

From: s22
To: s22
Subject: Swift parrot recovery plan - actions relating to NSW logging prescriptions [SEC=UNCLASSIFIED]
Date: Wednesday, 23 October 2019 1:28:35 PM
Attachments: [image001.png](#)

From: s22
Sent: Wednesday, 12 September 2018 1:19 PM
To: s47F
Subject: RE: Swift parrot recovery plan - actions relating to NSW logging prescriptions [SEC=UNCLASSIFIED]

Hi s47F

No problems, look forward to working with you over the next 12 months to revise the provisions.

Cheers

s22

From: s47F
Sent: Wednesday, 12 September 2018 10:49 AM
To: s22 s47F
Subject: RE: Swift parrot recovery plan - actions relating to NSW logging prescriptions [SEC=UNCLASSIFIED]

Hi s22 – apologies for that – we have been under the pump.

We have decided that we will progress under the current arrangements for swift parrot and regent honeyeater due to timing constraints. We didn't want to put the recovery teams under pressure when changes they may suggest may not have been able to be accommodated in time.

Instead we will circulate the provisions to you and the next steps we would like to take to inform any future revisions to the conditions in the next 12-months. This will hopefully give the recovery teams more time to review the provisions and identify any necessary changes. We will also be monitoring the settings and collecting some data, so this will also provide more information to inform any changes.

Thank you again for your time the other day. I will be in touch soon.

Regards

s47F

Forestry Branch NSW Environment Protection Authority

s47F

[@EPA_NSW](#)

Report pollution and environmental incidents 131 555 (NSW only) or +61 2 9995 5555

[Redacted]

From: s22
Sent: Wednesday, 12 September 2018 10:10 AM
To: s47F
Subject: RE: Swift parrot recovery plan - actions relating to NSW logging prescriptions [SEC=UNCLASSIFIED]

Hi s47F and s47F

Following up on our phone hook-up we had a couple of weeks ago. I seem to recall that the intention was to send me the current provisions for the swift parrot and regent honeyeater and for me to circulate to the Recovery Teams for comment. Was wondering where this process was up to and whether there was still time to comment on the documents.

Cheers

s22

A/g Director
Forest and Strategic Policy
Biodiversity Conservation Division
Department of Environment and Energy

s22

From: s22
Sent: Monday, 27 August 2018 10:09 AM
To: s47F
Subject: FW: Swift parrot recovery plan - actions relating to NSW logging prescriptions [SEC=UNCLASSIFIED]

Hi s47F

Following up on an email you sent to s22 about the Swift Parrot. I am the Director of Forest Policy in his Branch and have worked closely with the Swift Parrot recovery team, so might be able to help.

Regards,

s22
A/g Director
Forest and Strategic Policy
Biodiversity Conservation Division
Department of Environment and Energy

s22

 Please consider our environment before printing this email

From: s47F
Sent: Tuesday, 21 August 2018 5:57 PM
To: s22
Cc: s47F
Subject: Swift parrot recovery plan - actions relating to NSW logging prescriptions

Hi s22

As we discussed, we have just become aware of a specific action in the national recovery plan for the Swift Parrot seeking input on the revision to forestry prescriptions in NSW. As you know, we are currently finalising the coastal Integrated Forestry Operations Approval (IFOA) following public consultation, and would like to meet with you or other relevant staff at DoEE to provide an opportunity to discuss the latest on habitat requirements for the Swift parrot and how this might be managed in the context of the IFOA. We have considered additional opportunities for prescriptions following the public consultation on the [draft IFOA](#).

I've shown the relevant extract from the recovery plan below. I note in the appendix, further reference is made to a failure of NSW to integrate recommendations into final forestry prescriptions during the term of the previous (2001) recovery plan.

	Description	Priority	Performance Criteria	Potential Contributors
2.1b	Provide recommendations for the revision and update of forestry prescriptions to reflect the most recent habitat information available in Victoria and New South Wales.	2	Provide recommendations for revision of prescriptions for Swift Parrot: when forestry licence agreements are due for renewal in each state.	DSE, OEH

I further note there are also references to forestry in the recovery plan for the Regent Honeyeater, although these are not as specific.

I look forward to the opportunity for early discussions, as the NSW Government is hoping to finalise the Coastal IFOA shortly.

Regards

s47F

s47F
NSW Environment Protection Authority

s47F

s47F [@EPA_NSW](#)

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From: s22
Sent: Wednesday, 19 September 2018 5:08 PM
To: MinisterialCorrespondence
Cc: DLO Price
Subject: FW: Representation on behalf of Dailan PUGH [SEC=UNCLASSIFIED]
Attachments: 180918 JE to Price re PUGH.pdf; Protecting Federally Threatened Species in NSW.PDF; Letter_NEFA to Justine Elliot_16_9_2018.pdf

Categories: Min Reply-Min Price

ESD

For Min. reply please.
Thanks, s22

From: s22
Sent: Wednesday, 19 September 2018 4:20 PM
To: DLO Price <DLOPrice@environment.gov.au>
Subject: FW: Representation on behalf of Dailan PUGH

FYI – you may have already received....

s22 😊

Kind regards

s22

Office of The Hon Melissa Price MP
Minister for the Environment
Federal Member for Durack

Broome: (08) 9192 7216
 4/34-36 Frederick Street, Broome WA 6725
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From: s22
Sent: Tuesday, 18 September 2018 7:22 PM
To: Price, Melissa (MP)
Cc: s22 Elliot, Justine (MP)
Subject: Representation on behalf of Dailan PUGH

Dear Minister,

Please find attached and below correspondence from Justine Elliot MP on behalf of Dailan Pugh from s47F

...

The Hon Melissa Price
Minister for Environment
PO Box 6022
House of Representatives
Parliament House
Canberra ACT 2600

Via email: Melissa.Price.MP@aph.gov.au
Cc: s22

18 September 2018

Dear Minister,

Mr Dailan Pugh OAM, of s47F on behalf of the North East Forest Alliance, has contacted my office regarding the planned introduction of a new Coastal Integrated Forestry Operations Approval (IFOA) process by the NSW Government which will apply to North East NSW.

Mr Pugh is concerned that the introduction of this legislation will have a direct impact on various nationally threatened native species.

I enclose a copy of his correspondence.

Could you please respond in writing to Mr Pugh via this office.

Warm Regards,

s22

s22

Electorate Officer

Federal Member for Richmond
P (07) 5523 4371 F (07) 5523 4379

Justine
Elliot MP



JustineElliotMP



JElliotMP

ON YOUR SIDE

Authorised by Justine Elliot, Australian Labor Party, 107 Minjungbal Drive South Tweed



Justine Elliot MP

Federal Member for Richmond

IS180918

The Hon Melissa Price
Minister for Environment
PO Box 6022
House of Representatives
Parliament House
Canberra ACT 2600

(VIP-)

Via email: Melissa.Price.MP@aph.gov.au

s22

18 September 2018

Dear Minister,

Melissa

②

Mr Dailan Pugh OAM, of s47F on behalf of the North East Forest Alliance, has contacted my office regarding the planned (introduction of a new Coastal Integrated Forestry Operations Approval (IFOA) process by the NSW Government which will apply to North East NSW.

Mr Pugh is concerned that the introduction of this legislation will have a direct impact on various nationally threatened native species.

I enclose a copy of his correspondence.

Could you please respond in writing to Mr Pugh via this office.

Regards,

Justine Elliot

①

Justine Elliot MP
Federal Member for Richmond

Encl



(07) 5523 4371
justine.elliott.mp@aph.gov.au
[facebook.com/JustineElliotMP](https://www.facebook.com/JustineElliotMP)



107 Minjungbal Dr (PO Box 6996)
Tweed Heads South NSW 2486



North East Forest Alliance

NORTH EAST FOREST ALLIANCE

Dailan Pugh OAM
NEFA Co-ordinator

s47F

16 September 2018

Hon Justine Elliot MP
Federal Member for Richmond
Justine.Elliot.MP@aph.gov.au

Dear Justine,

I write to you on behalf of the North East Forest Alliance to bring to your attention the abject failure of NSW's legislative processes to demonstrate that they provide meaningful or adequate protection for Commonwealth listed Threatened species, the frequency with which management intent does not comply with Recovery Plans and Conservation Advices, the demonstrated failure to often implement prescriptions, and NSW's intent to significantly increase logging intensity and reduce protection for Threatened species.

The NSW Government is in the process of introducing a new Coastal Integrated Forestry Operations Approval (IFOA) to cover all forestry operations on public lands in NSW's Regional Forest Agreement areas of Eden, Southern and North East NSW. Their intent is to make this the regulatory regime that will be applied in any new RFA.

The intent of this letter is to alert you to the threat that NSW's current and proposed regulatory regime for forestry poses to nationally listed Threatened species and ecological communities in north-east NSW in the hope that you will make urgent representations to the Environment Minister to ensure protection is improved rather than reduced. The attached report has been separately sent to the Minister.

In summary the proposed changes to prescriptions for nationally listed threatened species currently requiring species-specific prescriptions under the north-east NSW IFOAs intend:

- Of the 20 Federally Threatened animal species with species-specific protection requirements (excluding nests/roosts), the proposal is to retain current prescriptions for 4 species, reduce protections for 3 species, and remove protections for 13 species. (Appendix 1)
- Of the 171 Federally threatened plants or populations that currently require species-specific protection (exclusion buffers, management plans) the proposal is to remove protections for 120 species, reduce protection for 14, retain protections for 17, marginally increase protection for 10, and 7 are uncertain (Appendix 2)

There are a multitude of other changes to general prescriptions in the new Coastal IFOA that will significantly impact upon nationally threatened species, most notably including:

- Establishing a North Coast Intensive Logging Zone from Grafton to Taree over some 140,000 ha of coastal forests where there will be no minimum basal area retention requirement, thus allowing clearfelling of extensive areas (including some 15,510ha (43%) of IFOA mapped 'high quality Koala habitat').
- Increasing logging intensity in the rest of State Forests by changing the requirement to retain 60% basal area and all trees >20cm diameter at breast height (dbh) to retaining minimum basal areas of 10-12m², effectively reducing basal area retention by some 33-50% in most cases.

- Reducing riparian buffers on headwater streams in catchments less than 20ha (around 75% of all streams on State Forests) from mostly 10m down to 5m, affecting some 22,000 kilometres of streams outside existing exclusion areas north from the Hunter River (as well as removing species-specific buffers around streams for a variety of frogs, most notably the barred frogs, and the need to implement 10m buffers on all headwater streams within 100km upstream of threatened fish).
- Setting the retention rate for hollow-bearing trees as up to 5 per hectare where they remain, removing the need to retain the next largest trees to increase retention to 5 per hectare in escarpment forests and where some threatened species occur, the need to increase retention to 8 hollow-bearing trees per hectare where there are >1 Greater Glider/ha within 3km of a Powerful Owl, and the need to retain all hollow-bearing trees within 100m of a Stephen's Banded Snake.
- Removing the requirement to protect one recruitment tree for each hollow-bearing tree retained (up to 5 per hectare), required to be sound and healthy mature to late-mature trees selected from the largest cohort.
- Remove the need to retain and protect 3 mature eucalypt nectar feed trees (of specified species) per hectare, increasing to 5 per hectare as the default prescription where Regent Honeyeater, Swift Parrot or Black-chinned Honeyeater are likely.
- Remapping stands of oldgrowth and rainforest included as Informal Reserves in the Comprehensive, Adequate and Representative Reserve System using revised targets, criteria and methodologies to make most stands available for logging.

The Private Native Forestry (PNF) Code has a range of record-based prescriptions for nationally listed threatened species, though there are few existing records on private lands and no survey requirements. This means that threatened species and ecosystems are usually provided with no protection what-so-ever in private forestry. Excusing logging operations on private lands from any obligations for threatened species under the EPBC Act, with virtually nothing done to mitigate impacts on them, is the single biggest threat to nationally listed forest species in the NE RFA.

Attached is a review of select nationally listed Threatened species occurring in the North East NSW Regional Forest Agreement (NE RFA) area. It compares the requirements of Recovery Plans and Conservation Advices with NSW existing prescriptions and proposed prescriptions for logging. A variety of case studies of the implementation of prescriptions are presented. It is important to recognise that these case studies are based on audits of a miniscule number of logging operations, emphasising how widespread and common breaches of required protections for threatened species are.

This review partially considers NSW regulatory compliance with two multi-species Recovery Plans, and Recovery Plans and/or Conservation Advices for one Threatened Ecological Community, 17 threatened animals and 11 threatened plants, while, for some species, considering examples from NEFA Audits relating to the implementation of IFOA prescriptions in practice. The proposed Coastal IFOA changes are considered for each species.

In summary the attached review finds:

1. Many Federally threatened species are not covered by Recovery Plans, have Recovery Plans that have expired or are not required to have Recovery Plans.
2. It is apparent that many Recovery Plans, particularly multi-species plans, fail to consider logging impacts or provide sufficient guidance on how to address forestry impacts and guide the recovery of threatened species.
3. While Recovery Plans are required by the NE RFA to be accounted for in logging operations, in practice Recovery Plans and Conservation Advices are generally ignored when planning and undertaking forestry operations.
4. One of the key requirements of numerous Recovery Plans and Conservation Advices (as well as being an ESFM principle) is to monitor the effectiveness of logging/management

prescriptions and adjust them accordingly (adaptive management), yet it appears that in the past 20 years only 5 plant species have been subject to token monitoring and despite significant damage to those species there has yet been no change to prescriptions. For most prescriptions there are no performance measures and Government's apparently don't care if they are effective.

5. In practice Threatened species management prescriptions are often breached and yet there is little meaningful enforcement or consequences, and rarely any rehabilitation or compensatory habitat requirements.
6. On private lands there are numerous prescriptions for threatened species, though as there are few records of threatened species on private lands and no requirements to survey for them, they are rarely provided any protection in practice. Without surveys to trigger species-specific prescriptions they are tokenistic.
7. The Commonwealth Government uses the existence of an RFA as an excuse for ignoring the impacts of forestry on threatened species, irrespective of whether Recovery Plans and prescriptions are complied with or whether prescriptions are weakened or removed.
8. The NSW Government uses the existence of an RFA as an excuse for ignoring Federal Recovery Plans, Conservation Advices and new listings.
9. The proposed new Coastal IFOA removes and reduces protection for most Federally listed threatened species.
10. The proposed new Coastal IFOA proposes significantly increasing logging intensity, removing the need to retain most mature trees (nectar feed trees and recruitment habitat trees), reducing riparian buffers, and logging oldgrowth and rainforest in Informal Reserves and yet none of the retained prescriptions for threatened species have been increased to take this into account.

It is apparent that if the Commonwealth has any intent to honour its obligations for the conservation and recovery of threatened species then it needs to ensure that there is a significant re-write of the threatened species provisions of the IFOA and PNF Code to ensure that they implement the identified recovery actions and provide the required protection. The most fundamental requirement is to require that they look before they log. If they don't look they don't find and if they don't find they don't protect. Survey requirements for public land need to be improved and for private lands they need to be introduced.

NEFA asks that you make representations to the Federal Environment Minister to ensure that there is a significant re-write of the Threatened species provisions of the proposed new Coastal IFOA and the PNF Code for north-east NSW to ensure that they implement the applicable recovery actions of Commonwealth Recovery Plans and Conservation Advices and provide the protection needed for nationally Threatened species and ecosystems.

As a first step NEFA has recommended to the Environment Minister that she have independent experts review NSW's proposed prescriptions and mitigation measures for threatened species and ecological communities, and identify changes required to make them compliant with Recovery Plans and Conservation Advices and any additional protections needed to ensure their recovery. We urge you to support such an independent review.

Please tell us what action you are taking in response to this request.

Yours sincerely,

s47F

Dailan Pugh OAM, for the North East Forest Alliance.

ATTACHED: Compliance of Forestry Operations in North East New South Wales with Commonwealth Requirements for Threatened Species and Ecosystems.

Compliance of Forestry Operations in North East New South Wales with Commonwealth Requirements for Threatened Species and Ecosystems.

Dailan Pugh, North East Forest Alliance, September 2018.

PREFACE

This report reviews the protection applied both in theory and practice to nationally threatened species and ecological communities in forestry operations in the North East NSW Regional Forest Agreement (NE RFA) area.

On public lands in north-east NSW logging is regulated by the Integrated Forestry Operations Approvals (IFOAs) (one for Upper North East and one for Lower North East) and the appended Environment Protection Licences, Threatened Species Licences and Fisheries Licences. The NSW Government is currently proposing on amalgamating all IFOAs and Licences for eastern NSW (including Eden and Southern) into a single Coastal IFOA.

For private lands the Private Native Forestry Code of Practice (PNF Code) was introduced by the NSW Government in August 2007 and sets the minimum operating standards for harvesting in private native forests. The NSW Government is currently undertaking a review of the PNF Codes.

This review provides numerous examples where logging prescriptions specified in IFOAs and the PNF Code are not compliant with Commonwealth Recovery Plans and Conservation Advices and where logging prescriptions are regularly and systematically not applied in practice. Federally listed threatened species and ecosystems are not being provided with the protection intended and often legally required. The PNF Code generally provides no real species-specific protection for threatened species, while the new Coastal IFOA is proposing reducing or removing most current species-specific protection for threatened species while significantly increasing logging intensity.

In summary this review finds:

1. Many Federally threatened species are not covered by Recovery Plans, have Recovery Plans that have expired or are not required to have Recovery Plans.
2. It is apparent that many Recovery Plans, particularly multi-species plans, fail to consider logging impacts or provide sufficient guidance on how to address forestry impacts and guide the recovery of threatened species.
3. While Recovery Plans are required by the NE RFA to be accounted for in logging operations, in practice Recovery Plans and Conservation Advices are generally ignored when planning and undertaking forestry operations.
4. One of the key requirements of numerous Recovery Plans and Conservation Advices (as well as being an ESFM principle) is to monitor the effectiveness of logging/management prescriptions and adjust them accordingly (adaptive management), yet it appears that in the past 20 years only 5 plant species have been subject to token monitoring and despite significant damage to those species there has yet been no change to prescriptions. For most prescriptions there are no performance measures and Government's apparently don't care if they are effective.
5. In practice Threatened species management prescriptions are often breached and yet there is little meaningful enforcement or consequences, and rarely any rehabilitation or compensatory habitat requirements.

Compliance of NE NSW Forestry with Commonwealth Threatened Species Requirements

6. On private lands there are numerous prescriptions for threatened species, though as there are few records of threatened species on private lands and no requirements to survey for them, they are rarely provided any protection in practice. Without surveys to trigger species-specific prescriptions they are tokenistic.
7. The Commonwealth Government uses the existence of an RFA as an excuse for ignoring the impacts of forestry on threatened species, irrespective of whether Recovery Plans and prescriptions are complied with or whether prescriptions are weakened or removed.
8. The NSW Government uses the existence of an RFA as an excuse for ignoring Federal Recovery Plans, Conservation Advices and new listings.
9. The proposed new Coastal IFOA removes and reduces protection for most Federally listed threatened species.
10. The proposed new Coastal IFOA proposes significantly increasing logging intensity, removing the need to retain most mature trees (nectar feed trees and recruitment habitat trees), reducing riparian buffers, and logging oldgrowth and rainforest in Informal Reserves and yet none of the retained prescriptions for threatened species have been increased to take this into account.

Given the abject failure of NSW's legislative processes to demonstrate that they provide meaningful or adequate protection for Commonwealth listed Threatened species, the frequency with which management intent does not comply with Recovery Plans and Conservation Advices, the demonstrated failure to often implement prescriptions, and NSW's intent to significantly increase logging intensity and reduce protection for Threatened species, the Commonwealth needs to ensure that there is a significant re-write of the Threatened species provisions of the IFOA and PNF Code to ensure that they implement the identified recovery actions and provide the protection required for nationally Threatened species and ecosystems.

NEFA's submission to the [Regional Forest Agreement Review](#) (Pugh 2018) demonstrates serious non-performance in the NE RFA area, including: failure to implement forestry codes of practice, failure to implement recovery plans for threatened species, failure to establish management plans for CAR reserves, failure to implement or enforce the ESFM framework and failure to correct proven and ongoing breaches of the RFA.

This report more comprehensively details the relevant requirements of national Recovery Plans and Conservation Advices, the NSW legislative protections for threatened species and ecosystems, and examples of compliance from the very small sample of operations inspected by NEFA over the years.

Recovery Plans are the principal measure relied upon by the Commonwealth to safeguard nationally listed threatened species. Unfortunately most threatened species are not covered by Recovery Plans, and many plans are either out of date or so vague as to be ineffective. Conservation Advices are the only federal direction offered for most threatened species and these have limited, if any, effect as they are not required to be complied with.

Clause 62 of the NE RFA states that "*The Parties agree that the management prescriptions or actions identified in jointly prepared and agreed Recovery Plans or Threat Abatement Plans will be implemented as a matter of priority, including through the Integrated Forestry Operations Approval on State forest*".

It is apparent that there is a comprehensive failure to incorporate nationally identified actions from Recovery Plans and Conservation Advices into NSW's legislative controls for logging operations on public lands, private lands and plantations. All the alterations made to the NSW Integrated Forestry Operations Approvals (IFOAs), and associated licences since 1998, have been aimed at reducing or removing protections for threatened species to make more areas and trees available for logging. There has not been a single change aimed at implementing a Recovery Plan requirement or improving the protection for any threatened species.

Compliance of NE NSW Forestry with Commonwealth Threatened Species Requirements

Hawke (2009) identifies "*Rather than being an exemption from the Act, the establishment of RFAs (through comprehensive regional assessments) actually constitutes a form of assessment and approval for the purposes of the Act. ... RFAs should be regularly monitored and audited to ensure they continue to meet the agreed conditions of that approval*", noting:

Key matters to consider when undertaking a review should be whether the following have been demonstrated:

- *the state's ESFM framework is capable of adapting to new information in a timely manner – this could include systems to ensure harvesting plans are consistent with recovery plans, conservation advice and action statements;*
- *matters of NES are consistently and uniformly incorporated into the state's ESFM framework and given appropriate consideration (consistent with information provided under the Act, such as listing advice);*

The ESFM requirements under the NSW IFOAs are merely "non-licence" requirements that nobody is responsible for enforcing. As a consequence many of the basic principles of ESFM are openly and regularly flouted (Pugh 2018). The Threatened Species Licence (TSL) and Fisheries Licence (FL) issued under the IFOAs do theoretically provide some legally enforceable protection for threatened species though these are poorly applied and policed. The proposed Coastal IFOA seeks to integrate the TSL and FL into the IFOA, though in the process removes or reduces the protection for most threatened species.

Application of prescriptions in the real world is where the process can often fail. In practice poor implementation is a common occurrence in NSW. NEFA considers that this is testimony to regulatory failure in NSW. Even the small sample of convictions Justice Pepper (*Director-General, Department of Environment, Climate Change and Water v Forestry Commission of New South Wales [2011] NSWLEC 102*) reviewed led her to conclude:

However, in my view, the number of convictions suggests either a pattern of continuing disobedience in respect of environmental laws generally or, at the very least, a cavalier attitude to compliance with such laws.

... Given the number of offences the Forestry Commission has been convicted of and in light of the additional enforcement notices issued against it, I find that the Forestry Commission's conduct does manifest a reckless attitude towards compliance with its environmental obligations ...

The cases reviewed by Justice Pepper were just the few that the EPA has prosecuted the Forestry Corporation for and some of those for which Penalty Notices had been issued. There are a plethora of quite serious offences that the EPA have only taken token, if any, regulatory action for. Justice Pepper's conclusions were only based on a small sample of the Forestry Corporation's offences.

All the years of regulation have failed to arrest the criminal behaviour of the Forestry Corporation, failed to implement the principles of ESFM and failed to provide the protection our threatened species so desperately require. It is evident is that the EPA's token 'proactive' audits and failure to apply meaningful deterrents has allowed the Forestry Corporation's *reckless attitude towards compliance with its environmental obligations* to flourish. It is also apparent that by their interpretations the EPA are continually weakening their ability to take regulatory action. It has reached the stage that, with a few exceptions, the EPA will only take meaningful regulatory action if the Forestry Corporation voluntarily confess.

Since the inception of the NE RFA the EPA have only ever prosecuted the Forestry Corporation in 2004 for one offence after they admitted guilt for 600 cubic metres of fill from a poorly constructed road in Chichester State Forest collapsing into a creek in contravention of the Environmental Protection Licence (EPL). Before the judgment was handed down the EPL was altered to exclude the vast majority of Forestry Corporation logging operations from its ambit.

Compliance of NE NSW Forestry with Commonwealth Threatened Species Requirements

In an overtly political move the EPA decided to stop issuing Penalty Notices for breaches of the TSL after January 2016. In response to our query for the EPA to explain their position the EPA (Michael Hood 9 February 2018) responded "*we determined to focus our approach on our proactive regulatory program and compliance priorities. In conjunction, we considered alternative tools such as the proactive release of information via audit reports, the issuing of official cautions, investigations and prosecutions*".

NEFA considers that the EPA's decision not to issue Penalty Notices was a political decision, the removal of a significant deterrent from the Forestry Corporation, a weakening of forest regulation and an intentional disincentive for NEFA's auditing. It is extremely frustrating for us to identify significant breaches that only result in meaningless and inconsequential warning letters or "official cautions".

The EPA's political position enabled Forestry Corporation CEO Mr. Roberts to state in response to questions at Budget Estimates (6 September 2017) that they had a clean record, leading to this exchange:

Mr ROBERTS: We did not have any penalty infringement notices served on us in the last financial year.

Ms DAWN WALKER: None?

Mr ROBERTS: None.

The Hon. GREG PEARCE: Excellent management.

The Hon. RICK COLLESS: Good work.

The Hon. GREG PEARCE: Great Minister.

The EPA's "proactive" audits are generally token audits limited to a small number of "compliance priorities" that are not published until years after the events. NEFA (Pugh 2018) reviewed those available for Upper North East NSW, and found just 8 available for 2015 which resulted in the EPA requiring the Forestry Corporation prepare 28 Action Plans. Eleven of the Action Plans related to 36 breaches of habitat tree prescriptions, all in a total sample area of 7.9ha covering 94 habitat trees. Given that thousands of hectares were logged that year the sampling is miniscule, though indicates a very high level of offences if extrapolated across the logged area. More worrying is that time and time again, year after year, the EPA find the same breaches and issue the same obviously useless requests for Action Plans.

Of equal concern is that the EPA rarely audit any species-specific prescriptions because they do not have the ecological expertise and they do not have the will because they are not compliance priorities.

The EPA also apparently consider Recovery Plans an irrelevant consideration. For example, in our audit of Cherry Tree State Forest NEFA (2015) documented numerous breaches of the Border Ranges Rainforest Biodiversity Management Plan, to which the EPA (Michael Hood 21 December 2016) responded "*The harvesting operations were undertaken under the authority of the Upper North East region Integrated Forestry Operations Approval*" - blatant breaches of the multi-species Recovery Plan were considered irrelevant because of the RFA. It is as if Clause 62 of the NE RFA does not exist, let alone any moral (or ESFM) obligation.

In spite of making Endangered Ecological Communities (EECs) a compliance priority the EPA refused to take any regulatory action what-so-ever in response to the roading and logging the Endangered Ecological Community Lowland Rainforest in Cherry Tree State Forest in response to NEFA's audit (Pugh 2015) . The rainforest had been mapped for decades and it had been identified and mapped as the State EEC Lowland Rainforest in a joint mapping project by both the EPA and the Forestry Corporation in 2016. NEFA's review of that mapping identified 33 incursions into mapped Lowland Rainforest affecting 4.5 ha. Despite their own mapping the EPA (Jackie Miles, 1-12-17) said they would do nothing because they could not determine beyond reasonable doubt that it was an EEC.

Compliance of NE NSW Forestry with Commonwealth Threatened Species Requirements

Similarly the EPA refused to even consider or mention 90ha of the State EEC Grey Box-Grey Gum Wet Sclerophyll Forest the Forestry Corporation logged within the Cherry Tree compartments. This too had been mapped jointly by both the EPA and the Forestry Corporation as an EEC in 2016, though the EPA refused to even consider it on the grounds that they have a Memorandum of Understanding with the Forestry Corporation not to use their mapping of it as a 'backward looking compliance tool', this is despite NEFA identifying numerous breaches within it before the EPA mapped it.

Though the most outrageous abrogation of their duty was the EPA (Michael Hood, 1 December 2017) stating that they would take no regulatory action at all for 122 breaches of habitat tree protections they identified in Cherry Tree State Forest likely "*as a result of harvesting operations*", because they were not able "*to prove beyond reasonable doubt that each individual instance of damage or debris was as a result of those undertaking the harvesting operation*" "*nor could it obtain evidence that would rebut a defence that the damage was caused by some other means*". It is blatantly obvious in most cases that the damage is caused by side-swiping of trunks, machinery damage to roots or trees being felled onto retained trees. This new position rules out the EPA taking further regulatory action for most breaches unless the Forestry Corporation confess (see section on Greater Gliders for discussion).

Adaptive Management is a key requirement of ESFM, most Recovery Plans and Conservation Advices, and Forestry management plans yet it is not applied in practice. From well before the RFA, and repeatedly since, NEFA have been asking for Government agencies to monitor the effectiveness of prescriptions intended to reduce environmental harm. This has been a requirement of numerous recovery plans, including the Northern Rivers Regional Biodiversity Management Plan (a national multi-species Recovery Plan), which has an action

7.1.5. Develop appropriate criteria and indicators to review the effectiveness of threatened species protection measures currently employed in public and private native forestry activities. Strengthen threatened species protection measures where they are shown to be inadequate.

The principle of monitoring a prescription and then using the results of that monitoring to improve the prescription is called adaptive management and is a basic tenet of ESFM. For example ESFM Principle 5 requires that "*ESFM would utilise the concept of adaptive management and continuous improvement based on best science and expert advice and targeted research on critical gaps in knowledge, monitoring or evaluation*".

It appears that in north-east NSW the impact of forestry has only been assessed for 5 plants and despite significant impacts no modification of prescriptions has yet been made. It is not believed that any other flora or fauna prescriptions have been subject to monitoring to assess their effectiveness, though this does not stop the Forestry Corporation claiming otherwise. In relation to biodiversity Forests NSW (2005) ESFM Plan notes:

Forests NSW will use adaptive management principles and actions within State forests to complement the management of the CAR reserve system.

...

During operations, site specific conditions are continually assessed, results recorded, the appropriateness of operational conditions reviewed and plans amended where necessary.

We have come across no evidence of this, quite to the contrary we are concerned that Forestry Corporation does not learn from their mistakes. We are most concerned that neither the EPA nor Forestry Corporation have bothered to assess the effectiveness of most prescriptions over the past 20 years and improved them accordingly. Rather than applying adaptive management as a routine practice we find that Forestry Corporation use it as an occasional excuse to log somewhere they shouldn't.

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There has been no strengthening of any of the Licence prescriptions included in the current licences since they were first issued 20 years ago, though there have been numerous instances of weakening and removal of prescriptions, not one of which has been based on monitoring of the effectiveness of either the old or new prescription.

The Private Native Forestry (PNF) Code has a range of record-based prescriptions for nationally listed threatened species, though there are few existing records on private lands and no survey requirements. This means that threatened species and ecosystems are usually provided with no protection what-so-ever in private forestry. If you don't look you don't find, if you don't find you don't protect. Excusing logging operations on private lands from any obligations for threatened species or ecosystems under the EPBC Act, with virtually nothing done to mitigate impacts on them, is the single biggest rort of the NE RFA. See sections on Clear Milkvine and Red Bopple Nut for examples.

NEFA made a detailed submission to the Federal Inquiry into: *The effectiveness of threatened species and ecological communities' protection in Australia*. The Inquiry (August 2013) found:
Forestry and the RFA exemption

7.32 The committee received numerous submissions expressing concern about forestry practices in state forests, and the RFA exemption in the EPBC Act.⁴³

7.33 Under section 38 of the EPBC Act, forestry operations undertaken in accordance with an RFA are not subject to the environmental assessment and approval provisions in Part 3 of the EPBC Act.

7.34 Submissions expressed concern that forestry operations pose a serious threat to a number of threatened species, such as koalas;⁴⁴ the Leadbeater's possum;⁴⁵ and tiger quolls.⁴⁶ In particular, there was concern that there has been non-compliance with RFAs, as well as difficulties in enforcing RFAs.⁴⁷ It was therefore suggested that the exemption in section 38 of the EPBC Act should be removed.⁴⁸ The removal of section 38 would mean that Part 3 of the EPBC Act would apply to forestry operations and 'the Commonwealth would need to approve logging of threatened species habitat in advance of it occurring'.⁴⁹

7.35 The inquiry in 2009 into the operation of the EPBC Act by this committee's predecessor, the Senate Standing Committee on Environment, Communications and the Arts, considered in great detail the interactions between RFAs and the EPBC Act. That inquiry recommended that the Hawke review:

...recommend proposals for reform that would ensure that RFAs, in respect of matters within the scope of Part 3 of the EPBC Act, deliver environmental protection outcomes, appeal rights, and enforcement mechanisms no weaker than if the EPBC Act directly applied.⁵⁰

7.36 Subsequently, Chapter 10 of the Hawke report considered RFAs and the EPBC Act, and made recommendations 38 and 39 to address the issue. In summary, recommendation 38 recommended that the provisions of the EPBC Act relating to RFAs be retained, but 'be subject to rigorous independent performance auditing, reporting and sanctions for serious non-compliance'.⁵¹ Recommendation 39 proposed the Commonwealth government work with the states to improve the independence of compliance monitoring; and develop processes to make publicly available information about the number and nature of complaints about RFA operations and the results of any investigations.⁵²

7.37 The government response to the Hawke review agreed with recommendation 39 and agreed in part to recommendation 38, noting the concerns raised about the operation of RFA, but stating that:

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The government remains committed to RFAs as an appropriate mechanism for effective environmental protection, forest management and forest industry practices in regions covered by RFAs. The government is also committed to working with state governments to improve the review, audit and monitoring arrangements for RFAs, including their timely completion ...

...

These improvements will inform the consideration of RFA renewal processes. The government does not agree to the recommendation to change section 38 of the Act, as the existing mechanisms for continuous improvement contained with the RFAs can be used to achieve ecologically sustainable forestry outcomes.⁵³

The Committee recommended (which was agreed by the Commonwealth):

Recommendation 37

7.116 The committee recommends that the Commonwealth government continues to work with state governments to improve the review, audit and monitoring arrangements for Regional Forest Agreements, with a view to ensuring that forestry operations avoid impacts on threatened species and ecological communities.

This has not been achieved.

NEFA wrote to the then Federal Minister for Sustainability, Environment, Water, Population and Communities, Tony Burke, on 16 May 2012 to highlight the inadequate protection provided for Koalas in logging operations in north-east NSW, and to request that he require a strengthening of logging prescriptions on both public and private lands to provide meaningful protection, and compliance with the NSW Recovery Plan, for the then recently listed vulnerable Koala.

Following the 2013 changes to the IFOA NSW conservation groups (Nature Conservation Council, Wilderness Society, North Coast Environment Council and NEFA) wrote (3 April 2013) to the then Federal Minister for Sustainability, Environment, Water, Population and Communities, Tony Burke, and Minister for Agriculture, Fisheries and Forestry, Joe Ludwig., "to raise a number of complaints about the fulfilment of Commonwealth responsibilities for the implementation of the North East NSW Regional Forest Agreement and the provision of adequate protection for threatened species, threatened ecosystems and heritage values", commenting:

It is our view that the Commonwealth's 'hands-off' approach to the periodic reviews of the Integrated Forestry Operations Approvals has meant that Commonwealth responsibilities for protection of CAR values and adequate protection of nationally threatened species and ecosystems are not being fulfilled. This situation requires urgent rectification given recent IFOA changes are highly likely to have a detrimental impact on nationally-listed threatened species...

We documented specific examples of non-compliance with national Recovery Plans for Hastings River Mouse, Black-breasted Button-quail and Native Jute (*Corchorus cunninghamii*), reminding the Ministers that in relation to Recovery Plans the RFA states (CI 62):

The Parties agree that the management prescriptions or actions identified in jointly prepared and agreed Recovery Plans or Threat Abatement Plans will be implemented as a matter of priority, including through the Integrated Forestry Operations Approval on State forest.

The letter commenting:

Some of the recent reductions in protection as a result of the IFOA review are in direct contravention of National Recovery Plans. They have breached many more of the Minister's Approved Conservation Advices for species that the Commonwealth has not met its obligations to prepare recovery plans for...

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The changes to the Threatened Species Licence in the north-east RFA Integrated Forestry Operations Approval directly removes or reduces specified protection for 1 nationally Critically Endangered, 8 nationally Endangered and 26 nationally Vulnerable species ...

We asked for the Ministers to take a number of actions, including:

- 1. We request that the Commonwealth acknowledge that the IFOAs are integral to the implementation of the RFA, and to commit to ensuring all changes to the IFOAs are fully considered by the Commonwealth.*
- 2. We ask the Commonwealth to use any and all powers to urgently intervene to restore adequate protection for nationally threatened species in north-east NSW, with particular reference given to the adequacy and recent downgrading of prescriptions under the IFOAs.*
- 3. In order to responsibly deal with nationally threatened species we ask the Commonwealth to undertake an independent scientific review of all prescriptions applied for nationally threatened species in forestry operations in NSW on both public and private land and to recommend needed changes to the IFOAs to adequately protect them.*

The response (30 May 2013) was from the Parliamentary Secretary for Agriculture, Fisheries and Forestry, Sid Sidebottom, who stated:

The Australian Government recognises its responsibilities as a party, along with the NSW Government, to the NSW RFAs. The Australian Government, through signing the three NSW RFAs, accredited the NSW forest management system as providing for continuing improvement ...

The NSW FAs relate to operational forest management in NSW. Under these circumstances, the operational issues you have highlighted fall within the direct responsibility of the NSW Government and its agencies. I urge you to make your concerns known to the NSW Government.

The Commonwealth Ministers basically refused our request to intervene, effectively telling us that the RFAs give NSW carte-blanche to change the prescriptions for threatened species as they see fit, irrespective of whether they contravene Recovery Plans. The Commonwealth claimed to have no ongoing responsibility for threatened species.

Clause 37 of the North East RFA requires that *"New South Wales undertakes to notify the Commonwealth within fourteen days of any amendment or termination of a Forest Agreement or amendment, suspension or revocation of any Integrated Forestry Operations Approval which applies to either of the Upper North East and Lower North East regions. Copies of any Forest Agreements or Integrated Forestry Operations Approvals will be provided to the Commonwealth within fourteen days"*.

At least our complaint seems to have prompted some slight interest from the State and Commonwealth to meet their mutual obligations. The recent EPA (2018) RFA Review identifies that in contravention of Clause 37 of the RFA, it was not until *"June 2013, NSW provided the Commonwealth with a bulk notification for amendments dated between December 2001 and March 2013 covering all four coastal IFOAs"*. There is a big difference between 14 days and 12 years.

The NSW Government has re-written its prescriptions for threatened species to be applied in logging operations on public lands as part of a new Integrated Forestry Operations Approval (IFOA). NSW is proposing on removing the requirements to survey for most nationally threatened species before logging and to reduce or remove the current protection from a raft of nationally threatened species. As documented herein, many of these changes are in direct contravention of relevant Recovery Plans and Conservation Advices. Exclusion areas established around records of a variety of nationally threatened species over the past 20 years will be opened up for logging. These

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changes are intended to be applied to the new RFAs and many aspects of the RFA (such as timber modelling and wood supply agreements) are predicated upon the reduced protection being implemented.

Those Federally listed threatened species currently requiring species-specific prescriptions under the north-east NSW Threatened Species Licences are identified in Appendices 1 (fauna) and 2 (flora), along with a précis of current and proposed changes to prescriptions. In summary the changes to species-specific prescriptions for north-east NSW are:

- Of the 20 Federally Threatened animal species with species-specific protection requirements (excluding nests/roosts), the proposal is to retain current prescriptions for 4 species, reduce protections for 3 species, and remove protections for 13 species. (Appendix 1)
- Of the 171 Federally threatened plants or populations that currently require species-specific protection (exclusion buffers, management plans) the proposal is to remove protections for 120 species, reduce protection for 14, retain protections for 17, marginally increase protection for 10, and 7 are uncertain (Appendix 2).

There are a multitude of other changes to prescriptions in the new IFOA that will significantly impact upon Federally threatened species, most notably including:

- Establishing a North Coast Intensive Logging Zone from Grafton to Taree over some 140,000 ha of coastal forests where there will be no minimum basal area retention requirement, thus allowing clearfelling of extensive areas (including some 15,510ha (43%) of IFOA mapped 'high quality Koala habitat').
- Increasing logging intensity in the rest of State Forests by changing the requirement to retain 60% basal area and all trees >20cm diameter at breast height (dbh) to retaining minimum basal areas of 10-12m², effectively reducing basal area retention by some 33-50% in most cases.
- Reducing riparian buffers on headwater streams in catchments less than 20ha (around 75% of all streams on State Forests) from mostly 10m down to 5m, affecting some 22,000 kilometres of streams outside existing exclusion areas north from the Hunter River (as well as removing species-specific buffers around streams for a variety of frogs, most notably the barred frogs, and the need to implement 10m buffers on all headwater streams within 100km upstream of threatened fish).
- Setting the retention rate for hollow-bearing trees as up to 5 per hectare where they remain, removing the need to retain the next largest trees to increase retention to 5 per hectare in escarpment forests and where some threatened species occur, the need to increase retention to 8 hollow-bearing trees per hectare where there are >1 Greater Glider/ha within 3km of a Powerful Owl, and the need to retain all hollow-bearing trees within 100m of a Stephen's Banded Snake.
- Removing the requirement to protect one recruitment tree for each hollow-bearing tree retained (up to 5 per hectare), required to be sound and healthy mature to late-mature trees selected from the largest cohort.
- Remove the need to retain and protect 3 mature eucalypt nectar feed trees (of specified species) per hectare, increasing to 5 per hectare as the default prescription where Regent Honeyeater, Swift Parrot or Black-chinned Honeyeater are likely.
- Remapping stands of oldgrowth and rainforest included as Informal Reserves in the Comprehensive, Adequate and Representative Reserve System using revised targets, criteria and methodologies to make most stands available for logging.

The new Coastal IFOA only mentions recovery plans in one place, where it requires "*incorporate actions specified in approved recovery plans, action statements and Saving our Species plans published by the Office of Environment and Heritage or equivalent*" when the Forestry Corporation are preparing "**species management plans**". The only Federally threatened species identified as requiring Species Management Plans in north-east NSW are the Eastern Bristle Bird and the plants

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Euphrasia arguta, Native Jute (*Corchorus cunninghamii*), and Milky Silkpod (*Parsonsia dorrigoensis*).

NSW began revising their IFOAs and associated threatened species licences in 2013 and by late 2015 the changes had mostly been decided. On 28 March 2018 NEFA (with National Parks Association) met with Josh Thomas, advisor to the Minister for the Environment and Energy, Josh Frydenberg, and later with the Deputy Secretary of Agriculture, Cindy Briscoe, and her staff. They all expressed surprise when told of the proposed changes. It is astounding that the Commonwealth is intending on signing off on "ever-greening" NSW RFAs and claim not to have been told of the intent of NSW to remove or reduce existing protections for most nationally threatened species.

This review demonstrates that for north-east NSW there is a systematic and comprehensive failure of NSW regulatory processes, both in theory and practice, to honour and implement recovery actions for threatened species identified in Commonwealth Recovery Plans and Conservation Advices. There can be no doubt that for public lands the new Coastal IFOA represents a major reduction in protection for Federally listed threatened species, meaning the already poor compliance with Recovery Plans and Conservation Advices will significantly worsen.

For private lands NSW regulatory processes give only token consideration of threatened species, with no meaningful mitigation in practice for most nationally threatened species, and therefore no meaningful compliance with Commonwealth requirements.

It is apparent that if the Commonwealth has any intent to honour its obligations for the conservation and recovery of threatened species then it needs to ensure that there is a significant re-write of the threatened species provisions of the IFOA and PNF Code to ensure that they implement the identified recovery actions and provide the required protection. The most fundamental requirement is to require that they look before they log. If they don't look they don't find and if they don't find they don't protect. Survey requirements for public land need to be improved and for private lands they need to be introduced.

EPA (2018) 'NSW Regional Forest Agreements, A report on progress with implementation of the New South Wales Regional Forest Agreements' Second and third five-yearly reviews'. NSW Environment Protection Authority.

Hawke, A. (2009) *The Australian Environment Act – Report of the Independent Review of the Environment Protection and Biodiversity Conservation Act 1999*, Australian Government Department of the Environment, Water, Heritage and the Arts

Pugh, D. (2018) North East Forest Alliance's submission to: 'NSW Regional Forest Agreements, A report on progress with implementation of the New South Wales Regional Forest Agreements' Second and third five-yearly reviews'. <https://www.epa.nsw.gov.au/-/media/epa/corporate-site/resources/forestagreements/review-submissions-2018/north-east-forest-alliance.pdf>.

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Claimed "Single Tree Selection" logging in Yabbra State Forest (2009).

Compliance of Forestry Operations in North East New South Wales with Commonwealth Requirements for Threatened Species and Ecosystems.

Introduction

This is a limited review of how select nationally threatened species are dealt with in theory and practice in logging operations on public and private lands in north-east NSW. Their treatment in NSW is compared to requirements of national recovery plans and conservation advices. This is only a preliminary assessment though it does highlight that national recovery plans and conservation advices are generally ignored in both theory and practice.

What NEFA finds most concerning is that the general and species-specific logging prescriptions have never been subject to independent expert review or monitoring to assess their effectiveness. They were originally developed in negotiation processes from 1996-98 between the then National Parks and Wildlife Service and State Forests of NSW. They were compromises based on opinions and resource impacts. There are no performance measures and they have never been monitored.

There have been a multitude of cuts to environmental protections since the inception of the RFA, justified on the need to increase resources to help meet WSA commitments. In 2003, in order to increase the harvestable area, "buffers on buffers" were removed by allowing trees to be dropped into, and machines to enter, exclusion areas.

Following the over-allocation of modelled available yields in 2003, in 2004 the Environment Protection Licence was amended to exclude most forest operations from its ambit, with the specific intent to allow the Forestry Corporation to log the 10m buffers required by the licence on "unmapped" streams in order to increase resources. There was no consideration of environmental impacts.

There were numerous amendments to the Threatened Species Licence from 2003 until 2011 that removed or reduced protection for threatened species and exclusion areas.

Since 2000 there have also been a number of species added to Federal Threatened species lists (such as the Greater Glider), and a number of new Recovery Plans prepared, yet there have been no changes to the Threatened Species Licence to reflect these changes.

From 2006 the Forestry Corporation began applying an unlawful version of the silvicultural prescription of Single Tree Selection (STS) involving up to 90% basal area removal, compared to STS's limit of 40% basal area removal (and retention of all trees under 20cm diameter at breast height (dbh)). In 2016 the EPA (pers. comm.) on behalf of the Environment Minister stated this intensity *"is not consistent with the definition and intent of STS (Single Tree Selection) in the Integrated Forestry Operations Approval (IFOA)*. This dramatically increased logging intensity has increase timber yields while greatly increasing environmental impacts, particularly on fauna. This unlawful logging was then adopted as the standard logging intensity for the new logging rules and yield assessments.

Throughout the deliberations of the EPA and the Forestry Corporation on the new Coastal IFOA the emphasis has always been on removing or minimising environmental protections to ensure no reduction in timber yields. There were numerous reductions in environmental constraints that were agreed between the agencies in negotiating the Coastal IFOA, such as:

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- increase logging intensity across public forests (mostly doubling tree removal), and create a 140,000ha North Coast Intensive Zone to allow Eden-style alternate coupe clearfelling,
- halve the measly 10m wide stream buffers in our vital headwaters while also allowing logging of riparian habitat protected for the past 20 years,
- reduce the retention requirements for ancient hollow-bearing trees, while removing the requirements to protect the next largest trees as recruitment trees to replace the hollow-bearing trees as they die out,
- remove the requirement to protect a sample (i.e. variously 3-5 per hectare) of mature high nectar-producing trees so essential to provide the abundant nectar needed by a plethora of species.
- removal of the need to survey for most threatened species, the removal of most species specific prescriptions and the opening up of most exclusions for threatened species established over the past 20 years.
- remove requirements to thoroughly search for Koalas ahead of logging and protect Koala High Use Areas, while zoning 43% of the highest quality habitat for extensive clearfelling.
- allow logging dieback to run rampant through our forests.

There were a variety of issues that the agencies were not able to agree on (NRC 2016), for which the Natural Resources Commission (NRC) mostly sided with the Forestry Corporation against the EPA on the basis of resource shortfalls, including:

- reductions in the minimum area of landscape exclusions within logging areas
- reductions in the minimum numbers and size of trees to be retained for Koalas
- increases in the minimum sizes of "giant trees" to be retained
- increases in the size of patches allowed for clearfelling
- reductions in minimum basal area retention under "selective" logging

Even then the NRC (2016) claim that *"it is not possible to meet the Government's commitments around both environmental values and wood supply"* maintaining there would be a shortfall in commitments from north-east NSW of 7,600 to 8,600 m³/yr of HQL due to protections for Endangered Ecological Communities and Koalas. To make up this claimed shortfall the Government decided to remap stands of oldgrowth and rainforest included as Informal Reserves in the Comprehensive, Adequate and Representative Reserve System using revised targets, criteria and methodologies to make most stands available for logging.

Irrespective of definitions, those forests mapped as oldgrowth and rainforest are of immense value as the most intact stands of forests left on State Forests as they have escaped the intensive logging of the past 20 years,. The eucalypt stands have a high number of hollow-bearing trees that provide the nests and dens essential for a plethora of hollow-dependant animals and the mature trees that provide the abundant browse, nectar and seeds that are essential food resources for a multitude of species, They are irreplaceable assets of immense importance for the maintenance of populations of forest dependent species throughout State Forests. They provide important refugia and stepping stones between our national parks.

It is evident that any pretence of Ecologically Sustainable Forest Management has been abandoned with the new Coastal IFOA. There have been major reductions in protections for Federally listed threatened species without any attempt to assess the consequences.

It is particularly concerning that that the NRC's claimed resource shortfall is an artificial construction obtained by excluding hardwood plantations from their resource claims to concoct the pretence of a resource shortfall (Pugh 2018). When hardwood plantations are included there is actually a surplus and no justification for the removal of prescriptions for threatened species.

This review is of a limited number of Federally listed threatened species, it compares the requirements of Recovery Plans and Conservation Advices with NSW existing prescriptions and

proposed prescriptions. A variety of case studies of the implementation of prescriptions are presented. It is important to recognise that these case studies are based on audits of a miniscule number of logging operations, emphasising how widespread and common breaches of required protections for threatened species are.

This review partially considers NSW regulatory compliance with two multi-species Recovery Plans, and Recovery Plans and/or Conservation Advices for one Threatened Ecological Community, 17 threatened animals and 11 threatened plants, while, for some species, considering examples from NEFA Audits relating to the implementation of IFOA prescriptions in practice. The proposed Coastal IFOA changes are considered for each species.

Summary

The Border Ranges Rainforest Biodiversity Management Plan multi species recovery plan.

The Border Ranges North and South (Queensland and New South Wales) is one of Australia's 15 Biodiversity Hotspots, and is one of the most significantly affected areas in NSW by lantana invasion and Bell Miner Associated Dieback, yet neither the Forestry Corporation nor EPA believe that there is any need to manage it for its special values and believe they can totally disregard the State-Commonwealth Border Ranges Rainforest Biodiversity Management Plan, which is a multi-species recovery plan. For example at Cherry Tree State Forest, in a Conserve and Repair priority area NEFA found that contrary to Objective 4 management plans had not been prepared for rainforest, tracks had been bulldozed through rainforest, tracks had been bulldozed to mark the boundary of rainforest (often clearing into the rainforest) and that logging had been undertaken into the rainforest, and that contrary to Objective 8 the roading and logging was spreading lantana and Bell Miner Associated Dieback. In response to NEFA's specific complaints the EPA consider that this "National Recovery Plan" is simply "Not Applicable" because operations are covered by an IFOA, one conceived 11 years before the plan was released. Neither is this recovery plan considered or applied in private property logging operations. The new Coastal IFOA does not require consideration of, or compliance with, this Recovery Plan.

Spotted-tailed Quoll

The nationally Endangered Spotted-tailed Quoll is known to strongly rely upon large hollow bearing trees and logs, as well as preying upon hollow-dependent species, and is known to be affected by intensive logging, though is able to tolerate some degree of disturbance. The 2016 National Recovery Plan for Spotted-tailed Quolls includes a variety of actions, most relevantly 'Objective 4. Evaluate and manage the risk posed by silvicultural practices', including developing guidelines on minimum habitat requirements for prescriptions, implementing monitoring programs to assess the efficacy of logging prescriptions, and identifying the disturbance thresholds of female quolls. NSW has applied the same logging prescriptions for the past 20 years without ever bothering to assess their effectiveness, without any monitoring or care as to what the effect on quolls will be. NSW has never bothered to monitor the efficacy of prescriptions, they are clearly in breach of the national recovery plan. As there are no requirements for surveys on private properties it is unlikely that any mitigation measures are applied in most quoll habitat.

Koala

The Koala is listed as nationally Vulnerable, yet the Recovery Plan due to commence in 2014 has yet to be prepared. Both the Commonwealth's Conservation and Management Strategy and NSW Recovery Plan have effectively expired, though their thrust for both public and private lands is to identify and protect important habitat areas, identify improved and standardised survey methods, and monitor and review the effectiveness of mitigation measures. The national Conservation Advice

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is the only currently applicable statement and includes actions such as monitoring "the effectiveness of management actions and the need to adapt them if necessary", "Identify populations of high conservation priority", "for Crown and private land investigate and/or secure inclusion in reserve tenure if possible", and "Manage any other known, potential or emerging threats such a Bell Miner Associated Dieback".

The current Koala prescriptions for public lands require the identification and exclusion from logging of Koala High Use Areas (HUAs), and the retention of 5 Koala feed trees per hectare in "intermediate use" habitat. Though in practice few areas are identified as Koala HUAs, with only some 200 hectares identified in 15 years. In 2012 the Forestry Corporation was found to not be undertaking the 'thorough' searches required, and to be in the process of logging one Koala High Use Area and intending to log 4 other Koala HUAs in Royal Camp SF. When logging resumed nearby the EPA confirmed NEFFA's complaint that another Koala HUA was logged, though they failed to investigate a subsequent complaint. When the FC attempted to resume logging in 2013 in another part of Royal Camp SF where they claimed "nil" Koalas, yet NEFA again found abundant evidence of Koala HUAs. Subsequent surveys by the EPA confirmed Royal Camp and the nearby Carwong SF as populations of high conservation priority yet the NSW Government is still intent on logging the HUAs under the new rules. The EPA briefly attempted to make the Forestry Corporation thoroughly search for Koala scats elsewhere though quickly gave up. There are no size limits on the 5 feed trees per hectare and they are rarely specifically marked for retention.

The current Koala prescription for private forestry is to protect "core" Koala habitat identified in accordance with a Koala Plan of Management, though very little has been identified since 1995. With most in Coffs Harbour LGA and even then it was subsequently approved for logging in contravention of the PNF Code. The prescriptions also require 20m buffers around high use trees and the retention of 10 primary koala food trees and 5 secondary koala food trees over 30cm dbh per hectare where a Koala is found, though as there is no survey requirements in practice NEFA has found high use trees are rarely identified and the tree retention requirements rarely triggered.

Having given up on getting the FC to thoroughly search for Koala HUAs, the EPA decided to use modelling in the new Coastal IFOA. An expert review they commissioned found that modelling wasn't accurate enough for regulation and that the priority had to be to identify existing resident populations. Undeterred the EPA commissioned DPI Forestry to prepare a model to use for regulation. NEFA compared the modelled high quality Koala habitat with recent intensive logging and found that 23,742 ha had been subject to this unlawful logging. The new Coastal IFOA proposes using a combination of Koala models to identify areas where Koala prescriptions 1 and 2 apply. In general 10 Koala feed trees per hectare >20 cm dbh are required to be retained in areas subject to prescription 1, and 5 feed trees per hectare in areas subject to prescription 2 (the EPA proposed 25 and 15 trees >25 cm dbh respectively though were over-ridden). There will be no requirement to search for Koalas ahead of logging to identify Koala High Use Areas or even to assess trees for use by Koalas when identifying feed trees to be retained.

Greater Glider

The Greater Glider is recognised as nationally vulnerable, though not in NSW. There is no Recovery Plan, just a 2016 Conservation Advice that identifies logging as the most significant threat and the need to 'Constrain impacts of hardwood production through appropriate levels of patch and hollow-bearing tree retention, appropriate rotation cycles, and retention of wildlife corridors between patches'. There has been no attempt in NSW to comply with this and, as also required by the Conservation Advice, there has been no monitoring to determine the numbers of types and hollow-bearing trees that need to be retained, or the effects of logging and burning on retained trees and glider populations. The one NSW prescription requiring increased hollow-bearing tree retention where more than one Greater Glider per hectare is recorded is considered by the Commonwealth Scientific Committee as "not adequate", and now the NSW Government is intending to remove the one specific protection for Greater Gliders, reduce hollow-bearing tree retention requirements and

remove the need to retain the recruitment trees essential to maintain hollow-bearing trees into the future.

Hastings River Mouse

The Recovery Plan for the Endangered Hastings River Mouse was adopted in 2005 by NSW thirteen years after it was started and 8 years after the draft plan was prepared. It was adopted in 2008 by the Commonwealth. It includes specific survey and habitat requirements which were initially incorporated into the Threatened Species Licence in a reduced form. In contravention of the Recovery Plan the Threatened Species Licence was amended in 2007 and in 2010 so as allow logging operations within 31 compartments in 6 State Forests to be undertaken within areas that would otherwise be required to be protected. The prescription for the Hastings River Mouse was changed in November 2011 to significantly reduce exclusion areas and survey requirements to reduce the likelihood of detecting its presence. Habitat retention requirements are proposed to be further reduced in the Coastal IFOA. There is evidence that the reduced surveys have significantly reduced the likelihood of detecting Hastings River Mouse, though there has never been any attempt to assess the effectiveness of the reduced prescription. The current and proposed prescriptions are clearly not consistent with the Recovery Plan.

Broad-toothed Rat

The Barrington Tops population of the Vulnerable Broad-toothed Rat is listed as an endangered population. The current prescription requires all "*Suitable habitat for Broad-Toothed Rat*" to be protected with a 20m buffer. All species-specific protection is intended to be removed. It can not be assumed that this endangered population is adequately protected by the proposed exclusions. The Conservation Advice requirement to "*Undertake a targeted survey of all suitable habitat within the subspecies' range*" and to *undertake a monitoring program to assess management effectiveness* have not been complied with.

Large-eared Pied Bat

The 2011 'National recovery plan for the large-eared pied bat *Chalinolobus dwyeri*' identifies that it roosts in caves and overhangs and forage in nearby high-fertility forest or woodland near watercourses, with the protection of known roosts and associated foraging habitats, with monitoring of the effectiveness of prescriptions. The current TSL requires 50 m buffers around roosts and the new Coastal IFOA generally requires 100m buffers around potential roosts, though neither require protection of associated foraging habitat. The effectiveness of the current or proposed prescriptions have never been monitored. The proposed Coastal IFOA significantly increases logging intensity and reduces headwater stream buffers which will significantly increase impacts on the foraging habitat of this species. It clearly contravenes the Recovery Plan.

Coxen's fig-parrot

The 2001–2005 Recovery Plan for the Endangered Coxen's Fig-parrot and the Commonwealth's 2016 Conservation Advice clearly identify the need to protect rainforest ecotones as potential breeding habitat for this species. This has never been provided. The NRC (2018) proposes the remapping of rainforest with a view to opening up substantial areas for logging. In their trial remapping 62% of rainforest was remapped as not being rainforest applying their new criteria. It is evident that the Recovery Plan and Conservation Advice for this species have never been complied with.

Regent Honeyeater and Swift Parrot

For the Critically Endangered Regent Honeyeater there is an outdated 1999–2003 Recovery Plan and 2015 Conservation Advice, both of which identify the loss of mature eucalypt feed trees as

significant threats and their retention as essential recovery actions. For the Endangered Swift Parrot the revised 2011 Recovery Plan requires the retention of all trees 60cm DBH or greater, together with smaller trees as recruits. The current TSL requires the retention of 10 mature eucalypt feed trees per 2 hectares where there are records of these species, though most often the default of retaining 10 mature feed trees per 2 hectares in modelled habitat is adopted in lieu of surveys. Though most commonly no attempt is made to specifically identify such trees in practice, with Hollow-bearing (H) and Recruitment (R) trees being relied upon. The new Coastal IFOA proposes removing any need to retain nectar feed trees or recruitment (R) trees as well as allowing for a significant increase in logging intensity. This is in clear contravention of Recovery Plans and Conservation Advices for both species.

Rufous Scrub Bird

For the Endangered Rufous Scrub-bird The 2014 Conservation Advice identifies that there is no need for a Recovery Plan because "*the remaining populations mostly occur in protected habitat*". Contrary to the Advice Rufous Scrub Bird does occur on State Forests. The current TSL requires that the all "microhabitat" within 300m of a record be protected, along with a 20m buffers. Surveys are required to be undertaken in the appropriate season when detection is most likely. As a default all microhabitat and a 20m buffer can be protected. The evidence is that the required prescriptions are rarely applied in practice and that the Forestry Corporation does not have the expertise to identify the species or its microhabitat. The new Coastal IFOA retains the prescription though allows surveys in seasons when it is unlikely to be detected.

Black-breasted Button-quail

The Vulnerable Black-breasted Button Quail is covered by a 2009 Recovery Plan that requires a new predictive model, surveys in potential habitat and the implementation of management prescriptions for forestry. Instead of developing an improved predictive model to guide surveys for this species, in 2013 the TSL was changed to remove the need for pre-logging surveys. The proposed Coastal IFOA removes all protection. The NRC (2018) proposes the remapping of rainforest with a view to opening up substantial areas for logging. In their trial remapping 62% of rainforest was remapped as not being rainforest applying their new criteria. It is evident that the Recovery Plan for this species have never been complied with in NSW.

Broad-headed Snake

For the Vulnerable Broad-headed Snake the 2014 Conservation Advice identifies that it utilises rock outcrops and hollow-bearing trees within 200m, with the need to survey for the species and retain hollow-bearing trees. The Commonwealth survey guidelines are not applied in forestry. The prescription for this species was removed from the TSL in 2013. There is no requirement to survey for this species or to protect hollow-bearing trees within 200m of rock outcrops. This species will be impacted by the Coastal IFOA's proposals to increase logging intensity, the removal of the need to restore 5 hollow-bearing trees per ha in escarpment forests and the need to retain the recruitment trees needed to replace hollow-bearing trees as they die out.

Giant Burrowing Frog

The Vulnerable Giant Burrowing Frog has no Recovery Plan, though has a 2014 Conservation Advice which requires site specific management plans, protection of breeding sites and the retention of vegetation "*especially within 300 metres of known breeding sites*". In 2013 the TSL was altered to remove survey requirements and replaced with tadpole monitoring where there are records. The proposed Coastal IFOA removes all protection for this species, while proposing increased logging intensity and that buffers on headwater streams be reduced from 10m to 5m - despite the Conservation Advice being that "*narrow buffers along streams does not sufficiently protect the species habitat*".

Green and Golden Bell Frog

The Vulnerable Green and Golden Bell Frog has no Recovery Plan. The 2014 Conservation Advice requires surveys and monitoring of management actions. The Significant Impact Guidelines identify a significant impact as constituting *"the removal or degradation of terrestrial habitat within 200 metres"* of known or suitable habitat and the breakage of habitat linkages, while specifying specific survey guidelines. The TSL requires buffers of 50m around records or occupied waterbodies, with significantly less survey requirements than recommended. The new IFOA proposes removing survey requirements for Green and Golden Bell Frog and the requirement for exclusion zones, thereby opening up all exclusion zones established in the past 20 years for logging. This is in total contravention of the Approved Conservation Advice.

Giant Barred Frog

There is no applicable Recovery Plan for the Giant Barred Frog, only a 2017 Conservation Advice which identifies that it moves up to 20m from streams and is impacted upon by logging. The need to protect riparian habitat from logging and monitoring of frog movements is recognised. The current TSL requires surveys and the implementation of 30m buffers on "mapped" streams (not "unmapped") within 200m of records. The prescription has been found to not be applied in practice. The new IFOA proposes removing survey requirements for Giant Barred Frog and the requirement for exclusion zones, thereby opening up all exclusion zones established in the past 20 years for logging. The intent is also to reduce exclusion zones along headwater streams in catchments less than 20ha down from mostly 10m to 5m which may have significant direct impacts on any populations in such areas and will have significant impacts water quality for any downstream populations. There has not been any monitoring to assess the effectiveness of the current prescription and there have not been any trials to assess how Giant Barred Frog will be affected by the new prescription. This is in contravention of the Conservation Advice.

Stuttering Frog

There is a 2011 Recovery Plan for the Vulnerable Stuttering Frog that identifies it uses small streams and forest well away from streams, with forestry identified as a threat and the need for monitoring and application of forestry prescriptions. The current TSL requires surveys and the implementation of 30m buffers on "mapped" streams (not "unmapped") within 200m of records. The prescription has been found to not be applied in practice. The new IFOA proposes removing survey requirements for Stuttering Frog and the requirement for exclusion zones, thereby opening up all exclusion zones established in the past 20 years for logging. The intent is also to reduce exclusion zones along headwater streams in catchments less than 20ha down from mostly 10m to 5m which may have significant direct impacts on any populations in such areas and will have significant impacts water quality for any downstream populations. There has not been any monitoring to assess the effectiveness of the current prescription and there have not been any trials to assess how Stuttering Frog will be affected by the removal of the prescription. This is in contravention of the Recovery Plan.

Fleay's Barred Frog

There is no applicable Recovery Plan for the Endangered Fleay's Barred Frog, with a 2017 Conservation Advice that identifies it uses forest well away from streams, with forestry identified as a threat and the need for monitoring and application of forestry prescriptions. The current TSL requires surveys and the implementation of 30m buffers on "mapped" streams (not "unmapped") within 200m of records. The prescription has been found to not be applied in practice. The new IFOA proposes removing survey requirements for Fleay's Barred Frog and the requirement for exclusion zones, thereby opening up all exclusion zones established in the past 20 years for

logging. The intent is also to reduce exclusion zones along headwater streams in catchments less than 20ha down from mostly 10m to 5m (which represents 75% of streams) which may have significant direct impacts on any populations in such areas and will have significant impacts water quality for any downstream populations. There has not been any monitoring to assess the effectiveness of the current prescription and there have not been any trials to assess how Fleay's Barred Frog will be affected by the removal of the prescription. This is in contravention of the Conservation Advice.

Lowland Rainforest of Subtropical Australia

A Recovery Plan is not identified as required for the Critically Endangered Lowland Rainforest of Subtropical Australia. The 2011 Conservation Advice identifies threats as *vegetation clearance* and fragmentation as threats, and actions to be avoided. In 2012 as part of the preparation of a Property Vegetation Plan, the Office of Environment and Heritage, at the request of the EPA and Forestry Corporation, reviewed rainforest mapping and deleted 2.5 ha and reassigned it as either cleared or for logging, without recognising that it qualified as the TEC Lowland Rainforest at both State and Federal levels. This was despite its being mapped as the Critically Endangered Lowland Rainforest of Subtropical Australia and as a Repair Priority under the Border Ranges Rainforest Biodiversity Management Plan. NEFA reviewed the remapping and found it was totally unjustified. though the EPA refused to investigate. It is clear that Lowland Rainforest is not provided with the protection it needs in NSW.

Big Nellie Hakea, *Hakea archaeoides*

The Vulnerable Big Nellie Hakea is covered by the 2010 Northern Rivers Regional Biodiversity Management Plan, which is its generic Recovery Plan, though provides little direction. It is also subject to a 2008 Conservation Advice. Forestry is a recognised threat, with monitoring and review of prescriptions as actions. It is not currently provided with any protection under the TSL, though the new Coastal IFOA proposes a 20m buffer. The current lack of any protection is clearly not in accord with this species' Recovery Plan or Conservation Advice.

Bordered Guinea Flower, *Hibbertia marginata*

The Vulnerable Bordered Guinea Flower is covered by the 2010 Northern Rivers Regional Biodiversity Management Plan, which is its generic Recovery Plan, though provides little direction. It is recognised as affected by Forestry. As with the Recovery Plan, the 2008 Conservation Advice requires monitoring of "*the effectiveness of management actions and the need to adapt them if necessary*". Under the TSL this species is subject to logging without any protection, subject to a monitoring plan. The only monitoring report for Bordered Guinea Flower (*Hibbertia marginata*) was not reported until 2012 and the impacts were found to be far greater than anticipated, with 28% and 36% of plants killed or removed at two locations, often by soil disturbance or being smothered by dense logging debris, with many other plants damaged, yet despite changes to the licence since then the prescription has not yet been changed. The Coastal IFOA proposes a 20m buffer, it is outrageous that this species has been allowed to be subject to indiscriminate logging for some 20 years, with monitoring only started in 2008 and significant impacts being reported in 2012.

Clear Milkvine, *Marsdenia longiloba*

The Vulnerable Clear Milkvine has no Recovery Plan, but is covered by a 2008 Conservation Advice which requires surveys, monitoring and an assessment and review of management actions, particularly on private land. The TSL requires protection of 90% of individuals. For PNF 20m buffers are required. During a logging operation undertaken by the Forestry Corporation on private land in 2013 NEFA identified 13 plants, of which 5 were apparently killed, one severely damaged, and 4 had logging and/or roading within what should have been their exclusion zones. Three of those killed were identified prior to road construction, and the other 2 found after. Other individuals are

likely to have been killed in the operation. The EPA waited until the time for prosecution had almost expired before issuing the Forestry Corporation with a \$5,500 fine for roading within the buffer of Clear Milkvine, though they contested the offence and refused to pay the fine, by which time it was too late for the EPA to prosecute. It is evident that because of the absence of survey requirements this species has no meaningful protection on private land in contravention of the Conservation Advice. The new Coastal IFOA proposes 20m buffers for this species.

Four-tailed Grevillea, *Grevillea quadricauda*

No Recovery Plan is required for the Vulnerable Four-tailed Grevillea. The 2008 Conservation Advice identifies forestry as a threat, requiring implementation and monitoring of prescriptions. The current TSL classes it as one of the 11 plants that can be logged indiscriminately subject to the undertaking of a Monitoring Program. There does not appear to have been any monitoring of this species despite the Forestry Corporation preparing a Flora Monitoring Program and identifying significant numbers in an area they intended to log in 2009, with the EPA stating "*Plan has not been required to be enacted*". The PNF Code requires protection of all individuals with no buffers. The new Coastal IFOA proposes to require 20m buffers. It is outrageous that this species has been allowed to be subject to indiscriminate logging for the past 20 years with no protection and no monitoring.

Milky Silkpod, *Parsonsia dorrigoensis*

The Endangered Milky Silkpod is covered by the 2010 Northern Rivers Regional Biodiversity Management Plan, which is its generic Recovery Plan, though provides little direction. It is also subject to a 2008 Conservation Advice. Forestry is an identified threat, with implementation, monitoring and improvement of prescriptions as actions. The current TSL class it as one of the 11 plants that can be logged indiscriminately subject to the undertaking of a Monitoring Program. Monitoring of Milky Silkpod (*Parsonsia dorrigoensis*) was not written up until 2009, up to 5 years after monitoring was complete. The monitoring covered 69 plants across 4 State Forests, finding "*Logging results in a large proportion (41-64%) of plants, or at least their above-ground parts, being damaged, destroyed or removed. Although all plants damaged by logging survived, a high proportion (19-41%) of plants is destroyed or removed*". The PNF Code requires protection of all individuals with no buffers. The new Coastal IFOA proposes more of the same, with a Management Plan required. It is outrageous that this species has been allowed to be subject to indiscriminate logging for the past 20 years with no protection, despite the evidence that logging has a significant impact. This contravenes both the Recovery Plan and Conservation Advice.

Narrow-leaved Melichrus, *Melichrus sp. Gibberagee*

The Recovery Plan relied upon for the Endangered Narrow-leaved Melichrus is the 2010 Northern Rivers Regional Biodiversity Management Plan which is its generic Recovery Plan that provides little direction. It identifies forestry as a threat, requiring "*Develop appropriate criteria and indicators to review the effectiveness of threatened species protection measures*". There is no approved Conservation Advice for this species. The current TSL requires 50m buffers. In 2017 NEFA identified 15 Endangered Narrow-leaf Melichrus that have had forestry operations conducted within their 50m exclusion zones, 8 had roading conducted within their buffers, often within a few metres of the plants, one had a log dump within its buffer and 6 have had logging operations extend within what should be exclusion zones, and a number of buffers were not marked as required. The PNF code requires 50m buffers. The new Coastal IFOA proposes reducing the buffer to 20m. This is apparently a political decision (all 50m buffers have been reduced to 20m) without any monitoring or review in contravention of the Recovery Plan.

Onion Cedar, *Owenia cepiodora*

The Border Ranges Rainforest Biodiversity Management Plan is the Recovery Plan relied upon for the Vulnerable Onion Cedar, relevantly it focuses the protection of rainforest and its buffers. The 2008 Conservation Advice focuses on monitoring and adapting management actions. In 2013 the exclusion zone required by the TSL around Onion Cedar was reduced from 50m down to 20m, without any apparent assessment. In 2015 in Cherry Tree State Forest NEFA found that a road had been constructed through the NSW TEC Lowland Rainforest within a Recovery Plan "Conserve" and "Repair" priority area, and within the 20m buffers of at least 26 Onion Cedars, in the process 2 of these (2 and 3m from track) had their tops knocked off during road construction and 2 were bulldozed over amongst logging debris, with others likely killed by the road construction. The EPA issued Forestry Corporation with 2 Penalty Notices, each with a \$1,000 fine, though took no legal action for the roading through the Lowland Rainforest and considered the Recovery Plan requirements irrelevant. The PNF Code requires 50m buffers. The proposed Coastal IFOA proposes retaining the 20m buffers. It is significant that the EPA thought that the Recovery Plan requirements for this species were irrelevant.

Red Bopple Nut, *Hicksbeachia pinnatifolia*

A Recovery Plan is identified as not required for the Vulnerable Red Bopple Nut, with the 2010 Conservation Advice identifying requirements for surveys, buffers, monitoring and adaption. The TSL requires 20m buffers. The PNF Code requires 20m buffers. During a logging operation undertaken by the Forestry Corporation on private land in 2013 NEFA identified 27 Red Bopple Nuts (about half tagged) that had logging roads constructed through their require buffers, and one with logging within its exclusion zone, and one injured. Of particular concern was that NEFA identified a road proposed to be constructed though a grove of over 60 Red Bopple Nuts, after we requested the EPA stop work the route was changed, though was still constructed through exclusion zones for at least 8 Red Bopple Nuts that had been identified and tagged by FC prior to the track's construction. Even though it was a deliberate act the EPA only issued an Official Caution for violating buffers of 4 Red Bopple Nuts. The new Coastal IFOA proposes retaining 20m buffers. It is apparent that that the Conservation Advice is being systematically ignored on private lands, even by Government agencies.

Sandstone Rough-barked Apple, *Angophora robur*

The Vulnerable Sandstone Rough-barked Apple is covered by the 2010 Northern Rivers Regional Biodiversity Management Plan, which is its generic Recovery Plan, which identifies logging as a threat though provides little direction. It is also subject to a 2008 Conservation Advice identifying requirements for monitoring and adaption. The current TSL classes it as one of the 11 plants that can be logged indiscriminately subject to the undertaking of a Monitoring Program. The only monitoring report for Sandstone Rough-barked Apple (*Angophora robur*) was prepared in 2008 with just 35 trees assessed of which 23% suffered significant damage (5 killed). The PNF Code requires protection of all individuals with no buffers. The new Coastal IFOA proposes removing all protection for this species. The removal of protection for this species is inconsistent with the Recovery Plan and Conservation Advice, particularly given the intention to significantly increase logging intensity.

Slaty Red Gum, *Eucalyptus glaucina*

No Recovery Plan is proposed for the Vulnerable Slaty Red Gum, the 2008 Conservation Advice identifies forestry as a threat requires monitoring and that logging "*not adversely impact on known populations*". The current TSL classes it as one of the 11 plants that can be logged indiscriminately subject to the undertaking of a Monitoring Program. The only monitoring report for Slaty Red Gum (*Eucalyptus glaucina*) was not prepared until 2012, finding 30% of trees up to 60 cm dbh were damaged by logging (5 logged) and 3 years after logging there was a population decline. For northern populations the PNF Code requires protection of all plants with no buffer, and for southern populations 20m buffers. The proposed Coastal IFOA proposes limiting protection to trees over 30 cm dbh with no buffers. With the intent being to significantly increase logging intensity beyond that

applied in the single trial the impacts are similarly likely to increase. Removing protection for smaller individual of this species is clearly in contravention of the Conservation Advice given that these have been found to be most significantly impacted.

Square-fruited Ironbark, *Eucalyptus tetrapleura*

For the Vulnerable Square-fruited Ironbark is covered by the 2010 Northern Rivers Regional Biodiversity Management Plan, which is its generic Recovery Plan, which identifies logging as a threat though provides little direction. It is also subject to a 2008 Conservation Advice identifying requirements for surveying, monitoring, adaption and protecting populations in timber harvesting areas. The current TSL requires the protection of 90% of individuals with no buffers. The new Coastal IFOA proposes the removal of all protection. Contrary to the Recovery Plan and Conservation Advice there has been no monitoring to assess the effectiveness of current prescriptions to justify the removal of protection.

MULTI-SPECIES

The Border Ranges Rainforest Biodiversity Management Plan

[Northern Rivers Regional Biodiversity Management Plan, National Recovery Plan for the Northern Rivers Region](#)

The Border Ranges Rainforest Biodiversity Management (BRRBM) Plan (Department of Environment, Climate Change and Water NSW, 2010) covers the Border Ranges North and South (Queensland and New South Wales) Biodiversity Hotspot, and *"constitutes the formal national recovery plan for those rainforest species which are endemic to the Hotspot region"* and *"identifies the actions to be taken to ensure the long-term viability of the threatened species and other biodiversity assets of the rainforest and related vegetation of the Border Ranges region"*.

The BRRBM Plan constitutes the regional recovery plan for species and ecological communities that occur within the Planning Area that are subject to the listings under the relevant state and Commonwealth nature conservation legislation. The Plan covers 58 fauna species, 134 flora species and 25 ecological communities associated with rainforest or related vegetation that are listed as threatened at either a national or state level.

In keeping with the contempt shown for the preparation of Recovery Plans, this multi-species approach appears to be a way of belatedly trying to cover as many species as possible. The plan is dated 2010, though covers 46 species identified in RFA ATTACHMENT 3, THREATENED FLORA, FAUNA AND ECOLOGICAL COMMUNITIES 'Table 1: Priority species for preparation of Recovery Plans (over next five years)' as requiring Recovery Plans by 2003-2005.

RFA Table 1: Priority species for preparation of Recovery Plans (over next five years) covered by the 2010 Border Ranges Rainforest Biodiversity Management Plan

Acronychia littoralis, Arthraxon hispidus, Baloghia marmorata, Bosistoa selwynii, Bosistoa transversa, Clematis fawcettii, Corchorus cunninghamii, Corokia whiteana, Cryptocarya foetida, Davidsonia jerseyana, Davidsonia johnsonii, Desmodium acanthocladum, Diospyros mabacea, Diploglottis campbellii, Elaeocarpus sedentarius, Elaeocarpus williamsianus, Endiandra floydii, Endiandra hayesii, Floydia praealta, Fontainea australis, Fontainea oraria, Hicksbeachia pinnatifolia, Isoglossa eranthemoides, Macadamia tetraphylla, Myrsine richmondensis, Ochrosia moorei, Owenia cepiodora, Plectranthus nitidus, Randia moorei, Sarcophilus fitzgeraldii, Sophora fraseri, Symplocos baeuerlenii, Syzygium hodgkinsoniae, Syzygium moorei, Tinospora tinosporoides, Tylophora woollsii, Uromyrtus australis, Coxen's

Compliance of NE NSW Forestry with Commonwealth Threatened Species Requirements

Double-eyed Fig Parrot, Eastern Bristlebird, Black-breasted Button-Quail, Red Goshawk, Fleay's Barred Frog, Giant Barred Frog, Brush-tailed Rock Wallaby, Hastings River Mouse, Mitchell's Rainforest Snail,

The Plan identifies both Conserve Priority and Repair Priority areas, noting:

The Conserve Priorities and Precincts map (see Figure 10) identifies areas that, if lost, would have the greatest impact on the biodiversity of the Planning Area. These are generally areas of existing conservation value where the focus should be on retaining the values that currently exist through mechanisms appropriate to their current tenure. National parks are not included here as they are already conserved. The Repair Priorities and Precincts map (see Figure 11) identifies areas that, if restored, would contribute the greatest biodiversity gains to the Planning Area. Repair Priorities are generally poorly conserved or over-cleared vegetation communities and are not restricted by land tenure (Turbill & Steed 2006). Areas where clusters of Conserve or Repair Priorities occur have been delineated and mapped as 'Precincts'

The Border Ranges Rainforest Biodiversity Management Plan fails to consider forestry or logging specifically despite the activity being a real threat to many species. The plan identifies a variety of key threatening processes (or legislative equivalents) that are relevant to logging:

- *Clearing of native vegetation*
- *Eucalypt dieback associated with over-abundant psyllids and Bell Miners *Manorina melanophrys**
- *Loss of hollow-bearing trees*
- *Invasion, establishment and spread of *Lantana camara**
- *Predation by the European Red Fox *Vulpes vulpes**
- *Predation by the feral Cat *Felis catus**
- *Degradation of native riparian vegetation along watercourses*

The Plan then focuses on objectives and outcomes aimed at redressing the threats, noting:

The objective of this Plan is to protect rainforest and related biodiversity and to provide a consistent and effective recovery program for species and communities of conservation concern. The recovery program will focus on improving the condition (connectivity and integrity) of rainforest and related vegetation communities and their component species and systems.

Objective 4 of the Plan is "To protect rainforest and related vegetation from fragmentation, modification and degradation", with relevant actions being:

- *Promote the rehabilitation and management of rainforest and related vegetation on public land through plans of management, pest strategies and restoration and rehabilitation plans.*
- *Ensure that buffers are included in approvals for new developments or activities that occur in close proximity to rainforest or related vegetation.*
- *Where appropriate, ensure local provenance flora is selected for revegetation and rehabilitation projects.*
- *Encourage preparation of restoration plans prior to commencement of restoration activities. These should consider potential impacts on priority and threatened species present at a site.*
- *Identify areas that contain high densities of hollow-bearing trees as areas of high conservation value in planning instruments and land management negotiations.*
- *Ensure retention of existing hollow-bearing trees. Also encourage the protection of recruitment trees that will ensure hollow resources are available into the future.*

Objective 5 of the Plan is " To protect rainforest and related vegetation from the impact of weeds", with relevant actions being:

Compliance of NE NSW Forestry with Commonwealth Threatened Species Requirements

- *Ensure implementation takes an integrated and systematic approach to incrementally control all weeds within a defined management area and promote native species regeneration.*
- *Prepare site management plans and adopt best practice weed control and removal practices.*
- *Target weed control efforts toward priority areas (see Table 11) in intact rainforest or related vegetation, or remnants in good condition.*
- *Undertake staged removal and replacement of weeds with suitable native species that provide alternative resources and habitat for wildlife (e.g. food resources for frugivores).*
- *Identify sites for Lantana control based on priority areas and species identified in this Plan, the 'Bell Miner Associated Dieback Strategy' (Bell Miner Associated Dieback Working Group 2004), and when available, the national Lantana management plan.*

Objective 8 of the Plan is "To minimise the effects of Bell Miner associated dieback on rainforest and associated wet sclerophyll forest", with relevant actions being:

- *Implement Lantana removal trials within areas adjacent to rainforest that are affected by dieback.*
- *Develop guidelines for restoration of severe dieback-affected sites which may be implemented by land-holders and government agencies.*
- *Continue mapping, surveying and assessing the extent of dieback within north-east NSW and south-east Queensland.*
- *Implement an 'alert system' so that new outbreaks are reported to the Bell Miner Associated Dieback Working Group.*
- *Undertake targeted surveys and monitoring of Bell Miners, rapid census of native bird species, and assessment of vegetation condition at priority locations.*

Objective 10 of the Plan is "To minimise the impacts of human interference", with relevant actions being:

- *To reduce access for pest animals and weeds, discourage the construction of new roads and tracks in priority areas.*
- *Adopt best practice methods to control sedimentation and erosion resulting from construction and maintenance activities.*

Threatened Species Licence

Since the Border Ranges Rainforest Biodiversity Management (BRRBM) Plan was adopted in 2010 there have been no changes to the NSW IFOA or associated licences. There is no mention of this Recovery Plan in any planning documents applicable to logging operations in the NSW section of the Border Ranges region. The NSW EPA consider that it is not applicable to forestry activities within the region because there is a RFA in place.

Since the BRRBM Plan was adopted in 2010 the Forestry Corporation have been logging State Forests in the Border Ranges with no consideration what-so-ever of this recovery plan. Across the Border Ranges NEFA have observed numerous contraventions of the BRRBM Plan, including:

- failure to prepare plans of management for rainforest and other informal reserves (Obj.4) (see Pugh 2018).
- refusal to prepare restoration plans for degraded forests, usually leaving the forest in a more degraded state than before logging (Obj. 4) (see [Audit of Yabbra SF](#) and other examples in [Pugh 2018b](#))
- failure to include buffers when logging in close proximity to rainforest or related vegetation (Obj. 4), to the contrary the Forestry Corporation often clear tracks along what they consider to be rainforest edges when logging to delineate the boundary of the logging area. And in the Audit of Whian Whian (documented in the section on Lowland Rainforest), [Audit of Cherry Tree SF](#) and [Audit of Sugarloaf SF](#) found roads constructed within Lowland Rainforest.

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- poor retention and protection of existing hollow-bearing trees, and poor selection and protection of recruitment trees (Obj. 4) (see section on Greater Gliders for an example from Cherry Tree SF, though also [Audit of Sugarloaf SF](#)).
- failure to identify, map or consider weed infested (mostly lantana) areas or areas affected by Bell Miner Associated Dieback (BMAD) in harvest planning (Obj.4, 5, 8) (see audits from Yabbra, Koreelah and Cherry Tree SFs summarised in [Pugh 2018b](#))
- failure to consider or mitigate the likely consequences of logging on weeds or BMAD (Obj. 8) (see [Pugh 2018b](#)),
- construction of new roads and tracks (as well as intensive logging) in priority areas with total disregard for their dispersal of predators and weeds (Obj. 10) (see [Audit of Cherry Tree SF](#))
- failure to apply minimal prescriptions for erosion mitigation and maintenance of stream quality (Obj. 10) (see [Audit of Yabbra SF](#), [Audit of Cherry Tree SF](#)).

For example NEFA's [Audit of Cherry Tree State Forest](#) (December 2015) commented:

As identified in the following sections NEFA maintains that the logging operations in Cherry Tree SF have been undertaken in a manner inconsistent with the above actions and thus the logging operations contravene the objectives of The Border Ranges Rainforest Biodiversity Management Plan in that:

- *The endangered Lowland Rainforest in the NSW North Coast and Sydney Basin bioregions, its buffers and associated vegetation, within this priority Precinct has been significantly degraded by roading and logging, and the widespread destruction of stands with Brush Box and eucalypt emergents.*
- *The new tracks, opening of the overstorey, extensive destruction of rainforest understories and soil disturbance will facilitate the spread of lantana through the logging area, and consequently the spread of Bell Miner Associated Dieback, significantly reducing the habitat and resources available for numerous species (such as Black-striped Wallaby, Red-legged Pademelon, Golden-tipped Bat, Wompoo Fruit-dove, Rose-crowned Fruit-dove, Sooty Owl, Onion Cedar, Ripple-leaf Muttonwood).*
- *The cutting down and extensive damage to hollow-bearing trees and recruitment trees will significantly increase loss of hollows (directly, indirectly and over time) required for many species (such as the Sooty Owl and Spotted-tailed Quoll); and*
- *The poor implementation of the already inadequate erosion mitigation guidelines and riparian buffers will contribute to stream degradation and impact aquatic and riparian species (such as the Giant Barred Frog, Eastern Freshwater Cod).*

As evidenced by the extensive degradation of logged forests elsewhere in the "Border Ranges North and South", including the extensive spread of lantana and BMAD, NEFA does not consider that the "log and leave it" strategies of the Forestry Corporation have worked in the past or will work in this case. This recent logging will significantly compound the obvious degradation from past logging.

As always, the inept EPA is content to sit back and allow this Priority Precinct to be further degraded. In contravention of the recovery plan, the EPA approved the construction of illegal tracks through Lowland Rainforest and threatened species in this area based on shoddy assessments, ignored systemic abuses of habitat trees, ignored the aggravation of both lantana invasion and Bell Miner Associated Dieback, and could not care less about the need to rehabilitate degraded threatened species habitat.

The EPA's response (December 2017) for "National Recovery Plan" was simply "Not Applicable" with "no" for ongoing investigation, with their full consideration being "The harvesting operations were undertaken under the authority of the Upper North East region Integrated Forestry Operations Approval".

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The Forestry Corporation's failure to consider the BRRBM Plan in planning is exemplified by their failure of the to identify or consider Conserve Priorities or Repair Priorities in their planning or logging, and the contempt the EPA has for any suggestion they should. NEFA's audits provide a series of case studies.

The Forestry Corporation commenced logging in compartments 27, 28, 30, 31 and 32 of Koreelah State Forest ([Koreelah State Forest Audit](#)) in March 2013, NEFA undertook audits in June and September 2013. The second visit focussed on undertaking pre-logging surveys for the threatened species Marbled Frogmouth, Yellow-bellied Glider, Alberts Lyrebird and the nationally endangered Fleay's Barred Frog in compartment 30 because both the Forestry Corporation and the EPA refused to do so - on one night we recorded Marbled Frogmouth, Yellow-bellied Glider and Fleay's Barred Frog which meant they had to apply the prescriptions for these species, resulting in increases to stream buffers by 10m throughout the compartment.

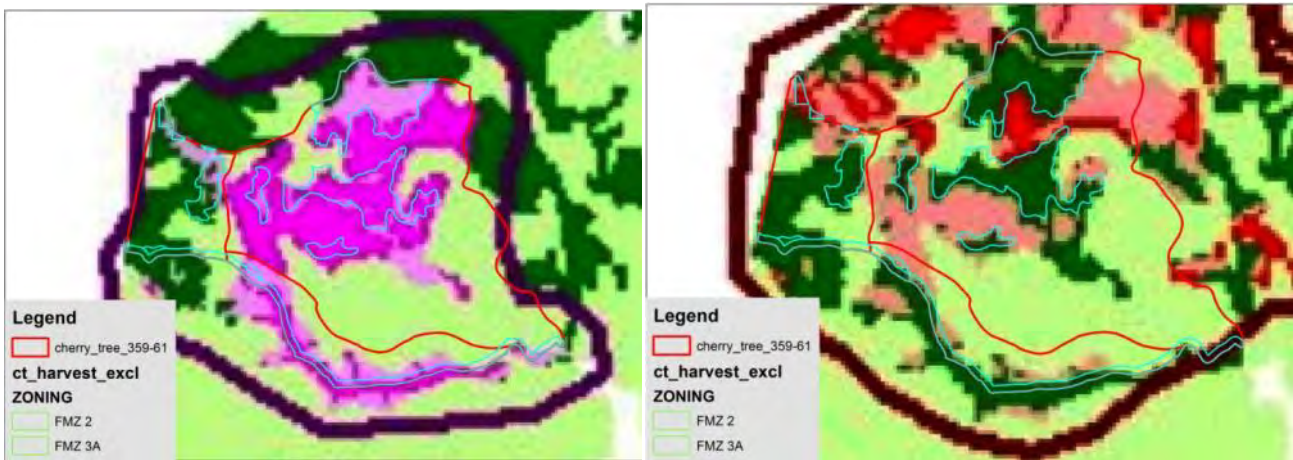
In the BRRBM Plan most of logging area in compartment 27, and significant parts of 28, 30, and 31 identified as Moderate-High Conserve Priorities and most of logging area in compartment 27, and patches of 28, 30, and 31 are identified as Moderate-Very High Repair Priorities. Yet there is no mention or consideration of the BRRBM Plan in the Harvesting Plan.

NEFA undertook a brief assessment of compartments 36, 42 and 43 of Donaldson State Forest on 11 May 2014, when being roaded for logging. NEFA identified the presence of Koalas and a variety of breaches, with most concern focussed on the likelihood of the spread of lantana and dieback (BMAD) through the logging area, particularly as there is chronic dieback at lower elevations and small pockets are already present within the logging area.

In the BRRBM Plan the whole of the Donaldson State Forest logging area in compartments 36, 42 and 43 is identified as Moderate-Very High Conserve Priorities, with most of compartment 36 identified as a High Repair Priorities, and patches of in 42 and 43 identified as Moderate-Very High Repair Priorities. Yet there is no mention or consideration of the BRRBM Plan in the Harvesting Plan. Due to NEFA's intervention logging was stopped.



EPA (2016) mapping of areas subject to >50% canopy removal in Cherry Tree State Forest. Note the extensive intensive logging in the recovery plan's Conserve and Repair Priority Areas.



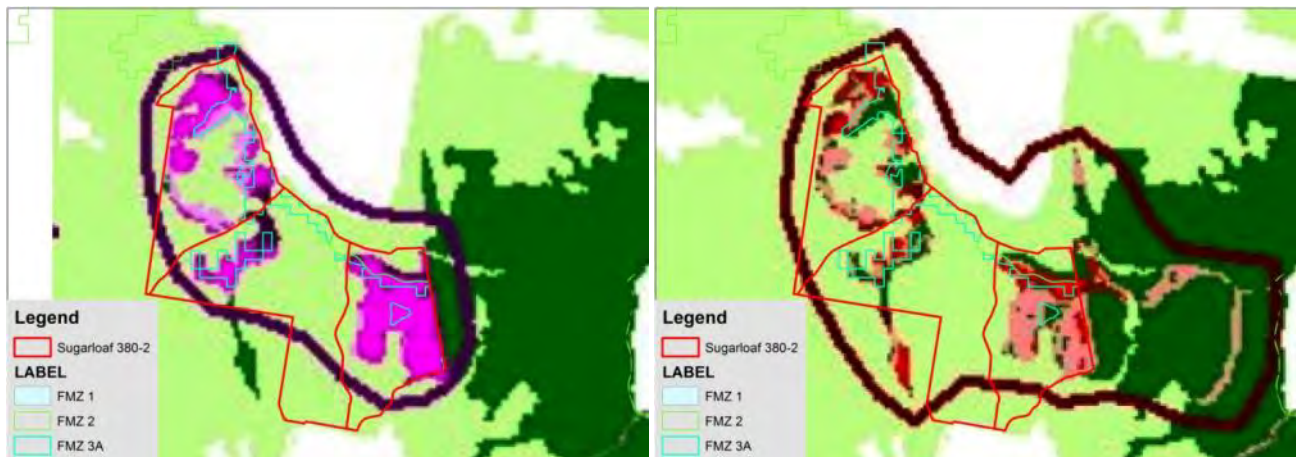
Cherry Tree SF compartments 359, 360 and 361, and informal reserves overlaid on excerpts from BRRBM Plan, LEFT is Conserve Priorities with light pink being Moderate-High and dark pink High, RIGHT: Repair Priorities with light red being Moderate-High and dark red High.

Logging of compartments 359, 360 & 361 of Cherry Tree State Forest began in January 2015 and was completed in September 2015. NEFA repeatedly raised concerns as logging was underway, though the breaches continued. Some 4.5ha of the NSW Endangered Ecological Community Lowland Rainforest and up to 90ha the Endangered Ecological Community Grey Box-Grey Gum Wet Sclerophyll Forest was subjected to roading and logging, mostly within both Conserve and Repair Priority areas, yet the EPA refused to do anything about the illegal logging, which left the EECs severely degraded. NEFA identified numerous breaches of the recovery plan (see above), concluding:

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The logging operations have been undertaken within identified "Conserve" and "Repair" priority areas in a manner that contravenes the objectives and aims of "The Border Ranges Rainforest Biodiversity Management Plan", which is the formal national recovery plan covering the area (contravenes Environment Protection and Biodiversity Conservation Act 1999).

As identified above, the EPA considered this recovery plan was "*Not Applicable*" to logging being undertaken within its ambit because operations were covered by an IFOA. NEFA raised the issue again in our [Sugarloaf Audit](#), and while the EPA are yet to respond they obviously haven't changed their position that recovery plans are irrelevant.



Compartments and informal reserves in Compartments 380-2 Sugarloaf State Forest overlaid on excerpts from BRRBM Plan, LEFT is Conserve Priorities with light pink being Moderate-High and dark pink High, RIGHT: Repair Priorities with light red being Moderate-High and dark red High.

The Forestry Corporation began logging compartments 380, 381 and 382 of Sugarloaf State Forest in 2016, NEFA undertook an audit in November 2016 just as logging was suspended. Compartments 380 and part 381 were logged. Most of the logging area in compartment 380 is high Conserve and Repair Priorities. NEFA identified:

The area investigated is within an area mapped as a Conserve Priority and Repair Priority precinct under the State/Commonwealth multi-species recovery plan Border Ranges Rainforest Biodiversity Management Plan though this has been ignored in the planning for these logging operations, along with requirements relating to buffering rainforest, protecting hollow-bearing and recruitment trees, and identifying and rehabilitating areas affected by lantana invasion and Bell Miner Associated Dieback.

In 2017 the Forestry Corporation started logging of compartments 58, 59 and 60 of Donaldson State Forest, which had a record of the nationally Endangered Eastern Bristlebird (*Dasyornis brachypterus*). The Forestry Corporation, in consultation with the EPA, prepared an Eastern Bristlebird Species Management Plan for the operation which did not even consider the BRRBM Plan. Most of logging area in compartments 58, 59 and 60 is identified in the BRRBM Plan as Moderate-High Conserve Priorities and Repair Priorities yet there is no mention or consideration of the BRRBM Plan in the Harvesting Plan. The local Githabul traditional owners intervened in 2016 to stop logging.

Proposed Coastal IFOA

The new Coastal IFOA does not require consideration of, or compliance with, this Recovery Plan.

The new IFOA only mentions recovery plans in one place, where it requires "incorporate actions specified in approved recovery plans, action statements and Saving our Species plans published by the Office of Environment and Heritage or equivalent" when the Forestry Corporation are preparing "**species management plans**". The only Federally threatened species identified as requiring

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Species Management Plans in north-east NSW are the Eastern Bristle Bird and the plants *Euphrasia arguta*, Native Jute (*Corchorus cunninghamii*), and Milky Silkpod (*Parsonsia dorrigoensis*).

The Eastern Bristle Bird and Native Jute occur within the Border Ranges, though these alone will not require compliance with the BRRBM Plan for the vast majority of logging operations on public and private lands.

MAMMALS

Spotted-tailed Quoll

The Spotted-tailed Quoll (*Dasyurus maculatus*) is listed as 'Endangered' under the EPBC Act. There is a 2004 *Commonwealth Listing Advice on Dasyurus maculatus maculatus* and a 2016 [National Recovery Plan for the Spotted-tailed Quoll *Dasyurus maculatus*](#).

The 2016 National Recovery Plan for the Spotted-tailed Quoll *Dasyurus maculatus* (DELWP 2016) identifies logging as a particular threat to the Spotted-tailed Quoll stating:

Timber harvesting occurs through a considerable proportion of the range of the Spotted-tailed Quoll (Mansergh 1984; Jones & Rose 1996) and has been implicated in localised population declines and extinctions (Mansergh 1984). However, a number of apparently healthy quoll populations continue to exist in some commercially (selectively) logged forests (Belcher 2000; A. Glen pers. comm.), indicating that the species exhibits a level of tolerance to some habitat disturbance. The northern subspecies still occupies areas that have undergone past intensive selective logging, but does not occur in areas subjected to extensive clearing and settlement (Burnett 1993). In southern NSW and eastern Victoria, Spotted-tailed Quolls were found to avoid forest patches 0–5 years after selective logging (40–60% canopy cover retained). However, selectively logged forest that, after 16–20 years, had a regenerated shrub layer and an abundance of defective saw logs to act as potential den sites, was preferentially used relative to its availability (Belcher 2000; Belcher & Darrant 2006b). Conversely, there is some indication that even-aged regrowth forests do not support quoll populations for 20–50 years after clear-fell logging (Belcher 2004). It is suggested that forestry practices (including controlled burns) that remove or reduce prey or critical habitat elements such as trees with hollows, hollow logs, a complex vegetation structure, >50% canopy cover and rock or burrow den sites, may render the habitat unsuitable, at least temporarily (Watt 1993; Belcher 2000; Glen & Dickman 2006a). In areas where rock den sites are not abundant, hollow logs and tree hollows are the preferred den sites. Given the very long time periods required to form hollows in trees and logs, intensive forestry practices could have a major impact on the availability of den sites, especially where logging is followed by burning (Andrew 2005). These practices may be particularly detrimental to a population if they coincide with the breeding season (Watt 1993). In Tasmania, only male Spotted-tailed Quolls and several non-breeding females were located in recently logged forest (C. Hawkins pers. comm.), highlighting the need to ensure that silvicultural systems are managed to maintain sufficient habitat to sustain breeding populations. A spatially explicit Population Viability Analysis modelling exercise predicted major population declines and a risk of extinction for Spotted-tailed Quolls in north-east Tasmania based on a range of projected logging regimes and the conversion of forest to plantation (M. Jones pers. comm.). This further highlights the need for adequate habitat reservation and management. Many of the arboreal mammalian prey of quolls are reliant on tree hollows for shelter and breeding and hence the abundance of these prey will be influenced by forestry practices (Gibbons & Lindenmayer 2002). Logging and fire events will also alter the abundance of some other potential prey species (Fox & McKay 1981; Lunney et al. 1987; Thompson et al. 1989).

The Recovery Plan identifies **Specific Objectives** "as necessary to guide the recovery of the Spotted-tailed Quoll", including:

Objective 1. Determine the distribution and status of Spotted-tailed Quoll populations throughout the range, and identify key threats and implement threat abatement management actions

Action 1.2 Undertake field surveys and mapping in areas where the distribution and status of populations are poorly known. (High Priority)

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Action 1.3 Develop and implement a program to monitor Spotted-tailed Quoll population status, determine factors influencing habitat quality, identify threats and implement management actions at representative sites throughout the species' range.

Objective 4. Evaluate and manage the risk posed by silvicultural practices.

Action 4.1 Develop guidelines on minimum habitat requirements that can be used to direct the formation of habitat retention prescriptions or other requirements in commercially harvested forests.

Performance criterion: Habitat retention guidelines produced.

Action 4.2 Implement monitoring programs to evaluate the effectiveness of current habitat retention prescriptions at providing habitat for viable populations of Spotted-tailed Quolls in commercially harvested forests.

Performance criterion: Habitat to support viable populations of Spotted-tailed Quolls retained in commercially harvested forests.

Action 4.3 Determine disturbance thresholds of female Spotted-tailed Quolls to refine habitat retention prescriptions or other requirements in harvested areas.

Performance criterion: Habitat retention prescriptions or other requirements refined through increased understanding of the impact of silvicultural systems on female Spotted-tailed Quolls.

Spotted-tailed quolls are known to have large home ranges (100-600ha), and have a high reliance for food on species (such as Greater Glider) dependent on large hollow-bearing trees and to utilise large hollow logs for refuge and dens. They are thus vulnerable to logging where it causes a depletion of large hollow-bearing trees and large logs, both in the short and long term.

Current Threatened Species Licence

The existing Threatened Species Licence 5.2.1 General Requirements requires searches by an adequately trained person for scats and "*Latrine and den sites of the Spotted-tailed Quoll*". The section '8.7.2 Field Methodology' identifies the need for "*four person hours per 200 hectares of net survey area*" for a range of features, including quoll scats and dens.

The existing Threatened Species licence (6.15) requirement for Spotted-tailed Quoll is:

a) An exclusion zone of at least 12 hectares must be implemented around Spotted-tailed Quoll maternal den sites. This exclusion zone must be linked to protection zones implemented in condition 5.7.

b) An exclusion zone of at least 3.5 hectares must be implemented around Spotted-tailed Quoll permanent den sites. This exclusion zone must be linked to protection zones implemented in condition 5.7.

While this prescription has been applied for over 20 years there does not appear to have been any attempt to assess the effectiveness of the surveys in locating *latrine and den sites* or the effectiveness of the prescription in mitigating impacts where it is applied. None of the Recovery Plan actions under 1.3 or Objective 4 'Evaluate and manage the risk posed by silvicultural practices' can be considered to have been complied with.

Private Native Forestry

The Private Native Forestry Code of Practice for Northern NSW requires:

Where there is a record of a spotted-tailed quoll den site, maternal den or latrine site within the area of forest operations, the following must apply:

(a) An exclusion zone with a 200-metre radius (about 12.5 hectares), centred on the location of the record, must be implemented around a spotted-tailed quoll maternal den site or latrine site. This exclusion area must be linked to riparian exclusion zones or riparian buffer zones where practicable.

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(b) An exclusion zone with a 100-metre radius (about 3.5 hectares), centred on the location of the record, must be implemented around spotted-tailed quoll permanent den sites. This exclusion zone must be linked to riparian exclusion zones or riparian buffer zones where practicable.

(c) Areas of riparian exclusion and protection zone must not be counted towards exclusion zones for the spotted-tailed quoll.

This prescription will be of little benefit to the vast majority of Spotted-tailed Quolls as there is no requirement to look for them before logging, leaving most quolls with no protection in reality.

Proposed Coastal IFOA

The new Coastal IFOA's proposed requirements for Spotted-tailed Quoll are to establish an exclusion zone that is 12 hectares or greater around maternal den sites and latrine sites, and 3.5 hectares or greater around permanent dens.

Spotted-tailed Quoll dens (including maternal dens) and latrine sites are required to be searched for during 'broad area habitat searches' at least 100 metres in advance of the forestry operation. It is required to be undertaken by a suitably qualified person at a rate of one kilometre per hour covering 50 metres per hectare. This equates to 20 hectares per hour, though if it is assumed that scats are only visible within 3m of the 50m transect then only around 3% of any hectare is searched. The problem is that the short search distance makes it unlikely that exclusion areas will be ideally situated around features.

Spotted-tailed Quoll *exclusion zones* (established around Maternal Dens, Latrines and Permanent Dens) are identified as a 'Category 2 Environmentally Significant Area'.

It is apparent that the proposed increases in logging intensity, reduced protection for hollow-bearing trees and removal of protection for recruitment trees, are likely to have a significant effect on Spotted-tailed Quolls and their prey.

The failure to undertake a rigorous monitoring program to assess the effectiveness of current logging prescriptions, and proposed changes to them, on Spotted-tailed Quolls is in contravention of the Recovery Plan objectives and actions 1.3. 4.2 and 4.3. There needs to be the development of guidelines on minimum habitat requirements in an independent (of Forestry Corporation) scientific process in accordance with Action 4.1. and trials undertaken to quantify the effectiveness of any proposed prescriptions before they are widely applied.

Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory)

The Koala (*Phascolarctos cinereus*) (combined populations of Queensland, New South Wales and the Australian Capital Territory) is listed as 'Vulnerable' under the EPBC Act. There is no nationally adopted Recovery Plan, with one meant to be developed and "*to commence following the expiration of the National Koala Conservation and Management Strategy in 2014*". There is a 2012 '*Approved Conservation Advice for Phascolarctos cinereus (combined populations in Queensland, New South Wales and the Australian Capital Territory)*'. There is also a 2008 NSW Recovery Plan for the Koala.

The Conservation and Management Strategy identifies:

Loss of habitat is the major threat to the koala in Queensland and New South Wales, and is the primary factor responsible for declining populations in those states....

Under the strategy it is a high priority to identify important habitat areas and protect them from clearing, through planning and legislative tools and other measures such as

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covenanting. ... It is important to consider that there is a significant lag-time before successfully replanted habitat can support koalas.

Degradation of habitat can result from: some logging regimes; thinning of timber during property development; destruction of undergrowth and mid-storey shelter trees; and other disturbances, such as regular burning, excessive nutrient input or the introduction of weeds. Degraded habitats are capable of supporting fewer koalas than undisturbed habitats.

The Conservation and Management Strategy identifies as actions:

Action 1.02 Assess, develop and implement options for protecting priority Koala habitat on public lands using legislation, covenants or agreements, or by new acquisition of koala habitat

Action 1.03 Assess, develop and implement options for protecting koala habitat on private lands.

- Develop incentive-based mechanisms for koala conservation on private lands.
- Implement incentive-based mechanisms for koala conservation on private lands.
- Establish covenants over koala habitat via cooperation with local government, community and business.

Action 1.04 Prioritise conservation of populations under immediate pressure.

- Workshop of experts to identify where existing koala populations are already experiencing significant loss of habitat and to identify immediate and short-term actions to secure their status.

Action 1.06 Develop standard monitoring/habitat assessment protocols.

There is some inconsistency and disagreement over how koala populations should be surveyed and mapped.

- Develop consistent protocols that enable population numbers or density to be compared between the same place at different times and between different habitats.

Action 1.08 Establish or continue surveying and monitoring programs.

Monitoring fulfils two important functions: evaluating population status so that the relative need for management can be assessed; and evaluating population trends so that the efficacy of management actions can be assessed. The scale at which these are undertaken must be appropriate to the scale of management....

In relation to 'Habitat Loss, Disturbance and Modification' the Conservation Advice includes:

- Monitor the progress of recovery, including the effectiveness of management actions and the need to adapt them if necessary.
- Identify populations of high conservation priority.
- Investigate formal conservation arrangements, management agreements and covenants on private land, and for Crown and private land investigate and/or secure inclusion in reserve tenure if possible.
- Manage any other known, potential or emerging threats such as Bell Miner Associated Dieback or Eucalyptus rust.

The 2008 NSW [Recovery plan for the koala \(Phascolarctos cinereus\)](#) identifies:

Smith and Andrews (1997) found that koala activity was greater in structurally diverse forest with the majority of trees 50–80 cm diameter at breast height (dbh). White (1999) found that koalas preferentially utilise trees between 25.5–80 cm dbh, with under-utilisation of trees less than 25.5 cm dbh. Lunney et al. (2000a) found that the koalas in the Coffs Harbour area favoured trees of 50–60 cm dbh and greater than 120 cm dbh. Some groundcover vegetation and other features such as hollow logs, are also useful to provide shelter while on the ground and refuge in extreme weather conditions, particularly in western KMAs (R. Kavanagh, State Forests NSW, pers. comm.).

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In the Comprehensive Regional Assessment, undertaken jointly between the Commonwealth and NSW Governments in north-east NSW, a significant threat to Koalas was identified (Environment Australia 1999) as “Logging that fails to retain stems in the 30-80 DBH size class”.

The NSW Recovery Plan includes as objectives and actions:

Objective 1: Conserve koalas in their existing habitat

Specific objective 1a: Identify and conserve habitat important for koala conservation

Action 1.13

DECC will work with councils to assist in the preparation of Comprehensive Koala Plans of Management under SEPP 44.

Performance criterion 1.13

Number of Koala Recovery Plans completed.

Action 1.15

Consideration will be given to having a single definition of koala habitat, instead of ‘core’ and ‘potential’ habitat and to expanding the list of koala food trees.

Performance criterion 1.15

Tree species list amended for SEPP 44 and the definition of ‘koala habitat’ determined and disseminated.

Action 1.19

DECC, together with DoP, will work with councils and catchment management authorities to assist them in developing koala habitat protection measures for incorporation in relevant local environmental plans (LEPs), and regional natural resource and vegetation management plans.

Performance criterion 1.19

DECC initiated discussions with relevant CMAs and councils regarding adequate incorporation of protection measures for koalas into regional natural resource and vegetation management plans, including catchment action plans and LEPs where relevant.

Action 1.20

DECC will approach DoP to jointly develop and provide specific advice to local government about the incorporation of koala protection into their new LEPs, currently under development.

Performance criterion 1.20

DECC initiated discussions with DoP regarding adequate incorporation of koala protection into LEPs. Advice to local governments re incorporating koala protection measures into revised LEPs developed jointly by DECC and DoP.

Action 1.24

DECC will approach Forests NSW (DPI) to collaborate in developing policy and practice consistent with the NSW Koala Recovery Plan; exchange information, given that koalas move across tenure boundaries; and work within the context of agreed regional forest agreements.

Performance criterion 1.24

DECC initiated discussions with DPI on the basis of this recovery plan. An agreed policy produced for exchanging information between DECC and DPI, working across boundaries and contributing to a plan that covers a landscape cross-tenure.

Specific objective 1c: Integrate koala habitat conservation into local and state government planning processes

Objective 3: Develop a better understanding of the conservation biology of koalas

Action 3.6

Investigate the relative importance of different threats to koalas, how to ameliorate them and the effectiveness of mitigation measures.

Performance criterion 3.6

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Research/study undertaken assessing the threats to koalas and their relative importance, the ameliorative measures for these threats and their effectiveness. Results disseminated/published in standard scientific arenas.

Regrettably both the Conservation and Management Strategy and NSW Recovery Plan have effectively expired and neither the NSW nor Commonwealth Governments have replaced them with contemporary plans. Never-the-less the relevant key requirements from both approaches can be considered to be:

- identify and protect important habitat areas (Conservation Strategy; Actions 1.02, 1.03, 1.04, 'Habitat Loss, Disturbance and Modification' actions, Recovery Plan; Objective 1)
- identify improved and standardised survey methods (Conservation Strategy; Action 1.06)
- monitor and review the effectiveness of mitigation measures (Conservation Strategy; Action 1.08. 'Habitat Loss, Disturbance and Modification' actions Recovery Plan Objective 3, Action 3.6)

Current Threatened Species Licence

In 1995 State Forests proposed their own "*Management Prescriptions for Logging in Coastal Forest Types: Koala (Phascolarctos cinereus)*". Basically State Forests' proposed conditions were adopted with little change by the NPWS as a Threatened Species Licence condition issued as an outcome of the Interim Assessment Process in 1997 (see TSL *Prescription 25a. Koala Prescription for North Coast Forest Types* pp. 135-139), with removal of the intent to protect Koala High Use Areas in perpetuity.

When these requirements were transferred into the current Threatened Species Licence in 1999 there were significant changes. The need to undertake pre-logging surveys to identify high use areas was removed and replaced with surveys at the time of logging, the need to search for scats within 2m of a tree was reduced to 1m, the recognition of any area where any 2 out of 10 consecutive trees search was identified as a high use area was changed to require a trigger tree (ie sighting, >20 scats, mother and baby) and 3 out of 10 trees consecutively searched with scats, the need to exclude logging from within 50m of high use areas was reduced to 20m, the need to protect individual trees with >20 scats was removed, and the need to protect ten primary browse trees (or secondary browse species if primary are unavailable) per hectare in intermediate use areas was reduced to 5 per hectare. It is important to recognise that the new prescriptions were negotiated prior to reserve outcomes being identified, so no account of reservation adequacy was involved.

Significantly the clause relating to monitoring (TSL p139) was removed:

Monitoring:

Koala monitoring will be conducted as part of the general monitoring procedures planned by SFNSW. Compartment monitoring may be advantageous to Districts for future planning in areas that have positive Koala records and prior management.

At the initial stage the state wide monitoring of Koala populations will require a comprehensive compilation of the location and extent of high use areas. The monitoring program will be designed to give information on the effectiveness of these prescriptions in meeting their objectives.

The survey methodology for detecting Koalas and determining high use areas (contained in these prescriptions) may be reviewed in the light of findings from the monitoring program.

For the past 19 years the Forestry Corporation have been required by their current Threatened Species Licence to undertake standardised pre-logging surveys utilising spotlighting, call playback and walked transects. In addition to this they have been required to undertake Koala Mark-up Searches in accordance with TSL 5.2.2 where they thoroughly search for Koala scats (faecal pellets) ahead of logging.

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If, during pre-logging Koala surveys, the Forestry Corporation identify a Koala High Use tree (with 20+ scats, or scats from a mother and baby) they are required to undertake a systematic scat survey in the vicinity. If they find at least three consecutive trees within 100 metres along a transect line with Koala scats under them it is identified as a Koala High Use Area and must have a 20m logging exclusion zone implemented around it. Theoretically the search area is required to be expanded as more scats are found, though this rarely occurs. The Koala High Use Area is only protected for the duration of the logging operation, and they are often logged the next time.

A compartment with an identified Koala High Use Area or "*where Koala scats have been detected under two of any ten consecutive trees searched*" is designated as a Koala intermediate use area where "*per two hectares of net logging area ten primary browse trees must be retained where available*". There is no size limit on trees or requirements to retain secondary feed trees where primary feed trees are unavailable.

The identification and protection of Koala High Use Areas, and to a lesser extent the identification of Koala intermediate use areas, are key requirements to comply with the Commonwealth's National Koala Conservation and Management Strategy and the NSW Recovery Plan requirements to identify and protect important habitat areas.

Since the first Threatened Species Licence was introduced in 1997 there has been a ongoing refusal on behalf of the Forestry Corporation to thoroughly search for Koala scats. This went on for 15 years while the EPA (and their predecessors) turned a blind eye, until NEFA exposed the failure to search for Koala scats and the logging of Koala High Use areas at Royal Camp State Forest in 2012 .

In July 2012 the Forestry Corporation maintained that they had undertaken the required Markup Survey (TSL 5.1., 5.2.1.) and Koala Markup Search (TSL 5.2.2) in Compartment 15 of Royal Camp State Forest and commenced logging. It was identified as an "intermediate use" area, and a Koala High Use Area had been identified in Compartment 14 the previous year (before a control burn got out of control and burned any evidence of Koala scats elsewhere in the logging area).

On NEFA's ([Pugh 2012](#)) initial audit of logging between 4th and 5th August 2012, not one Koala feed tree was found to be marked specifically for retention within Compartment 15, and in most areas the marked hollow-bearing and recruitment trees (which can double as Koala feed trees) were far too few and of the wrong species to satisfy this requirement. Marked trees were primarily in the vicinity of tracks and the boundary of exclusion areas, indicating that Mark-up Surveys had not been conducted throughout the logging area. Forests NSW had apparently made no effort to comply with the requirement to mark 10 primary browse trees per 2 ha.

NEFA ([Pugh 2012](#)) found abundant evidence of Koala use of feed trees in Compartment 15, such as distinctive scratch marks on the trunks of numerous trees, Koala faecal scats under many trees, and a sighting of a Koala when spotlighting. In our brief inspection NEFA located 4 areas that met the criteria for Koala High Use Areas. One area near log dump 20 was in the process of being logged, another near log dump 19 had been marked up for logging which was about to commence, and the two others near log dump 25 were proposed for logging in the near future. The area being logged had logging extending into it on three sides, and almost the entire area was within 300m of log dump 20 and within 100m of active logging.

NEFA (Pugh 2012) also found significant scat evidence of Koalas, including some that appeared to be from a mother and baby, in the small part of compartment 16 inspected, identifying that this indicated further Koala high use areas. Subsequent checks by both the EPA and Forestry Corporation confirmed the presence of Koala High Use Areas in all the localities we had identified.

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After our complaint, and while the EPA audit was supposedly underway, the Forestry Corporation burnt off substantial parts of the logged area of Compartment 15, thereby destroying the evidence of any remaining Koala scats in those areas and any further evidence of Licence breaches.

In total, with a follow-up assessment on 9th August, we located 23 trees with >20 scats beneath them within the Koala High Use Area being logged, including three with large and small scats indicating the presence of at least one mother and young, and 22 additional trees with 1-19 Koala scats beneath them. The range of ages of scats showed long-term usage until very recently. While the Forestry Corporation had identified no Koala high use trees on our first visit, by the 9 August they had marked at least 7 high use trees with >20 scats. Given that many of the scats were clearly visible on the surface it beggars belief that anybody could have even undertaken a cursory look and not seen any.

Logging resumed in compartment 16 on 9 August. On the 19 August NEFA inspected the eastern part of compartment 16, and located Koala scats under 20 trees, with three of these reduced to stumps in recent logging. More than 20 Koala scats were found under four trees and more than 50 under another. NEFA identified a Koala High Use Area that had been logged. Searching was limited by logging debris and ground disturbances. We thoroughly searched over 100 potential Koala feed trees and stumps for Koala faecal scats and saw no evidence that anyone else had previously searched in the long grass, leaves and bark around the bases of these trees before us (even trees marked as Koala (K) feed trees hadn't been searched). In the older logged area no Koala feed trees had been marked, though many Koala feed trees were marked in recently logged areas. Despite our findings logging continued.

On 23 September NEFA undertook an audit to the north-east of log dump 5 in compartment 16. Logging had been undertaken subsequent to our August 20 Audit Report. We searched a total of 103 preferred Koala feed trees (Grey Gums and Grey Box) for Koala scats. Scats were found under 16 trees, with two of these having >20 scats beneath them. The two high use trees had not apparently been identified before and had clearly not been subject to star searches. Our subsequent searches in this area revealed another Koala High Use Area that had logging undertaken around and within it. Of the 103 potential Koala feed trees we searched for scats only 7 had been obviously searched before.

The EPA found that 61 trees had been logged and 405m of snig tracks constructed in the koala high use exclusion zone that should have been imposed near log dump 20. In compartment 16 the EPA concluded that 7 trees were logged and 230m of snig tracks constructed within another Koala High Use Area near log dump 7, which had occurred after logging had resumed on 9 August. The EPA (2014, NSW EPA submission: Inquiry into the performance of the NSW Environment Protection Authority General Purpose Standing Committee No. 5) later identified the problem as

The EPA identified the root cause of the breaches of the licence as the Forestry Corporation's failure to undertake searches for evidence of koala in compliance with the licence. The EPA considered that if searches are inadequate or not undertaken at all, the default protection provisions in the licence become ineffective. That is, if you don't look, you don't find and if you don't find, you don't protect.

Regional Forester Craig Busby (28/8/12, see [Pugh 2014](#)) told the EPA "There are some grey areas in the licence about thoroughly doing the search. It is about what thoroughly means - our searches look under trees it doesn't say to get on your hands and knees and scrape the surface - it just says thoroughly". Craig Busby's email to CEO Nick Roberts of 7 November 2012 stated ([Pugh 2014](#)):

We are still in dispute with EPA over the interpretation of "thoroughness" of searching and techniques used and are standing our ground based upon the fact that we have not changed our techniques since the introduction of the TSL.

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In February 2013 the foresters responsible for the scat-searches and marking-up in Royal Camp told the EPA that they hadn't changed the way they searched for Koala scats and would not ([Pugh 2014](#)).

In April 2013 Regional Forester, Craig Busby, told the EPA that they had done the required pre-logging surveys and not done anything wrong, stating ([Pugh 2014](#)):

FCNSW marked up at least 300m in advance of harvesting operations right across the subject harvesting area ...Marking (including koala mark-up searches) in the vicinity of dump 20 took place around 16-18 July ...

... no triggers for star searches were found at the time of pre-harvest mark-up around log dump 20. ...The techniques for pre-harvest koala mark-up searches has been audited by the EPA many times since the introduction of the TSL. The EPA's current interpretation of the relevant TSL condition is inconsistent with historical practices.

... no features indicating a koala high use area were located in the vicinity of dump 20. ...Therefore FCNSW did not knowingly harvest within a high use area nor the associated 20m exclusion zone.

Despite the Forestry Corporation displaying no remorse or contrition, on 28 June 2013 the EPA issued FCNSW three penalty notices (with fines of \$300 each) for contravening a threatened species licence (TSL), including:

- *undertaking specified forestry activities (timber harvesting) in koala high use areas - TSL 6.14(c)(i)*
- *undertaking specified forestry activities (timber harvesting) in koala high use exclusion zones - TSL 5.1(a)(i)*
- *failing to conduct a thorough search for, record and appropriately mark koala high use and intermediate use areas – TSL 5.2.1(a)(b)*

The EPA informing the Forestry Corporation ([Pugh 2014](#)):

3. The EPA investigation identified significant breaches in contravention to the TSL. Specifically, EPA officers identified that:

Specified forestry activities including the felling of 61 trees in a koala high use exclusion zone and the construction and operation of snig track, an approximate length of 405m in a koala high use exclusion zone east of log dump 20, in compartment 15; and Specified forestry activities including the construction and operation of snig tracks that crossed koala high use areas east of log dump 20, in compartment 15.

FCNSW staff member responsible for the compartment mark up and koala searches did not conduct koala searches in certain areas in the compartment including part of the area that was subject to specified forestry activities in a koala high use area, east of log dump 20, in compartment 15.

The penalties were taken to be inconsequential by the Forestry Corporation and they continued to deny any wrongdoing or display any contrition. On 12 July 2013 ABC North Coast reported:

But regional manager Craig Busby says the breaches were administrative, and akin to staying too long in a parking lot.

He says they involved the identification of koala droppings beneath trees.

"The environmental interest groups were excavating koala scats, so it's an indication that they were there historically," Mr Busby said.

"We know they were there historically, but largely we look for fresher scats on the surface and that's where the discrepancy is.

"So we're working with the EPA to work out what the true definition of a koala high-use area is and we'll continue to do that.

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"I can understand that there's a perception in the community that (\$300) would be a light sort of fine.

"The reality is that the fines reflect the environmental outcome.

"Look in terms of the fines, they're administrative, they're like staying in a parking lot for a little bit too long, but the reality is there has been no environmental harm to koalas in that area."

While referring to Private Native Forestry, the comment by Prest (2003) is equally relevant to the Forestry Corporation:

Breaches of environmental law in the rural context are often perceived as minor or technical breaches. They are seen as neither criminal in nature nor morally reprehensible.

Landholders may view environmental impacts as minor, unproven or as an unintended by-product of economically beneficial activities. In such a context, it is inherently difficult to secure high levels of voluntary compliance, particularly where that compliance would come at an economic cost to the landholder.

At Royal Camp the Forestry Corporation had been logging for months in what was undoubtedly core Koala habitat before we stopped them. They were actively logging a Koala High Use Area, and about to log another 3 that we identified at the time. Over the preceding months there had been widespread removal of Koala feed trees, most likely within a number of Koala High Use Areas (the Forestry Corporation identified one such area to the EPA but they refused to inspect it ([Pugh 2014](#))). The Forestry Corporation went on to log another 2 Koala High Use Areas (one of which the EPA refused to investigate). The reaction of the EPA was to treat this as a minor offence, with the only reaction amounting to a total of \$900 in fines for a single Koala HUA. All other offences (Yellow-bellied Glider, habitat trees, stream crossings etc.) were forgiven, with many of our complaints (including ones shown to the EPA) not even investigated. With such lax enforcement it is no wonder that the Forestry Corporation considered the offences inconsequential, and went on to repeat them.

In 2013 NEFA became alarmed that the Forestry Corporation was proposing to commence logging in Compartment 13 of Royal Camp SF. The Forestry Corporation's draft Harvesting Plan identified "nil" Koalas. On 4 July 2013 NEFA inspected the area because of our concern that they may again log Koala High Use Areas. On one day we located 34 trees with Koala scats about their bases. Of these trees, 11 were found to be Koala high use trees on the basis that 10 had >20 Koala scats about their bases and another because it had scats of two different sizes, indicating the presence of a mother and joey. Two Koala High Use Areas were identified.

Based on his inspections of Royal Camp State Forest for NEFA, wildlife expert David Milledge ([Pugh 2014](#)) concluded: *"The level of Koala activity revealed by these searches is amongst the highest I have recorded in my experience of over 20 years conducting Koala scat surveys in coastal and escarpment forests in north-eastern NSW. This highlights the significance of Royal Camp State Forest in supporting a dense local Koala population and possibly one of the most important on public land in the region".*

A subsequent inspection by the EPA (About 24 July 2013) of the two Koala High Use Areas found in July in compartment 13 by NEFA confirmed their presence and located abundant additional high use tree locations. Leading the EPA to conclude:

Based upon these findings and recent findings made from investigations undertaken in compartments 14, 15 and 16 of Royal Camp State Forest, the EPA considers these areas contain koala habitat and play an important role to Koala populations in the region. The EPA consider compartment 13 to have areas that indicate koala high use that is ongoing and contemporary.

The then Minister for the Environment requested the EPA to determine the regional significance of the koala population, with the subsequent June 2014 report by Dr. Steve Phillips for the EPA finding

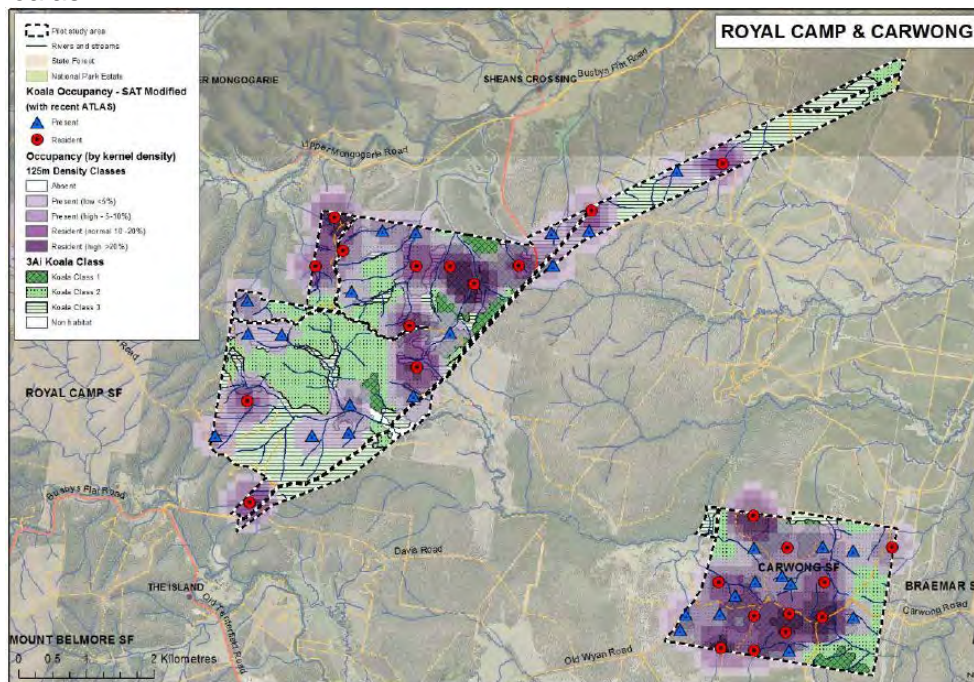
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a resident koala population within Royal Camp that "should be considered important at all levels of assessment" due to the koala populations of the encompassing Richmond Valley LGA being found to be "endangered on the basis of international, national and state-based conservation criteria".

In August 2014 the Forestry Corporation engaged Jim Shields to search for Koalas using a sniffer dog, they detected 14 Koalas at a mean density of 0.36/ha in 11 hours of searching.

Based on Koala records, in November 2014 NEFA proposed the creation of the 2,100 ha Sandy Creek National Park, comprised of two parts, including part of Royal Camp State Forest (compartments 13-16, 1,500ha) and the whole of Carwong State Forest (600ha).

The EPA (2016) study of 4 key areas of State forests known to once have had good Koala populations again verified that Royal Camp and Carwong State Forests have significant populations of resident Koalas:



Records and potential Koala habitat (based on Plant Community Type) identified by EPA (2016) for Sandy Creek National Park proposal.

The activity results and Phillips' (2013) report both indicate that Royal Camp and Carwong state forests support extensive areas of koala occupancy and habitat utilisation, and that in compartment 13, at least 50% of the habitat is utilised and conforms to optimal utilisation of secondary habitat by a low density population. The project found that 80% of Carwong and 58% of Royal Camp State Forest is utilised, which supports Phillips' (2013) results. On this basis it can be concluded that habitat in Royal Camp and Carwong is source habitat, where reproduction exceeds mortality on average over time. (p84)

It is clear to NEFA that Royal Camp and Carwong State Forests qualify as important Koala habitat in accordance with the Commonwealth's Conservation Strategy (Actions 1.02, 1.03, 1.04, 'Habitat Loss, Disturbance and Modification' actions) and NSW's Recovery Plan (Objective 1). Though it is clear that the Government's proposed changes to the IFOA will mean that these forests will no longer meet the criteria for protection (i.e. they are only modelled as high quality habitat in one model, rather than the 2 required) and will thus be opened up for logging.

For a brief period after Royal Camp the EPA attempted to make the Forestry Corporation undertake thorough scat searches, though quickly succumbed to Forestry Corporation pressure and abandoned any meaningful attempts to enforce compliance.

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As a result of our Royal Camp complaints Koalas were made a compliance priority by the EPA. The EPA (2014b) told the General Purpose Standing Committee No. 5 'Inquiry into the performance of the NSW Environment Protection Authority':

What else is being done to protect koala habitat on public land?

The EPA released the Crown Forestry Compliance Strategy on 1 July 2013. The strategy provides a comprehensive and transparent framework for the regulation of native forestry on public land, including the setting of annual Crown forestry compliance priorities by the EPA. These priorities are based on available data and intelligence, recent compliance findings and a recognition of issues important to the community. The identification and protection of koala habitat is a key compliance priority.

Koalas are identified as one of the EPA's Cross-tenure environmental compliance priorities for 2014–15 and 2015-16. For "*Protecting koalas and their habitat*" the action proposed was "*Assess compliance with Integrated Forestry Operations Approval (IFOA) and PNF Code requirements relating to protecting koalas and their habitat*", with the purpose being "*Assess compliance and raise awareness of regulatory requirements around Koala protection*", and the output "*Publish compliance summary on EPA website*".

As a consequence of Royal Camp the EPA began to audit Koala scat searches in the Lower North East, identifying that the Forestry Corporation had not undertaken thorough searches for Koala scats ahead of logging in Wang Wauk State Forest (from an assessment of just 12 trees) and Bulahdelah State Forest (from an assessment of just 9 trees). The response to the EPA's draft findings the Forestry Corporation (2013) admitted inadequate mark-up but refused to accept the need to thoroughly search for Koala scats, responding:

FCNSW cannot accept the detail and method associated with the specific allegations relating to ... retained koala feed trees. The link the EPA has made between tree marking and searching is not contained in the licence. The EPA's approach to searching for koala scats is not specified in the licence. The very nature of both the koala mark-up technique and star-search technique is subjective and inevitably different results may be expected on a particular day of searching, let alone results from surveys on different days, weeks or months.

The EPA October-November 2012 final audit report of Wang Wauk State Forest Compartment 116 found that Koala scats were still not being adequately searched for, despite the presence of a Koala High Use Area. They found a tree had been logged within a marked Koala High Use Area, noting "*Given the fact that high use koala activity has been discovered within the compartment it is significant importance that compartment mark up surveys are undertaken in compliance with the licence requirements to facilitate environmental features being located and accordingly protected. For example further koala high use areas*", finding:

The brief assessment undertaken by the EPA including 12 trees only. All 12 trees had evidence to suggest that a 'thorough' search, as per the licence requirement had not taken place. EPA officer observations note that all 12 trees had not had their base disturbed at all, i.e. no leaf litter displaced. Please note that the majority of the EPA assessment was undertaken at the most recently active (currently active) log dump area, which would have been indicative of the likely-hood of SFO searches.

Of the 12 trees searched, 5 trees were marked as K or R (or both) trees for retention. Of the 5 marked trees, 8 and 35 koala scats were located at the base of these trees, indicating that the SFO/FNSW personnel had been to the tree, yet hadn't disturbed the surface of leaf or grassy understorey. One search of a marked "K" tree yielded 35 koala scats in a very short space of time, which is a trigger for a koala star search. EPA officer observations noted that age of these koala scats and the likelihood of these scats being deposited prior to or shortly before the commencement of operations in these areas.

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The EPA's response was simply to require an action plan:

FNSW must ensure that immediate short term actions are taken to ensure that upcoming koala searches are done in a thorough manner. An long term action plan must be developed and implemented immediately to ensure that all future koala searches are done in a thorough manner for proper identification and appropriate protection of koala high use areas.

The EPA and Forestry Corporation met in January 2013 to discuss the failure to thoroughly search for Koala scats at Royal Camp, Wang Wauk and Bulahdelah State Forests, the Forestry Corporation (2013b) later submitting:

The intermediate use condition is designed to ensure suitable habitat elements (browse trees of preferred species) are retained during harvesting operations to mitigate both the immediate and longer-term impact of harvesting operations.

The high-use condition is intended to protect individual koalas and their current feed trees from the immediate impact of harvesting operations.

...

The mark-up survey approach was developed from the ... sampling method required in previous licences of 1km/100 ha Koala scat search transects, which included specific requirements for searching based on tree size, quality and a 1 minute minimum search thresholds undertaken during pre-harvest surveys, for two reasons:

Firstly, it was noted that as many, or more, star-searches were triggered during general mark-up survey as from the pre-harvest surveys and, secondly, by the time harvesting commenced, the location or boundaries of the high-use areas were often quite different to those established at the pre-harvest survey stage.

...

The survey methods for both mark-up surveys and star-searches are loose and not well suited to a targeted audit/enforcement approach, nor to a variable approach where search effort is scaled up in those areas with a greater likelihood of koalas being present. Different, experienced and qualified searchers can legitimately choose different trees to search under and/or different parts of the base and crown of a tree to search under and therefore will produce different results. Searches undertaken at different times under the same tree can also produce different results. Under dry conditions and/or in dry locations, scats can last for months; in wet conditions they can last days. Different understorey conditions and growth habits of different tree species/individual trees can markedly influence detectability of koala scats.

Medium term - In order to deliver an improved outcome for Koalas, at reduced cost and that is auditable and enforceable, FCNSW proposes the licence should move to a landscape approach for koalas. A new landscape prescription could better specify primary browse tree retention requirements based on current information, apply them to all compartments where primary browse species occur, rather than to just those compartments with records, and maintain a proportion of potential habitat unharvested area in each compartment. FCNSW will work towards developing and drafting a landscape prescription suitable for discussion with the EPA over the coming weeks.

In 2013 the Forestry Corporation (2013b) identified the problem with having no size limit for the retention of trees in "intermediate use" areas and proposed a "short-term" interim change to the TSL which was never implemented:

... a preference for mixed species forests with a high proportion of preferred browse trees, and trees between 30-80 cm dbh. Tree size preference has been linked to climbing efficiency, tree vigour/nutritional value or even lack of competition with Greater Gliders in areas with few large, old trees.

...

The intermediate-use condition, which FCNSW considers could be the most relevant and practical protection measure, has a flawed definition of 'primary browse trees', with no minimum tree size limit, quality requirements or protection requirements.

...

Short-term – in compartments in which the intermediate use prescription is triggered, FCNSW will apply a higher standard to identification and management of primary browse trees. That is, FCNSW will add to the end of the intermediate use prescription ‘primary browse trees should have as many of the following characteristics as possible; >30 cm dbh, mature and have a healthy crown. Retained primary browse trees must be protected from damage to the greatest extent practicable. When locating and marking these trees, the thorough search for evidence of koala scats must include disturbance of the grass and/or leaf-litter layer, where visibility for the detection of koala scats is compromised.

While the EPA failed to implement the short term measure suggested by the Forestry Corporation (for no apparent reason) they quickly became strong advocates for the Forestry Corporation's landscape approach for koalas.

After their initial flurry with Wang Wauk and Bulahdelah State Forests the EPA don't appear to have attempted any further compliance action. We have consistently found in our audits that since then the Forestry Corporation are routinely failing to thoroughly search for Koalas elsewhere (i.e. Whian Whian, Richmond Range SF, Cherry Tree SF, Sugarloaf SF - see NEFA audits). The EPA dismiss all our complaints, often without even investigating them.

The EPA seem to have totally given up in 2015, For example a review of the 8 proactive audits undertaken by the EPA in the UNE in 2015 found the EPA didn't identify any breaches for not undertaking Koala scat searches, though they started the year documenting that across 3 operations they inspected 3.32 ha and saw no evidence of Koala scat searches, with the 21 Tallowood assessed showing no signs of being searched. After May 2015 the EPA stopped identifying the area assessed for Koala searches and stopped identifying whether individual feed trees had evidence of searching, simply saying that they were not able to determine whether searches had been undertaken or not.

In NEFA's review [Clearing Koalas Away](#) (Pugh 2017) of DPI's Koala Habitat model an analysis of State Forests Biodata (from Wildlife Atlas) over the years 1997-2016, limited to high quality and very high quality habitat as mapped by DPI, reveals an average of 9.6 Koala observations, the hearing of an average of 3.6 calls and finding of 74.6 trees with Koala scats under them each year, despite requirements for extensive surveys. This is an extremely low strike rate for what is meant to be some of the best habitat left for Koalas in New South Wales.

In NEFA's review [Clearing Koalas Away](#) (Pugh 2017) of 22,586 ha of north-east NSW's public lands that were then currently being logged we found:

A total of 103 State Forest compartments covering 22,586 ha of public land have been identified as actively being logged as at June 2017 within the area of north east NSW covered by the Koala habitat model (Appendix 1).

A total of 4,663ha of modelled high quality (including very high quality) Koala habitat and 4,530ha of moderate quality habitat occurs within areas currently being logged (Appendix 1). The Office of Environment and Heritage's Wildlife Atlas identifies a total of 357 Koala records occurring within 34 of the compartments. The Forestry Corporation's [Harvesting Plans](#) identify that a total of 2 Koala High Use Areas totalling 1.2ha have been identified for protection and 11 compartments have been classed as Intermediate habitat which (theoretically) requires increased tree retention. The Harvesting Plans also identify that 22 compartments are (in part) being logged at a higher intensity than allowed by the Integrated Forestry Operations Approval (IFOA).

Despite the clear intent of the IFOA to limit STS to 40% basal area removal, the harvesting plans (Appendix 1) make it clear that the Forestry Intends to practice what it calls "heavy" or "regeneration" STS in parts of 22 compartments that are currently being logged. Of the 10

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logging areas (Appendix 1) comprised of more than 50% high quality Koala habitat, 8 are to be subject to intensive logging, with Harvesting Plans identifying maximum intensities of 69-85% basal area removal, with AGS practiced in two. The remaining 5 areas identified for intensive logging have 17-26% of their areas comprised of high quality Koala habitat. In total 13 of the 20 areas with >17% high quality Koala habitat are being targeted for "unlawful" logging. This intensive logging is effectively clearing (see Appendix 2).

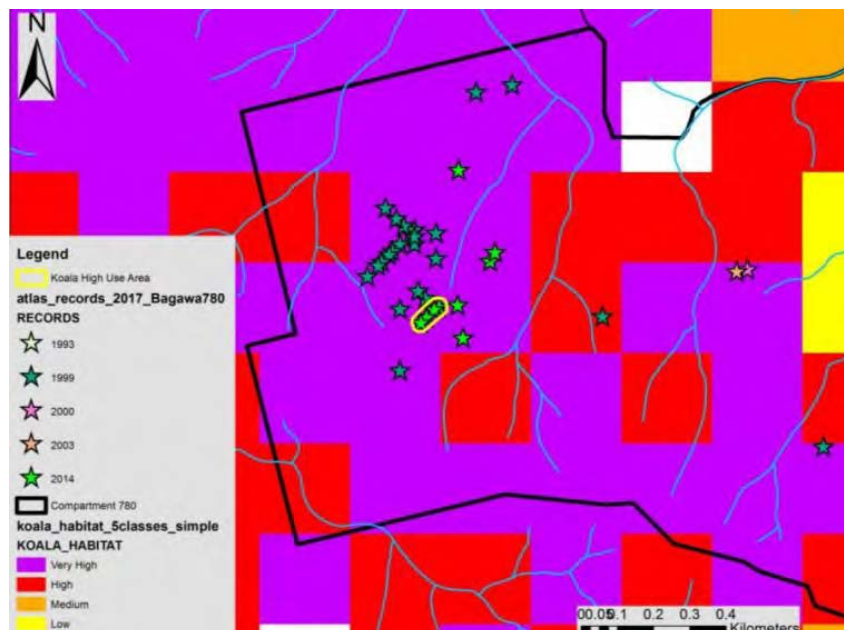
Distribution of High Quality (including very high) modelled Koala habitat across State Forest Compartments being logged as at June 2017 in North East NSW.

Area of HQ habitat in cmpt. (ha)	Number of cmpts	Total HQ habitat (ha)	Cmpts with Koala records	Identified Koala HUAs	Cmpts identified as Intermediate Habitat	Cmpts with Intensive logging
> 100 ha	17	2492	10	0.5 ha	2	11
50 - 99 ha	16	1183	7		2	5
25 - 49 ha	21	794	13	0.7 ha	4	6
1 - 24 ha	19	200	1		2	0
other	30	0	3		1	0
TOTALS	103	4669	34	1.2 ha	11	22

Also finding:

In current logging operations there are 2 Koala High Use Areas: one 0.5ha in size in very high quality habitat in Bagawa SF (cmpt. 780), and one 0.7ha in size in moderate quality habitat in Wang Waulk SF (cmpt. 118). So of the 4,669ha of high quality habitat in compartments currently being logged only 0.5ha is identified in harvesting plans to be protected.

The reason that so little is protected is twofold, firstly because the EPA have set unrealistically high scat detection thresholds and miniscule buffers in the licence, and secondarily because the Forestry Corporation refuse to undertake the legally required "thorough" searches necessary to find sufficient scats to trigger protection. The EPA know that the Forestry Corporation are not undertaking thorough, if any, searches though refuse to take action.

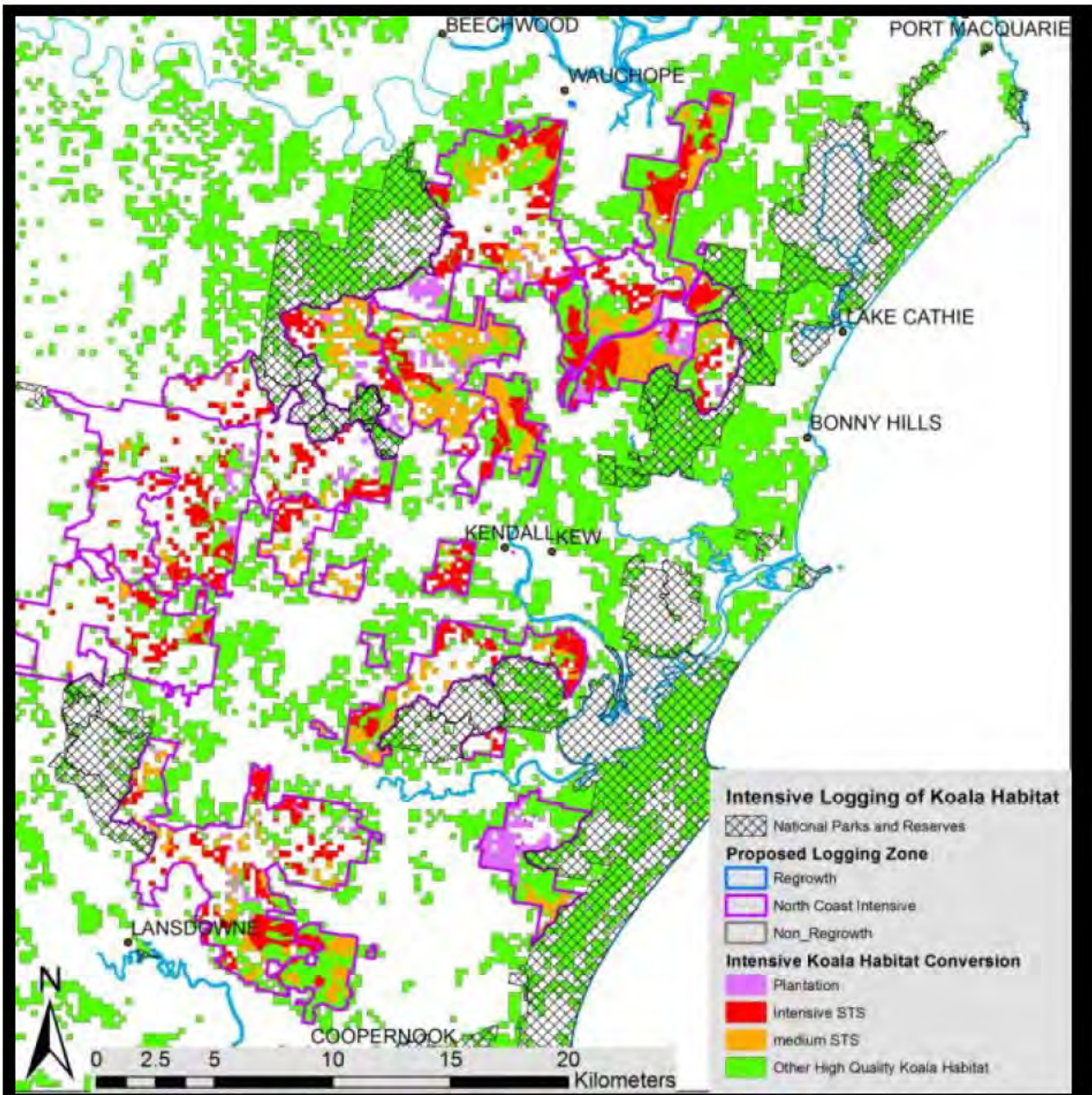


Bagawa SF Compartment 780, showing Koala habitat classes, records and the miniscule protected Koala High Use Area. And this is one of the best examples of current Koala protection. Note that the

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rows of 1999 records indicate where the Koala High Use Area would have been located in the previous logging, which is now available to be logged despite its obvious significance due to still being part of a Koala's home range 18 years later.

It is apparent that very few Koala High Use Areas have been identified. The Natural Resources Commission (2016) identify that "Around 200 hectares of koala high use area has been protected over the past 15 years and tree retention requirements have been triggered on around 33 percent of compartments (130,000 hectares)". NEFA accepts that the relatively low identification of Koala High Use Areas partially reflects the collapse of Koala populations on the north coast, though considers it also reflects the ongoing refusal by the Forestry Corporation to thoroughly search for Koala scats ahead of logging.



Example of high (including very high) quality Koala habitat subject to intensive ("regeneration" and "heavy") and medium STS south of Port Macquarie over the past decade. It is no wonder that Koalas are rapidly declining in the area when it is considered that much of the high quality habitat outside State Forests has also been subject to intensive logging - including many areas incorporated into national parks in 1998 and 2003.

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Single Tree Selection (STS) is the predominant logging regime applied in north east NSW's public forests, under this regime basal area removal is limited by the IFOA to 40%, yet starting in 2006 the Forestry Corporation began unlawfully practicing "medium:", "heavy" and "regeneration" STS . An examination of current harvesting plans indicate that there is no clear definition of the various STS intensities, with "regeneration" STS involving average basal area removals ranging from 62-86% (average 75%), "heavy" STS from 50-85% (average 68%) and "medium" STS from 30-60%.(average 47%). It is however obvious that all the new STS regimes of "regeneration", "heavy" and "medium" are normally in excess of the IFOA definitions of STS as involving less than 40% basal area removal. From mapped logging intensities provided by the Forestry Corporation, NEFA's review [Clearing Koalas Away](#) (Pugh 2017) found:

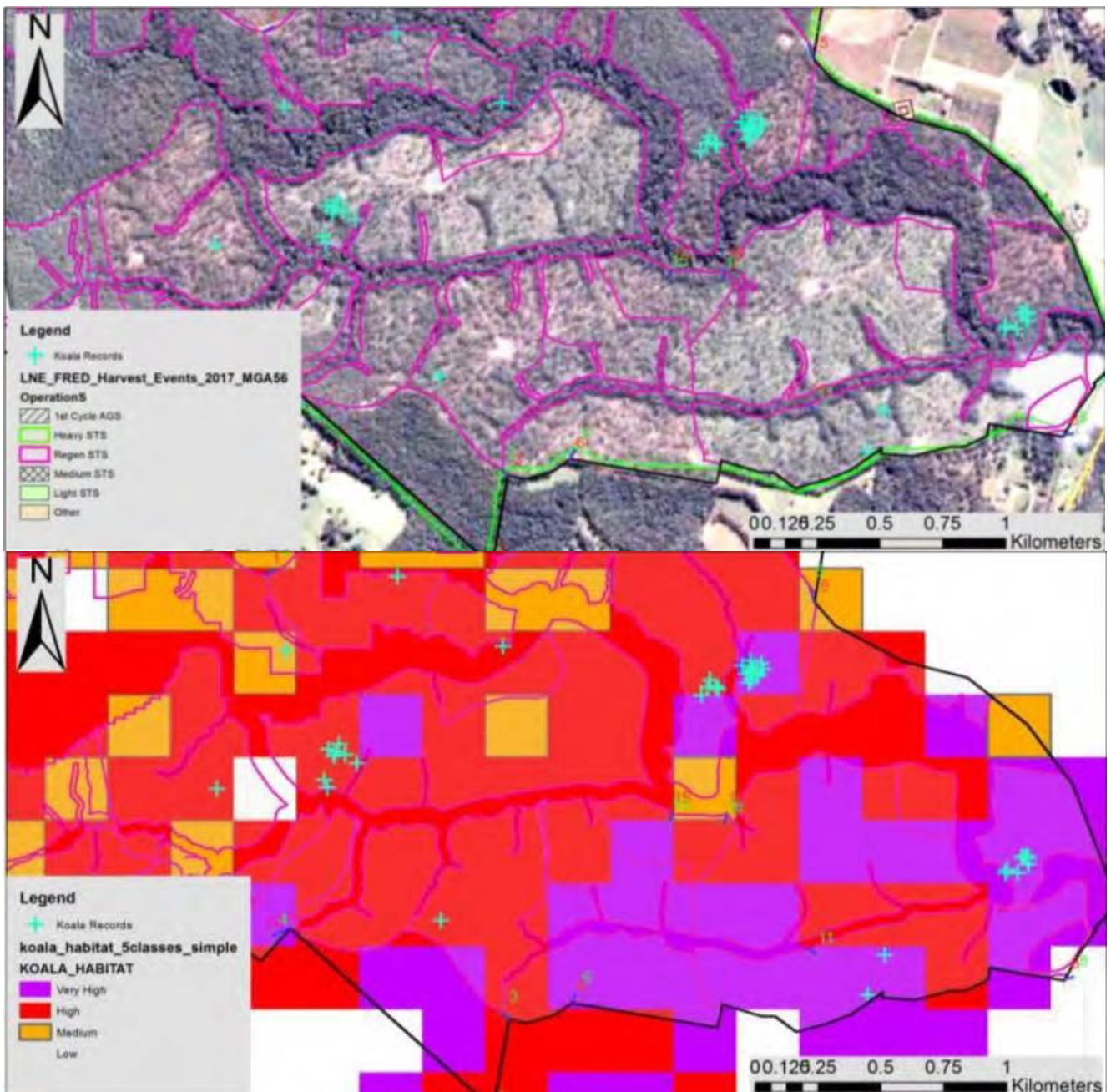
A comparison of the mapped treated areas with modelled Koala habitat displays the same trend as other data, with the highest quality habitat subjected to the most intensive logging and conversion to quasi plantations. The "regeneration" and "heavy" STS treated areas are comprised of 39% high quality Koala habitat, with 244 koala records within treated areas. The "medium" STS treated areas are comprised of 28% high quality Koala habitat with 473 Koala records. While the patch clearfelling regime of Australian Group Selection is not allowed in Koala Intermediate Habitat because of its impacts. it is telling that 64% of the AGS treated areas are high quality Koala habitat.

Despite this being a blatant rorting of the intent of Single Tree Selection the EPA refuse to do anything about it because they claim it is the Minister's responsibility to enforce the IFOA. The Minister for the Environment acknowledged, through a letter written by the Environment Protection Authority (EPA 2016b) on his behalf, that this type of harvesting as “*practiced by the FCNSW, is not consistent with the definition and intent of STS (Single Tree Selection) in the Integrated Forestry Operations Approval (IFOA) as well as FCNSW’s own silvicultural guidelines.*”

As identified in Clearing Koalas Away (NEFA 2017):

Since 2006 in the Lower North East region. the Forestry Corporation have subjected 74,906 ha to the unlawful logging practices of 'medium', 'heavy' and 'regeneration' Single Tree Selection involving 41-100% basal area removal. This is comprised of 23,742 ha (32%) of high quality Koala habitat and 717 Koala records.

Regrettably it is clear that both the Conservation and Management Strategy and NSW Recovery Plan requirements relating to identifying and protecting important habitat areas, identifying improved and standardised survey methods, and monitoring and reviewing the effectiveness of mitigation measures, are not being complied with on public lands.



Example of "regeneration" STS of high quality Koala Habitat in Cairncross SF, undertaken in 2012-13. There are 40 Koala records in this limited area dating back to 1980, with numerous records in 2011, 2012 and 2013 as it was being cleared. It is astounding that such obviously important Koala habitat was allowed to be virtually clearfelled. Even if no Koala High Use Areas were identified, the area qualified as an Intermediate Use area, with the intensive logging clearly illustrating the ineffectiveness of the current prescription.

Private Native Forestry

The NSW Recovery Plan places significant emphasis on protecting Koala habitat on private land through SEPP 44 and Local Environment Plans (i.e. *Actions 1.13, 1.15, 1.19, 1.20*).

State Environmental Planning Policy No. 44 (Koala Habitat Protection) came into effect in 1995 with the aim to "encourage the proper conservation and management of areas of natural vegetation that provide habitat for koalas to ensure a permanent free-living population over their present range and reverse the current trend of koala population decline:

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- *by requiring the preparation of plans of management before development consent can be granted in relation to areas of core koala habitat, and*
- *by encouraging the identification of areas of core koala habitat, and*
- *by encouraging the inclusion of areas of core koala habitat in environment protection zones”.*

SEPP 44 identifies two classes of habitat:

"core koala habitat" means an area of land with a resident population of koalas, evidenced by attributes such as breeding females (that is, females with young) and recent sightings of and historical records of a population.

"potential koala habitat" means areas of native vegetation where the trees of the types listed in Schedule 2 constitute at least 15% of the total number of trees in the upper or lower strata of the tree component.

Under the provisions of SEPP 44 local councils cannot approve development on lands greater than 1ha without an investigation of potential and core koala habitat. To this end SEPP 44 requires councils to address koala conservation through either Individual Koala Plans of Management (IKPoM) for a specific site/development, or Comprehensive Koala Plans of Management (CKPoM) that will apply to part or the whole of a Local Government Area.

SEPP 44 encourages Councils to systematically identify areas of 'core koala habitat, stating that councils "should" conduct koala surveys, and take the results regarding core koala habitat into account when making environmental protection zones and development control plans.

In the 22 years since SEPP 44 came into force four CKPoM plans have been adopted and approved by the Department of Planning and Environment, with the two most recent only for parts of Local Government Areas. Of these, only the Coffs Harbour KPoM identifies 'core koala habitat' across the LGA. with the Kempsey plan only identifying it in two small areas. Elsewhere various classes of Koala habitat has been identified.

In 2007 the NSW Government finally gazetted a set of weakened mandatory rules to control logging on private land in NSW as a Regulation under the Native Vegetation Act 2003, with four Codes of Practice for separate geographic regions. The regulation came into effect on 1st August 2007.

For koalas, the specific provisions for the PNF Code of Practice are:

(a) Forest operations are not permitted within any area identified as 'core koala habitat' within the meaning of State Environmental Planning Policy No. 44 – Koala Habitat Protection

(b) Any tree containing a koala, or any tree beneath which 20 or more koala faecal pellets (scats) are found (or one or more koala faecal pellets in Koala Management Area 5) must be retained, and an exclusion zone of 20 metres (50 metres in Koala Management Area 5) must be implemented around each retained tree.

(c) Where there is a record of a koala within an area of forest operations or within 500 metres of an area of forest operations or a koala faecal pellet (scat) is found beneath the canopy of any primary or secondary koala food tree (see Table I below), the following must apply:

(i) A minimum of 10 primary koala food trees and 5 secondary koala food trees must be retained per hectare of net harvesting area (not including other exclusion or buffer zones), where available.

(ii) These trees should preferably be spread evenly across the net harvesting area, have leafy, broad crowns and be in a range of size classes with a minimum of 30 centimetres diameter at breast height over bark.

(iii) Damage to retained trees must be minimised by directional felling techniques.

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(iv) Post-harvest burns must minimise damage to the trunks and foliage of retained trees.

The protection provided to 'core koala habitat' is next to useless as of the four Comprehensive Koala Plans of Management approved over the past 22 years, the Coffs Harbour CKPoM is the only one to identify core Koala habitat across the LGA and the Kempsey CKPoM only identifies two very small areas.

In 2011 the North Coast Environment Council identified that since 2007 the Private Native Forestry (PNF) Division of the NSW Department of Environment, Climate Change and Water (DECCW) had approved 60 separate logging applications covering almost 2000 hectares of the 19,000 ha identified core koala habitat in the Coffs Harbour Local Government Area contrary to SEPP 44. It is probable that before then logging was being undertaken in core Koala habitat using the PNF exemption.

The Sydney Morning Herald (4 January 2011) reported:

The department does not dispute the council's figures, but said the Coffs Harbour koala plan of management, which identifies the vulnerable species' local habitats, is not officially gazetted.

Because of this, the prohibition on logging that normally applies to important koala habitats under state environmental planning policies could not be enforced in that council area, the department's director of landscapes and ecosystems conservation, Tom Grosskopf, said.

"We're helping them to get their plan updated and get it going," he said.

But local environmentalists are appalled and have accused the department of playing word games. The environment council's vice-president, Susie Russell, said the department knew full well where the region's key koala areas were. It had been integral in mapping the habitats, but was ignoring the results and approving their destruction.

The callous disregard of the Government agencies for Koalas is exemplified by the fact that it was NPWS (later incorporated into DECCW) who in 1999 identified core Koala habitat in the Coffs LGA in accordance with SEPP 44, then it was DECCW that in 2007 finalised the PNF Code of Practice that specifically excluded core koala habitat from logging, and it was DECCW that in 2007 began systematically approving logging of core Koala habitat in the Coffs Harbour LGA in contravention of the PNF Code, with 2,000 of the 19,000 ha of identified core Koala habitat approved for PNF by 2010.

It is clear that the Recovery Plan's objective to *Conserve koalas in their existing habitat* by identifying and protecting 'core Koala habitat' in accordance with SEPP 44 and LEP zoning has been a failure.

NEFA (Pugh 2014) became involved with logging by the Forestry Corporation of a private property at Whian Whian (adjacent to the Nightcap National Park) when neighbours tried to have their concerns regarding Koalas addressed. Discussions with Forestry Corporation on 14 September 2013 revealed that they had found two Koala High Use Trees on the property and were thus applying the Private Native Forestry Code of Practice requirement to retain 10 primary koala food trees and 5 secondary koala food trees per hectare.

Concerns that this property is of exceptional value for Koalas and that Koala's were not being adequately protected were heightened when a brief assessment by NEFA of trees in the vicinity of the boundary located 5 Koala high use trees, none of which had apparently previously been searched. One of the Koala high use trees found had not been previously searched despite having a new road constructed right next to its base.

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When NEFA (Pugh 2014) learned that the Forestry Corporation were proposing to construct a new road we surveyed the marked route and identified that it passed through, and within 20m of, 8 Koala high use trees (>20 scats), over 60 vulnerable Red Bopple Nut *Hicksbeachia pinnatifolia*, and 3 NSW Endangered Clear Milkvine *Marsdenia longiloba*. NEFA wrote to the EPA on the 22 September 2013 to request the immediate and urgent imposition of a Stop Work Order in accordance with Section 37 of the Native Vegetation Act 2003.

The EPA sent a team in to oversee the Forestry Corporation, though refused to stop work. They EPA did not bother to check NEFA's records, yet spent 2 days wandering around the proposed route with the Forestry Corporation while they identified a new route.

Three days after our request for a Stop Work Order the new track was constructed. Subsequent inspections by NEFA (with botanists) found that the track had been illegally constructed through what should have been 20m exclusion zones for 3 Koala high use trees, 7 NSW Endangered Clear Milkvine, 12 vulnerable Arrow-head Vines, and 8 vulnerable Red Bopple Nuts, most of which had been identified and tagged with pink tape (by either NEFA or the Forestry Corporation) prior to track construction. One of the Koala high use trees that had been identified by the Forestry Corporation in the presence of the EPA had the track constructed within 15m and debris within 12m without its exclusion boundary being marked, one 3.2m from the track had been checked by the Forestry Corporation in the presence of the EPA but had not been identified despite subsequent inspections showing abundant scats, and one had been identified by NEFA but could not be subsequently verified due to scats being removed. Two Clear Milkvine were killed, one injured and 3 are missing. One Arrow-head Vine later died.

Over the course of events NEFA (Pugh 2014) found and reported a total of 16 Koala high use trees with 20 or more Koala scats beneath them. The Community Surveys of the weekend of 27-29 September found an additional 10 Koala high use trees with limited searching, bringing the total to 26 such trees in an area where the Forestry Corporation had only identified 2. A total of 8 Koala high use trees (and numerous threatened plants) were found to have had roads and tracks constructed within 20m of them.

This large number of high use trees proves that there is an active breeding Koala colony on the property, with evidence of males, females and young, that largely escaped the attention of the Forestry Corporation. There can be no doubt that the property constituted high quality core Koala Habitat but the EPA didn't care.

There was a 2 year window of opportunity for the EPA to legally pursue this matter, and they used most of this time up before they issued the Forestry Corporation with two Penalty Notices (each with a fine of \$5,500) on the 11 September 2015 for constructing their track through what should have been 20m exclusion zones for a Koala High Use Tree and the Endangered vine Clear Milkvine.

They were issued an Official Caution for violating buffers of 4 Red Bopple Nuts, with violations of 6 Arrow-head Vine buffers noted. This is half the breaches documented by NEFA.

The Forestry Corporation stated they intended to vigorously dispute the fines on the grounds that their intent *"was discussed with EPA staff on site during the operation"*. In other words, the EPA knew they were going to construct the illegal road and, at best, did nothing to stop them.

Given that the EPA had almost used up their 2 years for legal action, the Forestry Corporation simply bided their time before telling the EPA that they would not pay the fines and would rather dispute them in court. By then, the EPA claim, it was too late to defend the fines in court. Given the EPA's complicity in the construction of the illegal road it is no wonder they waited so long to take action so that they could avoid court.

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Following complaints from locals NEFA (2017) decided to undertake an initial assessment on 9th September 2017 of a private property near Mount Warning from the Crown Road Reserve that runs through it. No threatened species had previously been identified on the property. From our brief inspection NEFA identified 2 Koala High Use Trees (one of which had a road constructed up to its base) and detected the presence of two Marbled Frogmouths and one Masked Owl. We also identified a systematic failure to implement erosion mitigation prescriptions and illegal logging in an Environmental Zone,

The EPA (Bryce Gorham 14 February 2018) confirmed the presence of the Koala High Use Trees, though refused to require Koala surveys elsewhere on the property.

Regrettably it is clear that both the Conservation and Management Strategy and NSW Recovery Plan requirements relating to identifying and protecting important habitat areas, identifying improved and standardised survey methods, and monitoring and reviewing the effectiveness of mitigation measures, are not being complied with on private lands.

Proposed Coastal IFOA

For the new Coastal IFOA the Forestry Corporation and the Environment Protection Authority (EPA) have decided to remove the need to look for Koalas before logging and to remove the requirement to identify and protect Koala High Use Areas.

In their attempts to model Koala habitat the EPA (2016) reviewed a number of methodologies based vegetation and modelling. The EPA (2016) assessed predictive mapping based on floristic (Plant Community Type) mapping (3Ai-PCT), Forestry Corporation Research Note 17 forest type mapping (RN 17) and predictive modelling, finding that none were sufficiently reliable, primarily because "*the variability of canopy species present within vegetation types is too great for determining percentage occurrence of feed trees and therefore habitat class at the level of detail required (1:5000 metres) for management in state forests*".

The EPA's (2016) pilot project was subject to peer review by Andrew Smith, Steve Phillips and Rod Kavanagh, leading the EPA to identify:

In reviewing the findings of this project, the expert panel concluded that future work should be directed at determining the known, existing koala distribution and resident population. They recommended that a koala habitat map using the methods assessed can only be used to distinguish suitable habitat from unsuitable habitat. Any landscape scale protection provision attached to such a map would need to be both highly protective and follow precautionary conservation measures to protect both resident koala populations and manage unoccupied habitat to sustain the population into the future.

Despite the conclusion from an EPA (2016) study that modelling is too inaccurate for regulation at the scale of individual logging operations, the EPA are intent on using the DPI Forestry Koala habitat model (Law *et. al.* 2017) for regulation. OEH (2016) claim their Koala Likelihood model and the DPI Forestry model (Law *et. al.* 2017) "*are quite different from each other*" and recommend that it could be used in conjunction with the DPI Forestry model. Though the basic assumption that the maps are somehow different is flawed as they are both based on the same Koala record set, with the DPI utilising a reduced data set and DPI Forestry using the same data set and a limited number of environmental variables to extrapolate likely Koala habitat. Both models suffer from the problem of only being based on the same non-systematic data collected using very different methodologies and survey effort (and thus likelihood of detection) and incomplete coverage. Both models closely reflect Koala records.

Both models were used to classify high and moderate Koala habitat. The decision was made to use the intersections of the models to regulate Koala protection measures. The OEH model is termed the "OEH likelihood" model and the DPI Forestry model the "DoI habitat" model.

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Because of differences between the EPA and Forestry Corporation the Natural Resources Commission (2016) was directed to resolve a prescription based on a "modest increase in tree retention rates aim to minimise impacts on wood supply to best possible extent while recognising Government's policy initiatives and targeted investment in Koalas as an iconic species (**no net change to wood supply**)".

The EPA (NRC 2016) proposed a retention rate of 25 trees per hectare in High/high quality habitat, 20 trees per hectare in High/moderate quality habitat, and 15 trees per hectare in Moderate/moderate quality habitat. The NRC over-rode the EPA to support a retention rate proposed by the Forestry Corporation specifying "10 healthy trees per hectare with cell based application in High/high quality habitat, 5 trees per hectare with compartment wide application in High/moderate or moderate/moderate cells over 25 percent or more of compartment".

Under the prescriptions Koala browse trees are required to be greater than 20 cm DBH (30cm DBH outside the north coast). The EPA (NRC 2016) proposed that "In addition to tree clumps retain trees with minimum 25 centimetre diameter DBHOB, prioritising primary browse species, then secondary browse species:". The NRC over-rode the EPA to support the Forestry Corporation, deciding "In addition to tree clumps retain trees with minimum 20 centimetre diameter DBHOB, retaining trees where available with 50 percent primary browse species"

The NRC proposed tree retention rates based on intersections of both models:

	OEH Likelihood High (greater than 0.2)	OEH Likelihood Moderate (between 0.075 and 0.2)
DoI model - High Less than 500 metres: 0.6 and above Greater than 500 metres: 0.65 and above	10 healthy feed trees per hectare at least 20 centimetres diameter at breast height over bark (DBHOB) for mapped cells (cell size is 6 hectares)	5 healthy feed trees per hectare at least 20 centimetres DBHOB for NHA in a compartment (if mapped cells cover 25 percent or more of the NHA of a compartment)
DoI model - Moderate Less than 500 metres: 0.45 - 0.59 Greater than 500 metres: 0.45 - 0.64	5 healthy feed trees per hectare at least 20 centimetres DBHOB for NHA in a compartment (if mapped cells cover 25 percent or more of the NHA of a compartment)	5 healthy feed trees per hectare at least 20 centimetres DBHOB for NHA in a compartment (if mapped cells cover 25 percent or more of the NHA of a compartment)

The NRC also proposed "Retain 10 healthy browse trees per hectare in areas not yet modelled".

The NRC claimed that their "proposed settings will likely have a negative impact on timber supply, potentially reducing average annual supply volume by 3,500 cubic metres (9 percent reduction in harvestable Koala browse tree species). Supply Zones 2 and 3 would experience the greatest reduction in volume (1,400-1,800 cubic metres per year and 900-1,200 cubic metres per year)". They admit that this is conjecture, though it does seem somewhat inflated.

The EPA (2018) identify that Koala browse prescription 1 applies:

- where the **compartment** is of a high **koala likelihood class** and the koala **habitat** model cell is a high **koala habitat class**;

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- where the **compartment** is of a high **koala likelihood class** and there is no data in relation to **koala habitat class**;
- where there is insufficient data in relation to **koala likelihood class** in a **compartment** and the koala **habitat** model cell is a high **koala habitat class**; and
- where there is insufficient data in relation to **koala likelihood class** in a **compartment** and there is no data in relation to **koala habitat class**.

This methodology for applying the models is very simplistic and appears intended to reduce the identification of high quality habitat requiring higher tree retention rates. For example, Royal Camp and Carwong State Forests which have been identified by the EPA to be source Koala habitat with Koala occupancy of 58% and 80% respectively, are ranked as being very high on the OEH Likelihood Map, but only Moderate on the DPI Forestry map. So these important Koala habitats will only qualify for Koala Prescription 2 and the retention of 5 browse trees per ha.

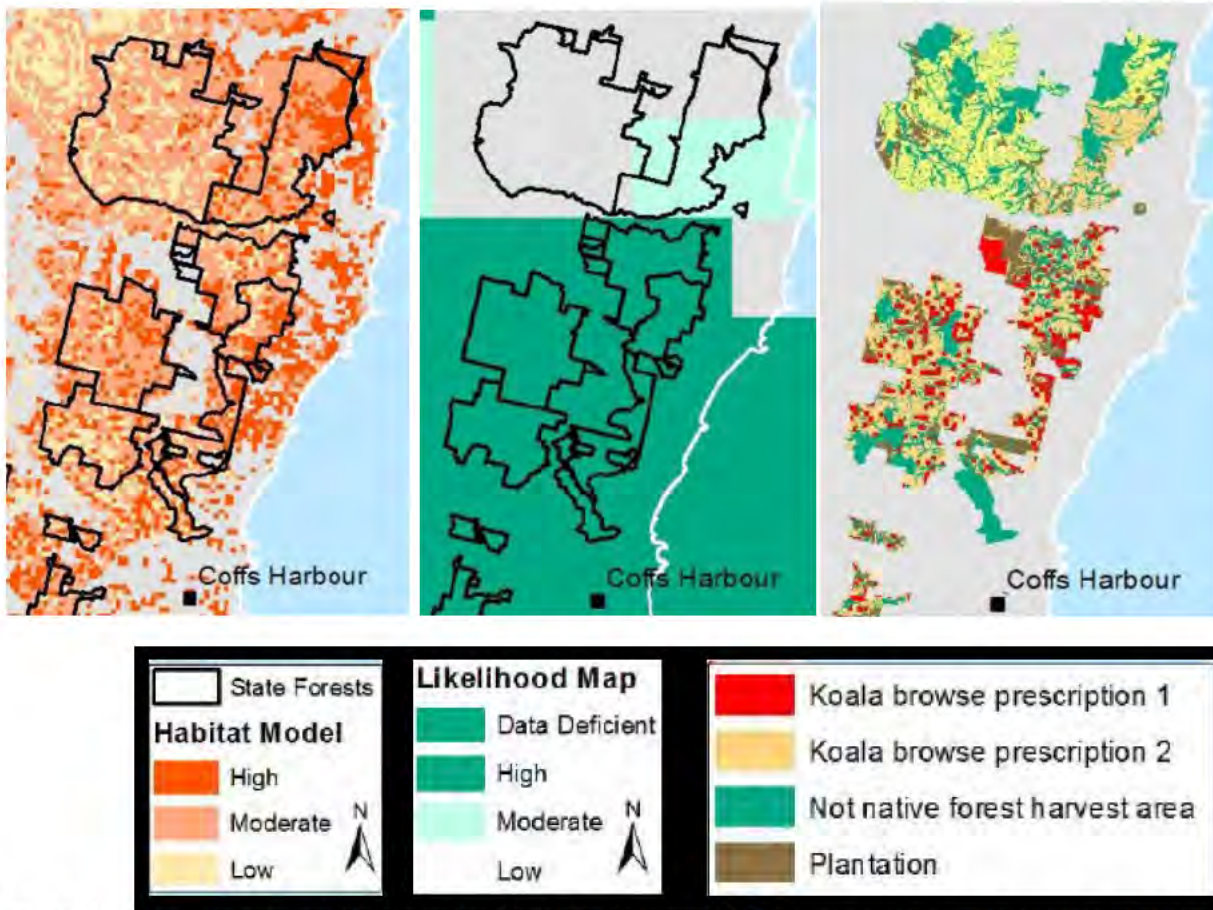
It would seem inappropriate to downgrade known Koala habitat, with very high Koala likelihood identified by OEH, on the grounds that DPI Forestry only rank it as medium quality Koala habitat.. Similarly it would seem to be inappropriate to use broad modelling with 2,500 ha grids based on a subset of data to clip more refined habitat modelling with 6.2 ha grids. These appear to be attempts to reduce the areas where the inadequate *Koala browse prescription 1* applies.

The remaining "high" modelled habitat is assigned to where it corresponds with moderate habitat in the other model, or where both models identify moderate habitat. The document 'Koala North – Creation of map of koala browse tree prescriptions' identifies that Koala browse prescription 2 applies to the whole compartment:

*where the compartment is of a high koala likelihood class and 25 percent or more of the base net area of the compartment is a moderate koala habitat class, or where the compartment is of a moderate koala likelihood class and 25 percent or more of the base net area of the compartment is a moderate or high koala habitat class, or there is no data on habitat class. or where there is insufficient data about **koala likelihood class** in a **compartment** and there is a moderate **koala habitat class**.*

The remnants of the DPI Forestry modelled "high" habitat (browse prescription 1) and the compartments with "moderate" (browse prescription 2) classes are then used to set browse tree retention rates (Condition 72):

- a minimum of 10 Koala browse trees in each hectare of net harvest area where Koala browse prescription 1 applies;
- a minimum of five Koala browse trees in each hectare of net harvest area where Koala browse prescription 2 applies;



Example of conversion of DPI Forestry Koala habitat model to prescriptions. Basically the Likelihood (low and moderate) and plantation maps are used to remove areas of modelled "high" quality habitat and the remainder is identified as Koala browse prescription 1.

The outcome of the process is 36,152ha of areas subject to browse prescription 1 and 212,073ha subject to browse prescription 2. The data available to us for where the unlawful logging intensities of moderate, heavy and regeneration Single Tree Selection (40-90% basal area removal) have been applied is limited to the Lower North East region up until early 2017, comparison with the proposed prescriptions identifies that this logging has occurred in 8,147ha (23%) of browse prescription 1 and 38,547ha (18%) of browse prescription 2. A total of 15,510ha (43%) of browse prescription 1 is within the proposed North Coast Intensive Zone.

The Forestry Corporation are then required to divide the loggable area up into patches up to 15 ha in size and average the tree retention across the area. For example if an area contains 5ha of Koala browse prescription 1 and 10ha of Koala browse prescription 2 then the requirement is to retain a total of 100 browse trees (an average of 6.7 browse trees over 20cm DBH per hectare) anywhere across the 15 hectares. Contrary to the NRC recommendation that the 10trees/ha be within the Koala browse prescription 1 area there is no requirement for any to be located within it.

In abandoning any measures to ascertain whether Koalas are present in an area, the EPA have deliberately abandoned any measures to identify and protect resident Koala populations and will instead often provide their limited protection to uninhabited and unsuitable habitat while allowing logging of the best habitat left.

For the licence primary browse trees are taken to be Tallowwood (*E. microcorys*), Swamp Mahogany (*E. robusta*) and Red Gums (*E. tereticornis*, *glauca*, *seeana* + hybrids). Primary browse species are required to be prioritised for retention up to at least 50% of the retained Koala browse trees (where available). Secondary browse trees are taken to be Grey Gums (*E. biturbinata*,

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propinqua, punctata, canaliculata), Grey Box (*E. moluccana, largeana*), Peppermints (*E. radiata, acaciaformis*), Sydney Blue Gum (*E. saligna*), Ribbon Gum (*E. nobilis, viminalis*), Messmate (*E. obliqua*), Snow Gum (*E. pauciflora*), Mountain Gum (*E. dalrympleana*), and New England Blackbutt (*E. andrewsii, campanulata*).

The DPE 'Explanation of Intended Effect State Environmental Planning Policy No 44 –Koala Habitat Protection' (2016) identifies a list of 65 browse trees, which include a number of north coast species not on the EPA's list. It is well known that Koalas have local preferences for certain species of eucalypts (Hindell and Lee 1987, Phillips 1990, Lunney et. al. 1999, Moore and Foley 2000, Phillips et. al. 2000, Smith 2004, Moore et. al. 2004b, DeGabriel et. al. 2010, Gow-Carey 2012, Davies et. al. 2014,). Koalas have been recorded feeding extensively on species not on EPA's list (i.e. Brush Box, Forest Oak) at some sites (Lunney et. al. 1992, Moore and Foley 2000, Smith 2004).

In the Coffs Harbour area Lunney et. al. (1999) identify:

Tallowwood Eucalyptus microcorys was identified as the tree species most preferred by koalas in the Coffs Harbour LGA. ... Tallowwood, however, was not the only tree species contributing to the distribution of koalas and to activity levels at survey sites in the LGA. A number of studies have shown that core koala habitat generally contains a primary tree species supported by 2 or 3 secondary species ... Other tree species identified as preferred trees were Swamp Mahogany E. robusta, Broad-leaved Paperbark Melaleuca quinquenervia, Flooded Gum E. grandis and Blackbutt E. pilularis.

The importance of Forest Oak for Koalas near Coffs Harbour led Smith (2004) to state:

While koalas are occasionally known to feed on non-eucalypt species (Moore and Foley 2000) the presence of Allocasuarina in more scats than all other eucalypts with the exception of tallowwood is exceptional and may indicate an important dietary preference that should be taken into account in conservation planning.

It is evident that the EPA list of feed species fails to include numerous browse species. This means that where there are less than 5 or 10 browse trees per hectare, alternative unlisted browse trees are allowed to be logged rather than retained.

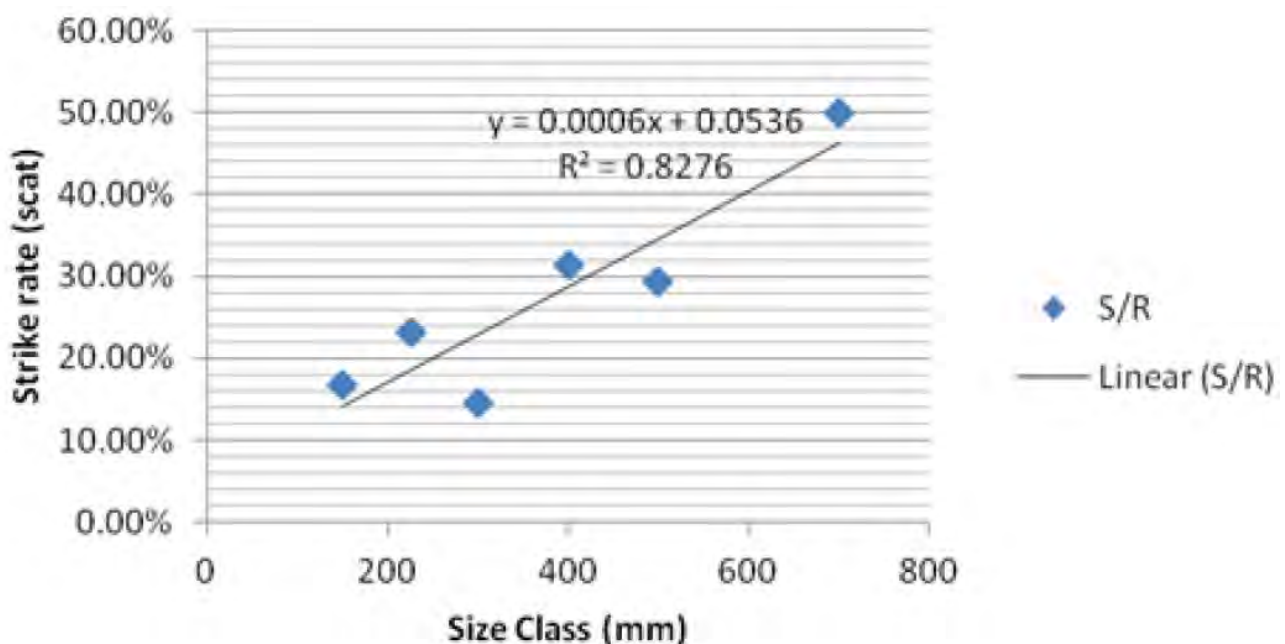


Figure 4 from EPA 2016: Size class of small-fruited grey gum versus scat strike rate, one of a number of examples. This shows that there is a one in five chance of a 20cm DBH small-fruited grey gum being utilised by a Koala compared to a one in two likelihood of a 70cm DBH tree being utilised - with the larger tree also likely to provide significantly more important resources.

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Koala browse trees are required to be greater than 20 cm DBH (30cm DBH outside the north coast). Many studies have identified Koalas preference for larger trees (Hindell and Lee 1987, Lunney *et. al.* 1991, Sullivan *et. al.* 2002, Moore *et. al.* 2004b, Smith 2004, Moore and Foley 2005, EPA 2016). Tree size has been found to be the most significant variable after tree species in a number of studies. While the setting of a minimum size limit of 20cm is an improvement on the current situation, this limit intentionally ignores the increasing importance of larger trees for Koalas. Given that the EPA (2016) clearly identified that Koala use of trees increased linearly with tree size it is astounding that this is not reflected in the prescription, with a requirement that those trees most likely to be utilised be preferentially selected for retention.

Within areas covered by the browse prescriptions trees are required to be visually assessed prior to logging for Koalas and if one is seen a 25m buffer is required to be applied until it leaves the tree. This is a return to the prescription that existed prior to the Endangered Fauna (Interim Protection) Act 1991: "*About the only thing done in a logging operation when a koala is located is to not fall the tree, at that time. It may be felled later (next day) if the koala has moved*" (Ernie Chiswell, Coffs Harbour District Forester, 29.11.1989). Presumably if a Koala is seen in a tree outside the browse prescription area then the tree can be cut down. Surely if a Koala is observed in a tree there is a high likelihood that it is either a feed or roost tree and should be protected, wherever it is.

If evidence (observation, scat, call, tracks or scratching) of a Koala is detected during a harvesting operation (outside the browse prescription areas) then Koala browse prescription 2 applies to the operational area. There is something wrong where locating such evidence before logging legally has no effect.

The EPA maintain that previously identified Koala High Use Areas will be protected under the new system, though we have been requesting such records for years and the Forestry Corporation have been adamant that they don't record them in a central data-base for the Upper North East, and they seem only partial for the Lower North East. Though the EPA (2018) claim that "very few" have been identified, only about 14ha per year, and many of these have since been logged.

Despite north-coast Koala populations crashing by 50% over the past 15-20 years, in part due to the loss of mature feed trees through logging, the Forestry Corporation and EPA are removing the need to identify and protect Koala High Use Areas while targeting the best habitat for the most aggressive logging and conversion into quasi-plantations. This is clearly not compliant with the Commonwealth Conservation and Management Strategy and NSW Recovery Plan requirements.

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Greater Glider

Greater Glider (*Petauroides volans*) is listed as 'Vulnerable' under the EPBC Act. It is not recognised as threatened in NSW. There is no Recovery Plan, just a 2016 'Conservation Advice *Petauroides volans greater glider*'.

The Conservation Advice notes:

During the day it shelters in tree hollows, with a particular selection for large hollows in large, old trees (Henry 1984; Kehl & Borsboom 1984; Lindenmayer et al., 1991; Smith et al., 2007; Goldingay 2012). In Grafton/Casino, Urbenville and the Urunga/Coffs Harbour Forestry Management Areas (FMAs) in northern New South Wales (NSW), the abundance of greater gliders on survey sites was significantly greater on sites with a higher abundance of tree hollows (Andrews et al., 1994; Smith et al., 1994, 1995). In the Grafton/Casino FMA, the greater glider was absent from surveyed sites with fewer than six tree hollows per hectare (Smith et al., 1994). In southern Queensland, greater gliders require at least 2–4 live den trees for every 2 ha of suitable forest habitat (Eyre 2002).

...

The greater glider is considered to be particularly sensitive to forest clearance (Tyndale-Biscoe & Smith 1969a) and to intensive logging (Kavanagh & Bamkin 1995; Kavanagh & Webb 1998; Kavanagh & Wheeler 2004; Kavanagh et al., 2005), although responses vary according to landscape context and the extent of tree removal and retention (Kavanagh 2000; Taylor et al., 2007)...

The Conservation Advice identifies "Timber production" as a severe threat, stating:

Prime habitat coincides largely with areas suitable for logging; the species is highly dependent on forest connectivity and large mature trees. Glider populations could be maintained post-logging if 40% of the original tree basal area is left (Kavanagh 2000); logging in East Gippsland is significantly above this threshold (Smith 2010; Gaborov pers. comm., 2015). There is a progressive decline in numbers of hollow-bearing trees in production forests as logging rotations become shorter and as dead stags collapse (Ross 1999; Ball et al., 1999; Lindenmayer et al., 2011).

The Conservation Advice identifies '**Primary Conservation Actions**' as:

- 1. Reduce the frequency and intensity of prescribed burns.*
- 2. Identify appropriate levels of patch retention, habitat tree retention, and logging rotation in hardwood production.*
- 3. Protect and retain hollow-bearing trees, suitable habitat and habitat connectivity.*

Recommended high priority actions for '**Active mitigation of threats**' are:

- Reduce the frequency and intensity of prescribed burns.*
- Constrain impacts of hardwood production through appropriate levels of patch and hollow-bearing tree retention, appropriate rotation cycles, and retention of wildlife corridors between patches.*
- Constrain clearing in forests with significant subpopulations, to retain hollow-bearing trees and suitable habitat.*
- Avoid fragmentation and habitat loss due to development and upgrades of transport corridors.*

Recommended high priority actions for '**Establish or enhance monitoring program**' are:

- From existing monitoring projects, design an integrated monitoring program across major subpopulations, linked to the assessment of management effectiveness.*
- Monitor the abundance and size structure of critical habitat tree species, and their responses to management including before and after prescribed burns, and before and after logging.*

Recommended high priority actions for '**Information and research priorities**' are:

Assess the impacts of fire management (prescribed burning programs) on habitat, hollow availability, preferred tree species, and glider population size.

Investigate the numbers, densities and types of hollow-bearing trees that must be retained to ensure viable populations.

The Greater Glider is recognised as nationally vulnerable, though not in NSW. There is no Recovery Plan, just a 2016 Conservation Advice that identifies logging as the most significant threat and the need to '*Constrain impacts of hardwood production through appropriate levels of patch and hollow-bearing tree retention, appropriate rotation cycles, and retention of wildlife corridors between patches*'. There has been no attempt in NSW to comply with this and, as also required by the Conservation Advice, there has been no monitoring to determine the numbers of types and hollow-bearing trees that need to be retained, or the effects of logging and burning on retained trees and glider populations. The one NSW prescription requiring increased hollow-bearing tree retention where more than one Greater Glider per hectare is recorded is considered by the Commonwealth Scientific Committee as "*not adequate*", and there is abundant evidence that the inadequate requirements for habitat tree retention are not complied with in practice. The NSW Government is now intending on removing the specific protection for Greater Gliders in foothill and coastal forests.

Current Threatened Species Licence

Retention of Hollow-bearing Trees and recruitment trees (to grow into the hollow-bearing trees of the future) are key requirements to mitigate logging impacts on an array of native animals in eucalypt forests (see nefa.org.au/old_trees). For decades NEFA have been battling to get improved protection for large hollow-bearing trees and the recruitments needed to sustain them, and the vital hollows they provide, into the future. NEFA considers that current retention rates of hollow-bearing (H) trees are inadequate and that the retention rates of recruitment (R) trees are grossly inadequate to maintain the prescribed numbers of H trees over time. Given natural (and induced) mortality as trees age it is a nonsense to only retain one recruitment tree for each hollow-bearing tree.

Poor and inadequate selection and protection of habitat trees has always been a problem. A large proportion of the R trees retained do not satisfy the selection requirements of being mature, undamaged and un-suppressed, and are therefore unlikely to ever develop into hollow-bearing trees. Similarly NEFA have identified a high proportion of logging damage to retained trees and debris left around retained trees ready for burning, further limiting their prospects of survival. NEFA has identified this as a problem in all our audits.

In NSW there are general requirements to retain 8 hollow-bearing trees per hectare where more than one Greater Glider per hectare exists within 3km of a Powerful Owl record (North East NSW) or 5km of a Tiger Quoll record (Southern NSW). Though even then only 5 R trees are required to be retained.

The Commonwealth's (2016) Conservation Advice notes that "*In production forests some logging prescriptions have been imposed to reduce impacts upon this species, however these are not adequate to ensure its recovery*", in relation to New South Wales stating:

... logging of areas where greater gliders occur in densities of greater than one per hectare require eight hollow-bearing trees to be retained per hectare (Terms of Licence). However, such tree-retention measures are typically not species-specific, and do not consider factors which influence the occupancy of hollows and their suitability for different fauna species (Gibbons & Lindenmayer 2002), including intra-specific or inter-specific competition for hollows and changes in predation by owls related to changes in forest structure.

Hollow-bearing and recruitment trees were identified as one of the EPA's (2016a) Cross-tenure environmental compliance priorities for 2013–16. For "Identification, retention and protection of adequate and appropriate trees for maintenance and replacement of arboreal tree hollow habitat".

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Since making habitat trees a compliance priority in 2013 the EPA have found that poor selection and retention of habitat trees is the most frequent and widespread breach of the Threatened Species Licence that they find. For example in their 8 proactive audits undertaken in the Upper North East region in 2015 they assessed a total of just 7.9ha for habitat tree retention, with just 43 H trees and 51 R trees assessed, and yet identified 36 breaches (Pugh 2018). For these widespread and frequent breaches the only regulatory action they took was to require 11 Action Plans, time and time again.

This followed on from the EPA (Gregory Abood, 13 August 2014) finding the previous year, from an audit of 6 forests in the Upper North East, that:

Key Audit Findings

Recruitment – failure to select trees most likely to provide hollow bearing resource continuity

EPA audits found a common trend that appropriate recruitment trees were not retained in accordance with the Threatened Species Licence (TSL) requirements. For example, in Dalmorton State Forest, trees were felled belonging to a cohort of trees with the largest diameter at breast height over bark (dbhob) contrary to the TSL requirements. For example, of the required ten recruitment trees (2 hectare assessment area) 6 trees from the cohort of trees with the largest dbhob were felled. Stumps of 85; 78; 78; 70; 66; 60 cm DBHOB (6 trees) were all belonging to a cohort of trees with the largest dbhob compared to the R trees retained in the assessed area being 83; 76; 60; 57; 54; 51; 51; 51; 51; 49; 49; 46; 46; 42.5; 36. Most notably, differences in trees removed versus those retained ranged up to 49cm (i.e. R tree 36cm vs stump 85cm at 1.3m). The EPA audit recorded clear examples of non-compliance with trees felled within 10m of marked and retained R trees including a Spotted Gum 46cm R tree and four adjacent Spotted Gum trees felled 75cm, 71cm, 60cm, 58cm DBHOB. Similar findings were recorded at Kangaroo River State Forest with for example an 81cm DBHOB tree felled and the largest R tree retained was 62cm and smallest R tree 46cm DBHOB (in the assessed area). Trees belonging to a cohort of trees with the largest dbhob were felled.

Proper selection is critical to achieve compliance and the intent of the condition. The retention of recruitment trees that belong to a cohort of trees with the largest DBHOB is important. Larger size class trees maintain biodiversity, diversity of forest structure and form, forest health and the productive capacity of these forest ecosystems. Larger size class trees are more likely ensure continuity of hollow bearing forest resources. Continuity of these resources is the key to sustain biodiversity elements of ecologically sustainable forest management (ESFM). Removing the next largest size class increases the risk of a hollow bearing resource gap in time. A future resource gap would acutely impact on biodiversity. The presence, abundance and size of hollows are positively correlated with tree basal diameter, which is an index of age. As such, tree dbhob is, in turn, a strong predictor of occupancy by vertebrate fauna and is the primary reason why largest diameter is stated within the TSL conditions. Harvesting trees that belong to a cohort of trees with the largest dbhob will impact on the capacity of this forest ecosystem to function in the future.

For these too they just required an Action Plan. It is clear that the Forestry Corporation can breach requirements as frequently as they like without any meaningful consequences and that the EPA refuse to increase consequences or penalties for repeat offences. This lack of enforcement seems to have led to deteriorating compliance, with the deliberate poor selection of recruitment habitat trees a common and widespread occurrence. Our recent audits have also found a significantly worsening situation with regards to reckless damage to habitat trees.

NEFA's audit of [Cherry Tree State Forest](#) (Pugh 2015) provides one example of compliance with the Greater Glider prescription. Cherry Tree State Forest was logged in 2015. NEFA began auditing the operations soon after logging commenced in an attempt to force compliance with Threatened Species Licence (TSL) requirements. This discussion focuses on habitat tree (H and R) retention in compartments 359 and 361 of Cherry Tree State Forest.

Compartments 359 and 361 of Cherry Tree SF both had a density of more than one Greater Glider per hectare (1.07 and 1.0 respectively) and were within two kilometres of a Powerful Owl record, so as required by TSL 6.9d were required to have Hollow-bearing (H) Tree retention rates of 8 per hectare. Though being in the regrowth zone were only required to retain 5 Recruitment (R) trees per hectare. This total net logging area of these two compartments is 310 hectares, requiring a total of 2,480 H trees and 1,550 R trees to be retained across these two compartments. A third

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compartment (360) logged at the same time only had a Greater Glider density of 0.9 per hectare so required the retention of just 5H and 5R trees per hectare.

The Threatened Species Licence (TSL 5.6(d)) requires hollow-bearing trees selected must belong to a cohort of trees with the largest diameter (dbhob), have good crown development, have minimal butt damage, and be evenly scattered throughout the net logging area.

Selected Recruitment trees are required (TSL 5.6 (e)) to belong to a cohort of trees with the largest dbhob, have good crown development, minimal butt damage, and be evenly scattered throughout the net logging area,

Damage to retained habitat trees must (TSL 5.6 (h)) be minimised to the greatest extent practicable, by utilising techniques of directional felling, removing or flattening logging debris to a height of less than one metre, and minimising disturbance to ground and understorey, within a five metres radius of retained trees.

The Border Ranges Rainforest Biodiversity Management Plan (which is a Commonwealth multi-species Recovery Plan applicable to the area) includes as an aim:

Ensure retention of existing hollow-bearing trees. Also encourage the protection of recruitment trees that will ensure hollow resources are available into the future.

From NEFA's first visit to compartment 359 of Cherry Tree SF we complained (8 March 2015) to the Environment Minister, the EPA and the Forestry Corporation that:

From our visual appraisal it appears that the required numbers of habitat trees are not being marked and retained. We also noted poor selection of hollow-bearing and recruitment trees, a number with bases damaged, and quite a few with debris stacked against them.

The Forestry Corporation must be reminded to ensure that the required numbers of habitat trees are retained, that damage is minimised, that debris is carefully removed, and that recruitment trees are sound, vigorous, and capable of growing into the hollow-bearing trees of the future. They must also be reminded to retain additional Koala feed trees and eucalypt feed trees where required.

We hoped that by highlighting the obvious problems up-front that those responsible may make some attempt to fix them.

In response to NEFA's initial complaint during March 2015 the EPA audited tree retention. This totalled a two hectare (2ha) complete census and inventory using small plots, assessing retained trees and trees felled. This assessment found retention rates and damage to be compliant.

On subsequent visits we observed that the Forestry Corporation had tidied up their operation by removing debris around habitat trees, marking all surviving habitat trees as H and R trees, and installing cross banks on tracks, though only on ridges. Down the steeper slopes nothing was done. Accordingly when the EPA did their initial inspection they limited their assessment plots to areas that had been tidied up, even then having to walk past obvious H and R breaches to put in their audit plots.

In our subsequent audits we documented numerous breaches down slope from the EPA audit plots on steeper areas which existed at the time of our first complaint and had not been tidied up, which the EPA later confirmed. It was clear that the Forestry Corporation correctly assumed that the EPA would not exert themselves by inspecting steeper areas. The unwillingness of the EPA to exert themselves seems to be a common problem, as it is in these harder to access areas that we find most breaches.



When first inspected this magnificent Tallowwood - many hundreds of years old - had debris piled up around it ready for burning. after our complaint the debris was removed in a token clean up.

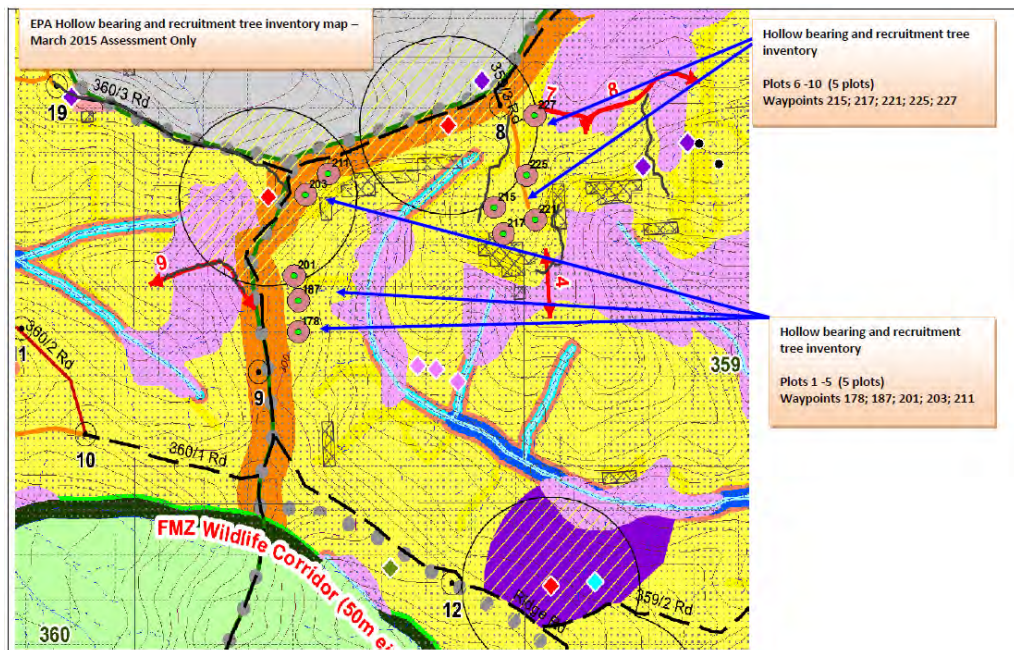


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On a ridge Forestry cleaned up, an R tree had its crown destroyed during logging (as well as being suppressed by an adjoining H tree). It appears that as part of the Forestry Corporation's clean-up for the EPA it was marked as "cancelled" with a nearby tree marked as an R tree (presumably as the replacement) despite having butt damage and dying crown due to suppression by an adjacent H tree.



Around log dump 8 there were 2 H trees and 2 R trees that had suffered significant butt damage. Despite having to walk past these to place their audit plots the EPA failed to count these as non-compliances. With their blinkered approach they failed to identify any non-compliances.



EPA habitat tree assessment sites of March 2015, note their locations on ridges near roads.

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It is apparent that the Forestry Corporation recognise that they don't need to worry about EPA inspections on steeper and less accessible sites where they feel free to flagrantly breach the rules.



Despite the Forestry Corporation's clean up on ridges, below the plot sites there were still numerous breaches that the EPA failed to identify. LEFT: Just downslope from the EPA audit area numerous H and R trees had been damaged and had debris left around them, in this photo 4 hollow-bearing (H) and one Recruitment (R) habitat tree had their crowns knocked out by having trees felled on them, with damage to their trunks and piles of debris left around all 10 habitat trees in the vicinity, ready for cremation. RIGHT: H tree with top knocked out and debris left around base in the same vicinity.



Examples of ongoing damage to habitat trees observed in NEFA's August visit to Cherry Tree State Forest. It was obvious that habitat trees were still being treated with contempt. LEFT: A marked habitat tree with its crown knocked out. RIGHT: Debris left around a a habitat tree.

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To our disappointment our second visit on the 24 August revealed that these problems were ongoing and that there was no apparent improvement. It was obvious that our complaint and the EPA's token audit had resulted in no improvement. We again found that habitat trees were being inappropriately identified, damaged in logging and left with debris around them. In our second complaint to the Minister regarding logging in the vicinity of log dumps 6 and 7 we noted in relation to habitat trees that *"we continue to press our concerns that requirements are apparently not being met"*.

It was apparent that across most of the area that there had still been no improvement - our attempts to arrest further breaches by exposing the problem had been in vain. Because of the EPA's slackness and ineptitude thousands of trees were logged and damaged in the logging operation that should not have been. It was thus apparent that unless we quantified our concerns that the EPA would do nothing to hold the Forestry Corporation to account.



Accordingly NEFA (Pugh 2015) assessed damage to marked habitat trees at 3 sites (1,2 and 3) totalling 43.3 ha in Compartments 359 and 361, and compliance with retention requirements at one site (3) totalling 3.3 ha. From Site 3 NEFA found that the required numbers of habitat trees were not being retained, noting:

Across the 3.3 hectares marked habitat tree retention was 4.5 H trees/ha and 3.9 R trees/ha, both of which are significantly below the requirements for this compartment. Three trees marked as R trees were observed to have hollows (AMG 476107, 6798517, 476055, 6798553, 476038, 6798553), with re-assignment of these trees as H trees, habitat tree retention was 5.5 H trees/ha and 3.0 R trees/ha. It is evident that retention of hollow-bearing trees was well below the 8 per hectare required and that there were additional hollow-bearing trees available for retention that were logged.

Similarly it is evident that the required numbers of R trees were not retained, and that most marked trees did not satisfy retention requirements. There were abundant stumps in the size range 50-100cm from logging, making it evident that most (if not all) of the largest cohorts of trees that should have been retained as R trees were logged. Only 5 of the marked R trees were accepted as reasonable choices, though these were still small trees and did not belong to the largest cohort of trees as evidenced by stumps. This is a retention rate of only 1.5 R

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trees per hectare. When considered with the significant logging damage to retained trees, the outcome is extremely bad.

Based on this sample, with the reassignment of some R trees as H trees and discount of R trees we considered unsuitable choices, NEFA found:

By extrapolation of the results from site 3 across the nett area of compartments 359 and 361 (allowing for reclassification of R trees with hollows to H trees) , there are some 1,670 H trees and 460 suitable R trees retained.

This means there are shortfalls of some 810 (33%) in the required number of H trees and some 1090 (70%) in the required number of R trees.

In the EPA's subsequent response (Michael Hood 21 December 2016) they identify they assessed 21 hectares and (without discounting R trees that did not satisfy retention requirements) found retention of recruitment trees adequate but that only 6.95 hollow-bearing trees per hectare were retained, giving a shortfall of 275 hollow-bearing trees for just compartment 359 (325 across both compartments), though they included Forestry Corporation data, to conclude the shortfall is just 172 hollow-bearing trees. The EPA did record inappropriate selection of recruitment trees as an offence though failed to document its extent or discount inappropriate trees when identifying retention rates. The EPA state:

*The analysis reflected over page has been conducted for **compartment 359 alone** where the EPA has decided to apply a conservative approach to condition 6.9d which requires 8H/ha. The net harvest area for compartment 359 is 262ha. In effect there was a requirement of 2096 hollow bearing trees, and 1310 recruitment trees for this area.*

Tree Retention Results

*Based on extrapolation, if the retention rate trend was maintained across the rest of compartment 359 (i.e. across the remaining 230 hectares) there would be a shortfall of hollow bearing tree of approximately **172 trees or approximately 0.75 hollow bearing trees per hectare**. This was calculated based on EPA retention rate of 6.8H/ha plus FCNSW retention rate of 7.5h/ha = 7.25H/ha retained on average. The EPA notes that recruitment tree retention rates were 6.25R/ha, more than 1 recruitment tree per hectares more than the minimum required rates. This analysis is based on 32 hectares of assessed area, equivalent to 12% sampling intensity.*

Even with the addition of the Forestry Corporation data, this suggests a shortfall of 232 H trees across both compartments. Despite finding a significant shortfall in the required retention of hollow-bearing trees, the EPA only issued an Official Caution. Note that NEFA maintains it was wrong for the EPA not to discount inappropriately selected R trees in determining retention rates, particularly as their Official Caution included inappropriate selection of R trees.

NEFA's sample of 43.3 ha in Compartments 359 and 361 for damage to habitat (H and R) trees was far more comprehensive, though is considered conservative as damage to many marked trees is likely to have been missed in the rapid assessment undertaken. Given the abundance of debris around many trees, butt damage will be significantly understated. It was evident that for many trees the visible damage to butts and trunks belied the more extensive internal damage sustained from the force of the blows.

In total within Sites 1,2 and 3, 23 H trees and 43 R trees had canopy and/or butt damage, giving likely physical logging damage to marked habitat trees across both compartments as 215 H trees and 308 R trees. In addition to physical damage 30 H trees and 34 R trees had debris left around them, giving debris across both compartments likely to have been left around 215 H trees and 243 R trees. The debris is likely to result in significant damage in post-logging burns.

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When the EPA (Michael Hood 21 December 2016) provided their "final" response to our Cherry Tree audit they deferred consideration of our complaints regarding roading and logging in the EEC Lowland Rainforest and damage to habitat trees. They thereafter told us they were considering legal action, and even requested high resolution images of all the habitat tree breaches we had identified. They strung us along for almost a year before telling us (Michael Hood, 1 December 2017) that they would take no regulatory action at all. Despite the EPA confirming our complaints for Cherry Tree State Forest from their sample, they refused to take any action what-so-ever for the widespread damage to habitat trees on the spurious grounds that they couldn't prove that the Forestry Corporation caused the damage, even suggesting to us that indeed someone else may have sneaked in there while logging was underway (presumably with a bulldozer and chainsaw) and caused the damage:

Inspections conducted by EPA officers identified 22 trees with crown damage, 51 trees with butt damage and 49 trees that appeared to have debris greater than one metre in height within a five metre radius. These observations were subsequently the subject of further investigations.

Although it is likely the damage to the trees and the debris were as a result of harvesting operations, the EPA would be required to prove beyond reasonable doubt that each individual instance of damage or debris was as a result of an action by those undertaking the harvesting operation. The investigation was unable to obtain evidence that satisfied this requirement beyond a reasonable doubt nor could it obtain evidence that would rebut a defence that the damage was caused by some other means.



It is obvious when habitat trees have been damaged during logging yet the EPA now claim that they cannot prove that this is logging damage, or that it may have been caused by some unknown persons. LEFT: One of numerous marked habitat trees knocked by machinery when a snig track was created up to its base. RIGHT: One of many habitat trees obviously damaged by having trees dropped on it, with the debris left around it and surrounding stumps clearly showing the source of the debris. No regulatory action was taken for these or hundreds of similar breaches.

The EPA do not extrapolate their results across the logging area. If it is assumed that this damage was recorded on the EPA's 23ha sample of the nett area of 310ha, for compartments 359 and 361,

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this would indicate 984 of the retained habitat trees being physically damaged and 661 with debris left around them, making NEFA's estimate very conservative.

Having spent many days auditing the operation and documenting trees that had been obviously damaged during logging NEFA considers that it is easy to identify the cause of the damage from machinery tracks, locations of tree stumps and the position of cut-off tree heads, Given that drainage works are implemented after each area is logged it was not possible for another person (as the EPA suggested to me) to have caused the damage later, and the idea that someone could operate in there unnoticed causing widespread damage while logging is underway is preposterous.

For the 122 offences the EPA found relating to damage to habitat trees in Cherry Tree they took no action what-so-ever, not even requesting an Action Plan. Indeed with this new interpretation it seems that will never be able to take an action again unless the Forestry Corporation first admits that they committed the offence, It is evident from the Forestry Corporation's response to all of the EPA's 2015 audits that they rarely admit anything.

Private Native Forestry

There is no prescription specifically for Greater Gliders in PNF, though the Private Native Forestry Code of Practice for Northern NSW does require similar increases in protection where there are records of owls:

Where there is a record within the area of forest operations or within 500 metres of the area of forest operations for the powerful owl, masked owl or sooty owl or 250 metres for the barking owl, the following prescriptions apply:

- (a) Buffer zones with a 1000-metre radius (about 300 hectares) for the powerful owl, masked owl or sooty owl and 500-metre radius (about 78 hectares) for the barking owl must be identified, centred on the location of the record or records. The radius of the buffer zone must be measured from the location of the record. Where there is more than one record, the radius of the buffer zone must be measured from a point equidistant from most records, where possible.
- (b) Within this buffer zone, the following additional prescriptions must be implemented:
 - (i) A minimum of 15 trees per 2 hectares with visible hollows must be retained where available.
 - (ii) A recruitment tree must be retained for each hollow bearing tree retained. Where the total number of hollow bearing trees and recruitment trees is less than 30 trees per 2 hectares, additional recruitment trees must be retained to bring the number up to 30 trees per 2 hectares.
 - (iii) Disturbance to understorey trees and shrubs, ground logs, and rocks and litter must be minimised.

While this is theoretically a far superior prescription for the Greater Glider than that applied to public lands, without any requirements for surveys it is in effect meaningless in most cases. For example, because this prescription had not been triggered at both of NEFA's private property audit locations, despite the presence of obviously suitable habitat, we engaged an expert who recorded Sooty Owl and a Masked Owl at Whian Whian and Masked Owl at Limpinwood, thereby triggering this prescription. It is evident that had NEFA not intervened the owls, and by default the Greater Gliders, would not have been given the protection they warranted.

Proposed Coastal IFOA

There is no species-specific prescription for Greater Gliders in the new Coastal IFOA.

The Greater Glider will be significantly affected by the removal of requirements for additional hollow-bearing trees where >1 GG per ha, and in the longer term by the removal of the need to restore 5

hollow-bearing trees per ha in escarpment forests and the need to retain the recruitment trees needed to replace hollow-bearing trees as they die out.

Hastings River Mouse

The Hastings River Mouse *Pseudomys oralis* is listed as 'Endangered' under the EPBC Act. The Hastings River Mouse *Pseudomys oralis* is restricted to upland open forests and woodlands with grass, heath or sedge understorey in north-east New South Wales and south-east Queensland, it is patchily distributed with seven known genetically discrete populations.

There is no 'Conservation Advice' or 'Listing Advice' though there is a Recovery Plan developed by NSW in 2005 and adopted by the Commonwealth in 2008 [Recovery Plan for the Hastings River Mouse \(*Pseudomys oralis*\)](#).

The protracted process of adopting the plan is testimony to NSW's antagonism to Recovery Planning. The Hastings River Mouse (HRM) Recovery Team had its inaugural meeting on the 23rd and 24th July 1992. This was the first recovery team for a threatened fauna species formed in NSW. The Recovery Team implemented a 3 year research program with the aim of finalising a Recovery Plan within 4 years, i.e. by 1996. While the research was completed, the NPWS frustrated the preparation of the plan. After years of procrastination the preliminary draft Recovery Plan was prepared on 19th May 1997 and discussed at the HRMRT meeting of 23rd May. The next meeting of the HRMRT was not until 22nd December 1997, with the draft Recovery Plan not provided until just before that meeting. The final version of the Plan was to be agreed by the 13th February 1998. The HRMRT did not meet again. The Recovery Plan for the Hastings River Mouse was not adopted until April 2005, thirteen years after it was started and 8 years after the draft plan was prepared.

Habitat alteration and fragmentation of Hastings River Mouse habitat is predominantly a result of frequent fire, forestry activities, clearing activities, grazing and weed infestation (DECCW 2005). The Recovery Plan states:

Timber harvesting impacts adversely on the Hastings River Mouse by reducing shelter provided by hollow logs and old-growth stems with butt cavities. Harvesting activities also open up the understorey and create roads and tracks potentially leading to increased predation pressure. The Hastings River Mouse has been found in logged areas (Meek et al 2003), however, the largest and most stable populations located to date occur in unlogged old-growth forest (Townley 2000a).

The Recovery Plan identifies some actions as:

6.2 Research

Specific Objective: Increase understanding of the ecology and management of the Hastings River Mouse, particularly in relation to disturbance and threatening processes.

Action 2.3: Give priority to research projects that focus on the impact of disturbance, threatening processes and the development of mitigation measures.

Justification: Although significant research has been conducted on the Hastings River Mouse, aspects of the species' ecology and causes of rarity remain unclear. Additional knowledge of the species' ecology and response to disturbance and threatening processes will assist in refining and directing recovery actions.

6.5 Management

Specific Objective: To implement effective management of Hastings River Mouse populations.

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Action 5.1: Develop Hastings River Mouse population management programs based on the best available knowledge and the Interim Management Guidelines provided in Appendix 3.

Justification: To ensure that populations of the Hastings River Mouse are actively managed using the most recent and available knowledge.

Specific Objective: To ensure that Hastings River Mouse populations and habitats are identified and managed to minimise impact from developments and activities.

Action 5.2: Develop and provide Environmental Impact Assessment (EIA) guidelines to councils and development control authorities to assist in the assessment of potential impacts from activities on Hastings River Mouse populations or habitat.

Justification: To adequately assess the likelihood of presence of Hastings River Mouse populations or habitat in an area, specific survey and assessment techniques are required. Guidelines should have modelled habitat maps attached. Interim guidelines are provided in Appendices 3 and 4.

Performance Criterion: Guidelines are developed within the life of the plan.

Action 5.3: Develop guidelines for the management of Hastings River Mouse populations and habitat and provide to public authorities, land management agencies and private landholders associated with the management of the Hastings River Mouse.

Justification: Provision of guidelines will assist in the management of Hastings River Mouse populations being incorporated into existing planning and management processes. Interim guidelines are provided in Appendix 3.

Performance Criterion: Guidelines are developed and provided to relevant land managers, public authorities and land holders within three years of the commencement of the plan.

The 2005 Recovery Plan includes "Appendix 2. Interim Hastings River Mouse Trapping and Population Survey Guidelines" identifying "The minimum specifications for trapping are as follows":

a) The minimum trap effort at a locality must be 100 size A Elliott traps over four nights (400 trap nights) for areas up to 50 hectares of moderate or high quality habitat or both. An additional 400 trap nights (100 traps for four nights) per 50 hectares above the original 50 hectares.

The 2005 Recovery Plan includes as "Appendix 3. Interim Hastings River Mouse Management Guidelines":

Timber Harvesting

Surveys: Pre-logging habitat and population surveys (Appendixes 1 & 2) should be carried out by the relevant agencies in areas not covered by the Integrated Forestry Operations Approvals for the Upper North East and Lower North East Regions.

Timber Harvesting: Timber harvesting and associated activities should be excluded from areas of medium to high quality Hastings River Mouse habitat.

Within a 200 m buffer around medium to high quality Hastings River Mouse habitat and mapped Hastings River Mouse corridors the following should apply:

- if the area is unlogged or has not been logged since 1950 it will remain unlogged;*
- in other areas a minimum of six mature trees with basal hollows, or trees likely to develop basal hollows, per hectare will be retained; all burning will be excluded; and no fire wood collection should occur within 200 m of a known Hastings River Mouse population.*

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The Hastings River Mouse was one of those targeted for reservation in the CRA process, with population targets established for 8 discrete populations. These targets were adopted to represent the number of breeding females required to be included in reserves to achieve the long term survival of the species. As with most endangered species the CRA process abjectly failed to deliver on the reservation requirements for this species, with only 8% of the mean of the habitat targeted for reservation included in the reserve system in north-east NSW, with 6 populations achieving less than 10% of their reservation targets (see Table).

HASTINGS RIVER MOUSE RESERVE STATUS IN NORTH EAST NSW AS AT 2004 (From Flint *et. al.* 2004)

	Population Targeted for Reservation	Estimated Total Population Reserved	Percentage of Reserve Target Achieved
Hastings River Mouse - pop.1	4238	3	1%
Hastings River Mouse - pop.2	4251	116	3%
Hastings River Mouse - pop.3	4251	322	8%
Hastings River Mouse - pop.4	4251	47	1%
Hastings River Mouse - pop.5	4238	523	12%
Hastings River Mouse - pop.6	4238	1231	29%
Hastings River Mouse - pop.7	4251	287	7%
Hastings River Mouse - pop.8	4251	334	8%
TOTAL	33969	2863	8%

The Hastings River Mouse has already been identified as having a high likelihood of becoming extinct within the next 50 years. The extremely low level of reservation achieved has guaranteed that this will be the case unless strong and effective management is applied off-reserve. The RFA requires that IFOA prescriptions take into account the extent of reserved habitat (1A 9, 1(B)13).

Current Threatened Species Licence

For public lands the 1988 Threatened Species Licence gave forests NSW the choice of establishing "An exclusion zone, or exclusion zones, ... to protect all modelled habitat within the compartment" or undertaking specified habitat assessments to identify habitat of moderate or high suitability within which targeted trapping surveys are required (TSL 8.8.9).. The Threatened Species Licence (TSL 6.13) required that exclusion zones of 200 metres must be established around records of Hastings River Mouse, extending to 800m in Hastings River Mouse habitat assessed as of moderate or high suitability. So the requirement is to only protect part of the medium and high quality habitat if they happen to catch a Hasting River Mouse, with no application of a 200m buffer to that habitat..

This is effectively a major reduction on what the Recovery Plan identifies as a Management Guideline in Appendix 3 for logging, though the Recovery Plan recognises this prescription, stating: *In NSW, an Integrated Forestry Operations Approval (IFOA) granted under part 4 of the NSW Forestry and National Park Estate Act 1998 (FNPE Act) regulates the carrying out of certain forestry operations, including logging, in the public forests of a region. The terms of the Threatened Species Licence of the IFOA outline the minimum protection measures*

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required to limit the impact of forestry activities on threatened species and their habitats and forms the basis for DECC regulation of those activities. The Threatened Species Licence for the Upper North East and Lower North East Regions include measures for the protection of the Hastings River Mouse.

Specific prescriptions for the Hastings River Mouse state that where there is a record of the species in a compartment or within 800 m outside the boundary of the compartment the following must apply:

- a) Within 800 m of a record of the Hastings River Mouse, 'specified forestry activities' as defined in the IFOA, are prohibited from all areas assessed as moderate or high suitability Hastings River Mouse habitat.*
- b) An exclusion zone of at least 200 m radius must be implemented around all records of the Hastings River Mouse.*

The prescriptions dictate how targeted surveys for the Hastings River Mouse and habitat suitability assessments must be conducted. Hastings River Mouse microhabitat models (Smith & Quin 1997) used to determine the level of habitat suitability are included in the prescriptions (See Appendix 1).

There are potential threats from logging to Hastings River Mouse sites on private property. Issues relating to timber harvesting include road construction, use of heavy machinery, timber removal and burning to stimulate regeneration and limit wildfires (Smith et al. 1994).

Many of the identified threats to the Hastings River Mouse are intrinsically linked and the magnitude of the effect of one threat is often related to the presence or absence of other threatening processes

The Threatened Species Licence was amended in 2007 and in 2010 so as allow logging operations within 31 compartments in 6 State Forests to be undertaken within areas that would otherwise be required to be protected (TSL 6.13B). These included Mount Mitchell State Forest Compartments 16, 17 and 18. This over-rides TSL 6.13 by establishing mapped HRM exclusion zone and HRM operational zones, with snagging and roading allowed in the operational zones.

These changes were in contravention of the Recovery Plan Action 5.1: Develop Hastings River Mouse population management programs based on the best available knowledge and the Interim Management Guidelines provided in Appendix 3. It is a safe bet that this major wind-back in protection for the Hastings River Mouse was never subject to monitoring to assess impacts on Hastings River Mouse and the effectiveness of the new measures.

What is most alarming is that this reduced protection appears to have been approved because of the high numbers of Hastings River Mice in these areas. For example, there were 16 records of Hastings River Mouse made in compartment 16 of Mount Mitchell SF, indicating a much larger population inhabiting the area and one likely to be of national significance. Such areas should be designated critical habitat and fully protected (particularly given the poor reservation status of this species) rather than being allowed to be logged with reduced protection.

The 2010 Review of NSW Forest Agreements and Integrated Forestry Operations Approvals: Upper North East, Lower North East, Eden and Southern regions stated:

Current Hasting River Mouse survey requirements and exclusion zones do not reflect current knowledge of Hasting River Mouse occurrence. Habitat suitability surveys are used to identify areas where trapping is required but are limited to areas within modelled habitat. The model is deficient because many records of the species fall outside of modelled habitat.

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To counter this deficiency, habitat suitability surveys within compartments containing 'known habitat' as well as those containing modelled habitat is appropriate; however, there is a need for Forests NSW to document the process of 'rapid assessment' of habitat suitability.

Forests NSW proposes that the Hastings River Mouse is now more widespread and numerous than when existing conditions were developed, and that the home range of the species is now known to be relatively small. As such, Forests NSW considers that exclusion zones of up to 800 m diameter are not appropriate.

One of the recommended changes was:

Forests NSW is to apply an exclusion zone covering 12 ha (equivalent to a circle of approximately 200 m radius) where there is a record of Hastings River Mouse of suitable habitat.

In contravention of the Recovery Plan requirement the prescription for the Hastings River Mouse was changed on the 7 November 2011. There does not appear to have been any attempt to critically review Forests NSW's claims, or to assess the likely consequences of the changes on Hastings River Mouse. The retention of habitat around Hastings River Mouse records was dramatically reduced from an exclusion area encompassing all habitat of moderate or high suitability within 800m (a potential maximum of 200ha) and all land within 200m, down to a 12ha exclusion area encompassing as much habitat as practical around a record:

*6.13 Hastings River Mouse *Pseudomys oralis**

Where there is a record of a Hastings River Mouse in the compartment or within 200 metres outside the boundary of the compartment, the following must apply:

a) A 12 ha exclusion zone that takes in as much Suitable Habitat for Hastings River Mouse as practical, must be established around the record. The exclusion zone need not be symmetrical and should, where possible, link to other areas excluded from harvesting activities.

This had the effect of opening-up large areas of Hastings River Mouse Habitat protected for well over a decade for logging.

Instead of undertaking surveys the Forestry Corporation have the option under condition 7(x) of "An exclusion zone, or exclusion zones, must be implement to protect all modelled habitat within the compartment".

The 7 November 2011 change also significantly reduced the likelihood of locating Hastings River Mouse by, for example, halving the Recovery Plan's (Appendix 2) trapping effort of a minimum of 400 trap nights per 50ha down to 200 trap nights per 50ha:

8.8.9 B Targeted surveys

Surveys to determine the presence of Hastings River Mouse must be conducted as follows:

a) The minimum specifications for trapping are as follows:

- i. The trap effort is to be at a rate of 1 size A Elliott trap over four nights for each hectare identified as having Suitable Habitat for Hastings River Mouse (either as the result of habitat suitability surveys under 8.8.9A or otherwise such as during compartment traverse or incidentally recorded).*
- i. The minimum number of traps will be 50 for up to 50 hectares, with 25 additional traps for each 25 hectares increment above 50 hectares, as follows:*
 - 10-50 hectares 50 traps*
 - 50-75 hectares 75 traps*
 - 75-100 hectares 100 traps*
 - > 100 hectares add additional 25 traps for each 25 ha increment*

This change makes it less likely that the Hastings River Mouse will be located where it occurs. For example Meek et. al. (2003) report the results of pre-logging surveys for Hastings River Mouse at 7 sites where it was recorded (there is no information on how many apparently suitable sites it was not recorded at) identifying "*Trap success for P. oralis at Marengo was 1.7% (excluding recaptures), 0.1% at Chaelundi, 0.3% at Hyland, 0.7% for Styx River, 0.8% for Glen Elgin, 0.4% for Enfield and 0.2% for Gibraltar Range*". At 3 sites only single Hastings River Mouse were recorded, being 1 per 800 trap nights at Chaelundi, 1 per 400 trap nights at Hyland and 1 per 250 trap nights at Enfield (given the minimum effort was meant to be 400 trap nights it is not known why the Enfield trap nights were so low).

Given this confirmation of the low likelihood of detecting Hastings River Mouse, even when it is present, it is perplexing as to why the EPA effectively removed protection from many localities by reducing required trap-nights and thus the probability of detecting any Hastings River Mice that are present.

This major reduction in habitat protection is contrary to the National Recovery Plan for this species, most significantly Appendix 2. minimum specifications for trapping and Appendix 3 Timber Harvesting Guidelines. Such ad-hoc and unjustified changes are contrary to the objective to implement effective management of Hastings River Mouse populations in accordance with actions 5.1. and 5.2:

The TSL prescription is often ignored, for example, in three separate forests Sparks (2010) identified a total of 83 hectares of modelled habitat of the Hastings River Mouse that was logged without the required habitat or trapping surveys having been undertaken to justify not excluding the areas from logging. Because the required surveys were not done it is not known what effect this had on Hastings River Mouse. In a typically grossly inadequate response, the EPA (then DECCW) issued warning letters for two of these three breaches.

Private Native Forestry

The Private Native Forestry Code of Practice for Northern NSW requires:

Where there is a Hastings River mouse record within the area of forest operations or within 200 metres of the area of forest operations, the following must apply:

(a) An exclusion zone with a 200-metre radius (about 12.5 hectares) must be identified, centred on the location of the record, within which the following additional prescriptions must be implemented:

(i) No forest operations or removal of understorey plants or groundcover are permitted.

(ii) No post-harvest burning is permitted.

(iii) Disturbance to any seepage areas within or adjacent to the exclusion zone, as well as to ground logs, rocks and litter, must be minimised.

The Recovery Plan (DECCW 2005) identifies that "*Eight percent of known Hastings River Mouse sites are located on private land. There is a high probability that additional populations are located on private land*". There are likely to be significant populations on freehold land as 21% of high quality habitat is modelled on freehold land.

The prescription applied to forestry operations on freehold land are a sham. Contrary to the Recovery Plan, the Private Native Forestry Code of Practice for Northern NSW ignores modelled habitat for this species and requires that a 200m exclusion area must be established around any known records. Because there are no requirements for surveys to locate this species (even in modelled habitat), and it is unlikely they will have been previously recorded on most private property sites where it occurs, this prescription will have absolutely no effect on most logging operations undertaken within occupied Hastings River Mouse habitat on private land.

Proposed Coastal IFOA

For Hastings River Mouse the new Coastal IFOA requires:

Where there is a record of a Hastings River Mouse in the operational area, or within 200 metres outside the boundary of the operational area:

(a) an exclusion zone that is 12 hectares or greater must be retained around each record, which must:

- i. be dominated by Hastings River Mouse micro-habitat;*
- ii. have a low edge to area ratio; and*
- iii. link to other ESAs.*

The current requirement to encompass "as much Suitable Habitat for Hastings River Mouse as practical" has effectively been reduced to "dominated by Hastings River Mouse micro-habitat" which is a lesser requirement.

The new IFOA Protocol 20: Pre-operational surveys (8) (f) Hastings River Mouse trapping surveys proposes "25 traps for each 25 hectares of Hastings River Mouse micro-habitat in the base net area, with a minimum effort of 50 traps", with traps "placed for a minimum of four nights". This is equivalent to the current prescription.

The Recovery Plan for the Endangered Hastings River Mouse was adopted in 2005 by NSW thirteen years after it was started and 8 years after the draft plan was prepared. It was adopted in 2008 by the Commonwealth. It includes specific survey and habitat requirements which were initially incorporated into the Threatened Species Licence in a reduced form. In contravention of the Recovery Plan the Threatened Species Licence was amended in 2007 and in 2010 so as to allow logging operations within 31 compartments in 6 State Forests to be undertaken within areas that would otherwise be required to be protected. The prescription for the Hastings River Mouse was changed in November 2011 to significantly reduce exclusion areas and survey requirements to reduce the likelihood of detecting its presence. Habitat retention requirements are proposed to be further reduced in the Coastal IFOA. There is evidence that the reduced surveys have significantly reduced the likelihood of detecting Hastings River Mouse, though there has never been any attempt to assess the effectiveness of the reduced prescription. The current and proposed prescriptions are clearly not consistent with the Recovery Plan.

Graham, K., Blackwell, G. and Hochuli, D., 2005. Habitat use by the Hastings River mouse, *Pseudomys oralis*. *Australian Zoologist*, 33(1), pp.100-107.

Meek, P.D., Mccray, K. and Cann, B., 2003. New records of Hastings River mouse *Pseudomys oralis* from State Forest of New South Wales pre-logging surveys. *Australian Mammalogy*, 25(1), pp.101-105.

Broad-toothed Rat

The Broad-toothed Rat (*Mastacomys fuscus mordicus*) is listed as 'Vulnerable' under NSW legislation (with the Barrington Tops population identified as Endangered) and under the EPBC Act. It is found in alpine and sub-alpine heathlands and open eucalypt woodlands in patches where there is a dense ground cover of grasses, sedges and shrubs.

There is a 2016 'Conservation Advice *Mastacomys fuscus mordicus* broad-toothed rat (mainland)', but no Recovery Plan.

The Conservation Advice identifies habitat change due to too frequent burning, stock grazing, weeds and dieback as significant threats, also identifying "*Habitat change due to logging*" as a "*A likely threat, but impacts are uncertain*".

The Conservation Advice identifies as **Survey and monitoring priorities:**

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*Undertake a targeted survey of all suitable habitat within the subspecies' range.
Design an integrated monitoring program across subpopulations, linked to an assessment of management effectiveness.*

In 2001 the NSW Scientific Committee made a Final Determination to list the Barrington Tops population of Broad-toothed Rat, *Mastacomys fuscus*, as an Endangered population on the grounds that it is in immediate danger of extinction.

The OEH Action Statement for this Endangered population identifies "interim" management actions as including:

Research impact of disturbance and threatening processes, and determine mitigation measures.

Ongoing abundance surveys, identify key colonies, and implement monitoring program with micro-chipping equipment.

Develop and distribute environmental impact assessment and management guidelines.

Complete preparation of the recovery plan in 2007.

And identifies activities as including "*Protect areas of habitat from clearing and disturbance*" and '*Support surveys in potential habitat*'.

Current Threatened Species Licence

Under the original TSL the Broad-toothed Rat was identified under "*1.2 Species Requiring Site-specific conditions*", with explicit survey requirements:

Surveys for the Broad-toothed Rat must be conducted as follows:

a) 75 size A Elliott traps baited with a mixture of rolled oats, peanut butter and honey must be spaced at ten metres intervals, in potential habitat.

b) Traps must be set for a minimum of four nights.

c) Survey Season: Anytime of the year, preferably avoiding cold, wet periods.

Changes in March 2013 included a prescription to require the protection for the endangered Barrington Tops population of Broad-toothed Rat by requiring protection of "*Suitable habitat for Broad-Toothed Rat*" (specifically defined to include heath and sedge/rush communities associated with saturated soil conditions) and a 20m buffer, requiring:

a) Where Suitable habitat for the Broad-toothed Rat extends beyond the boundary of a wetland, soak, bog, seepage or riparian exclusion zone, the boundary of the suitable habitat must be identified and an additional 20m exclusion zone must be applied to it.

b) Any area of Suitable habitat for the Broad-toothed Rat and exclusion zone that is greater than 0.1 ha must be marked in the field and mapped on the operational map.

The need to survey for the Broad-toothed Rat was removed, though replaced with a requirement to retain and buffer all "*Suitable habitat for Broad-Toothed Rat*".

Private Native Forestry

There is no prescription for this species.

Proposed Coastal IFOA

The new Coastal IFOA assumes that the Broad-toothed Rat is "*considered adequately protected by the multi-scale protection measures*".

The Barrington Tops population of the Vulnerable Broad-toothed Rat is listed as an endangered population. The current prescription requires all "*Suitable habitat for Broad-Toothed Rat*" to be protected with a 20m buffer. All species-specific protection is intended to be removed. It can not be assumed that this endangered population is adequately protected by the proposed exclusions. The

Conservation Advice requirement to "*Undertake a targeted survey of all suitable habitat within the subspecies' range*" and to *undertake a monitoring program to assess management effectiveness* have not been complied with.

Large-eared Pied Bat

Large-eared Pied Bat (*Chalinolobus dwyeri*) is listed as 'Vulnerable' under the EPBC Act. The Recovery Plan identifies that little is known about this species, observing: "*Over most of its range, the large-eared pied bat appears to roost predominantly in caves and overhangs ... and forage in nearby high-fertility forest or woodland near watercourses*".

There is a 2011 '*National recovery plan for the large-eared pied bat Chalinolobus dwyeri*', and a 2012 '*Commonwealth Listing Advice on Chalinolobus dwyeri (Large-eared Pied Bat)*'.

The Recovery Plan identifies that little is known about threats to this species, though roost sites are considered particularly vulnerable, also considering:

Vegetation clearance in the proximity of roosts

Clearing or harvesting of vegetation in or around roosts has the potential to affect foraging resources through habitat loss and fragmentation of the surrounding vegetation. This is likely to be particularly detrimental in the vicinity of maternity roosts where pregnant and lactating females require sufficient food resources to raise young. The microclimate within roosts may also be altered through adjacent clearing and logging altering solar radiation levels and groundwater levels.

Identified actions include:

Specific Objective 2: *Implement conservation and management strategies for priority sites*

Action 2.1 *Protection of known roosts and associated foraging habitats and management of threats.*

Methodology: Roost and maternity sites, together with foraging habitat, not already located within protected areas, (identified from Actions 1.1-1.5) to be protected under relevant legislation and/or other options such as conservation covenants and voluntary agreements to ensure protection.

Action 2.5 *Undertake monitoring to assess the impact of prescribed management strategies.*

Methodology: Conservation measures undertaken at priority sites (as identified in Action 1.3) for the large-eared pied bat, including non-breeding populations, roost and maternity sites need to be monitored to assess the efficacy of the strategies. The monitoring of such sites will evaluate the impact of actions on the specific populations and contribute to measuring the effectiveness of the recovery program. It is important that on-ground works do not interfere with the ability of the bats to function normally within their environment. This information will be made publicly available.

Performance criteria: A consistent and coordinated monitoring and reporting process implemented across the relevant states through the development of (i) A monitoring plan and; (ii) Annual progress reporting system.

The Recovery Plan identifies "*Management practices that will protect large-eared pied bat populations*" include "*Regulation of vegetation clearing or logging within the vicinity of known or potential roosts*".

The OEH '*Large-eared Pied Bat - profile*' identifies threats as including:

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Loss of foraging habitat close to cliffs, caves and old mine workings from forestry activities and too-frequent burning, usually associated with grazing.

And activities as including:

Protect known and potential forest and woodland habitat around cliffs, rock overhangs and old mine workings from clearing and isolation.

Current Threatened Species Licence

The current TSL requires that for the Large-eared Pied Bat:

a) A 50 metres wide buffer must be established around entries to known major subterranean roosting sites of these species. Specified forestry activities must be excluded from these buffers.

b) These buffers must be mapped on the Harvesting Plan Operational Map

Private Native Forestry

There is no prescription for this species.

Proposed Coastal IFOA

The new Coastal IFOA considers that the Large-eared Pied Bat is "*protected by a species-specific condition applying to a nest, den, roost, camp or feed tree retention*".

It is assumed that it is considered to be covered by clause 87. Subterranean bat roosts which requires that an *exclusion zone* with a minimum radius of 100 metres must be retained around a cave, mine, tunnel or rock overhang, and 40m around a disused mine shaft, unless bats are proved to be absent in accordance with "*Protocol 30: Subterranean bat roosts and flying-fox camps*".

The 2011 'National recovery plan for the large-eared pied bat *Chalinolobus dwyeri*' identifies that it roosts in caves and overhangs and forage in nearby high-fertility forest or woodland near watercourses, with the protection of known roosts and associated foraging habitats, with monitoring of the effectiveness of prescriptions. The current TSL requires 50 m buffers around roosts and the new Coastal IFOA generally requires 100m buffers around potential roosts, though neither require protection of associated foraging habitat. The effectiveness of the current or proposed prescriptions have never been monitored. The proposed Coastal IFOA significantly increases logging intensity and reduces headwater stream buffers which will significantly increase impacts on the foraging habitat of this species. It clearly contravenes the Recovery Plan.

BIRDS

Coxen's fig-parrot

Coxen's fig-parrot (*Cyclopsitta diophthalma coxeni*) is listed as endangered under the EPBC Act. The NSW Scientific Committee's 2007-2009 review of the conservation status of a selection of species recommended that Coxen's Fig-Parrot be upgraded to Critically Endangered.

Coxen's fig-parrot *Cyclopsitta diophthalma coxeni* recovery plan 2001–2005 identifies as a threat:

- disturbance to some suspected ecotonal breeding areas;

Also recognising:

Logging and associated disturbance of the subtropical rainforest/eucalypt ecotones thought to be part of the breeding habitat may also be a threat for the subspecies. Forshaw (1981) emphasises the special need to protect the rainforest edge where burning, clearing or logging operations not specifically targeted at the rainforest can be particularly damaging.

The Recovery Plan identifies as an action:

10.4.1 Develop management prescriptions and protocols for logging identified Coxen's fig-parrot habitat

Much of the bird's remaining habitat occurs in state forests and, at least in the locations described by Norris (1964), Holmes (1994a, 1995) and J. Young (pers. comm.), logging adjacent to rainforest may have affected the bird's habitat. Probable fig-parrot nests have been observed as early as July in mature flooded gum Eucalyptus grandis near the rainforest edge and in areas with a rainforest understorey (J. Young pers. comm.).

Threatened Species Licence conditions in the NSW Integrated Forestry Operations Approval (IFOA) require SF NSW and NSW NPWS to jointly develop and agree on site-specific conditions for all records in state forest that may be affected by logging operations. Such operations must not commence until these conditions are in place.

Conditions relating to proposed logging near rainforest in state forests north of the Bruxner Highway in NSW are currently being developed but extension of management guidelines to include all probable habitat in state forests within the bird's range is required. Rainforest edge buffers currently approved under the IFOA may require amendment in the vicinity of known fig-parrot habitat. These buffers should be protected from controlled burns during the August-December breeding season.

...

Outcome

Existing habitat within state forests will be protected.

The Recovery Plan identifies "Prescriptions and logging protocols" as a number 1 priority.

The Threatened Species Scientific Committee (2016) 'Conservation Advice *Cyclopsitta diophthalma coxeni* Coxen's fig-parrot' identifies as threats:

Clearance of Habitat

Logging, land clearing and associated disturbance of the subtropical rainforest/eucalypt ecotones thought to be part of the breeding habitat may be a threat for the subspecies. Forshaw (1981 cited in Coxen's Fig-Parrot Recovery Team 2001) emphasises the special need to protect the rainforest edge where burning, clearing or logging operations not specifically targeted at the rainforest can be particularly damaging (Coxen's Fig-Parrot Recovery Team 2001).

and as an action:

Survey and Monitoring priorities

- *Undertake survey work in suitable habitat and potential habitat to locate any additional occurrences and to more precisely assess population size and distribution.*

Current Threatened Species Licence

The TSL (8.6) relies upon incidental sightings for Coxen's Fig Parrot (there are no targeted survey requirements) and the implementation (TSL 1.2.) of Site Specific Conditions only when it is recorded.

Private Native Forestry

There is no prescription for this species.

Proposed Coastal IFOA

The new Coastal IFOA identifies the Coxen's Fig Parrot as a "Fauna threatened species considered adequately protected by the multi-scale protection measures".

The 2001–2005 Recovery Plan for the Endangered Coxen’s Fig-parrot and the Commonwealth’s 2016 Conservation Advice clearly identify the need to protect rainforest ecotones as potential breeding habitat for this species. This has never been provided. The NRC (2018) proposes the remapping of rainforest with a view to opening up substantial areas for logging. In their trial remapping 62% of rainforest was remapped as not being rainforest applying their new criteria. It is evident that the Recovery Plan and Conservation Advice for this species have never been complied with.

Regent Honeyeater and Swift Parrot

The Regent Honeyeater and the Swift Parrot are dealt with jointly as they are covered jointly in the planning process, with the same survey and protection requirements.

Researchers at Australia’s Threatened Species Recovery Hub (Geyle *et. al.* 2018) recently identified that Regent Honeyeater has a 57% chance of extinction within the next 20 years and that Swift Parrot has a 31% chance of extinction within the next 20 years, ranking them the 7th and 13th most threatened birds in Australia.

It is the mature trees that produce the most nectar that are vital to species such as the Swift Parrot and Regent Honeyeater. Older trees produce significantly more flowers and seeds than young trees and thus are of particular importance to fauna relying on these food sources. For Mountain Ash trees Ashton (1975) found:

The mature forest produced 2.15-15.5 times as many flowers as the pole stage trees, and 1.5-10 times as many as the spar stage forest. Estimates of the fruit set following the late autumn flowering of 1954 indicate that that of the mature forest was 1.6 times as great as that in the spar stage forest and 3.5 times as great as that in the pole stage forest.

REGENT HONEYEATER

Regent Honeyeater (*Anthochaera phrygia*, previously *Xanthomyza phrygia*) is listed as Critically Endangered under the EPBC Act. There are four known key breeding areas: three in NSW and one in Victoria,

There was previously a 1999 – 2003 Regent Honeyeater Recovery Plan. The Minister approved new Conservation Advice on 25/06/2015 and transferred this species from the Endangered to the Critically Endangered category, effective from 08/07/2015

The Conservation Advice identifies:

The decline of the Regent honeyeater is thought to be mainly due to the clearing, fragmentation and degradation of its habitat (Garnett et al., 2011). The species relies on a range of different food resources, and is particularly vulnerable to the removal of large mature trees which are important feeding and breeding habitat (Franklin et al., 1989; Oliver, 2000).

Primary Conservation Objectives

- 1. Reverse the long-term population trend of decline and increase the numbers of regent honeyeaters to a level where there is a viable, wild breeding population, even in poor breeding years*
- 2. Maintain key regent honeyeater habitat in a condition that maximises survival and reproductive success, and provides refugia during periods of extreme environmental fluctuation.*

Conservation and Management Actions

- 1. Improve the extent and quality of regent honeyeater habitat.*

...

Information and research priorities

4. Develop silvicultural techniques that accelerate maturity in key food species

The 2016 National Recovery Plan for the Regent Honeyeater states:

4.2.3 Habitat degradation

Remaining regent honeyeater habitat faces ongoing degradation and loss of quality, particularly on agricultural land in central and north-east Victoria and on the western slopes and northern tablelands of New South Wales. Loss of mature trees occurs through senescence, eucalypt dieback, harvesting for fence posts or firewood, or drought-induced stress ...

... It is important to identify and retain trees that produce relatively high levels of nectar. In some areas where there has been a history of removal of large trees, regent honeyeaters often select the largest available trees of the 'key' species. These trees are not necessarily mature or particularly large but are locally significant, producing heavier nectar flows than surrounding trees (Webster & Menkhorst 1992; Oliver 2000).

3.4.6 Habitat critical to survival

Habitat critical to the survival of the regent honeyeater includes:

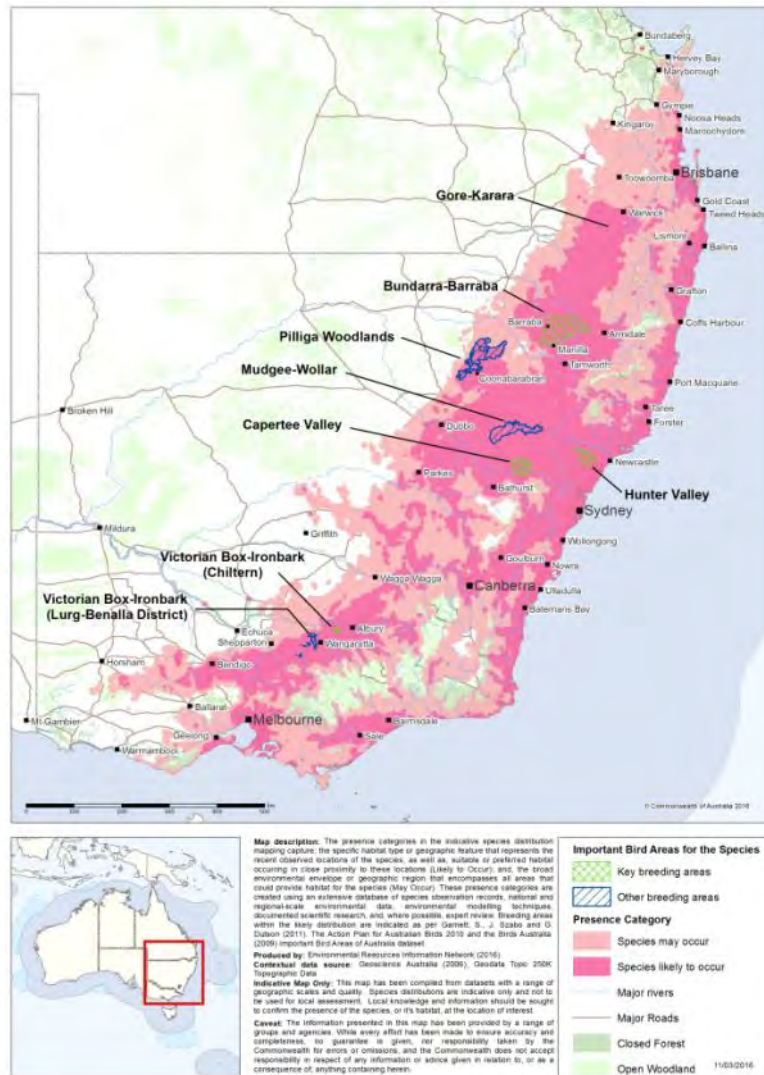
Any breeding or foraging habitat in areas where the species is likely to occur (as defined by the distribution map provided in Figure 2); and

Any newly discovered breeding or foraging locations.

Key areas include the Bundarra-Barraba, Pilliga Woodlands, Mudgee-Wollar and the Capertee Valley and Hunter Valley areas in New South Wales, and the Chiltern and Lurg-Benalla regions of north-east Victoria (Table 2; Figure 1).

Habitat critical to the survival of the regent honeyeater occurs in a wide range of land ownership arrangements, including on private land, travelling stock routes and reserves, state forests and state reserves, and National Parks. It is essential that the highest level of protection is provided to these areas and that enhancement and protection measures target these productive sites.

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Recovery Actions include:

1c Protect intact (high quality) areas of regent honeyeater breeding and foraging habitat (as described in '3.4.6 Habitat critical to survival').

With a performance criteria including:

- *Clearing of mature foraging trees in areas of habitat critical to the survival of the species (as described in 3.4.6) has been limited.*
- *Any developments in areas of mapped breeding habitat (figure 1), or areas critical to survival (section 3.4.6) have incorporated suitable threat mitigation measures.*
- *If avoidance or mitigation were not possible, any developments that proceeded provided offsets that protected and/or rehabilitated habitat of equivalent or better quality.*

Strategy 3 of the Recovery Plan focuses on "*Increase understanding of the size, structure and population trends of the wild population of regent honeyeaters*", while this is primarily focussed on research, there can be no doubt that well conducted pre-logging surveys could greatly enhance available information.

Regarding Socio-economic Impacts the Recovery Plan notes:

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Public and private forestry harvesting operations are potential threats to the regent honeyeater. The retention of nesting areas and a suitable number of large mature trees for nectar production and to provide foraging habitat is required. Application of suitable prescriptions protecting regent honeyeater habitat in areas managed for forestry throughout the range of the regent honeyeater may reduce the volume of timber available for harvesting. The extent of this reduction is unknown at this stage.

SWIFT PARROT

The Swift Parrot *Lathamus discolor* is listed as 'Endangered' under the EPBC Act.

The first national recovery plan was adopted in 2002. A revised recovery plan was made in 2011. The National Recovery Plan for the Swift Parrot *Lathamus discolor* Recovery Plan (2011) states:

Based on current knowledge of the ecology and distribution of the Swift Parrot the persistence of this species is mainly threatened by loss and alteration of habitat from forestry activities including firewood harvesting, clearing for residential, agricultural and industrial developments, attrition of old growth trees in the agricultural landscape, suppression of forest regeneration, and frequent fire. The species is also threatened by the effects of climate change, food and nest source competition, flight collision hazards, psittacine beak and feather disease, and illegal capture and trade.

Forestry activities, including firewood harvesting result in the loss and alteration of nesting and foraging habitat throughout the Swift Parrot's range ... The harvesting of mature box-ironbark woodlands of central Victoria and coastal forests of New South Wales for forestry reduces the suitability of these habitats for this species by removing mature trees which are preferred by Swift Parrots for foraging and that provide more reliable, as well as greater quantity and quality of food resources than younger trees (Wilson and Bennett 1999; Kennedy and Overs 2001; Kennedy and Tzaros 2005)

The most relevant action is under Manage and protect nesting and foraging habitat.:

2.1b. Provide recommendations for the revision and update of forestry prescriptions to reflect the most recent habitat information available in Victoria and New South Wales

DSE and OEHL are identified to provide recommendations for revision of prescriptions for Swift Parrots when forestry licence agreements are due for renewal in each state.

It is specified under **Management practices:**

Where forestry operations continue to occur within foraging habitats on the mainland, logging prescriptions should include the retention of all trees 60cm DBH or greater, together with at least 5 trees per hectare from a mixture of other age classes (30-40cm, 40-50cm and 50-60cm DBH) to ensure continuity of food resources over time.

The Recovery Plan states in relation to Action 4(c), 'Monitoring the effectiveness of management prescriptions in conserving habitat in production forests', that:

In NSW detailed recommendations for improving prescription measures for Swift Parrot habitat have been provided repeatedly for inclusion during threatened species license reviews. However this information, including published scientific information, has not been accounted for in any prescriptions to date. Limited compliance monitoring of prescriptions is likely to be undertaken as part of a general audit process, however this does not include identifying inadequacies of the prescriptions.

Current Threatened Species Licence

The Threatened Species Licence (TSL) requires:

*6.11 Swift Parrot *Lathamus discolor*, Regent Honeyeater *Xanthomyza phrygia*, and Black-chinned Honeyeater (eastern sub-species) *Meliphreptus gularis gularis**

Compliance of NE NSW Forestry with Commonwealth Threatened Species Requirements

Where there is a record of Swift Parrot, Regent Honeyeater or Black-chinned Honeyeater (eastern subspecies) in a compartment, the following must apply:

- a) At least ten eucalypt feed trees must be retained within every two hectares of net logging area.
- b) Where a Swift Parrot, Regent Honeyeater or Black-chinned Honeyeater (eastern sub-species) is observed feeding, the tree in which it is feeding must be retained.
- c) The trees referred to in condition 6.11 (a) and (b) above must be marked for retention. Where retained eucalypt feed trees also meet the requirements of hollow-bearing or recruitment trees, the retained eucalypt feed tree may be counted as a hollow-bearing or recruitment tree

The TSL (8.8.4 D) requires that Diurnal Bird surveys target Regent Honeyeater and Swift Parrots, during specific periods, with a minimum effort of:

Surveys must be conducted for a minimum of one person hour duration for areas up to 200 hectares of net survey area, plus an additional 15 minutes per 50 hectares above 200 hectares.

Regent Honeyeater nests are required to have a 20m buffer.

The TSL (7b vii) allows that instead of undertaking surveys as a default:

Swift Parrot and Regent Honeyeater: *At least ten eucalypt feed trees must be retained within every two hectares of net logging area. These trees must be marked for retention. Where retained eucalypt feed trees also meet the requirements of hollow-bearing tree or recruitment trees, the retained eucalypt feed tree can be counted as a hollow-bearing tree or recruitment tree. Where a Swift Parrot or Regent Honeyeater is observed feeding, the tree in which it is feeding must be retained.*

“Eucalypt feed tree” means mature or late mature trees of a variety of specified nectar producing species. It is the older trees that provide the most nectar and seed, thus the TSL requires they must be mature or late mature individuals. This requirement cannot be misinterpreted and applies to **every** area of 2 hectares.

These trees must be marked for retention (TSL 6.11, 5.6(g)). The licence also explicitly requires that habitat trees “*must be marked for retention*” and that “*logging debris must not, to the greatest extent practicable, be allowed to accumulate within five metres*” of a retained tree.

It is apparent that the TSL requirement for the retention of 5 "mature or late mature" nectar trees per hectare may not be in keeping with the Regent Honeyeater Recovery Plan objective of "limiting" *clearing of mature foraging trees in areas of habitat critical to the survival of the species*", though it is obviously not consistent with the Swift Parrot Recovery Plan requirement for *"retention of all trees 60cm DBH or greater, together with at least 5 trees per hectare from a mixture of other age classes (30-40cm, 40-50cm and 50-60cm DBH) to ensure continuity of food resources over time"*.

As noted in the Swift Parrot Recovery Plan, the Recovery Team's advice *"has not been accounted for in any prescriptions to date"*.

It is also apparent that the Swift Parrot Recovery Plan requires monitoring to be undertaken of the effectiveness of the prescription, though this certainly has not been done.

Though it is evident that the prescription for the Swift Parrot and Regent Honeyeater is not being either effectively implemented or monitored. More often than not the Forestry Corporation opts for the default prescription of retaining 5 mature and late mature feed trees rather than doing surveys, presumably because they consider they don't need to do anything. The EPA appear blind to the needs of both species and oblivious to the fact that this prescription is, in part, applied for these species.

Compliance of NE NSW Forestry with Commonwealth Threatened Species Requirements

Even where surveys are undertaken they can be of questionable veracity, as noted in the section on Rufous Scrub Bird where for years the Forestry Corporation had someone surveying for Diurnal Birds who they considered inadequately trained and incompetent for the task. There is also a significant issue with poor selection of mature and late mature trees for retention and the significant damage that is done to them (i.e. see section on Greater Glider).

Then there is just the failure to implement the prescription. For Royal Camp State Forest the Ecology Report (Threatened Species Licence Pre-logging and Pre-roading Survey Report for Compartments 14 and 15 Royal Camp State Forest, 13 September 2011) identifies that modelled habitat for both Regent Honeyeater and Swift Parrot occurs in the compartments. There is also an old record of Regent Honeyeater in the area. For diurnal birds it identifies "*Inappropriate season for surveys to be conducted. Default prescription will be implemented*".

Table 3: Default Species-specific Conditions in lieu of survey

TSL Condition	TSL Condition No.	Record Details	Prescription Summary
Giant barred Frog (<i>Mixophyes iteratus</i>)	7. b) iii	Nil records	Protection zone of 30m on both sides of streams that occur within modelled habitat.
Swift Parrot (<i>Lathamus discolor</i>) Regent Honeyeater (<i>Xanthomyza phrygia</i>)	7. b) x	Nil records	Retain 10 eucalypt feed trees (which may include habitat and recruitment feed tree species) within every 2ha of NLA. All trees where species were observed feeding must be retained.
Large-footed Myotis (<i>Myotis macropus</i>)	7. b) xv	Nil records	Protection zones of 30m on all dams, permanent waterbodies and permanent streams in cpt.

In Royal Camp SF for the nectivorous Swift Parrot and Regent Honeyeater the Harvesting Plans adopt the default prescription (TSL 6.11) of retaining "10 eucalypt feed trees (which may include habitat and recruitment feed tree species) within every 2ha of NLA". This is also the prescription applied for the Black-chinned Honeyeater that was recorded in Compartment 15. "Eucalypt feed tree" means mature or late mature trees of a variety of specified species, for Royal Camp focussing on ironbark species, forest red gum, box species and spotted gum species.

NEFA's audit report identified that required retention and marking of Koala and Yellow-bellied Glider feed trees, as well as hollow-bearing, recruitment and eucalypt feed trees was clearly deficient across the logging areas. In relation to the later, NEFA found:

no attempt has apparently been made to specifically identify or mark or retain any of the required eucalypt feed trees for nectivorous birds. (breaches TSL 5.6.(f), 6.11 and the site specific prescription for Black-chinned Honeyeater);

Within, and adjacent to, the Koala High Use Area that we identified (i.e. an area of approximately 5ha), we observed a single tree marked for retention as an "R" tree or recruit hollow-bearing tree. No attempt had apparently been made to mark any of the other required trees. We take this to be a representative sample of retention in stands with low numbers of large hollow-bearing trees.

A randomly chosen area of 2.3 hectares to the south west of log dump 27 was chosen for an assessment of tree retention in a multi-aged stand. In this area all stumps were measured and all retained trees over 40 cm diameter at breast height over bark (dbhob) documented. Diameters of retained trees were measured. In the 2.3 hectares assessed 11 eucalypt feed trees should have been retained. All retained trees are required to be marked for retention. It was found that:

Of the 9 trees marked for retention some are likely to have been redgums other than E. tereticornis and some were senescent trees, the requirement for marking and retention of 11 mature or late mature individuals of the listed eucalypt feed trees has not been satisfied.

Compliance of NE NSW Forestry with Commonwealth Threatened Species Requirements

NEFA concluded:

Of the total of 16 trees removed that were over 40 cm dbhob and thus likely to have been mature, late-mature or senescent, at least 11 should have been retained as hollow-bearing, recruitment or eucalypt feed trees and should not have been logged.

In response to NEFA's complaint the EPA (Steve Hartley 15 August 2013) assessed an area of 8.4 hectares in compartment 15 and found 2 hollow bearing trees (H) and 3 recruitment trees(R) that had been marked. The selected area presumably includes areas where logging had been stopped and was thus incomplete (ie more trees were intended to be felled). The Threatened Species licence required 42 Eucalypt Feed Trees should have been marked and protected within this area. As well as the 5 marked trees the EPA assessed there were an additional 13 trees in the area which were considered to meet the Eucalypt feed tree definition, giving a shortfall of 24 trees. There was no reported assessment of how many trees qualifying as H, R or Eucalypt Feed Trees were felled.

Specifically in relation to Eucalypt Feed Trees the EPA stated:

The EPA determined that within the area assessed (8.4 hectare) only 2 H trees were marked. EPA officers also noted that 3 R trees had been marked in the assessed area – these marked trees were considered to meet the Eucalypt feed tree requirements.

The EPA identified an additional 13 mature Grey Ironbark (*Eucalyptus paniculata*) in the area assessed which were considered to meet the Eucalypt feed tree definition. These trees were not however marked.

The net area of Compartments 14 and 15 is 784 ha, so if the EPA's assessment of 8.4ha was representative of the overall stand, the shortfall in Eucalypt Feed Trees would be in the order of 2,240 (57%) across the net area of both compartments.

This is a significant loss of resources when NEFA has found it is being replicated across logging operations throughout the region. Similarly the EPA consistently (i.e. see section on Greater Glider) find a failure to retain appropriate and sufficient recruitment (R) trees to satisfy legal requirements, and these are often damaged during logging. It is recruitment (R) trees that are primarily relied upon to satisfy the default requirements for Swift Parrot and Regent Honeyeater.

For Royal Camp the EPA found the Forestry Corporation failed to mark or retain an adequate number of eucalypt feed trees in accordance with TSL 6.11(c), identified this as "Not compliant" and issued an "Official Caution". It is not as if this was a new or novel case.

NEFA have found that the Forestry Corporation frequently rely upon the default prescription for both Swift Parrot and Regent Honeyeaters rather than undertaking surveys. In most cases where this is done the Forestry Corporation fail to mark Eucalypt Feed Trees for retention, instead relying upon their marking of Hollow-bearing and Recruitment trees to satisfy the 10 feed trees per 2 hectares, with no apparent consideration of their suitability as Eucalypt Feed Trees. NEFA have found a number of instances where there was no habitat tree mark-up at all.

During an audit of [Doubleduke State Forest](#) in June 2010 NEFA identified that. roading had been undertaken, a log dump constructed and logging was well under way in compartment 146 without any of the required trees and special features having been marked. This means the required surveys had not been done and no attempt had been made to select the most appropriate eucalypt feed trees and protect them from logging. NEFA's inspections of the adjoining Compartment 150 had led NEFA to suspect that it had been marked-up after logging. NEFA immediately (20 June 2010) informed the EPA and Minister for the Environment asking for the logging to stop:

For Doubleduke State Forest the Ecology Report (Threatened Species Licence Pre-logging and Pre-roading Survey Report, Doubleduke State Forest Compartments Ca-146,150, 5 November

2009) identifies that modelled habitat for both Regent Honeyeater and Swift Parrot occurs in the compartments. For diurnal birds it identifies "*Inappropriate season for surveys to be conducted. Default prescription will be implemented*".

While the EPA did not specifically consider Eucalypt Feed Trees, they were also affected when the EPA found NEFA's complaint proven, noting:

EPA's Responsive Audit Compartment 146:

- FCNSW issued Official Caution on 11 October 2011 in relation to the following 5 TSL breaches identified in compartment 146 of Doubleduke SF:
 - 5.1(h) - A failure to conduct compartment mark-up at least 100 metres in advance of harvesting operations
 - 5.2.1(d) - Harvesting operations being undertaken in areas which have not been subject to compartment mark up.
 - 5.2.2(a) - A failure to conduct compartment mark-up at least 300 metres in advance of harvesting operations in a compartment that contains preferred forest types.
 - 5.2.2(b) - Failure to conduct Koala mark-up searches prior to harvest.
 - 5.6(g)iii - Failure to mark hollow-bearing trees in the regrowth zone.

NEFA audits have found that this too is not an uncommon occurrence.

In order to see if Key Breeding Areas for Regent Honeyeater receive any special treatment the Harvesting Plans available online around the mapped "Hunter Valley" Key Breeding Area were reviewed. It is apparent that there is no particular consideration of the Regent Honeyeater:

The Harvesting Plan for 291, 294 and 295 Corrabare State Forest (11 June 2013) falls partially within the mapped "Hunter Valley" Key Breeding Area for Regent Honeyeater, the plan states "*Refer to the Threatened Species Licence (TSL) Booklet for Conditions*", makes no mention of the Regent Honeyeater or Swift Parrot, with no increased Eucalypt feed tree retention. There is a 1985 record of Regent Honeyeater in compartment 298.

The Harvesting Plan for 305, 306, 316, 317, 318 & 319, Corrabare State Forest (1 August 2014) adjacent to the mapped "Hunter Valley" Key Breeding Area for Regent Honeyeater states "*Refer to the Threatened Species Licence (TSL) Booklet for Conditions*", makes no mention of the Regent Honeyeater, though does state "*Swift Parrot-10 Eucalypt feed trees per 2ha*". There was an observation of the Swift Parrot in the area. There are also a 1988 record of Regent Honeyeater in compartment 308.

The Harvesting Plan for 307 & 315 Corrabare State Forest (31 January 2013) which occurs on the boundary of the mapped "Hunter Valley" Key Breeding Area for Regent Honeyeater states "*Refer to the Threatened Species Licence (TSL) Booklet for Conditions*", makes no mention of the Regent Honeyeater or Swift Parrot, and requires no increased Eucalypt feed tree retention.

The Harvesting Plan for 239 and 240 Heaton State Forest (3 November 2015), which occurs on the boundary of the mapped "Hunter Valley" Key Breeding Area for Regent Honeyeater, identifies Eucalypt Feed Tree retention as the standard "*6 Eucalypt feed trees/2 ha where they occur*" and then, somewhat confusingly, for Regent Honeyeater and Swift Parrot the default "*At least 10 eucalypt feed trees must be retained within every 2 ha of net logging area*".

Private Native Forestry

The Private Native Forestry Code of Practice for Northern NSW includes similar prescriptions for both species, being that where there is a record of the species:

(a) *At least ten eucalypt feed trees (refer to Table E) must be retained within every two hectares of the net harvest area. These must be marked for retention. Where retained eucalypt feed trees also meet the requirements of habitat or recruitment trees, the retained eucalypt feed trees can be counted as habitat or recruitment trees.*

Similarly where one of them is observed feeding "*the tree in which it is feeding must be retained*". And a 20-metre radius exclusion zone is required around any identified Regent Honeyeater nests.

Proposed Coastal IFOA

The new Coastal IFOA identifies Swift Parrot as "*Fauna threatened species considered adequately protected by the multi-scale protection measures*"

Regent Honeyeaters are classed as "*Fauna species and endangered populations protected by a species-specific condition applying to a nest, den, roost, camp or feed tree retention*", with 25m radius exclusion zones required around identified nests.

For the Critically Endangered Regent Honeyeater there is an outdated 1999–2003 Recovery Plan and 2015 Conservation Advice, both of which identify the loss of mature eucalypt feed trees as significant threats and their retention as essential recovery actions. For the Endangered Swift Parrot the revised 2011 Recovery Plan requires the retention of all trees 60cm DBH or greater, together with smaller trees as recruits. The current TSL requires the retention of 10 mature eucalypt feed trees per 2 hectares where there are records of these species, though most often the default of retaining 10 mature feed trees per 2 hectares in modelled habitat is adopted in lieu of surveys. Though most commonly no attempt is made to specifically identify such trees in practice, with Hollow-bearing (H) and Recruitment (R) trees being relied upon. The new Coastal IFOA proposes removing any need to retain nectar feed trees or recruitment (R) trees as well as allowing for a significant increase in logging intensity. This is in clear contravention of Recovery Plans and Conservation Advices for both species.

Ashton, D.H. (1975) Studies of Flowering Behaviour in *Eucalyptus regnans* F. Muell. *Australian Journal of Botany* 23(3) 399 - 411

Geyle Hayley M., Woinarski John C. Z., Baker G. Barry, Dickman Chris R., Dutson Guy, Fisher Diana O., Ford Hugh, Holdsworth Mark, Jones Menna E., Kutt Alex, Legge Sarah, Leiper Ian, Loyn Richard, Murphy Brett P., Menkhorst Peter, Reside April E., Ritchie Euan G., Roberts Finley E., Tingley Reid, Garnett Stephen T. (2018) Quantifying extinction risk and forecasting the number of impending Australian bird and mammal extinctions. *Pacific Conservation Biology* , - <https://doi.org/10.1071/PC18006>

Rufous Scrub-bird

Rufous Scrub-bird (*Atrichornis rufescens*), is listed as Endangered under the EPBC Act. There are two accepted subspecies of Rufous Scrub-bird, the northern (*A. r. rufescens*) and the southern (*A. r. ferrieri*) variants. *A. r. rufescens* occurs in the Gibraltar Ranges, Border Ranges, the northern part of the McPherson Range and in parts of the Main Range, but formerly occurred in lowland habitats of the Richmond and Tweed River basins. *A. r. ferrieri* occurs on Barrington Tops, Hastings Range and in the Dorrigo/Ebor area.

The Minister approved the conservation advice on 20/10/2014; and included this species in the endangered category, effective from 06/11/2014. The Conservation Advice in part states:

Some subpopulations of the northern subspecies are thought to have disappeared within the last two decades, including those at Mt Warning and Spicers Gap (Garnett et al., 2011); while the southern subspecies is believed to have gone from several areas where they were

once common in New England National Park. Recent surveys at Gloucester Tops found that although the numbers appeared stable in the core habitat areas above 600 m, there was a general failure to find any territories at lower altitudes and in areas burnt by wildfire (Newman et al., 2014). Surveys of the Border Ranges National Park found evidence of a decline in the density of breeding territories between 1981 and 2012 (Newman et al., 2014). Areas outside of the core range of the rufous scrub-bird have been poorly surveyed since the early 1980s and it is likely that declines in these non-core regions have been greater than in the core regions.

There should not be a recovery plan for *Atrichornis rufescens* as the remaining populations mostly occur in protected habitat and the primary anthropogenic threat to the species (clearance of suitable habitat) has mostly stopped.

Information required and research priorities

1. Information on the trends in distribution and population size across the range, including in non-core areas

Management actions required

1. Develop and implement fire management plans for all subpopulations
2. Assess whether experimental habitat manipulation is justified

Current Threatened Species Licence

The Threatened Species Licence (TSL) requires:

*6.10 Rufous Scrub-bird *Atrichornis rufescens**

If there is a record of Rufous Scrub-bird in a compartment or within 300 metres outside the boundary of a compartment, the following must apply:

- a) An exclusion zone must be implemented which encompasses all Rufous Scrub-bird microhabitat (as defined in Schedule 9 of this licence) within a 300 metres radius of the record.*
- b) An additional exclusion zone of at least 20 metres wide must be implemented around all microhabitat referred to in condition 6.10 (a) above.*

For the Rufous Scrub-bird TSL condition 7(b) gives the Forestry Corporation the option of either undertaking surveys or "*Protect all microhabitat (as defined in Schedule 9 of this licence) and implement a 20 metres exclusion zone around this habitat*".

TSL conditions 8.1 (a), (b), (d) and (e) requires that **reliable** pre-logging and pre-roading surveys must be conducted in modelled habitat for Rufous Scrub-bird. Condition 8.3 requires that Forests NSW **must ensure** that persons conducting pre-logging and pre-roading surveys are suitably experienced and trained, notably surveyors **must be** able to identify the threatened species and habitats of threatened species relevant to the region that require species-specific or site-specific conditions, as well as similar species that may be confused with these. Condition '8.8.4 C Rufous Scrub-bird' identifies the required methodology, which includes undertaking two separate surveys on separate days between August and February at sites selected at a density of 4 sites per 50ha of potential habitat.

There are 91 hectares of modelled Rufous Scrub-bird habitat in Compartment 502 of Styx River State Forest. During pre-logging surveys in March 2007 the Forestry Corporation reported hearing Rufous Scrub-birds call 10 times at 7 sites in response to call-playback. These call detection records were identified as highly reliable and entered into FNSW BIODATA data base and OEH's Wildlife Atlas.

In March 2011 the Forestry Corporation finalised their "Threatened Species Licence Pre-logging and Pre-roading Flora & Fauna Survey Report" for Compartment 502 which relied on the 2007 survey results but did not acknowledge the presence of modelled Rufous Scrub-bird habitat or any

Compliance of NE NSW Forestry with Commonwealth Threatened Species Requirements

of the 2007 Rufous Scrub-bird records. Despite these obvious omissions it certified that it was a “*full and accurate account of the survey results*”,

Four months later in July 2011 the Forestry Corporation claimed that due to emerging “*doubts over the validity of the records*” for Rufous Scrub-bird that they undertook an “*intense habitat assessment*” of Compartment 502 where it was determined that the habitat did not constitute Rufous Scrub-bird *microhabitat* in accordance with the TSL, also claiming that “*Further investigation questioned the observer at length where it was revealed that the positive identification was of a bird that flew up to 2 metres off the ground and ‘seemed to follow me through the forest’*”. The Forestry Corporation claim that then “*a decision was made that the records were a misidentification and removed from FNSW BIODATA data base*”, four months after they had been certified not to exist.

In November 2011 the Harvest Plan for Compartment 502 was approved. with no mention of Rufous Scrub-bird or its modelled habitat. In early 2012 the Forestry Corporation conducted a pre-harvest burn which burnt off most understorey within the modelled Rufous Scrub-bird habitat.

In March 2012 NEFA (Joe Sparks 09/03/2012) complained to EPA that the 7 Rufous scrub-bird localities recorded by State Forests on the NPWS Atlas are not represented on the Harvesting Plan for Compartment 502, and harvesting is occurring in RSB habitat. EPA sent a staffer out to have a quick look and who reported that logged and burnt areas complained about had indeed been disturbed, apparently making no attempt to assess whether the remaining undisturbed areas that hadn't yet been logged were Rufous Scrub-bird habitat, or whether the disturbed areas were likely to have been habitat before being burnt and logged. The logging continued.

In April the North Coast Environment Council engaged two ornithologists to visit compartment 502 who identified ideal habitat for Rufous Scrub-bird and considered that logged areas were likely to have been good habitat. In response the Forestry Corporation undertook another assessment claiming no suitable habitat existed. NEFA then employed another expert who confirmed the presence of suitable habitat.

On May 4th the EPA engaged an OEH expert who inspected part of compartment 502 for half a day in company with the Forestry Corporation. The EPA had refused our request to meet them on site and show them our specific complaints on the basis that they wanted to undertake an investigation independent of both us and the Forestry Corporation, yet the Forestry Corporation accompanied them on their “independent” investigation. Despite the limited time spent on site, the incomplete assessment and the fact that by the time of the investigation extensive areas of potentially suitable habitat had been burnt and logged, the OEH expert (Andren 2012) identified five sites considered to be potential Rufous Scrub-bird habitat, while recognising that areas of potential habitat “*may have been fragmented by fire*” and that his limited assessment “*does not preclude other sites within the compartment that were not inspected from also containing suitable habitat*”. The logging continued.

The outcome was that logging continued through the whole process with two areas of suitable microhabitat for Rufous Scrub-bird protected, the EPA (Greg Abood 22 April 2013) “*found that the experience of the person undertaking the initial Rufous Scrub Bird targeted surveys not to be adequate*”, requesting “*that a number of surveys be reconducted where it was evident that surveys were undertaken by personnel with insufficient technical experience where they have been relied upon in other situations*”. The EPA limited their concerns about the competence of the surveyor purely to his ability to recognise responses to call playback in diurnal bird surveys and not his ability to undertake surveys for other fauna and threatened plants despite his only training being to attend a Forestry Corporation 'wildlife school'. Neither was the EPA concerned about the Forestry Corporation's other ecologist's inability to identify Rufous Scrub-bird microhabitat, merely commenting “*there were areas where this microhabitat assessment could be improved in the future*”. Basically the EPA accepted the Forestry Corporation's argument that the incompetence of their surveyor was irrelevant because they had belatedly opted to rely on microhabitat surveys in accordance with TSL 7(b) rather than surveys.

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The EPA took no regulatory action, merely requesting "FCNSW to implement a corrective action to ensure the correct procedure is followed in the future".

It is evident that little was learnt from this travesty. NEFA (Joe Sparks, letter to NSW Environment minister Mark Speakman, 14/10/2015) later found that the Forestry Corporation had not assessed or surveyed all the modelled Rufous Scrub-bird habitat within Compartments 525-7 of Styx River State Forest. It took numerous requests and over a year for the EPA (Michael Hood 2 November 2016) to respond, stating "we determined more survey work needed to be done" and the Forestry Corporation "shortly after ... did more surveys achieving better coverage". The EPA then considered that the Forestry Corporation were "compliant with the TSL" and issued them with an advisory letter on 11 July 2016. The EPA did not apparently undertake an independent assessment, instead relying on Forestry Corporation's review.

Again in 2016 NEFA (Joe Sparks) complained about the Forestry Corporation's failure to include records and assess habitat of Rufous Scrub Bird in Compartments 83 and 84 of Barrington Tops State Forest. The EPA (Gregory Abood 26 February 2018) responded:

EPA found that FCNSW failed to include three (3) RSB records and associated protection zones at 2 locations on the harvest plan map and from the harvest plan document. EPA issued FCNSW with an Official Caution for not complying with BCL condition 3a). This was a breach of section 2.14(4) of Biodiversity Conservation Act 2016.

The EPA's ineffective regulation of Rufous Scrub-bird licence requirements has failed to provide them with the protection they are entitled to. Given that NEFA only audit a small proportion of logging operations it is apparent that these widespread failures are likely to be having a significant effect on this species.

It is apparent that contrary to the Conservation Advice that Rufous Scrub-bird is not all included in the reserve system and that NSW's processes are not adequate to identify and protect Rufous Scrub-bird habitat on State Forests. Given this species' Endangered listing and concerns about the viability of remaining populations all remaining suitable habitat needs to be adequately protected.

Private Native Forestry

The Private Native Forestry Code of Practice for Northern NSW requires:

If there is a record of a rufous scrub-bird in an area of forest operations or within 300 metres of the boundary of an area of forest operations, the following must apply:

- (a) An exclusion zone must be implemented which encompasses all rufous scrub-bird microhabitat (as defined below) within 300 metres of the location of the record.*
- (b) An additional exclusion zone at least 20 metres wide must be implemented around all microhabitat referred to above*

As there is no requirement for surveys this prescription is unlikely to be applied in practice.

Proposed Coastal IFOA

For Rufous Scrub-bird the new Coastal IFOA requires:

73.1 Where there is a record of Rufous Scrub-bird within an operational area or within 300 metres outside the boundary of an operational area, FCNSW must retain:

- (a) an exclusion zone that encompasses all Rufous Scrub-bird micro-habitat within a 300-metre radius of the record; and*
- (b) an additional exclusion zone that is 20 metres or greater in width must be maintained around the outer edge of the exclusion zone referred to in condition 73.1(a).*

73.2 If FCNSW does not conduct a targeted survey for Rufous Scrub-bird in accordance with Protocol 20: Pre-operational surveys, FCNSW must:

- (a) retain an exclusion zone that encompasses all Rufous Scrub-bird micro-habitat in the operational area; and
- (b) an additional exclusion zone that is 20 metres or greater in width must be maintained around the outer edge of the exclusion zone referred to in condition 73.2(a).

The new IFOA Protocol 20: Pre-operational surveys requires that surveys must be undertaken "between August and February at the rate of four survey sites per 50 hectares of Rufous Scrub-bird micro-habitat in the base net area, with a minimum number of four survey sites where less than 50 hectares of Rufous Scrub-bird microhabitat occurs in that area", or "If a Rufous Scrub -birds survey cannot be carried out during the peak calling season (August to February), eight sites per 50 hectares of Rufous Scrub-bird micro-habitat in the base net area must be conducted".

The allowance of surveys in periods when the Rufous Scub Bird is unlikely to respond will significantly reduce the chances of detecting this species and thus the likelihood of applying the prescription where it occurs.

For the Endangered Rufous Scrub-bird The 2014 Conservation Advice identifies that there is no need for a Recovery Plan because "*the remaining populations mostly occur in protected habitat*". Contrary to the Advice Rufous Scrub Bird does occur on State Forests. The current TSL requires that the all "microhabitat" within 300m of a record be protected, along with a 20m buffers. Surveys are required to be undertaken in the appropriate season when detection is most likely. As a default all microhabitat and a 20m buffer can be protected. The evidence is that the required prescriptions are rarely applied in practice and that the Forestry Corporation does not have the expertise to identify the species or its microhabitat. The new Coastal IFOA retains the prescription though allows surveys in seasons when it is unlikely to be detected.

Black-breasted Button-quail

The Black-breasted Button-quail (*Turnix melanogaster*) is listed as 'Vulnerable' under the EPBC Act. The NSW Scientific Committee's 2007-2009 review of the conservation status of a selection of species recommended that Black-breasted button-quail be upgraded to Critically Endangered.

The 2009 'National recovery plan for the black-breasted button-quail *Turnix melanogaster*' states:

The distribution of the species in NSW is almost unknown, hence estimations of the size and density of extant populations cannot as yet, be made. In north-eastern NSW, the species appears restricted to the Northern Rivers and Tablelands (Marchant & Higgins 1993). There are 10 reliable yet unconfirmed records from NSW in the past 20 or so years, from six areas in the far north-east of the state (Milledge & McKinley 1998; Garnett & Crowley 2000; Milledge 2000). Smyth and Young (1996) reported the species from as far south as the Walcha-Yarrowitch area and near Dorrigo, the sightings were made in the 1970s. Many confirmed sightings have also been reported directly adjacent to the Queensland border.

...

1. Habitat loss and fragmentation

Loss of habitat in order to sustain a range of human activities (timber-harvesting and other forestry-related practices, agriculture, infrastructure construction and urban development) leads to fragmentation of habitat and is a serious threat to the viability of populations...

3.3 Areas under threat

Combined with knowledge of population locations derived from surveys and trends in human activities across the landscape, the most significant areas under threat are likely to include areas:

where forestry operations still persist (e.g. Yarraman/Blackbutt) within the range of the species;

The Recovery Plan places strong reliance upon surveying and identifying potential habitat for this species in NSW:

Specific Objective 1

Consolidate current knowledge and define assessment and monitoring strategies for black-breasted button-quail, including an assessment of current status throughout its range and a clear definition of the habitats occupied by the species.

Performance criterion 1.1: Existing habitat mapped

...

Action 1.1.2: Map existing data on black-breasted button-quail distribution and habitat requirements and develop a predictive model of the species' distribution.

Predictive modelling of the distribution of the black-breasted button-quail will contribute to the species' recovery, honing current understanding of the ecological requirements of these birds. It will be particularly important in New South Wales where black-breasted button-quail are little known. Predictions gained by such analyses will be used as a guide for conducting searches for this species, again particularly in New South Wales and in areas of Queensland where modelling shows the birds may occur but have previously not been observed.

Outcomes: Accurate mapping and up-to-date predictive distribution model available as a planning tool.

Performance criterion 1.2: Ecological assessment and monitoring strategies established. Assessment of the following key areas where knowledge is deficient with respect to species' presence or habitat is completed:

- In NSW, Yarrowitch/Walcha areas, Border Ranges and potential coastal populations.

...

Action 1.2.1: Develop and document an effective method of finding and recording black-breasted button-quail and design and implement a monitoring program.

...

Action 1.2.2: Survey habitat where black-breasted button-quail occurrence is possible but has not yet been detected.

For north-east NSW the Recovery Plan identifies as a current action to reduce threats: "site-specific management conditions under the Integrated Forestry Operations Approval on Forests NSW estate".

The improvement of prescriptions is a key requirement of the Recovery Plan:

Specific Objective 2

Protect key ecosystems/habitat that support populations of black-breasted button-quail from human-induced threatening processes, thus maintaining current populations and habitat.

Performance criterion 2.1: Up to date management guidelines for black-breasted button-quail habitat and protection of populations maintained; promotion and adoption by government, industry and community sustained.

Action 2.1.1: Review and promote management guidelines to ameliorate impacts from human activities (housing land development, water infrastructure development,

timber harvesting, fire and stock management) on identified black-breasted button-quail habitat.

Outcomes: Management practices for protection, restoration and offsetting of black-breasted button-quail habitat and protection of populations accepted and implemented.

...

Specific Objective 3

Maintain or improve the extent, condition (quality) and connectivity of black-breasted button-quail habitat.

Performance criterion 3.1: Management guidelines for protecting populations and habitat adopted by government, industry and community and protective status of habitat enhanced.

Current Threatened Species Licence

Black-breasted Button-quail is one of those species that under the TSL (1.2) requires a site-specific prescription if Forestry Corporation become aware of its presence during logging.

In total contravention of the 2009 National recovery plan for the black-breasted button-quail *Turnix melanogaster*, the 2010 Review of NSW Forest Agreements and Integrated Forestry Operations Approvals: Upper North East, Lower North East, Eden and Southern regions stated:

Under condition 8.8.4 of the UNE TSL, Forests NSW is required to survey for Black-breasted Button-quail across the entire region where modelled habitat occurs.

The current model is a poor predictor of habitat and occurrence of the species in NSW is very unlikely.

Rather than complying with the Recovery Plan Action 1.1.2:to "map existing data on black-breasted button-quail distribution and habitat requirements and develop a predictive model of the species' distribution", or requirements of Performance criterion 2.1 and Action 2.1.1 for improved updated management guidelines, the EPA decided to remove any requirements to look for Black-breasted Button-quail.

The TSL (7c) still identifies "Pre-logging and pre-roading surveys must be conducted in compartments which contain Black-breasted Button-quail known habitat or potential habitat". Though the need for pre-logging surveys specifically targeting Black-breasted Button-quail was removed from condition 8.8.4. in March 2013.

Private Native Forestry

There is no prescription for this species.

Proposed Coastal IFOA

The new Coastal IFOA identifies Black-breasted Button-quail as "Fauna threatened species considered adequately protected by the multi-scale protection measures".

The Vulnerable Black-breasted Button Quail is covered by a 2009 Recovery Plan that requires a new predictive model, surveys in potential habitat and the implementation of management prescriptions for forestry. Instead of developing an improved predictive model to guide surveys for this species, in 2013 the TSL was changed to remove the need for pre-logging surveys. The proposed Coastal IFOA removes all protection. The NRC (2018) proposes the remapping of rainforest with a view to opening up substantial areas for logging. In their trial remapping 62% of rainforest was remapped as not being rainforest applying their new criteria. It is evident that the Recovery Plan for this species have never been complied with in NSW.

REPTILES

Broad-headed Snake

The Broad-headed Snake (*Hoplocephalus bungaroides*) is listed as Vulnerable nationally and as Endangered in NSW.

The Commonwealth's 2014 Approved Conservation Advice for *Hoplocephalus bungaroides* (broad-headed snake) states:

During autumn, winter and spring, the species shelters in rock crevices and under flat sandstone rocks on exposed cliff edges (OEH, 2012), especially in areas with a west to north-west aspect (NSW NPWS, 1999). In summer, it shelters in hollows of large trees within 200 m of escarpments (OEH, 2012).

...

Threats

The main identified threats to the broad-headed snake are:

disturbance of habitat, in particular the removal of large hollow-bearing trees adjacent to sandstone escarpments (OEH, 2012) and bush rock removal (Shine et al., 1998).

...

Research priorities that would inform future regional and local priority actions include:

More precisely assess ecological requirements, the summer life cycle, the type of use (obligatory versus facultative) of winter shelter sites and the relative impacts of threatening processes (OEH, 2012).

Develop and validate a habitat model for the broad-headed snake (OEH, 2012).

...

More precisely assess the species abundance and monitor the progress of recovery, including the effectiveness of management actions and the need to adapt them if necessary.

...

Habitat Loss, Disturbance and Modification

...

Ensure there is no disturbance in areas where the broad-headed snake occurs, excluding necessary actions to manage the conservation of the species.

...

Local Priority Actions

...

Include appropriate measures in forestry prescriptions, including reduced ridgetop disturbance, appropriate track creation and tree hollow retention.

Undertake survey work in suitable habitat and potential habitat to locate any additional populations/occurrences/remnants.

The Department of the Environment (2011) has prepared survey guidelines for *Hoplocephalus bungaroides*. The survey guidelines are intended to provide guidance for stakeholders on the effort and methods considered appropriate when conducting a presence/absence survey for species listed as threatened under the EPBC Act. For Broad-headed Snake it is recommended:

Most records for this species have been obtained by searching suitable sheltering sites (under rocks or in crevices) on westerly-facing sandstone cliffs by day during winter (Webb & Shine 1997b). The effect of disturbance to sandstone exfoliations by active searching that involves lifting are not yet clear, but it is generally perceived that breakage or inappropriate replacement of rocks could affect their suitability as sheltering sites. For these reasons, searching appropriate sheltering sites with torches during winter to detect the presence of the species in an area is recommended. Searching rock outcrops by day will only sample a subset of rocky sheltering sites; in particular deep crevices will not be thoroughly examined.

Current Threatened Species Licence

The TSL (1.2a) originally identified Broad-headed Snake as requiring "Site Specific Conditions" (to be determined once recorded). The required surveys were "*incidental (spotlight survey minimum)*", with spotlight surveys requiring:

For areas up to 200 hectares of net logging area, a spotlight transect totalling two kilometres distance, plus an additional 500 metres for each 50 hectares of net logging area above 200 hectares ... This / these transects must be spotlighted twice on two separate nights. On one night, the transect(s) must be spotlighted while walking. On the other night, the spotlighting transect(s) may be conducted from a vehicle. Preferably both transects should be done on foot.

It is apparent that the survey methodology was totally inappropriate for detecting any Broad-headed Snakes in compartments containing suitable habitat as it failed to target the rock outcrops where they were likely to be found as intended by the Commonwealth survey guidelines

Changes to the TSL in March 2013 removed protection for the nationally vulnerable Broad-headed Snake by deleting it from list of species requiring surveys and site-specific conditions. It is now listed on Schedule 5 '*Threatened fauna species considered adequately protected by the General conditions*'.

Contrary to the Conservation Advice there are no species-specific requirements in forestry prescriptions requiring reduced ridgetop disturbance, appropriate track creation and tree hollow retention within 200m of rock outcrops. There appears to have no attempt to identify the effectiveness of management prescriptions (when they existed) or to adapt them to make them effective. With the abandonment of surveys and measures to minimise impacts there is nothing specifically required to "*ensure there is no disturbance in areas where the broad-headed snake occurs*".

Private Native Forestry

The Private Native Forestry Code of Practice for Northern NSW requires:

Where there is a broad-headed snake record in the area of forest operations, the following must apply:

(a) A buffer zone with a 100-metre radius (about 3 hectares) must be identified, centred on the location of the record.

(b) Within this buffer zone, the following additional prescriptions must be implemented:

(i) A minimum of 26 trees with visible hollows with openings greater than 10 centimetres must be retained where available.

(ii) Disturbance to understorey trees and shrubs, ground logs and, in particular, rock outcrops and ledges must be minimised.

While this prescription is likely to provide some unquantified benefit for the Broad-headed Snake, it has apparently never been monitored, and without any survey requirements it is highly unlikely to be applied. A species-specific prescription was removed from the TSL in 2013.

Proposed Coastal IFOA

The new Coastal IFOA identifies Broad-headed Snake as "*Fauna threatened species considered adequately protected by the multi-scale protection measures*".

For the Vulnerable Broad-headed Snake the 2014 Conservation Advice identifies that it utilises rock outcrops and hollow-bearing trees within 200m, with the need to survey for the species and retain hollow-bearing trees. The Commonwealth survey guidelines are not applied in forestry. The prescription for this species was removed from the TSL in 2013. There is no requirement to survey for this species or to protect hollow-bearing trees within 200m of rock outcrops. This species will be impacted by the Coastal IFOA's proposals to increase logging intensity, the removal of the need to

restore 5 hollow-bearing trees per ha in escarpment forests and the need to retain the recruitment trees needed to replace hollow-bearing trees as they die out.

FROGS

Giant Burrowing Frog

The Giant Burrowing Frog (*Heleioporus australiacus*) is listed as Vulnerable under the EPBC Act. Potential habitat is identified in the south of the Lower North East region. There is no Recovery Plan. The 2014 'Approved Conservation Advice for *Heleioporus australiacus* (giant burrowing frog)' identifies as threats:

The main threats to the giant burrowing frog include:

... Conservation of narrow buffers along streams does not sufficiently protect the species habitat.

...

Forest disturbance associated with forestry operations resulting in:

- o disturbance and compaction of areas used for burrowing (Penman, 2005)*
- o loss of vegetation, particularly the understorey, that reduces microhabitat shading (Penman, 2005)*
- o vehicle strike (Lemckert et al., 1998).*

Priority Actions include:

Habitat Disturbance and Modification

- Prepare and implement site specific management plans to protect key giant burrowing frog populations from identified threats.*
- Apply alternative forestry management if current actions not considered suitable.*
- Protect breeding sites from disturbance, sedimentation and pollution.*
- Retain native vegetation and minimise ground disturbance where the species occurs, especially within 300 metres of known breeding sites.*

Current Threatened Species Licence

Changes in March 2013 removed survey requirements for the nationally vulnerable Giant Burrowing Frog in the LNE and replaced site specific protections with a monitoring program "*based on tadpole surveys*" "*to assess the persistence of populations*" as a result of logging "*Where there is a record of *Heleioporus australiacus* in a compartment or within 100 metres outside the boundary of a compartment*".

Private Native Forestry

The Private Native Forestry Code of Practice for Northern NSW requires:

Where there is a record of a giant burrowing frog in an area of forest operations or within 300 metres of the boundary of the area of forest operations, the following must apply:

- (a) An exclusion zone with a 300-metre radius must be identified, centred on the location of the record.*
- (b) No post-harvest burns must occur in the exclusion zone.*

As there is no requirement to undertake surveys for this species the prescription is unlikely to be applied to most areas where they occur. This species is thus effectively unprotected in most logging operations on private lands.

Proposed Coastal IFOA

For north-east NSW the new Coastal IFOA identifies Giant Burrowing Frog as "Fauna threatened species considered adequately protected by the multi-scale protection measures". A species management plan is required in a specified Southern area.

The Vulnerable Giant Burrowing Frog has no Recovery Plan, though has a 2014 Conservation Advice which requires site specific management plans, protection of breeding sites and the retention of vegetation "*especially within 300 metres of known breeding sites*". In 2013 the TSL was altered to remove survey requirements and replaced with tadpole monitoring where there are records. The proposed Coastal IFOA removes all protection for this species, while proposing increased logging intensity and that buffers on headwater streams be reduced from 10m to 5m - despite the Conservation Advice being that "*narrow buffers along streams does not sufficiently protect the species habitat*".

Green and Golden Bell Frog

The Green and Golden Bell Frog (*Litoria aurea*) is listed as Vulnerable under the EPBC Act. There is no Recovery Plan. The 2014 *Approved Conservation Advice for Litoria aurea (green and golden bell frog)*.

The main identified threats to the green and golden bell frog are:

- *habitat destruction and degradation, which are the biggest causes of recent local extinction (White & Pyke, 2008).*

Identified Local Recovery Actions include:

Habitat Loss, Disturbance and Modification

- *Monitor known populations to identify key threats.*
- *Monitor the progress of recovery, including the effectiveness of management actions and the need to adapt them if necessary.*

...

Undertake survey work in suitable habitat and potential habitat to locate any additional populations/occurrences/remnants.

Minimise adverse impacts from land use at known sites.

The 'Significant Impact Guidelines for the vulnerable green and golden bell frog *Litoria aurea*' identify specific survey guidelines, including:

Field surveys for the green and golden bell frog should be done either in conjunction with or after a habitat assessment and should be done:

over a minimum of four nights to increase the detection rate between September and March, at the time of peak activity for the species during warm and windless weather conditions following rainfall, and using a combination of diurnal surveys for basking frogs, nocturnal spotlight surveys, call detection, call playback and tadpole surveys.

...

Small wetlands (less than 50 metres at greatest length) should be covered in a period of about one hour by searching banks and emergent vegetation. Larger wetlands (more than 50 metres) should be searched by sampling multiple units systematically...

The Guidelines are not prescriptive, though identify a significant impact as constituting "*the removal or degradation of terrestrial habitat within 200 metres*" of known or suitable habitat, and "*breaking the continuity of vegetation fringing ephemeral or permanent waterways or other vegetated corridors linking*" such habitats.

Current Threatened Species Licence

The TSL states for '6.2 Green and Golden Bell Frog *Litoria aurea*':

Compliance of NE NSW Forestry with Commonwealth Threatened Species Requirements

- a) *Where there is a record of Litoria aurea in a compartment or within 50 metres outside the boundary of the compartment, an exclusion zone of at least 50 metres radius must be implemented around the record.*
- b) *In addition, where the record is associated with a wetland or dam, a 50 metres wide exclusion zone must be implemented around the wetland or dam.*

Given that the Guidelines identify that a significant impact constitutes "*the removal or degradation of terrestrial habitat within 200 metres*" of known or suitable habitat, it can be considered that 50m buffers are unlikely to be adequate.

For Green and Golden Bell Frog the TSL requires "Permanent wetlands or dams of greater than one hectare surface area must be surveyed for a minimum of one hour, both day and night. For large wetlands or dams, survey effort should be proportional to this effort. For smaller wetlands or dams a minimum of 30 minutes survey must be undertaken both day and night", with "Night searches must be conducted twice on two separate nights". This is half the *minimum of four nights* recommended by the Approved Conservation Advice and half the one hour survey effort for smaller dams and wetlands.

Private Native Forestry

The Private Native Forestry Code of Practice for Northern NSW requires:

- (a) *Where there is a record of a green and golden bell frog in an area of forest operations or within 50 metres of the boundary of the area of forest operations, an exclusion zone with at least a 50-metre radius must be implemented around the location of the record.*
- (b) *In addition, where the record is associated with a wetland or dam, a 20-metre-wide exclusion zone must be implemented around the wetland or dam.*

As there is no requirement to undertake surveys for this species the prescription is unlikely to be applied to most areas where they occur. This species are thus effectively unprotected in most logging operations on private lands.

Proposed Coastal IFOA

The new Coastal IFOA identifies Green and Golden Bell Frog as "*Fauna threatened species considered adequately protected by the multi-scale protection measures*". 10m buffers are required around dams.

The Vulnerable Green and Golden Bell Frog has no Recovery Plan. The 2014 Conservation Advice requires surveys and monitoring of management actions. The Significant Impact Guidelines identify a significant impact as constituting "*the removal or degradation of terrestrial habitat within 200 metres*" of known or suitable habitat and the breakage of habitat linkages, while specifying specific survey guidelines. The TSL requires buffers of 50m around records or occupied waterbodies, with significantly less survey requirements than recommended. The new IFOA proposes removing survey requirements for Green and Golden Bell Frog and the requirement for exclusion zones, thereby opening up all exclusion zones established in the past 20 years for logging. This is in total contravention of the Approved Conservation Advice.

Giant Barred Frog

Giant Barred Frog (*Mixophyes iteratus*) is listed as Endangered under the EPBC Act. There is a 2017 *Conservation Advice Mixophyes iteratus (giant barred frog, southern barred frog)* and the only Recovery Plan is the 2002 *Recovery plan for Stream Frogs of South-east Queensland 2001-2005*.

The Conservation Advice notes:

Compliance of NE NSW Forestry with Commonwealth Threatened Species Requirements

... A short term study of the patterns of daily movement of this species during the breeding season showed that individuals moved up to 100 m in a night, but not more than 20 m from the stream (Lemckert & Brassil 2000). There have been no longer term studies that include nonbreeding times sufficient to adequately assess habitat usage of the giant barred frog.

The Conservation Advice identifies "*Habitat loss and modification is considered the foremost threat to the giant barred frog*", noting:

Many sites where M. iteratus occurs are the lower reaches of streams that have had major disturbances such as clearing, timber harvesting and urban development in their headwaters. In the Dorrigo area (north-east New South Wales), Lemckert (1999) found that M. iteratus was less abundant in recently logged areas and at sites where there was little undisturbed forest. ...

The Conservation Advice does not include any NSW specific actions relating to 'Habitat loss disturbance and modifications'.

Some of the information in the Queensland Recovery Plan is state specific, though some actions are of relevance, such as:

4.1. Assess effectiveness of management prescriptions

The effectiveness of current forestry management prescriptions in ameliorating disturbance to the habitat of these frogs needs to be assessed. The current management prescriptions are largely based on establishing riparian buffer zones. Radio- and spool-tracking studies of barred-frogs (Task 3.6) will provide the necessary information on movement behaviour and habitat usage on which to make the assessment. The task involves reviewing existing management prescriptions as information from Task 3.6 becomes available.

The NSW OEH 'Giant Barred Frog - profile' identifies a variety of threats including weed infestations "where there are canopy gaps in the riparian vegetation", "Reduction in water quality or alterations to flow patterns", and "Inadequate protection of riparian habitat during forestry activities". The only site specific action in the so-called Action Toolbox is the vague "Protection and rehabilitation of the riparian habitat of the Giant Barred frog".

Current Threatened Species Licence

The current Threatened Species Licence for Giant Barred Frog requires pre-logging surveys and:

Where there is a record of Mixophyes balbus, M. iteratus or M. fleayi in a compartment or within 200 metres outside the boundary of the compartment, the following must apply:

- a) Exclusion zones of at least 30 metres wide must be implemented on both sides of all streams within 200 metres of the record.*
- b) The width of exclusion zones must be measured from the top of the bank of the incised channel or, where there is no defined bank, from the edge of the channel.*

The TSL defines streams as "*any stream or watercourse shown on the relevant topographic map(s) for the compartment*", meaning that protection is not applied to "unmapped" streams which can constitute a large proportion of streams in any catchment.

The TSL (8.8) identifies Giant Barred Frog as one of those requiring Targeted Fauna Surveys, for riparian frog surveys requiring "*one person hour for areas up to 200 hectares of net survey area, plus an additional 15 minutes per 50 hectares above 200 hectares. If more than one stream is surveyed, a minimum of ten minutes must be spent at each separate site*", "*Three call playback sessions must be conducted per one hour search*", with "*Surveys must be conducted twice, on different nights*", and searches "*must not be conducted in cold, windy conditions*" between August to March.

Compliance of NE NSW Forestry with Commonwealth Threatened Species Requirements

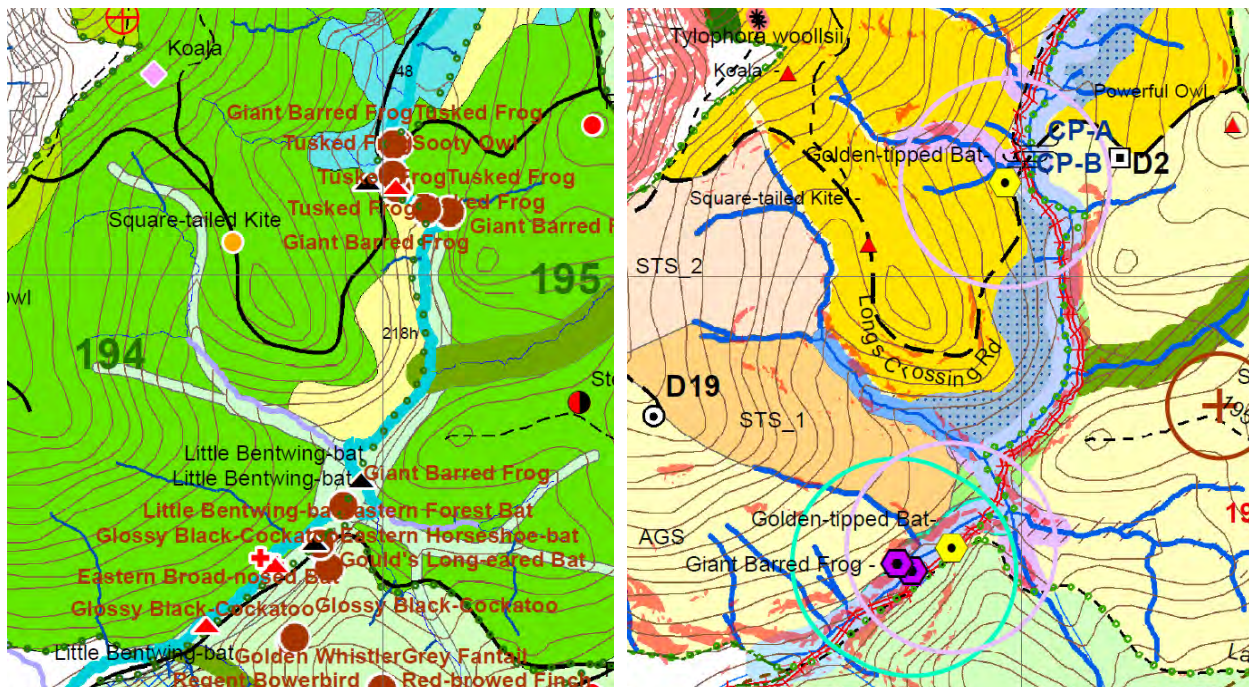
The Commonwealth 'Survey guidelines for Australia's threatened frogs' are significantly more targeted, specifically requiring "Call playback and spotlighting" along 200m of streams, requiring a "minimum of two nights under ideal conditions" though "Should be repeated on at least four separate occasions in activity period", including surveys for tadpoles, with searching "Not during heavy rainfall or stream flow. One week after heavy rainfall" between September to March.

The Commonwealth Guidelines differ significantly in requiring tadpole surveys and a minimum of 200m metres per stream surveyed compared to minimum of 10 minute surveys per stream (which presumably could be comprised of 2x5min surveys). Both require a minimum of 2 visits, though there is a higher threshold for favourable weather conditions with the Commonwealth Guidelines, and a preference for 4 repeats. Local reference sites where the species has been recorded are additional mandatory Commonwealth inclusions.

The TSL (7) also allows for no surveys when "Exclusion zones at least 30 metres wide must be implemented on both sides of those streams that occur within modelled habitat".

In 2014-5 the Forestry Corporation recorded 11 Giant Barred Frogs in pre-logging surveys in compartments 194 and 195 of Lansdowne State Forest. All of these were clearly within the compartments on Rock Creek, with 10 "below Longs Crossing". These were documented in the Ecology Report, with most shown on the "Threatened Species map 3", yet for some obscure reason nine of these records and the protection they required were omitted from the Harvesting Plan. This was particularly significant as these were compartments chosen by the EPA for their "IFOA Trials", meaning that the Harvesting Plans were also signed off by them and the logging operations undertaken under their supervision - they are equally culpable.

NEFA (Joe Sparks 1 March 2016) submitted an audit to the EPA identifying a variety of breaches in these compartments, including the failure to implement the required protection for the Giant Barred Frog, though are yet to get a response.



Extract from Threatened Species map 3 (LEFT) and Harvesting Plan (RIGHT) compartments 194 and 195 of Lansdowne State Forest. The Harvesting Plan only shows, and provides the required protection for, 2 (purple hexagons) of the 11 records of Giant Barred Frog recorded in the area. This omission is particularly significant as this is one of the EPA's "IFOA Trials".

Private Native Forestry

The Private Native Forestry Code of Practice for Northern NSW requires:

Where there is a record of a giant barred frog, Fleay's frog or stuttering frog in an area of forest operations or within 200 metres outside the boundary of the area of forest operations, the following must apply:

(a) A 30-metre wide exclusion zone must be implemented on both sides of all streams (including Prescribed Streams, and first-, second- and third-order and above streams – see Figure 5) within the forest operations area, within 200 metres of the location of the record.

(b) The width of the exclusion zone must be measured from the top of the bank of the incised channel or, where there is no defined bank, from the edge of the channel

As there is no requirement to undertake surveys for any of these species the prescription is unlikely to be applied to most areas where they occur. These species are thus effectively unprotected in most logging operations on private lands.

Proposed Coastal IFOA

The new Coastal IFOA identifies Giant Barred Frog as "*Fauna threatened species considered adequately protected by the multi-scale protection measures*"

As the only mitigation measure the IFOA does require:

84.2 Any new *drainage feature crossing* that is located within 200 metres upstream or downstream of a *stream breeding threatened frog record* must not alter natural stream flow.

There is no applicable Recovery Plan for the Giant Barred Frog, only a 2017 Conservation Advice which identifies that it moves up to 20m from streams and is impacted upon by logging. The need to protect riparian habitat from logging and monitoring of frog movements is recognised. The current TSL requires surveys and the implementation of 30m buffers on "mapped" streams (not "unmapped") within 200m of records. The prescription has been found to not be applied in practice. The new IFOA proposes removing survey requirements for Giant Barred Frog and the requirement for exclusion zones, thereby opening up all exclusion zones established in the past 20 years for logging. The intent is also to reduce exclusion zones along headwater streams in catchments less than 20ha down from mostly 10m to 5m which may have significant direct impacts on any populations in such areas and will have significant impacts water quality for any downstream populations. There has not been any monitoring to assess the effectiveness of the current prescription and there have not been any trials to assess how Giant Barred Frog will be affected by the removal of the prescription. This is in contravention of the Conservation Advice.

This is purely a politically derived outcome aimed at increasing access to timber resources with no consideration of the ecological requirements of this species or the necessity to limit the impacts of logging upon it.

Stuttering Frog

[National Recovery Plan for the Stuttering Frog *Mixophyes balbus*](#)

The Stuttering Frog *Mixophyes balbus* is identified as Vulnerable under the EPBC Act. The National Recovery Plan for the Stuttering Frog *Mixophyes balbus* (Hunter and Gillespie 2011) identify some of its habitat requirements as:

The Stuttering Frog occurs from northern NSW to Victoria, though most recent records of the Stuttering Frog are from the north of its range, with few records south of Sydney (Gillespie & Hines 1999; NSW Wildlife Atlas),

Compliance of NE NSW Forestry with Commonwealth Threatened Species Requirements

In north-eastern NSW it has been found along small first-order tributaries and larger third or fourth-order streams. The species has also been found in moist gullies within areas of dry forest, sometimes utilising small trickles of water (Tyler 1997). In the south it has mostly been found in headwaters, along small first or second-order streams (NSW Wildlife Atlas; Gillespie 1997).

*Adult Stuttering Frogs are terrestrial, often found sheltering in leaf-litter along the banks and lower slopes of streams. As with the ecologically similar species *Mixophyes fleayi*, (Doak 2005) Stuttering Frogs may also use habitats considerable distances away from riparian areas and may routinely disperse into surrounding forests outside of the breeding season (Mahony 1999). Consequently, terrestrial habitats in catchments containing populations are also of importance for foraging, shelter and possibly dispersal.*

The National Recovery Plan for the Stuttering Frog *Mixophyes balbus* (Hunter and Gillespie 2011) identify as threats:

Some riverine frogs are known to be susceptible to changes in catchment processes, such as hydrological regimes, sediment movement and nutrient yields, that influence the stream environment (Gillespie 2002). Catchment processes are in turn influenced by management activities, such as forestry operations, mining, impoundments, and other disturbance processes, such as fire and grazing.... Habitat destruction continues to threaten the Stuttering Frog, primarily through forestry activities and agriculture (Gillespie & Hines 1999; White 2000).

Many remaining Stuttering Frog populations occur in catchments managed by Forests NSW (Industry and Investment NSW) for timber harvesting. Forestry activities have the potential to impact on frog populations in a number of ways. The most direct impact is through mortality of individual frogs, and the loss of suitable habitat (including that required for movement or dispersal) through disturbance to ground substrates and removal of native vegetation. Forestry activities may also directly impact on the aquatic riverine environment used by the Stuttering Frog. This is primarily through increased sediment loads into the river as a result of road construction and maintenance, and the use of heavy machinery to extract timber. Increased sediment loads into streams are likely to reduce the availability of suitable oviposition sites and tadpole habitat (Gillespie 2002; Mahony 1999).

The Recovery Plan considers that "In view of the extent and rapid nature of the recent population declines of the Stuttering Frog throughout its entire distribution, all extant populations are considered critical for the long-term survival of this taxon at this stage".

The Recovery Plan includes as Performance Criteria:

All extant populations and priority populations critical to species survival identified; geographic genetic structure determined; habitat requirements are determined and information is available to land managers.

Action

1.3. Establish a population monitoring program of priority populations to determine population demography and evaluate the effectiveness of management actions

2.6. Develop effective license conditions and interim protocols to minimise adverse impacts of all commercial activities near to, and up stream of, all Stuttering Frog populations

3.2. Develop conservation and management guidelines for habitat protection and restoration for public land management agencies and private land managers

Current Threatened Species Licence

The current Threatened Species Licence for the Stuttering Frog requires pre-logging surveys and:

Compliance of NE NSW Forestry with Commonwealth Threatened Species Requirements

*Where there is a record of *Mixophyes balbus*, *M. iteratus* or *M. fleayi* in a compartment or within 200 metres outside the boundary of the compartment, the following must apply:*

- a) Exclusion zones of at least 30 metres wide must be implemented on both sides of all streams within 200 metres of the record.*
- b) The width of exclusion zones must be measured from the top of the bank of the incised channel or, where there is no defined bank, from the edge of the channel.*

The current TSL fails to satisfy the Recovery Plan intent in that there has been no monitoring to assess the effectiveness of current prescriptions and there are no species specific requirements required to minimise upstream impacts. Upstream impacts will be greatest where road crossings are implemented and where logging of "unmapped" streams occurs.

The TSL (8.8) identifies the Stuttering Frog as one of those requiring Targeted Fauna Surveys, for riparian frog surveys requiring *"one person hour for areas up to 200 hectares of net survey area, plus an additional 15 minutes per 50 hectares above 200 hectares. If more than one stream is surveyed, a minimum of ten minutes must be spent at each separate site"*, *"Three call playback sessions must be conducted per one hour search"*, with *"Surveys must be conducted twice, on different nights"*, and searches *"must not be conducted in cold, windy conditions"* between August to March.

The Commonwealth 'Survey guidelines for Australia's threatened frogs' are significantly more targeted, specifically requiring *"Call playback and spotlighting"* along 200m of streams, requiring a *"minimum of two nights under ideal conditions"* though *"Should be repeated on at least four separate occasions in activity period"*, including surveys for tadpoles, with searching *"Not during heavy rainfall or stream flow. One week after heavy rainfall"* between September to March.

The Commonwealth Guidelines differ significantly in requiring tadpole surveys and a minimum of 200m metres per stream surveyed compared to minimum of 10 minute surveys per stream (which presumably could be comprised of 2x5min surveys). Both require a minimum of 2 visits, though there is a higher threshold for favourable weather conditions with the Commonwealth Guidelines, and a preference for 4 repeats.

The TSL (7) also allows for no surveys when *"Exclusion zones at least 30 metres wide must be implemented on both sides of those streams that occur within modelled habitat"*.

A site inspection of FNSW operations in Compartments 16, 17 and 18 of Mount Mitchell State Forest by NEFA (Joe Sparks, September 2011) found breaches that directly affected the habitat utilised by Stuttering Frog. NEFA identified numerous breaches of erosion mitigation conditions, including 4 stream crossings in an identified exclusion zone for a Stuttering Frog which appears to overlie a Hastings River Mouse Exclusion Zone, stating:

We have today found serious breaches of the Environment Protection Licence in cpt's 16, 17, 18. Four crossings of Hartleys creek (4th order stream) are unstable crossings in breach of the EPL, sediment pollution is resulting from all four instances, one crossing is two concrete pipes which have been crushed by the machinery, it seem in a deliberate act. This same crossing has 50m of road drainage draining directly in to it (the EPL specifies 30m). 25m east of crossing 4, there is 150m of undrained road at 18 degrees leading in to the exclusion zone, 3 of the crossings are within a stuttering frog exclusion zone. One is right on the records for these frogs and could represent an attempt to kill these animals.



PHOTO: ONE OF 4 BREACHES OF RIPARIAN ZONE IN MOUNT MITCHELL SF IN STUTTERING FROG EXCLUSION.



PHOTO: HARVESTING PLAN FOR COMPARTMENT 16 SHOWING HRM EXCLUSION ZONE (MAROON), HRM RECORDS (GREY DIAMONDS), STUTTERING FROG EXCLUSION ZONE (RED), AND REPORTED BREACHES (RED CROSSES)

In response to Mr. Sparks' complaint the EPA responded (G. Abood, 12 February 2012):

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... the EPA immediately responded to your report of water pollution by issuing Forests NSW a Clean-Up Notice ... Forests NSW complied with this notice and implemented temporary sediment control measures on 30 September 2011 at each of the crossings within Mt. Mitchell State Forest.

In relation to your environment line report, the EPA has determined that Forests NSW failed to comply with the Environment Protection Licence (EPL) best practice conditions on 24 occasions, specifically failing to undertake operational planning for the four crossings. The EPA has issued Forests NSW with a formal written warning relating to Forests NSW failure to undertake the appropriate operational planning.

The issuing of a warning letter for so many breaches is a grossly inadequate response. True to form the EPA made no attempt to assess impacts on the riparian habitat of Stuttering Frog or Hastings River Mouse.

In a review of Harvesting Plans NEFA (Pugh 2016) identified that for Compartments 60, 61, 62, 198, 199, 201 and 202 of Ellis State Forest:

*The harvesting plans identify 11 Stuttering Frog (*Mixophyes balbus*) records, and 4 Giant barred Frog (*Mixophyes iteratus*) records in the vicinity, requiring 30m wide riparian buffers within 200m of records, though only 3 localities are identified on the harvesting plans within the compartments and one nearby. ...*

There are 9 records of Stuttering and Giant Barred Frogs from wildlife atlas not shown on the plan, with at least 3 of these dated November 2013 which do impact on the nett harvest area:

*Stuttering frog SK SF-1298993 20/11/2013 E460440 N6668930
Stuttering Frog SK-1298975 21/11/2013 E 459050 N6667900
Stuttering frog SK-1298979 21/11/2013 E 459200 N*

Given that the plan was not prepared until 29 January 2014 it is perplexing as to why these were not included. ...

When preparing their harvesting plan for compartments 280,281,283 and 284 of Forestland State Forest the Forestry Corporation failed to apply the required stream buffers for a record of Stuttering Frog, this was pointed out to CEO Nick Roberts by NEFA (Joe Sparks 29/7/2014) and the failure was affirmed (Rahmat Khaiami 25/8/14), though the Forestry Corporation claimed it hadn't been logged.

It is clear that there has been a systemic failure by the Forestry Corporation to transfer records of both Stuttering Frog and Giant Barred Frog from their surveys into Harvesting Plans. From our small samples this appears to be happening far too frequently to be accidental. These appear intentional with the intent being to increase access to riparian areas for logging.

Proposed Coastal IFOA

The new Coastal IFOA identifies Stuttering Frog as "*Fauna threatened species considered adequately protected by the multi-scale protection measures*"

The IFOA does require:

84.2 Any new **drainage feature crossing** that is located within 200 metres upstream or downstream of a **stream breeding threatened frog record** must not alter natural stream flow.

There is a 2011 Recovery Plan for the Vulnerable Stuttering Frog that identifies it uses small streams and forest well away from streams, with forestry identified as a threat and the need for monitoring and application of forestry prescriptions. The current TSL requires surveys and the

implementation of 30m buffers on "mapped" streams (not "unmapped") within 200m of records. The prescription has been found to not be applied in practice. The new IFOA proposes removing survey requirements for Stuttering Frog and the requirement for exclusion zones, thereby opening up all exclusion zones established in the past 20 years for logging. The intent is also to reduce exclusion zones along headwater streams in catchments less than 20ha down from mostly 10m to 5m which may have significant direct impacts on any populations in such areas and will have significant impacts water quality for any downstream populations. There has not been any monitoring to assess the effectiveness of the current prescription and there have not been any trials to assess how Stuttering Frog will be affected by the removal of the prescription. This is in contravention of the Recovery Plan.

This is purely a politically derived outcome aimed at increasing access to timber resources with no consideration of the ecological requirements of this species or the necessity to limit the impacts of logging upon it.

The failure to undertake a rigorous monitoring program to assess the effectiveness of logging current prescriptions on Stuttering Frogs is in contravention of the Recovery Plan objectives, let alone the failure to assess the effect that their removal will have on Stuttering Frogs. This is contrary to Recovery Plan actions 1.3. 2.6 and 3.2.

There needs to be the development of guidelines on minimum habitat requirements in an independent (of Forestry Corporation) scientific process in accordance with Action 2.6 and 3.2. and trials undertaken to quantify the effectiveness of any proposed prescriptions before they are applied.

Pugh, D. (2016) New IFOA Changes in Forest Protection In the Clarence and Richmond River Valleys. North East Forest Alliance, January 2016.

Fleay's Barred Frog

Fleay's Barred Frog (*Mixophyes fleayi*) is listed as Endangered under the EPBC Act. There is a 2017 Conservation Advice *Mixophyes fleayi (Fleay's frog)* and the only Recovery Plan is the 2002 *Recovery plan for Stream Frogs of South-east Queensland 2001-2005*.

The Conservation Advice notes:

Adults are found in leaf litter and along watercourses in rainforest and adjoining wet sclerophyll forests. Males call from rocks in streams or from pools at the margins of these streams (Corben & Ingram 1987) or from the forest floor. Females have been located well away from streams, over hundreds of metres from known breeding sites.

After disease the Conservation Advice identifies '*Habitat loss and fragmentation*' as the major threat, noting:

Upstream clearing of habitat and disturbances such as timber harvesting and urban development may reduce water quality (e.g. via sedimentation) and flow regimes. Increased sedimentation in streams results in filling of crevices and interstitial spaces in stream substrates reducing the availability of suitable oviposition sites or refugia for tadpoles (Welsh & Ollivier 1998) and reduce tadpole growth and development rates (Gillespie 2002). Forestry activities extracting water from streams may also alter hydrological regimes of catchments with resultant impacts on frog breeding habitat (deMaynadier & Hunter 1995).

The Conservation Advice identifies as Conservation and Management priorities:

Habitat loss, disturbance and modifications

- *Assess the effectiveness of current forestry management practices in ameliorating disturbance to the habitat of Fleay's frog, and revise management practices if necessary.*

Compliance of NE NSW Forestry with Commonwealth Threatened Species Requirements

- o *Improve the management of stream flows, water quality and riparian environments throughout catchment, particularly upstream of existing and potential sites by monitoring erosion and clearing events and implementing rehabilitation of riparian vegetation.*

Some of the information in the Queensland Recovery Plan is state specific, though some actions are of relevance, such as:

4.1. Assess effectiveness of management prescriptions

The effectiveness of current forestry management prescriptions in ameliorating disturbance to the habitat of these frogs needs to be assessed. The current management prescriptions are largely based on establishing riparian buffer zones. Radio- and spool-tracking studies of barred-frogs (Task 3.6) will provide the necessary information on movement behaviour and habitat usage on which to make the assessment. The task involves reviewing existing management prescriptions as information from Task 3.6 becomes available.

Current Threatened Species Licence

The current Threatened Species Licence for Fleay's Barred Frog requires pre-logging surveys and: *Where there is a record of *Mixophyes balbus*, *M. iteratus* or *M. fleayi* in a compartment or within 200 metres outside the boundary of the compartment, the following must apply:*

- a) Exclusion zones of at least 30 metres wide must be implemented on both sides of all streams within 200 metres of the record.*
- b) The width of exclusion zones must be measured from the top of the bank of the incised channel or, where there is no defined bank, from the edge of the channel.*

The current TSL fails to satisfy the Conservation Advice intent in that there has been no monitoring to assess the effectiveness of current prescriptions and there are no species specific requirements required to minimise impacts of upstream impacts on water quality or quantity. Upstream impacts will be greatest where road crossings are implemented and where logging of "unmapped" streams occurs.

The TSL (8.8) identifies Fleay's Barred Frog as one of those requiring Targeted Fauna Surveys, for riparian frog surveys requiring *"one person hour for areas up to 200 hectares of net survey area, plus an additional 15 minutes per 50 hectares above 200 hectares. If more than one stream is surveyed, a minimum of ten minutes must be spent at each separate site", "Three call playback sessions must be conducted per one hour search", with "Surveys must be conducted twice, on different nights", and searches "must not be conducted in cold, windy conditions" between August to March.*

The Commonwealth 'Survey guidelines for Australia's threatened frogs' are significantly more targeted, specifically requiring *"Call playback and spotlighting" along 200m of streams, requiring a "minimum of two nights under ideal conditions" though "Should be repeated on at least four separate occasions in activity period", including surveys for tadpoles, with searching "Not during heavy rainfall or stream flow. One week after heavy rainfall" between September to March.*

The Commonwealth Guidelines differ significantly in requiring tadpole surveys and a minimum of 200m metres per stream surveyed compared to minimum of 10 minute surveys per stream (which presumably could be comprised of 2x5min surveys). Both require a minimum of 2 visits, though there is a higher threshold for favourable weather conditions with the Commonwealth Guidelines, and a preference for 4 repeats.

The TSL (7) also allows for no surveys when *"Exclusion zones at least 30 metres wide must be implemented on both sides of those streams that occur within modelled habitat"*.

NEFA conducted an [audit of compartment 28 of Koreelah State Forest](#) on the 8 and 9 June 2013. At that time we made new records of Albert's Lyrebird and Koalas in compartment 28. It was obvious

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to us that Forestry Corporation had not conducted adequate pre-logging fauna surveys. Given the records of Alberts Lyrebird, Marbled Frogmouth and Fleay's Barred Frog in compartment 31, and the obvious presence of suitable habitat in compartment 30, it was apparent to us at that time that the Forestry Corporation had not conducted adequate surveys for these species in compartment 30 and thus were not applying the required prescriptions.

Regrettably the NSW Ministers, the Environment Protection Authority and the Forestry Corporation ignored our calls for additional surveys to ensure that the minimal prescriptions for threatened species were applied. So we returned with a fauna expert on the evening of the 31 August to undertake a [survey of compartment 30 of Koreelah State Forest](#), and located 3 Marbled Frogmouths and 4 Fleay's Barred Frogs (along with one Sooty Owl and 2 Yellow-bellied Gliders), which required a 10m increase in riparian protection around most streams in the compartment. Without our intervention the minimalist prescriptions for these species would not have been applied.

Proposed Coastal IFOA

The new Coastal IFOA identifies Fleay's Barred Frog as "*Fauna threatened species considered adequately protected by the multi-scale protection measures*"

As the only mitigation measure the IFOA does require:

84.2 Any new *drainage feature crossing* that is located within 200 metres upstream or downstream of a *stream breeding threatened frog record* must not alter natural stream flow.

There is no applicable Recovery Plan for the Endangered Fleay's Barred Frog, with a 2017 Conservation Advice that identifies it uses forest well away from streams, with forestry identified as a threat and the need for monitoring and application of forestry prescriptions. The current TSL requires surveys and the implementation of 30m buffers on "mapped" streams (not "unmapped") within 200m of records. The prescription has been found to not be applied in practice. The new IFOA proposes removing survey requirements for Fleay's Barred Frog and the requirement for exclusion zones, thereby opening up all exclusion zones established in the past 20 years for logging. The intent is also to reduce exclusion zones along headwater streams in catchments less than 20ha down from mostly 10m to 5m (which represents 75% of streams) which may have significant direct impacts on any populations in such areas and will have significant impacts water quality for any downstream populations. There has not been any monitoring to assess the effectiveness of the current prescription and there have not been any trials to assess how Fleay's Barred Frog will be affected by the removal of the prescription. This is in contravention of the Conservation Advice.

This is purely a politically derived outcome aimed at increasing access to timber resources with no consideration of the ecological requirements of this species or the necessity to limit the impacts of logging upon it.

The removal of survey requirements, failure to undertake a rigorous monitoring program to assess the effect the reduced logging prescriptions will have, and the failure to identify specific measures to reduce downstream impacts, on Fleay's Barred Frog is in contravention of the Conservation Advice.

THREATENED ECOLOGICAL COMMUNITIES

There are a large number of Nationally Threatened Ecological Communities (TECs) that occur in north-east NSW, though they are generally not explicitly recognised in planning processes for forestry. NSW Threatened Ecological Communities are explicitly excluded from the current Threatened Species Licence (TSL). In practice they have often not been recognised and have been logged.

The new Coastal IFOA notes "*The biodiversity conservation licence authorises FCNSW and any authorised person, to carry out any forestry operation in accordance with the approval that is likely to result in*" harm to any animal, plant or habitat that is "*a threatened species or threatened ecological community*" and "*is listed or considered by ... Protocol 27: Threatened ecological communities*". Protocol 27 identifies 15 "certified" TECs which have been mapped and 3 "indicative" TECs covered by indicative mapping, for which some require buffers up to 20m. It does not authorise harm to a "*threatened ecological community that is not described in Protocol 27*".

Remapping by the Forestry Corporation is allowed. The mapping is limited to public lands and there is no mapping for private lands.

There is no mention of Federally listed TECs which may be described differently to State listed TECs, and thus may not be covered by them. While they should theoretically be protected, there is no requirement that they be so, and in practice they are ignored.

Forestry is only recognised as a threat to the Critically Endangered Lowland Rainforest of Subtropical Australia. Remapping and roading of Lowland Rainforest for Private Native Forestry has been found to be a problem in practice. The over-arching problem is the failure to recognise the presence of Federally listed Lowland Rainforest, and State even by NSW Government agencies.

Lowland Rainforest of Subtropical Australia

Lowland Rainforest of Subtropical Australia is identified as Critically Endangered.

The Commonwealth's Species Profile and Threats Database identifies "*Recovery Plan not required, the planning, implementation and coordination of recovery actions does not involve complexity beyond that which can be managed through existing management plans and processes*". A conservation advice is also available that details the priority recovery actions required for this ecological community (11/11/2011)".

The 2011 Approved Conservation Advice for the Lowland Rainforest of Subtropical Australia states:

The main ongoing threats to the ecological community include: vegetation clearance, impacts associated with fragmentation of remnants and weeds.

...

Ongoing incremental clearing of vegetation for agricultural activities (in particular macadamias and fruit crops), horticultural industry (and the subsequent introduction of new potential weeds), hobby farming, peri-urban and rural residential development (including vegetation removal for bush fire protection) and also private native forestry are further adding to isolation and fragmentation of Lowland Rainforest remnants.

Research priorities that would inform future regional and local priority actions include:

- *Undertake surveys to locate and map remnants and other occurrences of the ecological community, as well as threatened species that occur in the ecological community.*
- *Design and implement a monitoring program or, if appropriate, support and enhance existing programs for the ecological community and associated threatened species.*

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Habitat Loss, Disturbance and Modification

- *Protect and conserve remaining areas of the ecological community. Further clearance and fragmentation of this critically endangered ecological community should be avoided.*
- ...
- *Monitor the progress of recovery, through improved mapping, estimates of extent and condition assessments of the ecological community, and effective adaptive management actions.*
- *Implement appropriate management regimes to maintain the biodiversity, including the threatened species, of the ecological community.*
- ...
- *Develop and implement best practice standards for management of the ecological community on private and public lands.*
- *Liaise with local councils and state authorities to ensure new developments, road widening, maintenance activities, or other activities involving substrate or vegetation disturbance in areas where the ecological community occurs, do not adversely impact the ecological community.*
- *Liaise with planning authorities to ensure that planning takes the protection of the ecological community into account, with due regard to principles for long-term conservation.*
- *Include buffer zones between the ecological community and development zones and areas undergoing pasture development or cultivation.*

Enable Recovery of Additional Sites

Patches of the Lowland Rainforest ecological community should be considered a priority for conservation funding (priority repair sites are identified in the Border Ranges Rainforest Biodiversity Management Plan (DECCW, 2010)).

Current Threatened Species Licence

Under "Authorisation" the Threatened Species Licence states:

This licence does not authorise the carrying out of an activity that is likely to:

- 1. Harm an endangered population or an endangered ecological community (as far as animals are concerned);*
- 2. Result in the picking of a plant that is part of an endangered population or endangered community;*
- 3. Damage critical habitat; or*
- 4. Damage to the habitat of an endangered population or endangered community.*

There is no specific mention of Threatened species or Threatened Ecological Communities listed under the *Environment Protection and Biodiversity Conservation Act 1999*.

Private Native Forestry

The Private Native Forestry Code of Practice for Northern NSW (PNF Code) requires that "A Forest Operation Plan must contain ... recorded locations of any ... endangered ecological communities listed under the schedules of the *Threatened Species Conservation Act 1995*".

Table C: Requirements for protecting landscape features species " *Endangered ecological communities listed in the Threatened Species Conservation Act 1995 at the date the private native forestry PVP is approved by the Minister... Forest operations may only occur in endangered ecological communities as part of an approved Ecological Harvesting Plan approved by the Director General of the Department of Environment and Climate Change, except that existing roads may be maintained*" and for " *Vulnerable ecological communities listed in the Threatened Species Conservation Act 1995 at the date the private native forestry PVP is approved by the Minister ... Forest operations must not occur in vulnerable ecological communities, except that existing roads may be maintained*".

Compliance of NE NSW Forestry with Commonwealth Threatened Species Requirements

The PNF Code only requires inclusion of "recorded locations" of State listed Threatened Ecological Communities (TECs) on harvesting plans, whereas most locations are unlikely to be recorded in existing data bases - there is no need to look before they log. Broader protection to TECs listed " *at the date the private native forestry PVP is approved by the Minister*" is theoretically provided by Table C. Though with no survey requirements, and a blanket refusal from the EPA to identify TECs, the reality is that TECs are unlikely to be provided with any intentional protection on private land. Many TECs will also not be protected as no subsequently listed TECs are required to be protected once a PVP has been issued.

There is no mention of nationally listed threatened species and ecological communities in the PNF Code, though the Environment Protection Authority (EPA) website states:

An approval under the [Native Vegetation Act 2003](#) does not remove the obligation of landholders to obtain approval under the Commonwealth [Environment Protection and Biodiversity Conservation Act 1999](#) (EPBC Act), where necessary. 'Actions' that are likely to have a significant impact on a matter of national environmental significance, such as ... nationally listed threatened species and ecological communities, ... require approval under the EPBC Act. If a person proposing to take an action believes that it might have a significant impact on a matter of national environmental significance, they must refer the proposal to the Commonwealth [Department of Environment](#) to determine if an approval is required.

It appears that in practice little, if any protection, is provided to either State or nationally listed Threatened Ecological Communities in PNF operations. This is demonstrated by the failure of the Forestry Corporation, EPA and Office of Environment and Heritage (OEH) to identify or protect rainforest qualifying as both the Endangered Ecological Community (EEC) Lowland Rainforest in NSW North Coast and Sydney Basin Bioregion under the NSW Threatened Species Conservation Act, and the Critically Endangered Lowland Rainforest of Subtropical Australia under the *Environment Protection and Biodiversity Conservation Act 1999*. The rainforest was mapped, though despite "detailed" assessment all three agencies failed to recognise it as either a State or Federally listed TEC, they then remapped parts of the rainforest as cleared, and constructed a road through it as well as the exclusion zones for numerous threatened species (see sections on Red Bopple Nut and Clear Milkvine).

During controversy over logging of the private property at Whian Whian ([Pugh 2014](#)) a community survey was undertaken on 29 September 2013. Dr. Robert Kooyman, a rainforest expert, identified the nationally listed Critically Endangered Lowland Rainforest of Subtropical Australia as occurring along the access road in the identified logging area.

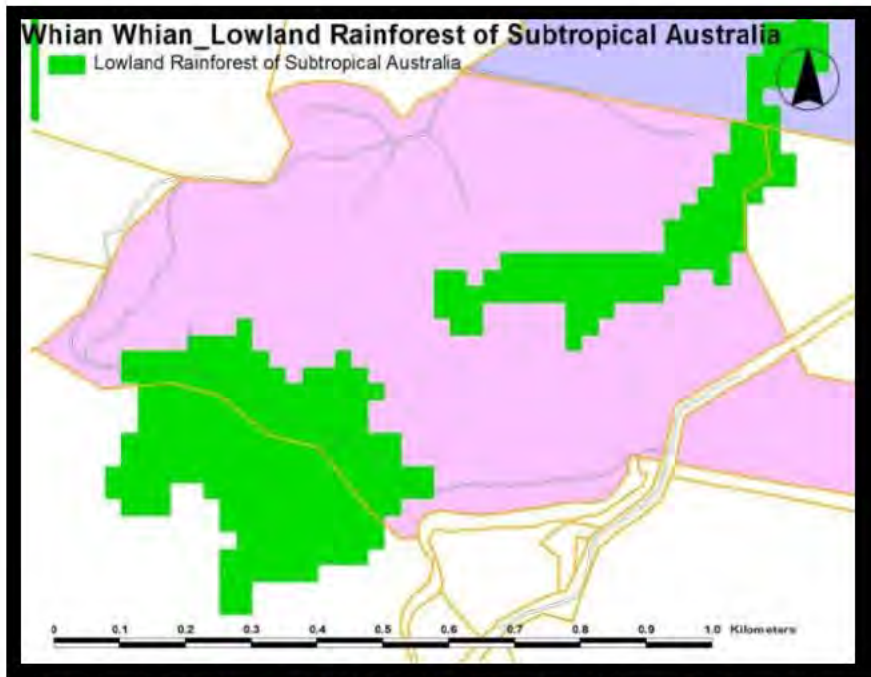
A subsequent NEFA review of rainforest mapping showed the road had been constructed through a 12.5ha stand of rainforest mapped in the NSW 1998 Comprehensive Regional Assessment (CRA), that extends across the boundary with the property to the south. The mapping by Flint and Cerese (2010) clearly identified this rainforest as Lowland Rainforest of Subtropical Australia under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). FC, EPA and OEH have no excuse for ignoring this evidence.

The property is also identified as a Repair Priority in Figure 11c of the Border Ranges Rainforest Biodiversity Management Plan which is a national multi-species Recovery Plan. Though this too was ignored.

This CRA mapped rainforest is taken to be rainforest for Property Vegetation Plans (PVPs) except where disputed by property owners. If the landowner is not happy with the CRA rainforest mapping on their property, the landholder can:

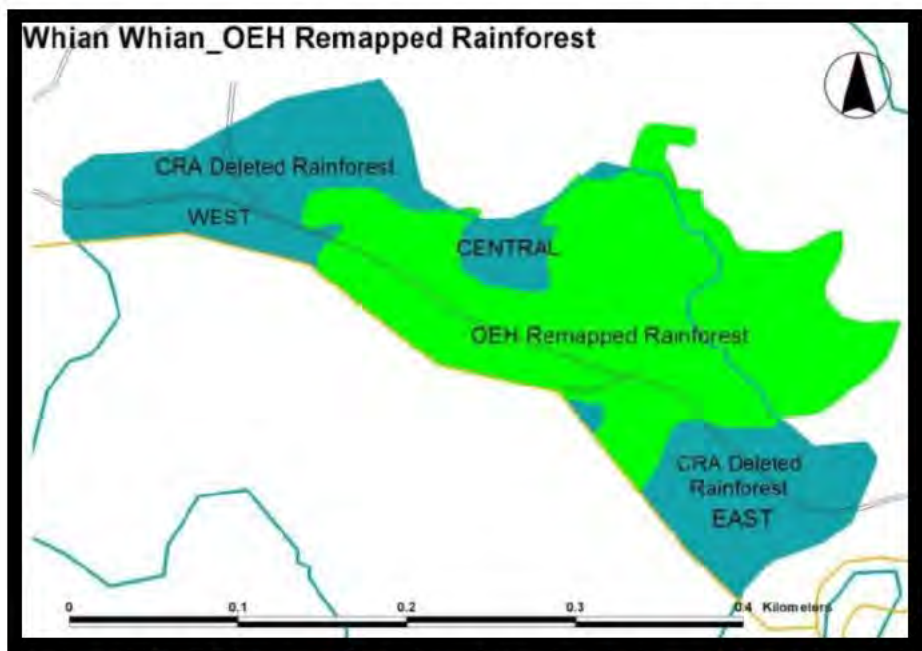
apply to DECC for an evaluation of the area proposed for private native forest for new rainforest mapping and determination of rainforest. The landholder will need to identify the

area in dispute and provide evidence to DECC officers that the area is not rainforest. Evidence could include photographic and logging records, or other disturbance history.



Mapped Lowland Rainforest of Subtropical Australia (from Flint and Cerese 2010)

In May 2012 as part of the preparation of the PVP, the OEH, at the request of the EPA and Forestry Corporation, reviewed the rainforest mapping. In this process they redrew the rainforest boundary. The 4.9 hectares of rainforest mapped on the property in the stand along the road, was remapped as 3.3ha by OEH, with 2.5 ha deleted and 0.9ha added by an extension of the boundary to the north. The deleted rainforest was reassigned either to the loggable area or as cleared land. The FC constructed the main access road through this stand of rainforest for 520m, with this reducing to 250m with the remapping. This road was newly constructed through the deleted rainforest.



MAP: OEH remapping of the CRA mapped rainforest resulted in the deletion of a western, central and eastern patches. Note that most of the stand occurs on the adjacent property (outlined in blue). This is part of a stand mapped as Lowland Rainforest of Subtropical Australia by Flint and Cerese in 2010.

Compliance of NE NSW Forestry with Commonwealth Threatened Species Requirements

In deleting these rainforest patches the Government agencies removed all protection from them and their inhabitants, reallocating the western and central stands for logging and the eastern stand as cleared land.

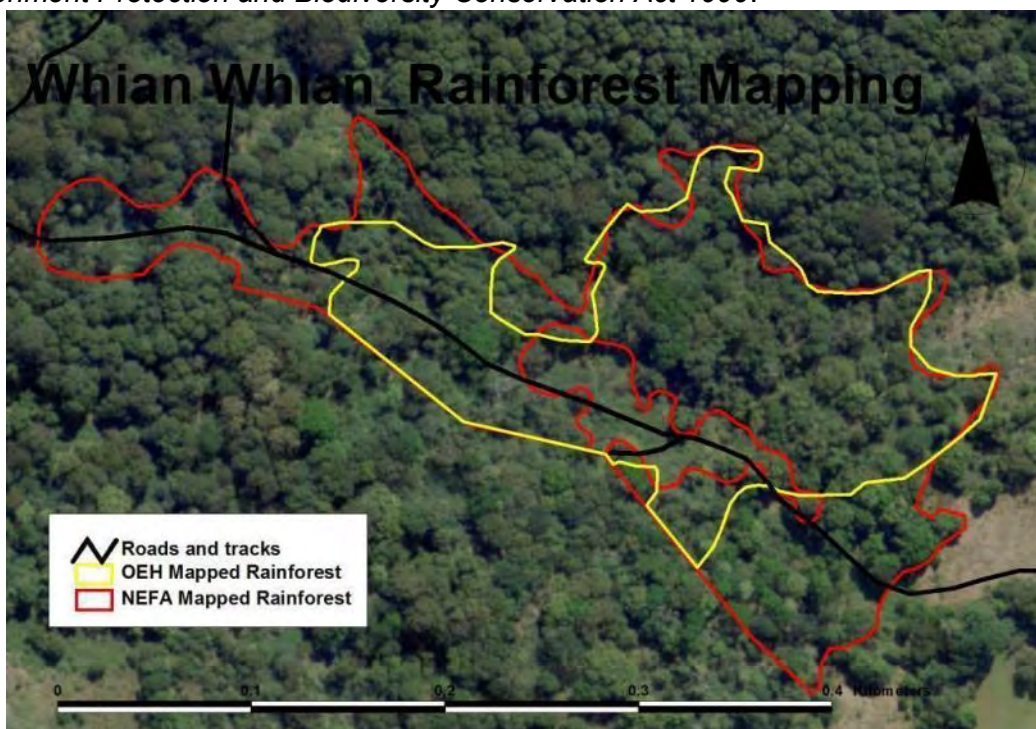


Examples of Lowland Subtropical rainforest remapped by OEH as either cleared land or assigned to the logging area.



Part of a large area of lantana retained as rainforest in OEH remapping, though classed as non-rainforest in NEFA mapping.

NEFA engaged an API expert and botanist to remap the rainforest in the vicinity of the access road using Aerial Photographic Interpretation (API). This was done by applying the definition in the PNF Code and the methodology specified in the “Identification of Rainforest, Field Guide” (NRM Field Assessment Guidelines: Rainforest Identification). In accordance with the Field Guide NEFA undertook transects to determine crown separation ratio using two “zig zag transects” (Field Guide 3.2). From this process, floristic assessments, and consideration of the criteria, it was clear the deleted rainforest qualified as both the Endangered Ecological Community (EEC) Lowland Rainforest in NSW North Coast and Sydney Basin Bioregion under the NSW Threatened Species Conservation Act, and the Critically Endangered Lowland Rainforest of Subtropical Australia under the *Environment Protection and Biodiversity Conservation Act 1999*.



Mapping by OEH and NEFA overlaid on aerial photo, note the south eastern patch classed as “cleared” by OEH and the central lantana dominated area classed as non-rainforest by NEFA.

Compliance of NE NSW Forestry with Commonwealth Threatened Species Requirements

NEFA presented our detailed evidence to the EPA as part of our audit (Pugh 2014). NEFA requested the PVP and documents relating to the rainforest remapping under the Government Information (Public Access) Act 2009 (GIPA) from both the EPA and OEHL though they gave a blanket refusal of every document on the grounds they are “*personal information*” and that their release can “*reasonably be expected to*” “*expose a person to a risk of harm or of serious harassment or serious intimidation*”.

There was a 2 year window of opportunity for the EPA to legally pursue this matter, and they used most of this time up before they responded (Michael Hood 28 September 2015). The EPA refused to consider or investigate our rainforest complaint, instead referring back to the PVP remapping:

The EPA engaged the Office of Environment and Heritage (OEHL) to do an independent review of existing rainforest mapping of the property. This review was done using the agreed and documented rainforest re-mapping protocol and in accordance with the PNF Code definition of rainforest. API and field site verification was completed during 2012. All mapped rainforest was excluded from the approved PNF PVP for the property.

The Environment Protection Authority issued a Property Vegetation Plan (PVP) for part the Hewittville property (Lot 136 DP 755724 Tyalgum) in the Tweed Valley on 29 April 2013. This property is recognised as a Conserve Priority Area in Figure 10b and a Repair Priority in Figure 11b of the Border Ranges Rainforest Biodiversity Management Plan.

Controversy ensued in late 2017 when NEFA found an Environmental Protection Zone was being logged without the required approval by Tweed Shire Council. A community assessment in December 2017 identified a rainforest stand as qualifying as the Endangered Ecological Community Lowland Rainforest, with 14 Vulnerable Durobby (*Syzygium moorei*) and a number of Endangered Green-leaved rose walnut (*Endiandra muelleri* subsp. *bracteata*) within or near it. While their report was provided to the EPA (with localities) because it was anonymous nothing will be done to protect these unless the EPA investigate it for themselves.

Proposed Coastal IFOA

Lowland Rainforest of Subtropical Australia, and other Commonwealth listed TECs, are not considered under the new Coastal IFOA, though the NSW listed Lowland Rainforest has been mapped for protection on public land, but not private. They are differently described, so the Commonwealth listed TEC is not necessarily protected.

FLORA

There are two multi-species recovery plans which cover north-east NSW, the Border Ranges Rainforest Biodiversity Management Plan and Northern Rivers Regional Biodiversity Management Plan. Both are extremely vague when it comes to species-specific measures and do not provide the direction needed to appropriately protect and recover the subject species.

The Border Ranges Rainforest Biodiversity Management Plan does not specifically consider forestry as a Threat, though it can generically be counted as a threat under the classifications of : Clearing, Fragmentation, modification and degradation, and Weed invasion. These are identified as threats to all the plants covered. Forestry is one of the most widespread activities occurring throughout forests in the region and the failure of the plan to specifically consider forestry impacts and mitigation measures is irresponsible in what is meant to be a recovery plan.

The Border Ranges Rainforest Biodiversity Management Plan is dealt with previously.

The Northern Rivers Regional Biodiversity Management Plan (the NRRBM Plan) constitutes the national regional recovery plan under the *Environment Protection and Biodiversity Conservation Act 1999* for threatened species and ecological communities principally distributed in the Northern Rivers Region of NSW. It is only marginally better when considering forestry impacts.

In relation to Recovery Actions for Forestry it is noted:

Impacts on biodiversity from forestry can be directly linked to harvesting intensity and frequency. The protection of non-wood biodiversity values requires a balance between maximum potential harvest regimes and the retention and management of key biodiversity features within the landscape.

'OUTCOME 7.1: Impacts of forestry operations on biodiversity are minimised' identifies:

- *Develop criteria and indicators to measure, monitor and report on ecologically sustainable forest management practices for forestry operations on private lands, to ensure sustainability of the full range of wood and non-wood values of forests.*
- *Develop appropriate criteria and indicators to review the effectiveness of threatened species protection measures currently employed in public and private native forestry activities. Strengthen threatened species protection measures where they are shown to be inadequate.*

The NRRBM Plan identifies 15 Federally listed threatened plant species that are specifically threatened by Forestry. Of these, the new Coastal IFOA proposes removing protection for 4 of these species and reducing protection for 3. Four are effectively having their protection increased to 20m exclusion zones and three remain the same. Slaty Red Gum remains equivocal as the monitoring process has been of little benefit - while it has been found the greatest damage is to small trees, the protection is to be limited to mature trees with no buffers to limit damage.

	Flora species		EPBC Act	TSC Act	Current Prescription	Proposed Changes
Herb	Tall Knotweed	<i>Persicaria elatior</i>	V	V	50m	Road Plan
Shrub	Big Nellie Hakea	<i>Hakea archaeoides</i>	V	V	none	20m
Shrub	Bordered Guinea Flower	<i>Hibbertia marginata</i>	V	V	Man Plan	20m

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Shrub	Dorrigo Daisy Bush	<i>Olearia flocktoniae</i>	E	E	90% plants	Road Plan
Shrub	Four-tailed Grevillea	<i>Grevillea quadricauda</i>	V	V	Man Plan	20m
Shrub	Mason's Grevillea	<i>Grevillea masonii</i>	E	E	20m	20m
Shrub	Moonee Quassia	<i>Quassia</i> sp. 'Moonee Creek'	E	E	20m/90%	20m
Shrub	Narrow-leaf Melichrus	<i>Melichrus</i> sp. 'Gibberagee'	E	E	50m	20m
Shrub	Orara Boronia	<i>Boronia umbellata</i>	V	V	90% plants	Remove
Small tree	Dwarf Heath Casuarina	<i>Allocasuarina defungens</i>	E	E	20m/90%	Remove
Tree	Sandstone Rough-barked Apple	<i>Angophora robur</i>	V	V	Man Plan	Remove
Tree	Slaty Red Gum	<i>Eucalyptus glaucina</i>	V	V	Man Plan	Protect mature
Tree	Square-fruited Ironbark	<i>Eucalyptus tetrapleura</i>	V	V	90% plants	Remove
Vine	Cryptic Forest Twiner	<i>Tylophora woollsii</i>	E	E	20m	20m
Vine	Milky Silkpod	<i>Parsonsia dorrigoensis</i>	E	V	Man Plan	Man. Plan

Federally threatened species identified in the Northern Rivers Regional Biodiversity Management Plan as being under threat from Forestry, with current and proposed prescriptions.

Five of these species were subject to Monitoring Programs.

The current TSLs for UNE and LNE identify 11 plants that require Monitoring Programs be prepared under condition 6.27 of the Threatened Species Licence for the Upper North East and Lower North East Regions of the Forest Agreement:

- Rupp's Wattle *Acacia ruppii*,
- Rusty Plum *Niemeyera* (previously *Amorphospermum*) *whitei*- Southern Metapopulation Unit
- Sandstone Rough-barked Apple, *Angophora robur*
- Long leaf wax flower. *Eriostemon myoporoides* ssp. *conduplicatus*
- Slaty Red Gum *Eucalyptus glaucina* - Northern Metapopulation Unit
- Narrow-leaf Finger Fern *Grammitis stenophylla*
- Four-tailed Grevillea *Grevillea quadricauda*
- Bordered Guinea Flower *Hibbertia marginata*
- Grove's Paperbark *Melaleuca groveana*
- Milky Silkpod *Parsonsia dorrigoensis*
- Broad-leaved Pepperbush *Tasmannia purpurascens*

The Monitoring Programs allow logging to be undertaken in a species' habitat without any prescriptions required to be applied. It is not until monitoring is undertaken and the results considered that anything is intended to be done to modify prescriptions. The reality is that despite being in operation for 20 years monitoring is rarely done and there has been no improvement in protection for any species despite significant impacts being identified.

An informal GI(IP) Act request was submitted on 13 April 2017 for all relevant documents with a response provided by the EPA on 31/07/2017.

The most apparent problem with the limited monitoring undertaken is that the foresters supervising the operation (and likely the contractors) are aware they were logging in a trial area (with plots often

marked on the ground) and thus needed to minimise damage, so the reported damage is likely significantly less than what would occur in a normal operation. Despite this damage to species was far higher than expected by the Forestry Corporation.

Of the 11 species identified for monitoring, the EPA (2017, pers. comm.) identified that:

1. Rupp's Wattle *Acacia ruppia* is claimed to be "not known within 50m of FMZ4" so the conditions were not triggered.
2. Long leaf wax flower *Eriostemon myoporoides* ssp. *conduplicatus* is claimed to be "not known within 50m of FMZ4" so the conditions were not triggered.
3. For Narrow-leaf Finger Fern *Grammitis stenophylla* the EPA identified "Occurrence in harvesting operations unclear. No plan or report located".
4. For Grove's Paperbark *Melaleuca groveana* (not federally listed) the EPA identify that "Plan has not been required to be enacted" though an undated Monitoring Plan was prepared for Kippara State Forest Compartments 6 and 7 and Kippara SF compartments 8, 12 and 13. Online plans identifies *Melaleuca groveana* within the net harvesting area of the 2016 Harvesting Plan for Kippara SF compartments 27, 28, 29, 30, 31 and 33.
5. Similarly there does not appear to have been any monitoring of Four-tailed Grevillea (*Grevillea quadricauda*) despite the Forestry Corporation preparing a Flora Monitoring Program and identifying significant numbers in an area they intended to log in 2009, with the EPA stating "Plan has not been required to be enacted".
6. For *Tasmannia purpurascens* (not federally listed) monitoring was started in 2011, with plots established, though the EPA apparently have no results.
7. The only monitoring report for Bordered Guinea Flower (*Hibbertia marginata*) was not reported until 2012 and the impacts were found to be far greater than anticipated, with 28% and 36% of plants killed or removed at two locations, often by soil disturbance or being smothered by dense logging debris, with many other plants damaged, yet despite changes to the licence since then the prescription has not yet been changed to the proposed 20m buffer.
8. The only monitoring report for Sandstone Rough-barked Apple (*Angophora robur*) was prepared in 2008 with just 35 trees assessed of which 23% suffered significant damage (5 killed), yet the intent now is to remove all protection.
9. The only monitoring report for Slaty Red Gum (*Eucalyptus glaucina*) was not prepared until 2012, finding 30% of trees up to 60 cm dbhob were damaged by logging (5 logged) and 3 years after logging there was a population decline, yet the intent now is to limit protection to mature plants with no buffers.
10. Monitoring of Milky Silkpod (*Parsonsia dorrigoensis*) was not written up until 2009, up to 5 years after monitoring was complete. The monitoring covered 69 plants across 4 State Forests, finding "Logging results in a large proportion (41-64%) of plants, or at least their above-ground parts, being damaged, destroyed or removed. Although all plants damaged by logging survived, a high proportion (19-41%) of plants is destroyed or removed".
11. Rusty Plum (*Niemeyera whitei*) is not Federally listed, so is not detailed below. Monitoring up to a year post-logging was reported on in 2008. Of the 40 trees monitored 12 trees (30%) were damaged by harvesting, with 6 of these "subject to moderate to severe damage considered potentially capable of causing mortality", though with one exception all damaged trees coppiced.

This means that over 20 years of the Threatened Species Licence the impacts of logging were only monitored and reported on for 5 species. Even then the monitoring was not commenced until long after the TSL came into effect, and often not reported on until years later. Even under the controlled monitoring programs, where monitored species were identified and presumably avoided, in all cases significant damage to the threatened species was recorded. Only one monitoring report for each species was undertaken, often despite claims that monitoring would be ongoing and the need to better identify the significance of impacts. None of the monitoring has so far resulted in any changes to prescriptions, with these species still subject to uncontrolled logging impacts.

The results do clearly show that any threatened species within logging areas is likely to be subject to significant impacts, even when identified prior to logging with efforts made to avoid impacts. It is also apparent that for many species post-logging burning greatly compounds logging impacts. The results also show that impacts are more significant than the agencies assume.

What is most concerning is that the existing monitoring has been undertaken under the current logging regimes, which the Flora Monitoring Programs place strong reliance upon to minimise impacts, yet future logging is proposed to be undertaken under a significantly increased intensity with reduced tree retention. Thus the impacts on threatened plant species will be far greater.

The concept of undertaking monitoring while indiscriminately logging habitat of threatened species over decades is a nonsense, and failing to introduce appropriate protection measures when significant impacts are found is a farce.

A precautionary approach would require that logging exclusion zones are placed around all threatened plant species potentially vulnerable to the range of impacts associated with logging (ie physical damage, soil disturbance, microclimate changes, hydrological changes, burning, weed invasion, logging dieback), with logging only allowed after independent trials have proven that logging impacts can be appropriately controlled.

Big Nellie Hakea

Big Nellie Hakea (*Hakea archaeoides*) is listed as Vulnerable under both NSW's Threatened Species Conservation Act and the Commonwealth's *Environment Protection and Biodiversity Conservation Act 1999*. It is restricted to the hinterland between Kempsey and Taree, around Mt Boss, Broken Bago and Landsdowne. Found on steep, rocky, sheltered slopes and in deep gullies in open eucalypt forest. Commonly occurs at the interface of dry eucalypt forest and gully communities.

The OEH Profile (Accessed 01 Dec 2017) in part identifies:

Threats

- *Risk of local extinction due to low population numbers.*
- *Burning patterns which do not allow regeneration.*
- *Forestry activities.*

Activities to assist this species

- *Manage fire in areas of habitat to maintain the shrub layer and to promote regeneration of Hakea archaeoides.*
- *Protect from forestry activities.*
- *Report new occurrences to the OEH.*

The Approved Conservation Advice for *Hakea archaeoides* (1/10/2008) states "*The main potential threats to H. archaeoides include inappropriate fire regimes; forest operations; and vulnerability to stochastic effects due to small population sizes (DEC, 2005b)*", identifying:

Habitat Loss, Disturbance and Modification

- *Monitor known populations to identify key threats.*
- *Monitor the progress of recovery, including the effectiveness of management actions and the need to adapt them if necessary.*
- *Identify populations of high conservation priority.*
- *Ensure forest activities, road widening and maintenance activities (or other infrastructure or development activities) involving substrate or vegetation disturbance in areas where H. archaeoides occurs do not adversely impact on known populations.*

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- ...
- *Minimise adverse impacts from land use at known sites.*
- *Investigate further formal conservation arrangements, management agreements and covenants on private land, and for crown and private land investigate inclusion in reserve tenure if possible.*
- *Assess implementation and effectiveness of forestry management prescriptions, and, if needed, develop or refine threatened species prescriptions.*

Recovery Plan is identified as Department of Environment, Climate Change and Water NSW (2010). Northern Rivers Regional Biodiversity Management Plan, National Recovery Plan for the Northern Rivers Region.

Current Threatened Species Licence

This species is not mentioned in the current licence.

As *Hakea trineura* (from which it was separated) it was identified in the previous licence as requiring *Where there is a record of one or more of the species listed in part b) of this prescription in the compartment the following must apply:*

a) Damage to plants caused by specified forestry activities must be avoided. No buffer is required. The location of these species must be mapped on the Harvesting Plan Operational Map.

Private Native Forestry

The PNF Code requires:

Threatened and protected flora: protection of 90% of individuals

Where there is a record of a species to which this condition applies:

(a) A minimum of 90% of individuals must be protected from specified forestry activities.

During forest operations, the potential for damage to these plants must be minimised by the use of directional felling techniques.

Proposed Coastal IFOA

Under the new Coastal IFOA Big Nellie *Hakea* is classed as "Flora species that require a 20-metre exclusion zone around all individuals".

The Vulnerable Big Nellie *Hakea* is covered by the 2010 Northern Rivers Regional Biodiversity Management Plan, which is its generic Recovery Plan, though provides little direction. It is also subject to a 2008 Conservation Advice. Forestry is a recognised threat, with monitoring and review of prescriptions as actions. It is not currently provided with any protection under the TSL, though the new Coastal IFOA proposes a 20m buffer. The current lack of any protection is clearly not in accord with this species' Recovery Plan or Conservation Advice.

Bordered Guinea Flower

Bordered Guinea Flower (*Hibbertia marginata*) is listed as Vulnerable under both NSW's Threatened Species Conservation Act and the Commonwealth's *Environment Protection and Biodiversity Conservation Act 1999*. Bordered Guinea Flower is a small shrub, growing to 0.5 m tall. restricted to the southern Richmond Range between Casino and Grafton. The 2001 Forests NSW 'Monitoring Plan –*Hibbertia marginata*' identifies that "*the total population is about 9 000 individuals*" but could be larger, considering "*It may occur as small discrete stands, with tens of individuals over hundreds of square metres, or as much larger, diffuse stands occupying tens of hectares*".

Compliance of NE NSW Forestry with Commonwealth Threatened Species Requirements

The OEH Profile (21 Aug 2018) identifies as Threats Road maintenance and widening, Inappropriate fire regimes, and Timber harvesting activities. Management activities are identified as "*Identify roadside populations and protect them during road-works*" and "*Protect areas of known habitat during timber harvesting activities*".

The "Approved Conservation Advice for *Hibbertia marginata*" (3 July 2008) identifies "The main identified threats to *H. marginata* are forestry activities and inappropriate fire regimes (NSW NPWS, 1999)". Regional and Local Priority Actions are identified as:

Habitat Loss, Disturbance and Modification

- *Monitor known populations to identify key threats.*
- *Monitor the progress of recovery, including the effectiveness of management actions and the need to adapt them if necessary.*
- *Identify populations of high conservation priority.*
- *Ensure road widening and maintenance activities in areas where *Hibbertia marginata* occurs do not adversely impact on known populatio*
- ...
- *Assess implementation and effectiveness of forestry management prescriptions, and, if needed, develop or refine threatened species prescriptions (DECC, 2005).*

Recovery Plan is identified as Department of Environment, Climate Change and Water NSW (2010). Northern Rivers Regional Biodiversity Management Plan, National Recovery Plan for the Northern Rivers Region.

Current Threatened Species Licence

Bordered Guinea Flower is identified in the current TSL as one of the 11 plants that require Monitoring Programs be prepared under condition 6.27 of the Threatened Species Licence for the Upper North East and Lower North East Regions of the Forest Agreement:

The 2001 Forests NSW 'Monitoring Plan –*Hibbertia marginata*' outlines the intent, with monitoring immediately post logging and burning, within a year after and three and seven years post-logging.

The 2012 "*Hibbertia marginata* Flora Monitoring Program, First report" is the only report prepared. At 3 sites in different forests twenty plants were selected and tagged with uniquely-numbered metal tags. Monitoring was undertaken at variable times, though within a year. It appears the longer-term monitoring was not done. They found:

For all study areas combined, there was a significant effect of treatment type $p < 0.01$). There was a mean decline of 24% in unlogged, burnt plots and 33% in logged, unburnt plots, ... there was evidence for a greater decline in logged and burnt plots than either alone ...

...

Based on the change in plant density, the mean proportion of plants killed or removed over all three areas combined is 0.28. The proportion is substantially lower for Tabbimoble SF, but since logging is incomplete in that area, the data may not be representative. The proportion for Mount Belmore SF (a decline of 36%) is higher than for Doubleduke (28% decline) ...

Damaged individuals were found to be unexpectedly difficult to relocate with certainty, due to the small, easily damaged stems and the frequent loss of tags.... Because of the loss of tags and the effect of fire on the Mount Belmore plots, it is not possible to quantitatively estimate the proportion of plants damaged by logging or the types and extent of damage sustained. The decline in numbers of plants appears to be due to plants removed as a result of soil disturbance or smothered by dense logging debris, rather than a result of plants simply being physically damaged.

...

Compliance of NE NSW Forestry with Commonwealth Threatened Species Requirements

The decline in numbers of plants in the net harvest area was greater than predicted. For logged, unburnt areas, the results suggest an immediate overall decline of about 30% in the net harvest area and 15% in the total State forest population (assuming that approximately 50% of the population is in harvest exclusion areas). There was also an unexpected decline in areas which were burnt but not affected by logging. Although many individuals survive low intensity fire, a significant proportion do not survive.

Although there was some seedling recruitment soon after logging, it was insufficient in the short term to replace plants which were lost. It remains to be seen whether longer term recruitment will compensate for the decline immediately following logging. ...

Table 2. Change in numbers of plants following logging, by treatment type.

Treatment type	Number of plots	Mean change, plants per plot	Mean percentage change
All unlogged, burnt plots	13	-6.5	-24
All logged, unburnt plots	17	-3.2	-33
All logged burnt plots	6	-19.2	-70

Private Native Forestry

For Bordered Guinea Flower the PNF Code requires:

Exclusion of specified forestry activities from 100% of individuals and no buffer.

Individuals of the threatened species or protected native plants to which this condition applies must not be picked in the course of carrying out specified forestry activities

Proposed Coastal IFOA

Under the new Coastal IFOA Bordered Guinea Flower is classed as "Flora species that require a 20-metre exclusion zone around all individuals".

The limited monitoring for this species identified that the species was significantly damaged during logging, despite it being apparent that the foresters supervising the operation (and likely the contractors) were aware they were logging in a trial area and thus needed to minimise damage to Bordered Guinea Flower. It is astounding that since 1998 the Forestry Corporation were allowed to log in the habitat of this species subject to a Flora Monitoring Plan that wasn't completed until 2012, and that the prescription is still yet to be changed to provide this species with the protection it obviously needs.

Clear Milkvine

Clear Milkvine (AKA Slender Marsdenia) (*Marsdenia longiloba*) is listed as 'Vulnerable' under the EPBC Act and as Endangered under NSW's Threatened Species Conservation Act. There is no approved Recovery Plan. There is a 2008 *Approved Conservation Advice for Marsdenia longiloba (Clear Milkvine)*.

The Conservation Advice considers:

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The main identified threats to Clear Milkvine include localised extinction due to small population; *loss and fragmentation of habitat through land clearing for agriculture and urban development; invasion by introduced weeds, such as Lantana (Lantana camara); grazing and trampling by cattle; inappropriate fire regimes; and herbicide usage (DECC, 2005a, 2005c).*

The Conservation Advice 'Research Priorities' include:

Research priorities that would inform future regional and local priority actions include:

More precisely assess population size, distribution, ecological requirements and the relative impacts of threatening processes.

Undertake survey work in suitable habitat and potential habitat to locate any additional populations/occurrences/remnants

The Conservation Advice identifies as Regional and Local Priority Actions:

Habitat Loss, Disturbance and Modification

- *Monitor known populations to identify key threats.*
- *Monitor the progress of recovery, including the effectiveness of management actions and the need to adapt them if necessary.*
- *Suitably control and manage access on private land.*
- *Minimise adverse impacts from land use at known sites.*
- *Investigate formal conservation arrangements, management agreements and covenants on private land, and for crown and private land investigate inclusion in reserve tenure if possible.*

Conservation Information

- *Liaise with private landholders to convey the significance of Clear Milkvine populations occurring on or adjacent to their property and encourage works for species protection (DECC, 2005b).*

Current Threatened Species Licence

Under the TSL 6.26 Threatened and Protected Flora: protection of 90% of individuals:

A minimum of 90% of individuals must be protected from specified forestry activities. During harvesting operations, the potential for damage to these plants must be minimised by utilising techniques of directional felling.

Private Native Forestry

The Private Native Forestry Code of Practice for Northern NSW requires that “An exclusion zone with at least a 20-metre radius must be implemented around all individuals”.

NEFA and the community identified 13 Clear Milkvine during a logging operation on a private property at Whian Whian ([Pugh 2014](#)). Of these 5 were apparently killed, one severely damaged, and 4 had logging and/or roading within what should have been their exclusion zones. More are likely to have been killed or buried under debris. The FC and EPA were notified of the location of 3 of these before they disappeared, and themselves tagged one before they constructed a track through its exclusion area.

On the 22 September 2013 NEFA identified what it considered likely to be 3 Clear Milkvine (which was later confirmed) in the vicinity of the FC's proposed new road. Flagging tape was placed on an adjacent palm so as not to risk damage to the vine. A photo was provided to the EPA and GPS localities to both EPA and the FC. Three days later, under the supervision of the EPA, the FC constructed a new track through the site and NEFA are now unable to find it or the adjacent palm that had been marked with flagging tape. It appears it was simply bulldozed.



Photo of Clear Milkvine provided, along with GPS co-ordinates, to EPA on 22 September, three days later under the supervision of the EPA the FC constructed a new track through the site and NEFA are now unable to relocate it.

As part of the Community Survey on the 27 of September botanist Nan Nicholson found that the new extraction track had been constructed through a group of 3 Clear Milkvine located 40m to the SSW from NEFA's reported location of 22 September. Two of these had been killed and one severely damaged, as was confirmed by the FC botanist. NEFA inspected this site and do not consider it is the one located on 22 September. Though NEFA's record, and another nearby, emphasises that both EPA and FC botanists should have searched this vicinity thoroughly.

As part of its post-logging assessment NEFA located another Clear Milkvine 38m to the NNE of NEFA's September 22 record, and 7m from a drain outlet on the new track. This one was growing on an Arrow-head Vine and had been marked with flagging tape by the FC. It is apparent that both the FC and EPA should have identified this individual before they violated its exclusion zone. Though a FC comment that "*Doug ... said no*" appears to refer to this species and suggests that despite tagging the vine on which it was growing (and the marking of the centre of the track through a patch of 3) the FC botanist (Doug Binns) may not have recognised this species, even after being alerted to its presence.

During the Community Survey on the 27 of September botanist Nan Nicholson also located another Clear Milkvine next to the logging road that FC had bulldozed debris around. This one is particularly interesting in that the forester charged with identifying threatened species had marked the tree on which the Clear Milkvine was growing, just below a spray of leaves, as the boundary of a riparian exclusion zone. This shows that the responsible foresters are not adequately trained. The others identified in the Community Survey were subsequently protected.



LEFT: 3 Clear Milkvine were found in this pile of debris next to track, two were killed and one severely damaged. RIGHT: Clear Milkvine growing on an Arrow-head vine, marked with tape by FCNSW before track construction, nearest debris 3m, cross drain outlet 7m away and edge of track 10m away.



Clear Milkvine (Marsdenia) found growing on marked tree next to road with debris pushed near it. Note the spray of Clear Milkvine leaves on the trunk above the markings. The marking is for the filter strip, though the forester doing it apparently did not recognise the plant in front of him.

As part of the Community Surveys a further 3 Clear Milkvine were identified by volunteer botanists before the FC could log or road them. As part of NEFA's post-logging assessment a further 2 Clear

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Milkvine were located on the northern boundary of the logging area in an area not covered in the Community Surveys. One small one was found with debris 1.5 m away and extensive logging within 20m and another larger one with logging debris reaching it and again with extensive logging within 20m. Logging of this area occurred after the Community Surveys and was overseen by foresters who had taken part in the Community Surveys and thus should have been able to identify Clear Milkvine by then, if they could be bothered looking.



Two Clear Milkvine (foreground) were found in an area not inspected in the Community Survey that was subsequently logged. Both did not have exclusion zones applied and had extensive logging and debris within what should have been their buffers. It is highly likely that others were killed in the adjacent logging area.

There was a 2 year window of opportunity for the EPA to legally pursue this matter, and they used most of this time up before they issued the Forestry Corporation with two Penalty Notices (each with a fine of \$5,500) on the 11 September 2015 for constructing their track through what should have been 20m exclusion zones for a Koala High Use Tree and the NSW Endangered vine Clear Milkvine.

The Forestry Corporation stated they intended to vigorously dispute the fines on the grounds that their intent *"was discussed with EPA staff on site during the operation"*. In other words, the EPA knew they were going to construct the illegal road and, at best, did nothing to stop them.

Given that the EPA had almost used up their 2 years for legal action, the Forestry Corporation simply bided their time before telling the EPA that they would not pay the fines and would rather dispute them in court. By then, the EPA claim, it was too late to defend the fines in court.

Proposed Coastal IFOA

Under the new Coastal IFOA Clear Milkvine is classed as *"Flora species that require a 20-metre exclusion zone around all individuals"*.

The Vulnerable Clear Milkvine has no Recovery Plan, but is covered by a 2008 Conservation Advice which requires surveys, monitoring and an assessment and review of management actions, particularly on private land. The TSL requires protection of 90% of individuals. For PNF 20m buffers are required. During a logging operation undertaken by the Forestry Corporation on private land in 2013 NEFA identified 13 plants, of which 5 were apparently killed, one severely damaged, and 4 had logging and/or roading within what should have been their exclusion zones. Three of those killed were identified prior to road construction, and the other 2 found after. Other individuals are likely to have been killed in the operation. The EPA waited until the time for prosecution had almost

expired before issuing the Forestry Corporation with a \$5,500 fine for roading within the buffer of Clear Milkvine, though they contested the offence and refused to pay the fine, by which time it was too late for the EPA to prosecute. It is evident that because of the absence of survey requirements this species has no meaningful protection on private land in contravention of the Conservation Advice. The new Coastal IFOA proposes 20m buffers for this species.

Four-tailed Grevillea

Four-tailed Grevillea (*Grevillea quadricauda*) is listed as Vulnerable under both NSW's Threatened Species Conservation Act and the Commonwealth's *Environment Protection and Biodiversity Conservation Act 1999*. It is a dense shrub growing up to 2 m high found to the north-west of Whiporie in Mount Belmore State Forest, Mount Neville Nature Reserve and at Tucabia, east of Grafton.

The OEH Profile (09 Mar 2018) identifies threats as

- Timber harvesting activities.
- Too-frequent fire.
- Road widening and maintenance.
- Clearing for development and agriculture.
- Risk of local extinction because populations are small.

Activities to assist this species include:

- Ensure forestry operations do not damage habitat.
- Identify roadside populations and protect them during road-works.

The Commonwealth's Approved Conservation Advice for *Grevillea quadricauda* (Four-tailed Grevillea) (26/3/2008) states "*The main identified threats to G. quadricauda are timber harvesting activities; frequent fires; road widening and maintenance activities; and clearing for development and agriculture. The small population size of this species further increases the risk of local extinctions resulting from these threats (DECC, 2005a)*".

Regional Priority Actions identified include:

- *Identify populations of high conservation priority.*
- *Manage threats to areas of vegetation that contain populations of the species.*
- *Ensure road widening and maintenance activities (or other infrastructure or development activities as appropriate) in areas where G. quadricauda occurs do not adversely affect known populations.*
- ...
- *Include direction for the protection of known populations and potential habitat of the species in the Code of Practice for Private Native Forestry (DECC, 2007).*

Local Priority Actions include:

- *Monitor known populations to identify key threats.*
- *Monitor the progress of recovery, including the effectiveness of management actions and the need to adapt them if necessary.*
- *Minimise adverse impacts from land use at known sites.*
- *Undertake survey work in suitable habitat and potential habitat to locate any additional populations.*
- *Assess implementation and effectiveness of forestry management and develop or refine threatened species prescriptions, if required (DECC, 2005b).*

Identified as Recovery Plan not required.

Current Threatened Species Licence

Four-tailed Grevillea is identified in the current TSL as one of the 11 plants that require Monitoring Programs be prepared under condition 6.27 of the Threatened Species Licence for the Upper North East and Lower North East Regions of the Forest Agreement:

A Flora Monitoring Program for Grevillea quadricauda was prepared on 4 November 2008.

A 2008 Monitoring Report identifies "*In July 2008 during a desktop survey of compartments scheduled for harvesting in Mt Belmore State Forest it was identified that previous records of Grevillea quadricauda existed within proposed harvest area*", these records were confirmed with operations scheduled for January 2009.

It does not appear that the monitoring was ever undertaken, with the EPA 2017 claiming "*Plan has not been required to be enacted*".

Private Native Forestry

The PNF Code requires:

*Exclusion of specified forestry activities from 100% of individuals and no buffer
Individuals of the threatened species or protected native plants to which this condition
applies must not be picked in the course of carrying out specified forestry activities.*

Proposed Coastal IFOA

Under the new Coastal IFOA Four-tailed Grevillea is classed as "*Flora species that require a 20-metre exclusion zone around all individuals*".

No Recovery Plan is required for the Vulnerable Four-tailed Grevillea. The 2008 Conservation Advice identifies forestry as a threat, requiring implementation and monitoring of prescriptions. The current TSL class it as one of the 11 plants that can be logged indiscriminately subject to the undertaking of a Monitoring Program. There does not appear to have been any monitoring of this species despite the Forestry Corporation preparing a Flora Monitoring Program and identifying significant numbers in an area they intended to log in 2009, with the EPA stating "*Plan has not been required to be enacted*". The PNF Code requires protection of all individuals with no buffers. The new Coastal IFOA proposes to require 20m buffers. It is outrageous that this species has been allowed to be subject to indiscriminate logging for the past 20 years with no protection and no monitoring.

Milky Silkpod

Milky Silkpod (*Parsonsia dorrigoensis*) is listed as Vulnerable under NSW's Threatened Species Conservation Act and as Endangered under the Commonwealth's *Environment Protection and Biodiversity Conservation Act 1999*. It is a slender, trailing climber found in tall eucalypt forests and in subtropical and warm-temperate rainforests between Kendall and Woolgoolga. State Forests 2000 the Flora Monitoring Program (FMP) identifies that "*Its longevity is unknown, but is likely to be at least several decades and may be in the order of centuries*".

The OEH Profile (28 Jun 2018) identifies threats as including "*Road maintenance and widening*", "*Loss of individuals or impacts on habitat as a result of forestry activities*" and "*Invasion of habitat by introduced weeds, particularly Lantana*". Activities to assist this species include:

- *Searches for the species should be conducted prior to any logging operations.*
- *Control introduced weeds in potential habitat areas.*
- *Protect known habitat from clearing, high levels of disturbance and development.*
- *Monitor populations to identify any threats or population declines.*

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- *Ensure roadside populations are identified and marked to protect them from road works and weed spraying.*

Approved Conservation Advice for *Parsonsia dorrigoensis* (Milky Silkpod) (3/7/2008) notes:

The main identified threat to Milky Silkpod is low numbers.

*The main potential threats to Milky Silkpod include clearing of habitat for agriculture or roadworks; invasion of habitat by introduced weeds, particularly Lantana (*Lantana camara*); and detrimental burning regimes. State Forest populations may be affected by forest operations (DECC, 2005; Richards, 1999).*

Identified Regional Priority Actions include:

- *Monitor the progress of recovery, including the effectiveness of management actions and the need to adapt them if necessary.*
- *Identify populations of high conservation priority.*
- *Manage threats to areas of vegetation that contain populations/occurrences/remnants of Milky Silkpod, particularly on State Forests with logging activity.*
- *Ensure road widening and maintenance activities (or other infrastructure or development activities involving substrate or vegetation disturbance) in areas where Milky Silkpod occurs do not adversely impact on known populations.*

Local Priority Actions include:

- *Minimise adverse impacts from land use at known sites, particularly on State Forests, by conducting searches for Milky Silkpod prior to any logging operations.*
- *Identify and remove weeds in the local area, particularly Lantana, which could become a threat to Milky Silkpod, using appropriate methods.*

The Recovery Plan is Department of Environment, Climate Change and Water NSW (2010). *Northern Rivers Regional Biodiversity Management Plan, National Recovery Plan for the Northern Rivers Region.*

Current Threatened Species Licence

Milky Silkpod is identified in the current TSL as one of the 11 plants that require Monitoring Programs be prepared under condition 6.27 of the Threatened Species Licence for the Upper North East and Lower North East Regions of the Forest Agreement:

In June 2000 the Flora Monitoring Program (FMP) was approved. In Scotchman SF monitoring was completed in 2003-2004. In Viewmont State Forest monitoring was completed in 2004. In Tuckers Nob SF monitoring was completed in 2008.

The 'Parsonsia dorrigoensis Flora Monitoring Program First report' was not prepared until 26 June 2009. It monitored the impacts on 20 plants at each of 3 logging operations and 10 plants in another, notionally one month following logging being completed within the compartments, with one site measured after a year. The report identifies:

There were highly significant declines in the numbers of large plants (all classes greater than or equal to 2 m long) in Scotchman 106 (logged, burnt) and in Viewmont. There was a small but non-significant decline in large plants in Scotchman 107 and a small but non-significant increase in Tuckers Knob. ...

...

1. In the logged burnt area, an estimated 60% of plants were killed or removed. Due to the relatively small number of plots, this estimate is subject to substantial uncertainty, with the 95% confidence interval being 31 to 83%. In areas which were logged but not burnt, an estimated 29% of plants were killed or removed, with the 95% confidence interval 19 to 41%.

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The total proportion damaged by logging but not killed or removed is estimated as 20%, comprising 13% with major damage (stems severed below lowest leaves) and 7% with minor damage. The proportions of destroyed and damaged plants varied widely among study areas, mainly in relation to the varying intensity of logging operations.

2. All plants which were damaged by logging, but not removed or destroyed, recovered regardless of the type or extent of damage. Those which were severely damaged by being severed at or near ground level recovered by sprouting new stems. Those with less severe damage recovered by new shoots or continued growth on residual stems.

...

Logging results in a large proportion (41-64%) of plants, or at least their above-ground parts, being damaged, destroyed or removed. Although all plants damaged by logging survived, a high proportion (19-41%) of plants is destroyed or removed. Based on results from Scotchman and Tuckers Knob, after one year post-logging, lost plants are replaced by seedlings or vegetative sprouts from rhizomes, to the extent that the net result is a slight increase in the numbers of plants. However, the immediate post-logging results from Viewmont suggest that this may not always be the case, and that in some circumstances there may be a net decline. There is an indication that numbers of plants may fluctuate substantially, without disturbance, over periods of several years, which complicates the interpretation of observed responses to logging. Although the data on the combined effect of logging and fire are very limited, net recruitment may not occur, or may be slower to develop, in areas which are both logged and burnt.

Table 1. Summary of responses of individual tagged plants.

Numbers for Scotchman 106 for post-burning are based on the combined effect of logging and burning. Two plants in Tuckers Knob SF 2 died of natural causes but were not damaged by logging and have been excluded from the 'total killed' column. One tagged plant in Viewmont SF was inadvertently omitted from post-logging assessment.

	Removed or destroyed	Major damage	Minor to moderate damage	Recovered	Total killed	Total assessed
Scotchman106, post-log, pre-burn	5	2	2	-	-	10
Scotchman106, post-log, post-burn	5	5	0	4	6	10
Scotchman107	1	2	3	5	1	10
Tuckers Knob	6	0	0	0	6	20
Viewmont	9	2	0	2	9	19
Tamban	1	3	0	3	1	10

Private Native Forestry

The PNF Code:

Exclusion of specified forestry activities from 100% of individuals and no buffer

Individuals of the threatened species or protected native plants to which this condition applies must not be picked in the course of carrying out specified forestry activities

Proposed Coastal IFOA

Under the new Coastal IFOA Milky Silkpod is classed as "Flora species requiring a species management plan".

The Endangered Milky Silkpod is covered by the 2010 Northern Rivers Regional Biodiversity Management Plan, which is its generic Recovery Plan, though provides little direction. It is also subject to a 2008 Conservation Advice. Forestry is an identified threat, with implementation, monitoring and improvement of prescriptions as actions. The current TSL class it as one of the 11 plants that can be logged indiscriminately subject to the undertaking of a Monitoring Program. Monitoring of Milky Silkpod (*Parsonsia dorrigoensis*) was not written up until 2009, up to 5 years after monitoring was complete. The monitoring covered 69 plants across 4 State Forests, finding "Logging results in a large proportion (41-64%) of plants, or at least their above-ground parts, being damaged, destroyed or removed. Although all plants damaged by logging survived, a high proportion (19-41%) of plants is destroyed or removed". The PNF Code requires protection of all individuals with no buffers. The new Coastal IFOA proposes more of the same, with a Management Plan required. It is outrageous that this species has been allowed to be subject to indiscriminate logging for the past 20 years with no protection, despite the evidence that logging has a significant impact. This contravenes both the Recovery Plan and Conservation Advice.

Narrow-leaved Melichrus

Narrow-leaved Melichrus (*Melichrus sp. Gibberagee*) is listed as 'Endangered' under the EPBC Act. It is yet to be formally described.

This species was discovered during pre-logging surveys brokered with the Minister for Forests by NEFA in 1997. The Forestry Corporation identified an exclusion zone, included it in a draft harvesting plan, and this was approved by the then Regulatory and Public Interest Committee (RaPIC) subject to the condition "No new roads/dumps be constructed or reopened within interim exclusion zones for new plant species".

NEFA attended a site inspection on 17 December 1997 where botanists identified individuals outside the interim exclusion zone which Forestry Corporation agreed to protect. When the Forestry Corporation and NPWS were in the process of developing an agreed management plan in January 1998 the Forestry Corporation used a bulldozer to reopen and widen a track through the middle of their interim exclusion zone for the newly discovered population. resulting in the Forestry Corporation (Doug Binns) admitting 23 Narrow-leaf Melichrus were eliminated by grading, and another 7 plants damaged. NEFA's audit identified an additional 194 individuals that had disturbance (tree heads and machinery disturbance) within 10m (10m buffers were all that was required back then).

State Forests blamed the contractor for not following instructions and suspended him. The contractor in turn claimed he was following State Forests' instructions and, with the backing of the Forest Products Association, commenced legal proceedings to be reinstated. State Forests gave in without a fight, implying they were in the wrong. In March the NPWS approved them to upgrade the illegal road and to log within 10m of Narrow-leaf Melichrus. They got away with it scot free.

The Recovery Plan relied upon is the 2010 Northern Rivers Regional Biodiversity Management Plan, National Recovery Plan for the Northern Rivers Region. OEH have a Narrow-leaf Melichrus - profile that identifies 'Timber harvesting activities' and 'Road-works' as a threat, with an assistance being "Protect known habitat from timber harvesting activities".

The weed Lantana, *Lantana camara*, is an identified threat to the Narrow-leaf Melichrus.

There is no approved Conservation Advice for this species.

Current Threatened Species Licence

Compartments 117 and 118 of Giberagee (and some adjacent private lands) are the only places in the world where the Endangered Narrow-leaf Melichrus (*Melichrus sp. gibberagee*) is found. In 2017 NEFA undertook a number of inspections of compartment 118 and part of 117 of Gibberagee State Forest when logging was underway. See [Preliminary Audit of Gibberagee State Forest](#) (NEFA 2017).

NEFA undertook a preliminary assessment of a small part of the area on 6 February 2017, identifying a variety of problems and providing a "Preliminary Audit of the Endangered Narrow-leaf Melichrus in Gibberagee SF" to both Fisheries NSW and the Environment Protection Authority (EPA) on 8 February 2017, identifying problems with the management of the nationally endangered Narrow-leaf Melichrus (*Melichrus sp. gibberagee*), habitat trees and unmapped drainage lines.

There followed a ludicrous process where EPA invited us out to the forest on 10 March to show them breaches of Narrow-leaf Melichrus buffers. When they arrived they had the Forestry Corporation with them, who immediately ordered us out of the forest without even allowing us to show them more breaches we had just found nearby.

The Forestry Corporation then sent a backdated letter to me threatening legal action if I returned to the forest on the grounds that it is a "closed" forest. From previous experience NEFA had no confidence that either the EPA or Fisheries would attempt to identify any additional breaches aside from those we had initially reported. We have long given up on the assumption that if we highlighted problems this would initiate a thorough investigation by the regulatory agencies.

Over 3 visits NEFA identified 15 Endangered Narrow-leaf Melichrus that have had forestry operations conducted within their 50m exclusion zones. Eight had roading conducted within their buffers, often within a few metres of the plants, one had a log dump within its buffer and 6 have had logging operations extend within what should be exclusion zones, by up to 18 and 22m in the worst cases. It is evident that exclusion zone boundaries, at least at some sites, have not been marked on the ground in accordance with TSL.



Log dump situated within buffer of Narrow-leaf Melichrus. with marked logs subsequently erected to show exclusion zone by the Forestry Corporation.



The arrow indicates the location of a Melichrus immediately adjacent to a newly constructed road.

On our last visit it was found that individuals of the Endangered Narrow-leaf Melichrus situated near roads used during logging were found to have coatings of dust, sufficient to significantly impair their functioning and compound the effects of a prolonged dry period.



LEFT: Melichrus immediately adjacent to road with dense covering of dust RIGHT: Melichrus about 10m in from road with covering of dust.

Private Native Forestry

The Private Native Forestry Code of Practice for Northern NSW requires A. Threatened flora: 50-metre exclusion zone, all individuals:

- (a) *An exclusion zone with at least a 50-metre radius must be implemented around all individuals.*
- (b) *An exclusion zone at least 50 metres wide must be implemented around all groups of individuals. A group is defined as more than one individual located less than 20 metres apart.*

Proposed Coastal IFOA

Under the new Coastal IFOA Narrow-leaved Melichrus is classed as "*Flora species that require a 20-metre exclusion zone around all individuals*". This is a major reduction in protection from the current 50m buffers, representing an 84% decline in buffers from 0.785ha 0.126ha.

The Recovery Plan relied upon for the Endangered Narrow-leaved Melichrus is the 2010 Northern Rivers Regional Biodiversity Management Plan which is its generic Recovery Plan that provides little direction. It identifies forestry as a threat, requiring "*Develop appropriate criteria and indicators to review the effectiveness of threatened species protection measures*". There is no approved Conservation Advice for this species. The current TSL requires 50m buffers. In 2017 NEFA identified 15 Endangered Narrow-leaf Melichrus that have had forestry operations conducted within their 50m exclusion zones, 8 had roading conducted within their buffers, often within a few metres of the plants, one had a log dump within its buffer and 6 have had logging operations extend within what should be exclusion zones, and a number of buffers were not marked as required. The PNF code requires 50m buffers. The new Coastal IFOA proposes reducing the buffer to 20m. This is apparently a political decision (all 50m buffers have been reduced to 20m) without any monitoring or review in contravention of the Recovery Plan.

Onion Cedar

Onion Cedar (*Owenia cepiodora*) is listed as 'Vulnerable' under the EPBC Act. The 2010 *Border Ranges Rainforest Biodiversity Management Plan - NSW & Queensland* is relied upon as the Recovery Plan. There is a 2008. *Approved Conservation Advice for Owenia cepiodora (Onionwood)*.

The Border Ranges Rainforest Biodiversity Management Plan is the Recovery Plan relied upon for the Vulnerable Onion Cedar. It includes a variety of objectives and actions that are relevant to Onion Cedar.

Objective 4 of the Plan is "*To protect rainforest and related vegetation from fragmentation, modification and degradation*", with relevant actions being:

- *Promote the rehabilitation and management of rainforest and related vegetation on public land through plans of management, pest strategies and restoration and rehabilitation plans.*
- *Ensure that buffers are included in approvals for new developments or activities that occur in close proximity to rainforest or related vegetation.*

Objective 10 of the Plan is "To minimise the impacts of human interference", with relevant actions being:

- *To reduce access for pest animals and weeds, discourage the construction of new roads and tracks in priority areas.*

The Recovery Plan identifies Cherry Tree State Forest as a "Conserve" and "Repair" priority area.

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The Conservation Advice identifies that the NSW population is "about 40 mature individuals and at least 400 immature individuals, including seedlings", with:

The main identified threats to Onionwood include habitat clearing; weed infestation; and stochastic events. The current low population is attributable to heavy logging in the past (Floyd, 1989; Sheringham & Westaway, 1995). Lantana (Lantana camara) has been reported as a threat to NSW sites (McKinley et al., 1995) and is present at both the Queensland sites (Ryan et al., 2003).

Identified recovery actions in the Conservation Advice include:

Habitat Loss, Disturbance and Modification

- *Monitor known populations to identify key threats.*
- *Monitor the progress of recovery, including the effectiveness of management actions and the need to adapt them if necessary.*
- *Identify populations of high conservation priority.*
- *Manage threats to areas of vegetation that contain populations/occurrences/remnants of Onionwood.*
- *Investigate formal conservation arrangements such as the use of covenants, conservation agreements or inclusion in reserve tenure.*

Invasive Weeds

- *Identify and remove weeds in the local area, which could become a threat to the species, using appropriate methods.*
- *Manage sites to prevent introduction of invasive weeds, which could become a threat to Onionwood, using appropriate methods.*

Current Threatened Species Licence

The original TSL identified Onion Cedar as covered by 6.22 Threatened Flora: 50 metres Exclusion Zone, all individuals:

Where there is a record of any of the species listed in Table 1 or Table 2 below within the compartment or within 50 metres outside the boundary of the compartment, the following must apply:

- a) An exclusion zone of at least 50 metres radius must be implemented around all individuals.*
- b) An exclusion zone of at least 50 metres wide must be implemented around all groups of individuals. A group is defined as more than one individual located less than 20 metres apart*

In 2013 the exclusion zone required around Onion Cedar was reduced from 50m down to 20m, without notification, no justification, and no consultation with the Commonwealth. It is now listed under the TSL 6.23 *Threatened and Protected Flora: 20 metres Exclusion Zones, all individuals.*

Currently surveys are required for Onion Cedar and 20m exclusion zones created around all individuals. An added requirement for surveys is imposed by TSL when constructing roads through IFOA rainforest that is identified as part of the informal reserve system. A field assessment is required that includes:

- ii. An assessment and description of any threatened flora that will or is likely to be directly or indirectly affected by construction, or occurs within 50 metres of the construction area.*

On NEFA's first inspection of Cherry Tree State Forest we identified 8 vulnerable Onion Cedars *Owenia cepiodora* which the Forestry Corporation had constructed a track through and logged amongst. This was part of a brief preliminary visit, which we reported in the hope it would cause the EPA to fully assess the extent of the breach, require pre-logging assessments by competent botanists and lead to rehabilitation of the affected plants.

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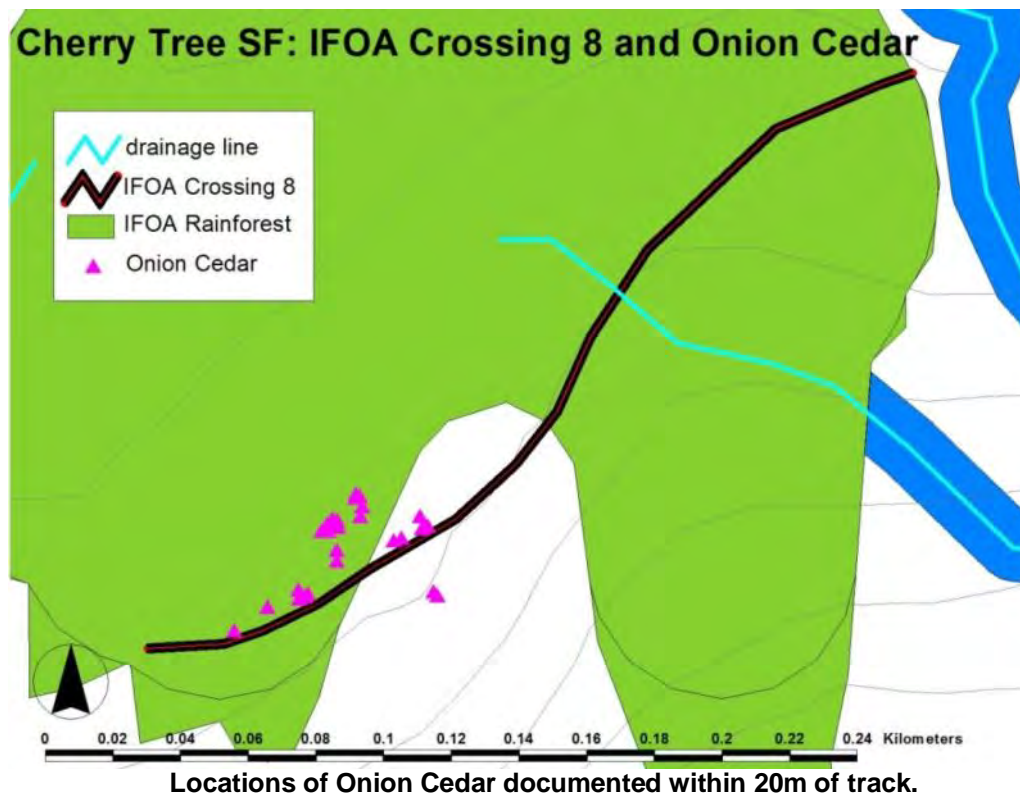
During subsequent inspections a more thorough investigation of the Onion Cedar area was undertaken to better document the number of individuals affected by the track construction (it is emphasised that this was not comprehensive). A total of 26 Onion Cedars were identified within 20m of the track. Two of these (2 and 3m from track) had their tops knocked off during road construction and 2 were bulldozed over amongst logging debris. 19 of the affected Onion Cedars are within the IFOA rainforest and 7 within the nett harvest area.

The IFOA mapped rainforest was identified as the NSW Endangered Ecological Community (EEC) Lowland Rainforest and it was later revealed that the nett harvest area in this vicinity is within the EEC Grey Box-Grey Gum Wet Sclerophyll Forest. So all 26 offences occurred within EECs.



Onion Cedar in roading debris. BOTTOM LEFT: a 6m Onion Cedar is one of two pushed over amongst logging debris, 6 months later they were still alive but nothing had been done to remove the debris and give them a chance of surviving. A year later they were dead.

Given their distribution on both sides of the track and into the logging area, it is most probable that additional Onion Cedars were killed in the construction of the road and associated logging operations. Subsequent inspections revealed more Onion Cedars in the vicinity.



When inspected in August the 2 bulldozed trees were still alive but very sick, with the debris still left around them. This was raised in a complaint handed to the Minister for the Environment on 29 August. When last inspected at the end of October, there had still been no attempt to recover any of the trees.

Onion Cedar is a distinctive and obvious plant and could not be missed by any competent botanist, or even a well trained forester, particularly as they were the only threatened plant being specifically targeted in surveys. Many of the individuals were young trees with leaves at eye height - you would have to be blind to miss them. It is evident that the Forestry Corporation did not have "an adequately trained person" "conduct a thorough search" for threatened plants in contravention of both TSL 5.2.1 (a) (xiv) and Schedule 6 (d) (ii) . We tagged the plants so they could be relocated by the EPA. Due to the EPA's apparent inability to identify the additional Onion Cedars it is apparent that they do not have the required expertise or will either.

NEFA (Pugh 2015) submitted their [audit of Cherry Tree State Forest](#) to the EPA in December 2015 identifying that the construction of IFOA crossing 8 through a population of the vulnerable Onion Cedar is in contravention of TSL Schedule 6 (d) (ii) (v), while the undertaking of forestry operations within 20m of these plants, and the subsequent damaging and killing of individuals, is a breach of TSL 5.1 (b), 5.2.1 (a) (xiv), 5.4 (e)(iv) and "6.23 Threatened and Protected Flora: 20 metres Exclusion Zones, all individuals".

Though given that all of these breaches occurred in the EECs, their roading and logging is not permitted by the TSL, so they are direct contraventions of the NPW Act 118(a) and (d).

The EPA (15 January 2016) subsequently prepared a response that only considered NEFA's initial complaint (RECKY OF CHERRY TREE STATE FOREST, 9 March 2015), which they claimed had been fully responded to, though ignored most complaints to primarily focus on the damage to the Onion Cedar. They refused to consider NEFA's further complaints that an additional 18 Onion Cedars had roading within 20m. They also refused to consider that the offences occurred within the EECs Lowland Rainforest and Grey Box-Grey Gum Wet Sclerophyll Forest. From their limited assessment they concluded:

Two Penalty Notices issued for unlawfully picking threatened plants – Onion Cedar

We issued two penalty infringement notices to the Forestry Corporation of NSW (FCNSW) for breaching section 118(A)(2) of the *National Parks and Wildlife Act 1974* ("NPW Act"). We found that FCNSW planned, instructed and supervised forestry operations, including parts of the operation that failed to comply with conditions of the Threatened Species Licence for the Upper North Region ("TSL"). Ultimately, as the TSL was not complied with, section 118(A)(2) of the NPW Act was breached when eight threatened Onion Cedar plants (*Owenia cepiodora*) were picked. The level of damage to these plants ranged from minor to severe. The picked plants are directly adjacent to a constructed snig track and are within both rainforest areas (2 plants), and the net logging area (6 plants). FCNSW was fined \$1000 for each offence.

Penalty enforcement action is appropriate

In taking enforcement action, we gave consideration to all the matters surrounding this forestry operation. We are mindful that the actions that caused the breaches should have been avoided. The EPA considers that the root cause of this harm was that FCNSW failed to identify Onion Cedar plants and assess forestry impacts. FCNSW had expertise and resources to execute this operation in a manner that would have prevented these breaches.

Official caution issued for failing to comply with Threatened Species Licence

We have reasonable grounds to believe that FCNSW committed other offences under section 133(4) of the NPW Act as a result of four non-compliances with the TSL. These offences related to a failure to prepare a report addressing all matters in accordance with Schedule 6 (TSL condition 5.4e(ii)); failing to conduct compartment mark-up searches in advance of harvesting operations (TSL conditions 5.2.1.a) and also operating in areas not subject to compartment marking up (TSL conditions 5.2.1b; 5.1h). We issued an official caution for these matters.

Removal of debris against Onion Cedar plant

As part of its short term corrective actions, FCNSW committed to removing the logging debris placing pressure on one *Owenia cepiodora* plant along snig track adjacent to IFOA crossing 8. We requested this action be timely and undertaken in a manner that does not further risk or harm the individual plant or surrounding individual *Owenia cepiodora* plants.

Corrective Action Request to remediate roads and drainage through rainforest areas

On 2 April 2015, the EPA issued a corrective action request for remedial works to be undertaken along IFOA crossing 7 and 8 as a result of excessive soil disturbance during wet weather. This request required specialist soil conservationist advice. It also mandated no further damage to Onion Cedars and for the drainage to comply with Environment Protection Licence requirements. The works were satisfactorily completed in a timely manner to minimise the risk of water pollution.

On 19 January 2016 NEFA complained to the Minister for Environment about the EPA's incomplete response, with 19 issues ignored and 2 only partially considered, stating:

The gross inadequacy of the EPA's "investigation" is astounding. Even the two issues they dealt with have been considered incompletely and extremely incompetently. From our brief visit on 9 March 2015 we identified and tagged 8 Onion Cedar near the road which had been affected by roading, with 4 seriously damaged. Our subsequent investigations identified a total of 26 Onion Cedars in that vicinity that had roading undertaken within 20m of them, with some of the additional ones next to the road, and considered others were likely to have been bulldozed out in track construction. We provided the EPA with details of these offenses on 15 December.

It beggars belief that the EPA did their own "investigation" and failed to identify any more Onion Cedar than those 8 we had tagged. A professional body would have checked for any other affected plants in the vicinity - and even a half-competent investigator should have identified the additional Onion Cedars near the road once they had their "eye in".

The Minister (7 March 2016) responded that he had asked the EPA to contact NEFA regarding their "regulatory response relating to the onion cedar allegations that NEFA made, including the additional matters raised". On 8 April NEFA subsequently attended a site inspection with EPA, at their request to show them to rainforest breaches that they claimed to be unable to find. NEFA wrote to the Environment Minister (Dailan Pugh 11 April 2016):

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On the site inspection I showed the EPA many of the additional Onion Cedars they had failed to identify, and they accepted these were Onion Cedars (I had a botanist with me to confirm it), these included a number readily visible from the track, some only a metre or so from those few identified by the EPA. I showed them two beside the track which had their tops knocked out in track construction, and during the inspection identified an additional one (which I had not previously documented) that had been damaged during track construction and had debris still pushed on to it.

The EPA had not bothered to further investigate the Onion Cedars, or bothered to investigate the additional locations I had provided co-ordinates for, and made it clear to me that they had no intent to do so. It was clear on the site inspection that there are still undocumented affected plants. My concern that they were not going to fully investigate my complaint was verified. They are going to let the FC off the additional offences scot free, and not even acknowledge the true magnitude of the offences.

...

The EPA claimed on the 18 January 2016 that "as part of its short term corrective actions" they have requested that the Forestry Corporation remove debris from one Onion Cedar in a "timely" manner. We requested the EPA, Forestry Corporation and the Minister for the Environment to take remedial action for this and other plants in March 2015, and repeatedly since. When inspected on Friday nothing had been done, and despite recent site inspections the EPA had not realised this. To me this displays complete contempt for the survival of an illegally damaged threatened species and the belated meaningless restoration directive of the EPA. A year after NEFA complained to the Environment Minister, this vulnerable species still has roading debris piled around it, as do others, and is extremely vulnerable to burning and weed invasion.

...

To our view the fact that over 20 of the affected Onion Cedars were in an EEC should have increased the severity of the offenses, though the EPA only admit to 2 plants being in the rainforest and issued fines and remediation requirements for two that were not in the EEC, the EPA ignored the EEC when considering the significance of the offense and appear intent on intentionally downplaying the extent and significance of the damage to Onion Cedar within the EEC.

The EPA provided NEFA with their final report on 21 December 2016. As we expected, in their final report the EPA failed to consider any of the additional Onion Cedar, with the additional 18 Onion Cedars simply claimed to have been dealt with under the general "Official Caution". Regarding rehabilitation they claim:

Removal of debris against Onion Cedar

The EPA requested the FCNSW removed debris placing pressure of Onion Cedar T4-235 (above). FCNSW removed a log placing pressure against this tree on 1 February 2016. The EPA was not informed of this action by FCNSW until 28 April 2016. The EPA was not satisfied with the action that FCNSW took. The EPA issued a follow up request for FCNSW to implement an action plan to ensure the long term survival of the Onion Cedar plant affected by the operations. The action plan required:

That FCNSW prepare an action plan in consideration of the long term protection, health and survival of all affected Onion Cedar plants at Cherry Tree State Forest. This action plan should be prepared with practical measures to, at least:

- Periodically monitor the plants and surrounding environment;*
- Take necessary actions to maintain an optimum growing environment;*
- Prevent further disturbance and damage;*
- Consider relevant risks and threats (eg fire and weed invasion);*
- Consider all Onion Cedars in the area, so that both individuals (known, damaged or otherwise), and the broader immediate population are included;*

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- Consider the surrounding communities, especially rainforest;
- Exclude all types of machinery from the process ie hand tools only

The EPA is awaiting final confirmation from FCNSW confirming actions against this request.

When the site was inspected over a year later the required remedial works had still not been undertaken and the Onion Cedars specifically identified for remediation were dead.

While the *Border Ranges Rainforest Biodiversity Management Plan - NSW & Queensland* is relied upon as the Recovery Plan the EPA dismissed our concerns that it had not been complied with on the grounds that "*The harvesting operations were undertaken under the authority of the Upper North East region Integrated Forestry Operations Approval*". They considered it irrelevant that these offences had occurred within Conserve and Repair Priority Areas.

As well as contravening the Recovery Plan the Forestry Corporation clearly breached the Conservation Advice requirements to:

- Monitor the progress of recovery, including the effectiveness of management actions and the need to adapt them if necessary.
- Manage threats to areas of vegetation that contain populations/occurrences/remnants of Onionwood.
- Manage threats to areas of vegetation that contain populations/occurrences/remnants of Onionwood.
- Identify and remove weeds in the local area, which could become a threat to the species, using appropriate methods.
- Manage sites to prevent introduction of invasive weeds, which could become a threat to Onionwood, using appropriate methods.

Private Native Forestry

The Private Native Forestry Code of Practice for Northern NSW requires A. Threatened flora: 50-metre exclusion zone, all individuals:

- (a) An exclusion zone with at least a 50-metre radius must be implemented around all individuals.*
- (b) An exclusion zone at least 50 metres wide must be implemented around all groups of individuals. A group is defined as more than one individual located less than 20 metres apart.*

As there is no requirement for surveys there is little chance that this requirement will have any effect in practice.

Proposed Coastal IFOA

Under the new Coastal IFOA Onion Cedar is classed as "Flora species that require a 20-metre exclusion zone around all individuals".

The Border Ranges Rainforest Biodiversity Management Plan is the Recovery Plan relied upon for the Vulnerable Onion Cedar, relevantly it focuses the protection of rainforest and its buffers. The 2008 Conservation Advice focuses on monitoring and adapting management actions. In 2013 the exclusion zone required by the TSL around Onion Cedar was reduced from 50m down to 20m, without any apparent assessment. In 2015 in Cherry Tree State Forest NEFA found that a road had been constructed through the NSW TEC Lowland Rainforest within a Recovery Plan "Conserve" and "Repair" priority area, and within the 20m buffers of at least 26 Onion Cedars, in the process 2 of these (2 and 3m from track) had their tops knocked off during road construction and 2 were bulldozed over amongst logging debris, with others likely killed by the road construction. The EPA issued Forestry Corporation with 2 Penalty Notices, each with a \$1,000 fine, though took no legal action for the roading through the Lowland Rainforest and considered the Recovery Plan

requirements irrelevant. The PNF Code requires 50m buffers. The proposed Coastal IFOA proposes retaining the 20m buffers. It is significant that the EPA thought that the Recovery Plan requirements for this species were irrelevant.

Red Bopple Nut

Red Bopple Nut (*Hicksbeachia pinnatifolia*) is listed as Vulnerable under both NSW's Threatened Species Conservation Act and the Commonwealth's *Environment Protection and Biodiversity Conservation Act 1999*. Identified threats include clearing associated with roadworks, habitat degradation, weed invasion, and inappropriate burning regimes.

A Recovery Plan is identified as not required.

The Approved 'Conservation Advice for *Hicksbeachia pinnatifolia* (Monkey Nut)' (16/6/2010) identifies:

Regional and Local Priority Actions

Habitat Loss, Disturbance and Modification

- *Implement appropriate buffer zones at strategic locations to protect the species' habitat (DECC, 2005b).*
- *Undertake roadside management in a manner consistent with the conservation of the species (DECC, 2005b).*
- *Ensure there is appropriate site specific management, including assessment of relevant land use planning options, at strategic sites (DECC, 2005b).*
- *Undertake survey work in suitable habitat and potential habitat to locate any additional populations/occurrences/remnants.*
- *Undertake survey and mapping of relevant roadsides (DECC, 2005b).*
- *Monitor the progress of recovery, including the effectiveness of management actions and the need to adapt them if necessary.*
- *Identify populations of high conservation priority.*

Current Threatened Species Licence

The TSL identifies Red Bopple Nut as "*Threatened and Protected Flora: 20 metres Exclusion Zones, all individuals*".

Private Native Forestry

The PNF Code requires that "*An exclusion zone with at least a 20-metre radius must be implemented around all individuals*".

NEFA found that in a private property operation at [Whian Whian](#) undertaken by the Forestry Corporation (who were supposedly trained in threatened plant identification) that threatened plants were ignored.

Red Bopple Nut *Hicksbeachia pinnatifolia* (AKA Monkey Nut) is a small tree growing to 12 m high with distinctive large leaves, heavily scented flower spikes on its trunk, and eye catching large red fruit. It is one of the most distinctive threatened plants in the region. There can be no excuse for not identifying it, particularly as it occurs at an unusually high density on the property.



Despite having usual large leaves, distinctive fruit sprouting from the trunk, and strongly and distinctively scented flowers – all often at eye height – the Forestry Corporation’s highly trained ecologists were unable to identify a single one until they were pointed out by NEFA

NEFA have identified 27 Red Bopple Nuts (about half tagged) that have had the logging road constructed through their buffers, with one injured. The extraction track was constructed through exclusion zones for at least 8 Red Bopple Nuts that had been identified and tagged by FC prior to the track’s construction. One Red Bopple Nut had logging within its exclusion zone.

When the Forestry Corporation constructed their main access road they did so within what should have been exclusion zones for numerous Red Bopple Nuts if the FC could be bothered identifying them. Without searching hard NEFA have so far located 27 individuals 3-20m from the road, with one damaged. As Red Bopple Nuts are very distinctive, it is obvious that the Forestry Corporation did not bother even undertaking a cursory look for them.

On the 22 September, when the FC were about to construct a new access road, NEFA identified over 60 Red Bopple Nuts in the vicinity of the marked route. A cluster of over 30 Red Bopple Nuts (christened Bopple Grove) had the road marked right through their centre. Most of these were marked with flagging tape by NEFA and key GPS points were provided to the FC and EPA. At that time NEFA did not find any Red Bopple Nuts that had been marked, though this did not deter the FC from later claiming they had already found some of these, with Greg Lollback from the EPA going so far as to claim it was understandable for the FC to mark the route for their new track through Bopple Grove even though they really had no intention of constructing it there!



LEFT: Damaged Red Bopple Nut adjacent to main access road that apparently had a tree pushed onto it. RIGHT: Red Bopple Nut (foreground) near the constructed extraction track with nearby debris.



“Bopple Grove”, showing trees flagged by our botanist, note the distinctive leaves at eye height and the low and distinctive flowers sprouting from the trunk. RIGHT The pink mark on the trunk is the route of the proposed road, the pink flagging tapes are on identified Red Bopple Nuts in the road’s path.

Numerous Red Bopple Nuts were known to be in the vicinity of the extraction track before Forestry Corporation constructed it, undaunted and under the supervision of the EPA they went ahead and constructed the track within what should have been exclusion zones for at least 8 individuals. A

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cluster of 6 tagged Red Bopple Nuts had debris from the road nearby, extending up to the base of one individual. Another close by had debris within 3m and extensive debris within 6m. Another tagged nearby was measured as 15m from road debris. Given that these were all tagged the Forestry Corporation and the EPA were aware of their locations before the track was constructed.



Two of the numerous Red Bopple Nuts known to be in the vicinity before the Forestry Corporation constructed a track within what should have been exclusion zones for at least 8 individuals. LEFT (530063 6834673): Note the extensive debris from the track in the background (6m away) and the palm head at the base of the Bopple Nut (centre foreground) RIGHT This tagged one (on left) had debris within 1m and the track was 16m away A tagged Arrow-head vine (on right) was mixed up with the debris towards the track and later died.

As part of this audit another Red Bopple Nut was located to the north-east of the logging area, with debris up to 2.5 metres away and extensive logging within 20m. This area was logged after the community survey, in an area not then searched. Even after all the controversy and the Community Surveys the FC appear incapable of identifying and protecting even the most obvious threatened species.

As the outcome the EPA issued an Official Caution for violating buffers of 4 Red Bopple Nuts.



Even after all the controversy a Red Bopple Nut was located to the north-east of the logging area with debris up to 2.5 metres away and extensive logging within 20m.

Proposed Coastal IFOA

Under the new Coastal IFOA Red Bopple Nut is classed as "Flora species that require a 20-metre exclusion zone around all individuals".

A Recovery Plan is identified as not required for the Vulnerable Red Bopple Nut, with the 2010 Conservation Advice identifying requirements for surveys, buffers, monitoring and adaption. The TSL requires 20m buffers. The PNF Code requires 20m buffers. During a logging operation undertaken by the Forestry Corporation on private land in 2013 NEFA identified 27 Red Bopple Nuts (about half tagged) that had logging roads constructed through their require buffers, and one with logging within its exclusion zone, and one injured. Of particular concern was that NEFA identified a road proposed to be constructed though a grove of over 60 Red Bopple Nuts, after we requested the EPA stop work the route was changed, though was still constructed through exclusion zones for at least 8 Red Bopple Nuts that had been identified and tagged by FC prior to the track's construction. Even though it was a deliberate act the EPA only issued an Official Caution for violating buffers of 4 Red Bopple Nuts. The new Coastal IFOA proposes retaining 20m buffers. It is apparent that that the Conservation Advice is being systematically ignored on private lands, even by Government agencies.

Sandstone Rough-barked Apple

Sandstone Rough-barked Apple (*Angophora robur*) is listed as Vulnerable at both State and Federal levels. The online OEH Profile (20 Aug 2018) identifies it occurs in a band from around Glenreagh,

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north-west of Coffs Harbour, to the Coaldale area north-west of Grafton, with an isolated occurrence farther west near Nymboida, where it can be locally common.

The Forests NSW's 2006 Flora Management Program report identifies that it can grow up to 20m high and 40cm dbh. It identifies 51 separate records comprising 30 populations, with some populations estimated to be less than a hundred plants and the largest up to 6,000 plants. It occurs on National Parks and private lands, and that "*twenty seven percent of the total documented population occur in State forest*".

OEH identifies threats as including:

- *Widening of roads and roadside maintenance activities.*
- *Timber harvesting and forestry activities.*

The Commonwealth's (3 July 2008) 'Approved Conservation Advice for *Angophora robur*' identifies principal threats as "clearing of habitat for development or agriculture; too frequent fires, which may suppress regeneration; widening of roads; and timber harvesting". The identified 'Regional and Local Priority Actions' include:

Habitat Loss, Disturbance and Modification

- *Monitor known populations to identify key threats.*
- *Monitor the progress of recovery, including the effectiveness of management actions and the need to adapt them if necessary.*
- *...*
- *Consider A. robur in the Code of Practice for Private Native Forestry where it occurs in areas where logging on private land may occur (DECC, 2005b).*
- *Ensure road widening and maintenance activities (or other infrastructure or development activities) involving substrate or vegetation disturbance in areas where A. robur occurs does not adversely impact on known populations.*

The accepted Recovery Plan is Department of Environment, Climate Change and Water NSW (2010). *Northern Rivers Regional Biodiversity Management Plan, National Recovery Plan for the Northern Rivers Region.*

Current Threatened Species Licence

Sandstone Rough-barked Apple is identified in the current TSL as one of the 11 plants that require Monitoring Programs be prepared under condition 6.27 of the Threatened Species Licence for the Upper North East and Lower North East Regions of the Forest Agreement:

In September 2006 the Flora Monitoring Program (FMP) as per Condition 6.27 of the UNE TSL was approved. Under the Flora Monitoring Program three sites were identified for monitoring, in October 2006 monitoring plots were established at just one site in Newfoundland SF.

The "Angophora robur Flora Monitoring Program, First report" was prepared on 7 August 2008. It identifies a total of 35 mature (10 cm dbh or greater) trees were assessed a year after logging, with eight mature trees (23%) subject to severe damage potentially capable of causing mortality, and 5 of these "*lost to the mature size class due to the main stem being severed or destroyed*".

Private Native Forestry

The PNF Code requires:

Exclusion of specified forestry activities from 100% of individuals and no buffer.

Individuals of the threatened species or protected native plants to which this condition applies must not be picked in the course of carrying out specified forestry activities

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As there is no requirement for surveys there is little chance that this requirement will have any effect in practice.

Proposed Coastal IFOA

Under the new Coastal IFOA Sandstone Rough-barked Apple is classed as "*Flora threatened species considered adequately protected by the multi-scale protection measures*".

The limited monitoring for this species identified that the species was significantly damaged during logging, despite it being apparent that the foresters supervising the operation (and likely the contractors) were aware they were logging in a trial area and thus needed to minimise damage to Sandstone Rough-barked Apple.

The Vulnerable Sandstone Rough-barked Apple is covered by the 2010 Northern Rivers Regional Biodiversity Management Plan, which is its generic Recovery Plan, which identifies logging as a threat though provides little direction. It is also subject to a 2008 Conservation Advice identifying requirements for monitoring and adaptation. The current TSL classes it as one of the 11 plants that can be logged indiscriminately subject to the undertaking of a Monitoring Program. The only monitoring report for Sandstone Rough-barked Apple (*Angophora robur*) was prepared in 2008 with just 35 trees assessed of which 23% suffered significant damage (5 killed). The PNF Code requires protection of all individuals with no buffers. The new Coastal IFOA proposes removing all protection for this species. The removal of protection for this species is inconsistent with the Recovery Plan and Conservation Advice, particularly given the intention to significantly increase logging intensity.

Slaty Red Gum

Slaty Red Gum (*Eucalyptus glaucina*) is listed as Vulnerable at both State and Federal levels. The online OEH Profile (01 Dec 2017) identifies it as a medium-sized tree to 30 m tall "*Found only on the north coast of NSW and in separate districts: near Casino where it can be locally common, and farther south, from Taree to Broke, west of Maitland*". The Forests NSW 2000 Monitoring Plan identifies that it grows to 35m tall with diameters over 120 cm, claiming that there are estimated to be 17,000 mature trees, mostly on State forests.

OEH identify as a threat "*Timber harvesting activities*". and as a management activity "*Protect areas of habitat from timber harvesting activities*".

The 'Approved Conservation Advice for Eucalyptus glaucina (Slaty Red Gum)' (3/7/2008) states "*The main identified threats to Slaty Red Gum include clearing and fragmentation of habitat for agriculture and development, timber harvesting activities, and lack of regeneration through grazing pressure (DECC, 2005)*". Identified "Regional Priority Actions" include:

Habitat Loss, Disturbance and Modification

- *Monitor known populations to identify key threats.*
- *Monitor the progress of recovery, including the effectiveness of management actions and the need to adapt them if necessary.*
- *...*
- *Ensure agriculture and timber harvesting activities (or other infrastructure or development activities involving substrate or vegetation disturbance) in areas where Slaty Red Gum occurs do not adversely impact on known populations.*

There is no adopted or made Recovery Plan for this species and none required.

Current Threatened Species Licence

Slaty Red Gum is identified in the current TSL as one of the 11 plants that require Monitoring Programs be prepared under condition 6.27 of the Threatened Species Licence for the Upper North East and Lower North East Regions of the Forest Agreement:

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The Forests NSW 2000 Monitoring Plan proposed selecting one of every 3 compartments where >100 Slaty Red Gum occurs for establishment of 10 monitoring plots, with compartment 28 in Braemar and compartment 43 in Bungawalbin State Forests selected initially. Results were to be reviewed after 18 months.

The 'Eucalyptus glaucina Flora Monitoring Program First report' was prepared in 2012 and is the only one prepared. The report identifies that:

Overall, 30% (95% CI 24-36%) of trees up to 60 cm dbhob were damaged by logging (Table 1). Most of these recovered (Table 2), either by branch epicormic growth or by basal coppice. Seven percent of trees in this size category were killed or removed. ... Five trees over 30 cm dbhob were felled as sawlogs. ... There is moderately strong evidence that the proportion of plants which were damaged was significantly greater for smaller size classes.

... There was an increase in the 2 m to 5 cm size class three years after logging, but this was predominantly due to coppice following damage to larger plants. The hypothesised post-disturbance recruitment was lower than predicted and the results provide no evidence that the decrease in the number of medium to large trees is adequately compensated by recruitment.

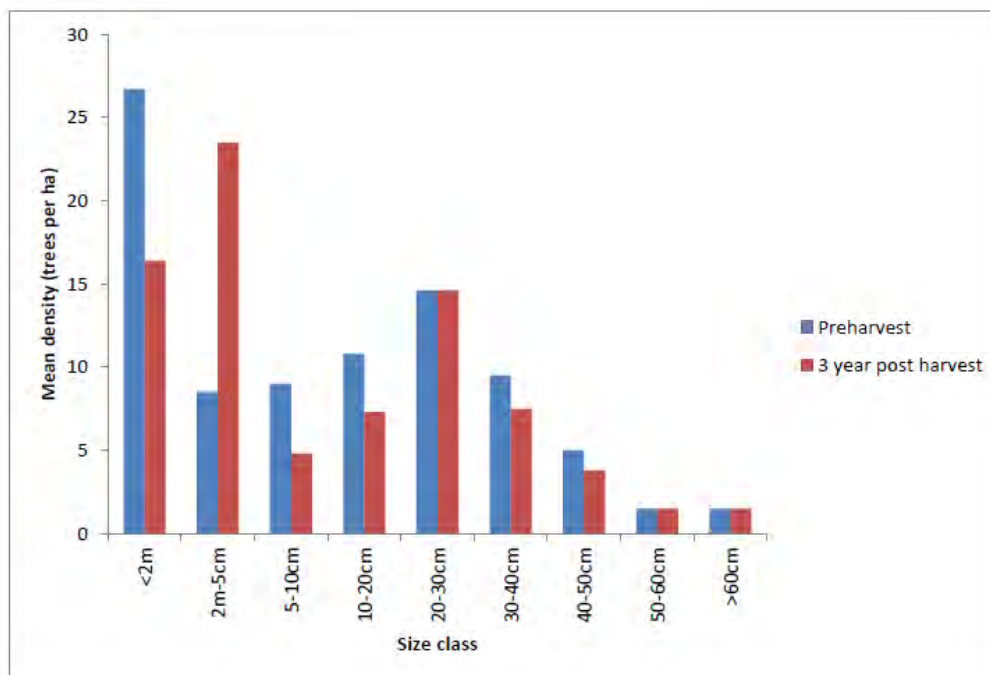


Figure 3. Mean density of E. glaucina plants pre-logging and 3 years post-logging

For compartment 15 of Royal Camp State Forest that was logged in 2012 the Ecology Report identifies 8 records of the Slaty Red Gum (*Eucalyptus glaucina*), with six of these cited as being made by Robert Kooyman on 08/12/1998. Forester Robert Kooyman undertook 7 Flora Traverse Surveys in compartment 15 for Forests NSW on 7-9 of December 1998. His record sheets identify >128 records of Slaty Red Gum (that are also mapped). The questions are why did Forestry Corporation ignore over 120 of their own records (which they are legally required to document) and why did they only pick up two individuals in their more recent assessment. Forests NSW apparently made no attempt to avoid logging this species with a number of individuals found logged.

Private Native Forestry

For the Northern Rivers population the PNF Code requires:

Exclusion of specified forestry activities from 100% of individuals and no buffer.

Individuals of the threatened species or protected native plants to which this condition applies must not be picked in the course of carrying out specified forestry activities

For the Hunter–Central Rivers population the PNF Code requires:

Threatened and protected flora: 20-metre exclusion zone, all individuals

Where there is a record of a species to which this condition applies:

(a) An exclusion zone with at least a 20-metre radius must be implemented around all individuals.

(b) An exclusion zone at least 20 metres wide must be implemented around all groups of individuals. A group is defined as more than one individual located less than 20 metres apart.

As there is no requirement for surveys there is little chance that these requirements will have any effect in practice.

Proposed Coastal IFOA

Under the new Coastal IFOA Slaty Red Gum is classed as "*Flora species that require protection for mature individuals or populations*", which applies to trees over 30cm dbh.

The limited monitoring for this species identified that the species was significantly damaged during logging, despite it being apparent that the foresters supervising the operation (and likely the contractors) were aware they were logging in a trial area and thus needed to minimise damage to Slaty Red Gum.

No Recovery Plan is proposed for the Vulnerable Slaty Red Gum, the 2008 Conservation Advice identifies forestry as a threat requires monitoring and that logging "*not adversely impact on known populations*". The current TSL classes it as one of the 11 plants that can be logged indiscriminately subject to the undertaking of a Monitoring Program. The only monitoring report for Slaty Red Gum (*Eucalyptus glaucina*) was not prepared until 2012, finding 30% of trees up to 60 cm dbh were damaged by logging (5 logged) and 3 years after logging there was a population decline. For northern populations the PNF Code requires protection of all plants with no buffer, and for southern populations 20m buffers. The proposed Coastal IFOA proposes limiting protection to trees over 30 cm dbh with no buffers. With the intent being to significantly increase logging intensity beyond that applied in the single trial the impacts are similarly likely to increase. Removing protection for smaller individual of this species is clearly in contravention of the Conservation Advice given that these have been found to be most significantly impacted.

Square-fruited Ironbark

Square-fruited Ironbark (*Eucalyptus tetrapleura*) is listed as Vulnerable under both NSW's Threatened Species Conservation Act and the Commonwealth's *Environment Protection and Biodiversity Conservation Act 1999*. It may grow to over 30 m tall and is restricted to the coastal lowlands and foothills of northern NSW around Casino and Grafton.

The OEH Profile (20 Aug 2018) identifies Threats as including '*Timber harvesting activities*' and '*Road construction and maintenance*'. Activities to assist this species 'include '*Identify and protect populations in timber harvesting areas and along roadsides*' and '*Protect individuals from road maintenance activities*'.

The Commonwealth's 'Conservation Advice for *Eucalyptus tetrapleura* (Square-fruited Ironbark)' (3/7/2008) identifies:

Threats

The main identified threats to Square-fruited Ironbark include loss of habitat through clearing for agriculture, timber harvesting activities, road construction and maintenance; grazing of young plants by domestic stock; and too-frequent fires that inhibit regeneration (DECC NSW, 2005). The Square-fruited Ironbark is also under threat from Lantana (*Lantana camara*) (DECC NSW, 2006).

Regional and Local Priority Actions

Habitat Loss, Disturbance and Modification

- Identify and protect populations in timber harvesting areas and along roadsides.
- Monitor the progress of recovery, including the effectiveness of management actions and the need to adapt them if necessary.
- ...
- Ensure road widening and maintenance activities (or other infrastructure or development activities as appropriate) in areas where Square-fruited Ironbark occurs do not adversely impact on known populations.

The Recovery Plan is identified as Department of Environment, Climate Change and Water NSW (2010). *Northern Rivers Regional Biodiversity Management Plan, National Recovery Plan for the Northern Rivers Region*.

Square-fruited Ironbark is one of those species identified as affected by forestry. In relation to Recovery Actions for Forestry it is noted:

Impacts on biodiversity from forestry can be directly linked to harvesting intensity and frequency. The protection of non-wood biodiversity values requires a balance between maximum potential harvest regimes and the retention and management of key biodiversity features within the landscape.

'OUTCOME 7.1: Impacts of forestry operations on biodiversity are minimised' identifies:

- *Develop criteria and indicators to measure, monitor and report on ecologically sustainable forest management practices for forestry operations on private lands, to ensure sustainability of the full range of wood and non-wood values of forests.*
- *Develop appropriate criteria and indicators to review the effectiveness of threatened species protection measures currently employed in public and private native forestry activities. Strengthen threatened species protection measures where they are shown to be inadequate.*

Current Threatened Species Licence

The current TSL requires:

Threatened and Protected Flora: protection of 90% of individuals

Where there is a record of any of the species listed in Table 9 or Table 10 within the compartment, the following must apply:

- a) A minimum of 90% of individuals must be protected from specified forestry activities. During harvesting operations, the potential for damage to these plants must be minimised by utilising techniques of directional felling.*

Private Native Forestry

The PNF Code requires:

Threatened and protected flora: protection of 90% of individuals

Where there is a record of a species to which this condition applies:

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(a) A minimum of 90% of individuals must be protected from specified forestry activities. During forest operations, the potential for damage to these plants must be minimised by the use of directional felling techniques.

As there is no requirement for surveys there is little chance that this requirement will have any effect in practice.

Proposed Coastal IFOA

Under the new Coastal IFOA Square-fruited Ironbark is classed as "*Flora threatened species considered adequately protected by the multi-scale protection measures*".

There has apparently been no assessment of the effectiveness of the current prescription for this species. With the extensive damage to Slaty Red Gum and Sandstone Rough-barked Apple identified in their controlled logging operations it can similarly be expected that Square-fruited Ironbark will be significantly damaged in logging operations.

For the Vulnerable Square-fruited Ironbark is covered by the 2010 Northern Rivers Regional Biodiversity Management Plan, which is its generic Recovery Plan, which identifies logging as a threat though provides little direction. It is also subject to a 2008 Conservation Advice identifying requirements for surveying, monitoring, adaptation and protecting populations in timber harvesting areas. The current TSL requires the protection of 90% of individuals with no buffers. The new Coastal IFOA proposes the removal of all protection. Contrary to the Recovery Plan and Conservation Advice there has been no monitoring to assess the effectiveness of current prescriptions to justify the removal of protection.

Appendix 1: Changes to prescriptions for nationally threatened fauna proposed in new IFOA for north-east NSW.

Common Name	Scientific Name	Commonwealth Status	Current Prescription	Proposed Change
Black-breasted Button-quail	Turnix melanogaster	Vulnerable	Site Specific Condition	Remove
Coxen's Fig-Parrot	Cyclopsitta diopthalma coxeni	Endangered	Site Specific Condition	Remove
Red Goshawk	Erythrotriorchis radiatus	Vulnerable	Site Specific Condition	Remove
Regent Honeyeater	Anthochaera phrygia	Critically Endangered	10 euc. Feed trees/2ha, active feed trees, Nest 20m	Remove, retain nest
Rufous Scrub Bird	Atrichornis rufescens	Endangered	300m record - Microhabitat+20m	Retain
Swift Parrot	Lathamus discolor	Critically Endangered	10 euc. Feed trees/2ha, active feed trees	Remove, retain nest
Fleay's Barred Frog	Mixophyes fleayi	Endangered	200m of record - 30m stream buffers	Remove
Giant Barred Frog	Mixophyes iteratus	Endangered	200m of record - 30m stream buffers	Remove
Giant Burrowing Frog	Heleioporus australiacus	Vulnerable	Monitoring Program	Retain
Green and Golden Bell Frog	Litoria aurea	Vulnerable	50m records/dams/wetlands	Remove
Littlejohn's Tree Frog	Litoria littlejohni	Vulnerable	50m records/dams/wetlands	Remove
Stuttering Frog	Mixophyes balbus	Vulnerable	200m of record - 30m stream buffers	Remove
Broad-toothed Rat	Mastacomys fuscus	Vulnerable	suitable habitat outside exclusion zones-20m exclusion	Remove
Hastings River Mouse	Pseudomys oralis	Endangered	12ha around records	Retain
Koala	Phascolarctos cinereus	Vulnerable	Koala High Use areas +20m buffer, intermediate- 10 primary browse/2ha	Reduce, no KHUA, 10 trees/ha High QH, 5 trees/ha Med QH
Greater Glider	Petauroides volans	Vulnerable	8 hollow-bearing trees/ha where >1GG/ha, within 3km Powerful Owl	Remove
Long-nosed Potoroo	Potorous tridactylus	Vulnerable	where there is a record, 5m buffers around 12 trees/2ha	Remove
Spotted-tailed Quoll	Dasyurus maculatus	Endangered	Maternal Den sites-12ha, Den sites-3.5ha, latrines-	Retain

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			12ha	
Eastern Freshwater Cod	Maccullochella ikei	Endangered	Class 1&2 buffer unmapped streams, Class 1 improve stream crossings.	Reduce - Remove Class 2. Buffers 10>5m 20ha catchments.
Oxleyan Pygmy Perch	Nannoperca oxleyana	Endangered		

Appendix 2: Changes to prescriptions for nationally threatened flora proposed in new IFOA for north-east NSW.

Buffers measured as exclusions around each individual plant, where specified it is only applied to 90% of individuals. Other prescriptions require protection of 90% of individuals (no buffers), preparation of management plans or preparation of site plans. The new prescriptions have done away with the 90% requirement as it was not able to be readily audited, limited all buffers to 20m radius, and only require the protection of mature individuals of a variety of eucalypts.

Species	Federal Status	Current Prescription	Proposed Changes
<i>Acacia bynoeana</i>	Vulnerable	20m/90%	20m
<i>Acacia courtii</i>	Vulnerable	20m/90%	Remove
<i>Acacia flocktoniae</i>	Vulnerable	20m/90%	Remove
<i>Acacia macnuttiana</i>	Vulnerable	20m	Remove
<i>Acacia pubescens</i>	Vulnerable	20m	Remove
<i>Acacia pubifolia</i>	Vulnerable	20m	Remove
<i>Acacia pycnostachya</i>	Vulnerable	20m	Remove
<i>Acacia ruppilii</i>	Endangered	Man Plan	Remove
<i>Acronychia littoralis</i>	Endangered	50m	Site Plan
<i>Allocasuarina defungens</i>	Endangered	20m/90%	Remove
<i>Allocasuarina simulans</i>	Vulnerable	20m	Remove
<i>Almaleea cambagei</i>	Vulnerable	20m	Remove
<i>Amyema plicatula</i>	Endangered	50m	Remove
<i>Angophora inopina</i>	Vulnerable	20m	20m/mature
<i>Angophora robur</i>	Vulnerable	Man Plan	Remove
<i>Arthraxon hispidus</i>	Vulnerable	20m	Remove
<i>Asperula asthenes</i>	Vulnerable	20m	Remove
<i>Asterolasia elegans</i>	Endangered	20m/90%	Remove
<i>Baloghia marmorata</i>	Vulnerable	50m	Remove
<i>Bertya ingramii</i>	Endangered	20m	Remove
<i>Boronia granitica</i>	Endangered	20m	Remove
<i>Boronia repanda</i>	Endangered	20m	Remove
<i>Boronia umbellata</i>	Vulnerable	90% plants	Remove
<i>Bosistoa transversa</i>	Vulnerable	50m	Remove
<i>Bulbophyllum globuliforme</i>	Vulnerable	50m	Remove
<i>Cadellia pentastylis</i>	Vulnerable	50m	Remove
<i>Caladenia tessellata</i>	Vulnerable	20m	Remove
<i>Callitris oblonga</i>	Vulnerable	20m/90%	Remove
<i>Clematis fawcettii</i> #	Vulnerable	20m/90%	Remove
<i>Commersonia rosea</i>	Endangered	90% plants	Remove
<i>Corchorus cunninghamii</i>	Endangered	90% plants	Man. Plan
<i>Corokia whiteana</i>	Vulnerable	20m/90%	Remove
<i>Corynocarpus rupestris</i> subsp. <i>rupestris</i>	Vulnerable	50m	Remove
<i>Cryptocarya foetida</i>	Vulnerable	50m	Remove
<i>Cryptostylis hunteriana</i>	Vulnerable	20m	20m
<i>Cynanchum elegans</i>	Endangered	20m/90%	Remove
<i>Cyperus semifertilis</i>	Vulnerable	20m	Remove

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Darwinia biflora	Vulnerable	20m/90%	Remove
Davidsonia jerseyana	Endangered	50m	Remove
Davidsonia johnsonii	Endangered	50m	Remove
Desmodium acanthocladum	Vulnerable	90% plants	20m
Dichanthium setosum	Vulnerable	20m/90%	20m
Diospyros mabacea	Endangered	50m	Remove
Diploglottis campbellii	Endangered	50m	Remove
Diuris eborensis	Endangered	NA	20m
Diuris flavescens	Critically Endangered	20m	20m
Diuris pedunculata	Endangered	20m	Remove
Diuris praecox	Vulnerable	20m/90%	20m
Diuris venosa	Vulnerable	20m	20m
Eidothea hardeniana	Critically Endangered	50m	Remove
Elaeocarpus sedentarius	Endangered	50m	Remove
Elaeocarpus williamsianus	Endangered	50m	Remove
Endiandra floydii	Endangered	50m	Remove
Endiandra hayesii	Vulnerable	50m/90%	Remove
Eucalyptus caleyi subsp. ovendenii	Vulnerable	20m/90%	Remove
Eucalyptus camfieldii	Vulnerable	20m/90%	20m/mature
Eucalyptus glaucina - Northern Metapopulation Unit *	Vulnerable	Man Plan	20m/mature
Eucalyptus glaucina - Southern Metapopulation Unit	Vulnerable	20m	Remove
Eucalyptus mckieana	Vulnerable	20m/90%	20m/mature
Eucalyptus nicholii	Vulnerable	20m	Remove
Eucalyptus pachycalyx subsp. banyabba	Endangered	50m	Remove
Eucalyptus parramattensis subsp. Decadens	Vulnerable	20m	Remove
Eucalyptus pumila	Vulnerable	20m	Remove
Eucalyptus rubida subsp. barbigerorum	Vulnerable	20m	20m/mature
Eucalyptus scoparia	Vulnerable	20m	Remove
Eucalyptus tetrapleura	Vulnerable	90% plants	Remove
Euphrasia arguta	Critically Endangered	90% plants	Man. Plan
Euphrasia bella	Vulnerable	50m	Remove
Euphrasia collina subsp. muelleri	Endangered	50m	Remove
Floydia praealta	Vulnerable	50m	Remove
Fontainea australis	Vulnerable	50m/90%	Road Plan
Fontainea oraria	Endangered	50m	Remove
Gaultheria viridicarpa subsp. Viridicarpa	Vulnerable	20m	Remove
Genoplesium baueri	Endangered	20m	Site Plan
Genoplesium insignis	Critically Endangered	20m	20m
Gentiana wissmannii	Vulnerable	50m	Remove
Gingidia rupicola	Endangered	20m	Remove
Gossia fragrantissima	Endangered	50m	Remove
Grevillea banyabba	Vulnerable	20m/90%	Remove
Grevillea beadleana	Endangered	20m/90%	20m

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Grevillea evansiana	Vulnerable	20m/90%	Remove
Grevillea guthrieana	Endangered	20m/90%	Remove
Grevillea guthrieana - Booral Metapopulation	Endangered	20m	20m
Grevillea masonii	Endangered	20m	20m
Grevillea mollis	Endangered	20m	Remove
Grevillea obtusiflora spp. Obtusiflora	Endangered	50m	Remove
Grevillea parviflora	Vulnerable	20m/90%	Remove
Grevillea quadricauda	Vulnerable	Man Plan	20m
Grevillea rhizomatosa	Vulnerable	90% plants	20m
Grevillea scortechinii subsp. sarmentosa		20m/90%	Remove
Grevillea shiressii	Vulnerable	20m/90%	Remove
Hakea archaeoides	Vulnerable	none	20m
Hakea fraseri	Vulnerable	20m	Remove
Haloragis exalata subsp. exalata	Vulnerable	90% plants	Remove
Haloragis exalata subsp. velutina	Vulnerable	90% plants	Remove
Hibbertia marginata	Vulnerable	Man Plan	20m
Hicksbeachia pinnatifolia - Northern Metapopulation Unit	Vulnerable	50m/90%	Remove
Hicksbeachia pinnatifolia - Southern Metapopulation Unit	Vulnerable	20m	20m
Homoranthus lunatus	Vulnerable	20m	Remove
Homoranthus prolixus	Vulnerable	20m/90%	Remove
Isoglossa eranthemoides	Endangered	20m	Remove
Kardomia granitica	Vulnerable	20m	Remove
Kunzea rupestris	Vulnerable	20m/90%	Remove
Lasiopetalum longistamineum	Vulnerable	20m/90%	Remove
Lepidium hyssopifolium	Endangered	50m	Remove
Lepidium peregrinum	Endangered	50m	Site Plan
Leptospermum deanei	Vulnerable	20m/90%	Remove
Leucopogon confertus	Endangered	20m	Remove
Macadamia tetraphylla	Vulnerable	50m	Remove
Marsdenia longiloba	Vulnerable	90% plants	20m
Melaleuca biconvexa	Vulnerable	20m	20m
Melaleuca deanei	Vulnerable	20m	Remove
Melichrus hirsutus (syn. M. sp. A)	Endangered	20m	20m
Melichrus sp. Gibberagee	Endangered	50m	20m
Myrsine richmondensis	Endangered	50m	20m
Neoastelia spectabilis	Vulnerable	50m	20m
Ochrosia moorei	Endangered	50m	20m
Olax angulata	Vulnerable	50m	Remove
Olearia cordata	Vulnerable	20m	20m
Olearia flocktoniae	Endangered	90% plants	Road Plan
Owenia cepiodora	Vulnerable	20m	20m
Ozothamnus tessellatus	Vulnerable	20m	Remove
Parsonsia dorrigoensis *	Endangered	Man Plan	Man. Plan
Paspalidium grandispiculatum	Vulnerable	90% plants	Remove
Persicaria elatior	Vulnerable	50m	Road Plan
Persoonia pauciflora	Critically Endangered	20m	Remove
Phaius australis	Endangered	50m	Remove
Phebalium glandulosum subsp.	Vulnerable	20m	Remove

Compliance of NE NSW Forestry with Commonwealth Threatened Species Requirements

eglandulosum			
Philotheca ericifolia	Vulnerable	20m/90%	Remove
Picris evae	Vulnerable	20m	Remove
Pimelea venosa	Endangered	20m	Remove
Plectranthus nitidus	Endangered	20m/90%	Remove
Pomaderris brunnea	Vulnerable	20m	20m
Pomaderris reperta	Critically Endangered	20m	Remove
Prostanthera askania	Endangered	50m	Remove
Prostanthera cineolifera	Vulnerable	20m	Site Plan
Prostanthera cryptandroides	Vulnerable	20m	Remove
Prostanthera densa	Vulnerable	20m/90%	Remove
Prostanthera palustris (sp. Bundjalung)	Vulnerable	50m	Remove
Prostanthera staurophylla	Vulnerable	20m/90%	Remove
Pterostylis cucullata	Vulnerable	20m	Remove
Pterostylis gibbosa (LNE)	Endangered	20m	Remove
Pterostylis riparia	Vulnerable	NA	20m
Quassia sp. Moonee Creek (syn. Q. sp. B)	Endangered	20m/90%	20m
Randia moorei	Endangered	50m	Remove
Rhizanthella slateri	Endangered	20m	20m
Rutidosia heterogama	Vulnerable	20m	Remove
Sarcophilus fitzgeraldii	Vulnerable	50m	Remove
Sarcophilus hartmannii	Vulnerable	50m	Remove
Sarcophilus weinthalii	Vulnerable	50m/90%	Remove
Solanum sulphureum	Endangered	NA	Road Plan
Sophora fraseri	Vulnerable	20m	Road Plan
Styphelia perileuca	Vulnerable	20m	20m
Symplocos baeuerlenii	Vulnerable	50m/90%	Remove
Syzygium hodgkinsoniae	Vulnerable	50m	Remove
Syzygium moorei	Vulnerable	50m	Remove
Syzygium paniculatum	Vulnerable	50m	Remove
Tasmania glaucifolia - North Metapopulation Unit	Vulnerable	50m	Remove
Tasmania glaucifolia - Southern Metapopulation Unit	Vulnerable	20m/90%	Remove
Tetrateca juncea	Vulnerable	20m/90%	20m
Thelymitra sp. 'adorata'	Critically Endangered	20m	Remove
Thesium australe	Vulnerable	20m/90%	Remove
Triplarina imbricata	Endangered	20m	Remove
Tylophora linearis	Endangered	20m	Remove
Tylophora woollsii	Endangered	20m	20m
Uromyrtus australis	Endangered	50m	Remove
Velleia perfoliata	Vulnerable	20m/90%	Remove
Zieria floydii	Endangered	50m	Remove
Zieria involucreta	Vulnerable	20m/90%	Remove
Zieria lasiocaulis	Endangered	20m	20m
Zieria prostrata	Endangered	50m	Remove



Australian Government Solicitor

DEED OF VARIATION

DEED OF VARIATION IN RELATION TO THE REGIONAL FOREST AGREEMENT
FOR THE EDEN REGION

The Commonwealth of Australia

The State of New South Wales

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DEED OF VARIATION

DEED OF VARIATION IN RELATION TO THE REGIONAL FOREST AGREEMENT FOR THE EDEN REGION

Date

This deed is made on _____ 2018.

Parties

This deed is made between and binds the following parties:

1. The **Commonwealth of Australia** (the **Commonwealth**)
2. The **State of New South Wales** (the **State**)

Context

This deed is made in the following context:

- A. The parties entered into the Regional Forest Agreement to establish a framework for the management of certain forests.
- B. The parties have agreed to amend the Regional Forest Agreement on the terms and conditions contained in this deed.
- C. Except as amended by this deed, the Regional Forest Agreement continues in full force and effect without amendment.

Operative provisions

In consideration of the mutual promises contained in this deed, the parties to this deed agree as follows:

1. Definitions and Interpretation

Definitions

- 1.1. In this deed, unless the contrary intention indicates otherwise:

Effective Date	means the date of this deed.
Regional Forest Agreement	means the Regional Forest Agreement for the Eden Region dated 26 August 1999 between the Commonwealth and the State, as amended from time to time.

Interpretation

- 1.2. In this deed, unless the contrary intention appears:
- a. clause headings are for convenient reference only and have no effect in limiting or extending the language of provisions to which they refer;

- b. if any word or phrase is given a defined meaning, any other part of speech or other grammatical form of that word or phrase has a corresponding meaning;
- c. the annexures form part of this deed; and
- d. in the interpretation of this deed no rules of construction apply to the disadvantage of any party on the basis that it put forward this deed.

Guidance on construction of deed

- 1.3. As far as possible all provisions of this deed will be construed so as not to be void or otherwise unenforceable.
- 1.4. If anything in this deed is void or otherwise unenforceable then it will be severed and the rest of the deed remains in force.
- 1.5. A provision of this deed will not be construed to the disadvantage of a party solely on the basis that it proposed that provision.
- 1.6. In the event of conflict between this deed and the Regional Forest Agreement, the provisions of this deed will prevail.

Commencement

- 1.7. The terms of this deed apply on and from the date of this deed.

2. Amendment of the Regional Forest Agreement

- 2.1. With effect from the Effective Date, the Regional Forest Agreement is amended as set out in Annexure 1. For the avoidance of doubt, unless the context indicates otherwise:
 - a. text that is underlined is inserted into the Regional Forest Agreement; and
 - b. text that is struck through is deleted from the Regional Forest Agreement.
- 2.2. Each party acknowledges that a clean version of the Regional Forest Agreement, as amended by this deed with effect from the Effective Date pursuant to clause 2.1, is set out in Annexure 2.

3. Confirmations

Each of the parties confirms and acknowledges that:

- a. this deed varies the Regional Forest Agreement, and does not terminate, discharge, rescind or replace the Regional Forest Agreement;
- b. except as expressly agreed in this deed, its obligations and covenants under, and the provisions of, the Regional Forest Agreement continue and remain in full force and effect;

- c. nothing in this deed:
 - i. prejudices or adversely affects any right, power, authority, discretion or remedy which arose under or in connection with the Regional Forest Agreement before the date of this deed; or
 - ii. discharges, releases or otherwise affects any liability or obligation which arose under or in connection with the Regional Forest Agreement before the date of this deed; and
- d. notwithstanding anything in this deed, nothing in this deed is intended to make legally binding any obligations in the Regional Forest Agreement that the parties have expressed an intent to be non-binding.

4. Costs

- 4.1. Each party will bear its own costs and expenses (including legal costs) arising out of and incidental to the negotiation, preparation, execution and delivery of this deed.

5. Entire agreement and variation

- 5.1. This deed contains the entire agreement of the parties with respect to its subject matter and supersedes all prior understandings and representations between the parties with respect to its subject matter.
- 5.2. Each party will take such steps, execute all such documents and do all such acts and things as may be reasonably required by any other party to give effect to this deed.
- 5.3. The provisions of this deed will not be varied either in law or in equity except by agreement in writing signed by the parties.

6. Applicable law

- 6.1. This deed is to be construed in accordance with, and any matter related to it is to be governed by, the laws of the jurisdiction that govern the Regional Forest Agreement.

7. Counterparts

- 7.1. This deed may be executed in any number of counterparts and by each party in separate counterparts. All counterparts together constitute the one agreement.

Signing Page

EXECUTED as a deed.

SIGNED, SEALED AND)
DELIVERED for and on behalf)
of The Commonwealth of)
Australia by:)

Name of signatory

Signature

In the presence of:

Name of witness

Signature of witness

SIGNED, SEALED AND)
DELIVERED for and on behalf)
of the State of New South)
Wales by:)

Name of signatory

Signature

In the presence of:

Name of witness

Signature of witness

ANNEXURE 1 AMENDED REGIONAL FOREST AGREEMENT

REGIONAL FOREST AGREEMENT

for the

EDEN REGION

of

NEW SOUTH WALES

between

THE COMMONWEALTH OF AUSTRALIA

&

THE STATE OF NEW SOUTH WALES

AUGUST 1999 (includes 2018 VARIATION)

Eden Regional Forest Agreement

THIS AGREEMENT is made on the 26th day of August 1999

BETWEEN

THE STATE OF NEW SOUTH WALES, (“New South Wales” or “the State”), and
THE COMMONWEALTH OF AUSTRALIA (“the Commonwealth”).

Recitals

WHEREAS:

Purpose of Agreement

- A. This Regional Forest Agreement (RFA) establishes the framework for the management of the forests of the Eden region. Parties are committed to ensuring the Agreement is durable and ~~that the obligations and commitments that it contains~~ are delivered to ensure effective conservation, sustainable forest management and ~~forest~~ industry stability outcomes.
- B. This Agreement is a Regional Forest Agreement, for the purposes of the *Export Control Act 1982 (C'wthCth)*, the *Regional Forest Agreements Act 2002 (Cth)* and the *Environment Protection and Biodiversity Conservation Act 1999 (Cth)*. ~~Export Control (Hardwood Wood Chips) (1996) Regulations (C'wth), and the Export Control (Regional Forest Agreements) Regulations (C'wth)~~. As such the Agreement :
- (a) identifies areas in the region ~~or regions~~ that the Parties believe are required for the purposes of a Comprehensive, Adequate and Representative ~~national~~ Reserve System, and provides for the conservation of those areas; and
 - (b) provides for the ecologically sustainable management and use of forested areas in the region; and
 - (c) is for the purpose of providing long-term stability of forests and forest industries; and
 - (d) has regard to studies and projects carried out in relation to all of the following matters that are relevant to the region:
 - (i) environmental values, including Old Growth, Wilderness, endangered species, National Estate Values and World Heritage Values;
 - (ii) Indigenous heritage values;
 - (iii) economic values of forested areas and forest industries;

(iv) social values (including community needs); and

(v) principles of Ecologically Sustainable Forest Management.

- C. This Agreement is divided into Parts. Part 1 applies to the whole Agreement. Part 2 is not intended to create legally binding relations. Part 3 is intended to create legally binding relations. The Attachments are not intended to create legally binding relations except to the extent that this is necessary to give effect to Part 3.

NOW IT IS AGREED as follows:

PART 1

Interpretation

- 1 This Agreement is to be interpreted, unless the contrary intention appears, with reference to the definitions and general provisions specified in clauses 2 and 3.

Definitions and General Provisions

- 2 In this Agreement unless the contrary intention appears:

“Aboriginal” for the purposes of this agreement means the First Peoples of NSW;

“Agreement” means all parts of this Agreement between the Commonwealth of Australia and the State of New South Wales and includes the Attachments to this Agreement;

~~**“Australian Heritage Commission”** or **“the Commission”** means the Commission established by the *Australian Heritage Commission Act 1975* (C’wth);~~

“Australian World Heritage Intergovernmental Agreement” means the Australian World Heritage Intergovernmental Agreement, as agreed by the Commonwealth, the States and the Territories, as amended from time to time;

“Biodiversity” means biodiversity as defined in the JANIS Report;

“CAR Values” means the conservation values as described by the JANIS Reserve Criteria;

“Commonwealth Heritage Management Principles” has the same meaning as “Commonwealth Heritage management principles” in section 341Y of the EPBC Act;

“Commonwealth Heritage Place” has the same meaning as “Commonwealth Heritage place” in section 341C(3) of the EPBC Act;

“Commonwealth Heritage Values” has the same meaning as “Commonwealth Heritage values” in section 341D of the EPBC Act;

“Comprehensive Adequate and Representative Reserve System” or **“CAR Reserve System”** means areas under any of the following categories of land tenure - as described in the JANIS Report - Dedicated Reserves, Informal Reserves and other areas on Public Land protected by ~~prescription~~ Regional Prescriptions (eg under any Integrated Forestry Operation Approvals applicable to the Eden region), and areas of Private Land where the CAR Values are protected under secure management arrangement by agreement with private

landholders. This reserve system is based on the principles of comprehensiveness, adequacy and representativeness;

~~“Codes of Practice” or “Codes” means the State’s suite of codes identified in this Agreement or described in the *New South Wales CRA/REA Steering Committee: Assessment of Management Systems and Processes for Achieving Ecologically Sustainable Forest Management in New South Wales: Independent Expert Working Group Report* published by the Commonwealth and New South Wales Governments April 1998. Codes include the:~~

- ~~• Timber Plantations (Environmental Protection) Harvesting Code 1997 (Schedule 1 of Timber Plantations (Harvest Guarantee) Regulation 1997 (NSW));~~
- ~~• State Forests of NSW Forests Practices Code : Part 1: Timber harvesting in State Forests Plantations (July 1995) (Under review);~~
- ~~• State Forests of NSW Forests Practices Code : Part 2: Timber harvesting in Native Forests (November 1995) (Under review);~~
- ~~• State Forests of NSW Forests Practices Code : Part 3: Plantation Establishment and Maintenance (Draft of August 1996) (Under review);~~
- ~~• State Forests of NSW Forest Practices Code : Part 4 Forest Roads and Fire Trails (February 1999);~~
- ~~• State Forests of NSW Forest Practices Code : Part 5 Wildlife Management in Native Forests (due for completion by April 2000);~~
- ~~• Integrated Forestry Operations Approvals for the Eden region; and~~
- ~~• Additional or new Codes identified in the New South Wales *Eden Region Forest Agreement*;~~

~~“Competition Principles Agreement” means the agreement of the same name described in the Compendium of National Competition Policy Agreements, January 1997, National Competition Council updated by the Council of Australian Governments in 2007;~~

~~“Comprehensive Regional Assessment” or “CRA” means the assessment process carried out pursuant to Attachment 1 of the NSW RFAs Scoping Agreement for New South Wales Regional Forest Agreements between the Commonwealth of Australia and the State of New South Wales;~~

~~“Crown Land” means land that is vested in the Crown or was acquired under the Closer Settlements Acts as in force before their repeal, not in either case being:~~

- ~~(a) land dedicated for a public purpose; or~~

(b) land that has been sold or lawfully contracted to be sold and in respect of which the purchase price or other consideration for the sale has been received by the Crown;

~~“**Crown Reserve**” means land dedicated or reserved as a reserve under the *Crown Lands Act 1989* (NSW) and managed by the NSW National Parks and Wildlife Service;~~

“Dedicated Reserve” means a formal reserve equivalent to International Union for the Conservation of Nature and Natural Resources (IUCN) Protected Area Management Categories I, II, III, or IV as defined by the IUCN Commission for National Parks and Protected Areas (1994). The status of Dedicated Reserves is secure, requiring action by the New South Wales Parliament or in accordance with New South Wales legislation for reservation or revocation. In New South Wales, Dedicated Reserves include, but are not limited to, parks under the *National Parks and Wildlife Act 1974* (NSW), ~~and~~ flora reserves under the *Forestry Act 1916 2012* (NSW), and areas mapped as Special Protection Zone (FMZ 1), under the NSW (~~Special Protection Zones under the Forest Management Zoning system~~);

~~“**Deferred Forest Agreement**” means the Deferred Forest Agreement between the Commonwealth and the State of New South Wales signed on 25th January 1996;~~

~~“**Eco Field Guide**” means A Field Guide to South East Forests of New South Wales Volumes One and Two published by State Forests of NSW which applies to the Eden region;~~

“Ecologically Sustainable Forest Management” or **“ESFM”** means forest management and use in accordance with the specific objectives and policies for ecologically sustainable development as detailed in the *National Forest Policy Statement* and as further described in Attachment 14;

~~“**Environment and Heritage Values**” means those values assessed pursuant to Attachment 1 of the RFA Scoping Agreement;~~

“Environment and Heritage Values” means values assessed as part of the CRA. These included Biodiversity, Forest Ecosystems, Old Growth forests, Wilderness, endangered species, National Estate Values, World Heritage Values and Indigenous heritage values;

“EPBC Act” means the *Environment Protection and Biodiversity Conservation Act 1999* (Cth);

“Extractive Material” means sand, gravel, clay, soil, turf, rock, stone or similar substances, not being a Mineral as defined in this Agreement;

“Extractive Operation” means the winning of Extractive Material, or, an industry or undertaking (not including Mining), which depends for its operations on the winning of Extractive Material from the land upon which it is carried on;

“Five-yearly Review Scoping Agreement” means a scoping agreement between the Commonwealth of Australia and the State of New South Wales for each five-yearly review, including any agreed priorities, procedures and funding arrangements for the conduct of the five-yearly review;

“Forest” means a Forest Ecosystem listed in Table 1 of Attachment 1; the land on which a Forest Ecosystem listed in Table 1 of Attachment 1 occurs; or a Plantation of trees for timber production. The carrying out of Forestry Operations on an area does not prevent it from remaining a Forest;

“Forest Agreement” means a Forest Agreement as defined in the *Forestry and National Park Estate Act 1998 2012* (NSW);

“Forestry Corporation of NSW” or **“FCNSW”** means the Forestry Corporation of NSW, a State Owned Corporation under the *State Owned Corporations Act 1989* (NSW);

“Forestry Corporation of NSW SFNSW Native Hardwood Forest Management System” means ~~the system of the same name described in the New South Wales Eden Region Forest Agreement~~ of policies, processes and procedures used by Forestry Corporation of NSW to ensure forest activities achieve ESFM, including a system of monitoring, audit and management review that allows for continual improvement and adaptive management and maintaining EMS certification under ISO 14001 or a demonstrated equivalent environmental management system;

“Forest Ecosystem” means, for the purposes of the Agreement, a forest ecosystem as defined in the JANIS Report. ~~Forest Ecosystems as they exist at the present time in the Eden region are described~~ listed in Attachment 1 of this Agreement;

“Forest Estate” means all Forests growing on Public Land or Private Land;

“Forest Management” means the management and administration of all Forests including State forest, national parks, other conservation reserves or Crown land, private native forest and Plantations;

“Forest Management System-Framework” means the New South Wales ~~Forest Management System~~ suite of legislation, regulations, other regulatory instruments and guidance. The elements of the framework are as described in the report entitled *Assessment of Management Systems and Processes for Achieving Ecologically Sustainable Forest Management in New South Wales*¹; Independent Expert Working Group Report published by the Commonwealth and New South Wales Governments April 1998 and as modified by the *Forestry and National Park Estate Act 1998* (NSW) ‘*Overview of the New South Wales Forest Management Framework*’ as published by the NSW Government and as amended from time to time ~~Major elements of the system include Forest~~

¹Reference to this report in this agreement does not imply or convey any agreement with or agreement to any commentary or recommendation but is restricted to description of the forest management system described within that report.

~~Agreements, Integrated Forestry Operations Approvals, Codes of Practice, Eco-Field Guides and Regional ESFM Plans;~~

“Forest Management Zoning” or “FMZ” is a land classification system which ~~will set out~~ sets out, in map format, management intent across State forest. It is based on the “Components of the CAR System” in the JANIS Report, to clearly differentiate between those areas of State forest which are specifically set aside for conservation purposes (and utilising statutory protection in some cases) and those areas which are available for timber harvesting and other activities. The system is described in the document *Forest Management Zoning in NSW State Forests* Managing our forests sustainably: Forest Management Zoning in NSW State Forests, State Forests of NSW [1999] and as amended from time to time;

“Forestry Operations” means:

- (a) logging operations, namely, the cutting and removal of timber from land for the purpose of timber production;
- (b) forest products operations, namely, the harvesting of Forest Products that are of economic value;
- (c) on-going forest management operations, namely, activities relating to the management of land for timber production such as thinning, bush fire hazard reduction and other silvicultural activities; and
- (d) transport of Forest Products;

“Forest Products” means timber and ~~timber~~ forest products as defined in the *Forestry Act 1916 2012* (NSW);

“Forest Resource and Management Evaluation System” or “FRAMES” means ~~State Forests~~ the Forestry Corporation of NSW statewide forest resource inventory, growth modelling, simulation and harvest scheduling system for New South Wales’ public ~~native~~ hardwood forest resource. ~~This system will be described in a document to be published within three months of the date of this Agreement (see Attachment 5);~~

“Harvesting Exclusions Zone” or “FMZ3A” means the zone of the name ‘Zone 3A – Harvest Exclusions’ under the NSW Forest Management Zoning system;

“High Quality Logs” means logs which are suitable for high-value solid log products such as poles, piles and girders as well as logs suited for processing into sawn timber or veneer;

“Indigenous” means the Aboriginal and Torres Strait Islander peoples of Australia. ‘Indigenous’ is used in this document to mirror its use in Commonwealth legislation. Otherwise ‘Aboriginal’ is used to refer to the First Peoples of NSW.

“Informal Reserve” means a reserve that contains and is managed for Environment and Heritage Values which contribute to the CAR Reserve System and meets the principles for Informal Reserves as described in the JANIS Report. In New South Wales, it includes, but is not limited to, parts of the Special Management Zone areas mapped as Special Management Zone (FMZ 2), which meet the size and design criteria for Informal Reserves, under the NSW Forest Management Zoning system;

“Integrated Forestry Operations Approval” or “IFOA” means an Integrated Forestry Operations Approval as defined in the *Forestry and National Park Estate Act 1998-2012* (NSW);

“ISO 14000 Series” means ~~AS/NZS ISO 14000 series, Environmental Management Systems, Standards Australia, 1996;~~

“ISO 14001” means *AS/NZS ISO 14001: 2015, Environmental Management Systems: Requirements with guidance for use, Standards Australia (as amended from time to time);*

“JANIS Report” means the report by the Joint Australian and New Zealand Environment and Conservation Council (ANZECC) / Ministerial Council on Forestry, Fisheries and Aquaculture (MCFFA) National Forests Policy Statement Implementation Sub-committee, titled *Nationally Agreed Criteria for the Establishment of a Comprehensive, Adequate and Representative Reserve System for Forests in Australia*, published by the Commonwealth of Australia in 1997;

“JANIS Reserve Criteria” or “Criteria” means the criteria as described in the JANIS Report for establishing the CAR Reserve System addressing Biodiversity, Old Growth forest and Wilderness, taking account of reserve design and management and social and economic considerations;

“Listed Species and Communities” means species and communities listed in accordance with Part 13 of the EPBC Act, Biodiversity Conservation Act 2016 (NSW) or Fisheries Management Act 1994 (NSW), including threatened and endangered species, threatened ecological communities, migratory species and other listed categories (or equivalent);

“Low Quality Logs” means undersize or defective log sections that do not meet a high quality specification but are still suitable for processing into sawn timber or veneer;

“Matters of National Environmental Significance” for the purpose of this Agreement means those matters protected by Part 3 of the EPBC Act as matters of national environmental significance, including:

- (a) World Heritage Values of declared World Heritage Places;
- (b) National Heritage Values of National Heritage Places;

- (c) ecological character of Ramsar Wetlands;
- (d) listed species and communities in the EPBC Act (excluding those categories referred to in paragraphs 178(1)(a) and (f), and paragraph 181(1)(c) of the EPBC Act);

“Mineral” means any substance prescribed by the regulations of the *Mining Act 1992* (NSW) as a mineral, ~~and~~ or petroleum as prescribed under the *Petroleum (Onshore) Act 1991* (NSW), and includes coal, oil shale and petroleum but does not include uranium;

“Mineral Exploration” means prospecting under an authority or other title under either the *Mining Act 1992* (NSW) or the *Petroleum (Onshore) Act 1991* (NSW);

“Mining” means mining under an authority or other title under the *Mining Act 1992* (NSW) and includes production of petroleum under the *Petroleum (Onshore) Act 1991* (NSW);

“Mining Operations” means operations or works carried out in the course of Mining, or Mineral Exploration;

“Montreal Process Criteria” means the Montreal Process criteria for the conservation and sustainable management of temperate and boreal forests;

“Montreal Process Implementation Group for Australia” or **“MIG”** means the Montreal Process Implementation Group established by the Commonwealth and all State and Territory Governments;

“National Estate” means those places as defined under section 4 of the repealed Australian Heritage Commission Act 1975 (C^{wth} Cth);

“National Estate Values” means values attributed by the former Australian Heritage Commission to the National Estate places;

“National Forest Policy Statement” or **“NFPS”** means the *National Forest Policy Statement 1992* endorsed by the Commonwealth and all State and Territory Governments;

“National Heritage Management Principles” has the same meaning as “National Heritage management principles” in section 324Y of the EPBC Act;

“National Heritage Place” has the same meaning as “National Heritage place” in section 324C(3) of the EPBC Act;

“National Heritage Values” has the same meaning as “National Heritage values” in section 324D of the EPBC Act;

~~“NPWS Environmental Management System”~~ means ~~the system of the same name described in the New South Wales Eden Region Forest Agreement;~~

“NSW National Parks and Wildlife Service” or **“NPWS”** means the New South Wales National Parks and Wildlife Service;

“NSW RFAs Scoping Agreement” means the Scoping Agreement for New South Wales Regional Forest Agreements between the Commonwealth and the State of New South Wales signed on 25th January 1996;

“Old Growth forest” means old growth forest as defined in the JANIS Report;

“Other Wood Products” means timber that is not processed as a high quality, low quality or Pulpwood log, including firewood, biomaterial and fencing products;

“Owner” means:

- (a) in relation to land:
 - (i) the owner of any estate or interest in that land, including the Crown in right of the State; and
 - (ii) any statutory corporation which has the power to carry on Forestry Operations or Mining Operations as the case may be, on the land;
- (b) in relation to Forest Products or Mining products, as the case may be, the owner of any interest in those products.

“Parties” means the State of New South Wales and the Commonwealth of Australia;

“Party” means a Party to this Agreement;

“Plantations” means intensively managed stands of trees of either native or exotic species, created by the regular placement of seedlings or seed, but not principally for the purpose of the production of food or any other farm produce other than timber;

“Private Land” means lands other than Public Land and land owned or leased by the Commonwealth;

“Progress Report” means a report prepared by the Parties on the performance of this Agreement for each five-yearly review;

“Public Land” means lands of the New South Wales Crown;

“Pulpwood” means logs cut and prepared primarily for the manufacture of wood pulp;

~~**“Quota Sawlog”** means a Sawlog having dimensions and quality that are equal to or greater than those specified in the Wood Supply Agreements between State Forests of NSW and Sawlog using customers;~~

“Ramsar Convention” means the Convention on Wetlands of International Importance Especially as Waterfowl Habitat;

“Ramsar Wetlands” means those places defined under section 17 of the EPBC Act;

“Recovery Plan” ~~includes~~ means a recovery plan made or adopted under the EPBC Act, or an equivalent instrument made under the *Biodiversity Conservation Act 2016* (NSW), or the *Fisheries Management Act 1994* (NSW) Part 3 of the *Endangered Species Protection Act 1992* (C’wth) and/or relevant parts of the *Threatened Species Conservation Act 1995* (NSW);

“Regional ESFM Plan” means a plan covering State forests in the region that has the status of a management plan ~~under the Forestry Regulation 1994~~ (NSW) under the *Forestry Act 1916 2012* (NSW) and meeting additional requirements under the Forestry Regulation 2012 (NSW);

“Regional Forest Agreement” or **“RFA”** means a Regional Forest Agreement within the meaning of the ~~Export Control (Hardwood Wood Chips) (1996) Regulations (C’wth)~~ Regional Forest Agreements Act 2002 (Cth);

“Regional Prescriptions” ~~include~~ means those prescriptions within the Forest Management Framework that are applicable to Forestry Operations in the Eden region. These prescriptions include but are not limited to silvicultural prescriptions and systems, and environment protection measures covered by the Codes of Practices, Eco Field Guides, and the ~~Integrated Forestry Operations Approval applying to the Eden region~~ Regulatory Instruments, Forest Management Zoning, and Aboriginal and non-Aboriginal cultural heritage guidelines;

“Register of the National Estate” means the register of the same name kept pursuant to the *Australian Heritage Commission Act 1975* (C’wth);

“Regulatory Instruments” means the State’s suite of statutory and regulatory tools used to achieve ESFM for forestry operations currently in place (or as amended from time to time), including, but not limited to:

- Integrated Forestry Operations Approval applicable to the Eden region under the *Forestry Act 2012* (NSW);
- Forestry Regulation 2012 made under the *Forestry Act 2012* (NSW);
- Plantations and Reafforestation (Code) Regulation 2001 made under the *Plantations and Reafforestation Act 1999* (NSW);
- Private Native Forestry Code of Practice for Southern NSW, 2008;
- Additional, new or amended Regulatory Instruments as released from time to time by the NSW Government;

“Sawlog” means logs which are suitable for processing into sawn timber. Specifications for compulsory and non compulsory Sawlogs are defined in Wood Supply Agreements between State Forests of NSW and Sawlog using customers;

“Special Management Zone” or **“FMZ 2”** means the zone of the same name ‘Zone 2 – Special Management’ as described under the NSW Forest Management Zoning system in S21A of the *Forestry and National Park Estate Act 1998* and described in the document *Forest Management Zoning in State Forests, SFNSW, 1999*;

“Special Prescription Zone” or **“FMZ 3B”** means the zone of the same name ‘Zone 3B – Special Prescription’ as described under the NSW Forest Management Zoning system described in the document *Forest Management Zoning in State Forests, SFNSW 1999*;

“Special Protection Zone” or **“FMZ 1”** means the zone of the same name ‘Zone 1 – Special Protection’ as described under the NSW Forest Management Zoning system described in the document *Forest Management Zoning in State Forests, SFNSW 1999*;

“State forest” means land dedicated as State forest under the *Forestry Act 1916 2012* (NSW);

“State Forests of NSW” or **“SFNSW”** means the Forestry Commission of New South Wales, constituted as a corporation under the *Forestry Act 1916* (NSW) operating as State Forests of New South Wales;

“Statement of Significance” means a statement of significance made by the Australian Heritage Commission for a place which forms part of the National Estate;

“Statutory Conservation Planning Document” means a conservation advice, recovery plan, threat abatement plan or wildlife conservation plan made or adopted in accordance with the EPBC Act, or equivalent instruments or programs under the *Biodiversity Conservation Act 2016* (NSW) or the *Fisheries Management Act 1994* (NSW);

“Sustainability Indicators” means qualitative or quantitative measures, at the regional (sub-national) level developed to assess the criteria for sustainable forest management, as described in *Ecologically Sustainable Forest Management Criteria and Indicators for the NSW Forest Agreement regions* (EPA 2017), and as amended from time to time;

“Sustainable Yield” means the long term estimated wood yield from forests that can be maintained from a given region in perpetuity under a given management strategy and suite of sustainable use objectives, as determined using the processes described in Attachment 11, and as amended from time to time;

“Threat Abatement Plan” means a threat abatement plan made or adopted under Part 3 of the *Endangered Species Protection Act 1992* (C’wth) ~~the EPBC Act~~;

“Threatening Process” means a threatening process listed as a key threatening process under the *Biodiversity Conservation Act 2016* (NSW), *Fisheries Management Act 1994* (NSW) and the EPBC Act in recognition that the process adversely affects or may threaten the survival, abundance or evolutionary development of a native species or ecological community;

“Values Protected by Prescription” means *values protected by prescription* as defined in the JANIS Report and includes areas in the Forest Management Zoning system including those areas in FMZ 2 that do not meet Informal Reserve criteria, FMZ 3A, FMZ 3B and other mapped areas under the IFOA applicable to the Eden region.

“Wilderness” means wilderness as defined in the JANIS Report;

“Wilderness Values” means the values of the same name as defined in the JANIS Report and the *NSW RFAs Scoping Agreement* between NSW and the Commonwealth;

“Wild Rivers” means a water course, water course network, or a connected network of water bodies, of natural origin and exhibiting natural flow (perennial, intermittent or episodic) in which the biological, hydrological and geomorphological processes associated with the river flow; and the biological, hydrological and geomorphological processes in those parts of the catchment with which the river is intimately linked; have not been significantly altered by modern or colonial society;

“Woodchips and Unprocessed Wood” means ~~those goods that are prescribed goods under within the meaning of the *Export Control (Hardwood Wood Chips) (1996) Regulations (1996)* (C’wth Cth) or ; the *Export Control (Regional Forest Agreements) Regulations* (C’wth); and the *Export Control (Unprocessed Wood) Regulations* (C’wth Cth), or would be prescribed goods under those regulations if not for the *Export Control (Regional Forest Agreements) Regulations* (Cth);~~

~~**“Wood Supply Agreement”** means an agreement in writing between State Forests of NSW and a person or company or organisation under which State Forests of NSW agrees to supply and the person or company or organisation agrees to take native hardwoods;~~

“World Heritage List” means the list kept under that title under Article 11 of the Convention Concerning the Protection of the World Cultural and Natural Heritage;

“World Heritage Nomination” means the submission by the Commonwealth of a nominated area to the UNESCO World Heritage Committee for assessment as a World Heritage area consistent with section 314 of the EPBC Act and the *World Heritage Operational Guidelines for the Implementation of the World Heritage Convention*;

“World Heritage Place” means a property on the World Heritage List;

“World Heritage Values” means ~~features, formations, areas, and sites of outstanding universal value within the meaning of Article 2 of the *Convention Concerning the Protection of the World Cultural and Natural Heritage*, also known as the World Heritage Convention~~ has the same meaning as in section 12(3) of the EPBC Act.

- 3 In this Agreement unless the contrary intention appears:
- (a) A reference to a clause or Attachment is a reference to a clause or Attachment to this Agreement and a reference to this Agreement includes a reference to an Attachment;
 - (b) A reference to this Agreement or another instrument is a reference to this Agreement or that other instrument as amended or varied from time to time;
 - (c) A reference to a statute or ordinance includes any consolidations, amendments, re-enactments or replacements thereof and also includes regulations and other instruments made under them;
 - (d) A reference to a code or other instrument includes any consolidations or amendments thereof;
 - (e) A word importing the singular includes the plural and vice versa, a word importing a gender includes each other gender and a reference to a person includes an individual, firm, body corporate, association (whether incorporated or not), government, governmental or semi-governmental body, local authority or agency;
 - (f) A reference to an act, matter or thing includes the whole or any part of that act, matter or thing and a reference to a group of acts, matters, things or persons includes each act, matter, thing or person in that group;
 - (g) Where any terms and conditions are added to an Attachment of this Agreement it is agreed that those terms and conditions will form part of this Agreement;
 - (h) Headings are inserted for convenience and do not affect the interpretation of this Agreement.

Definition of the region

- 4 The area covered by this Agreement is the Eden region as shown in Map 1 accompanying this Agreement.

Duration of Agreement

- 5 This Agreement takes effect on 26 August 1999 upon signing by both Parties and, unless earlier terminated in accordance with clause 99, 100, 101 or 102, will remain in force ~~for 20 years~~ until 26 August 2039, or until a later date pursuant to clause 6A and 6B.

6 The process for extending the Agreement for a further period ~~will be~~ was determined jointly by the Parties as part of the third five-yearly review.

6A Subject to clause 6B, upon the satisfactory completion of each five-yearly review in accordance with clause 8M, the Agreement will be extended for a further five years.

6B The extension of this Agreement under clause 6A will occur upon the satisfactory completion of the five-yearly review due to commence in 2024 and thereafter upon the satisfactory completion of each subsequent five-yearly review until this Agreement is terminated by the Parties or subsequent extensions of this Agreement are withdrawn in accordance with clause 14C.

Basis of Agreement – National Forest Policy Statement

7 The Parties confirm their commitment to the goals, objectives and implementation of the *National Forest Policy Statement (NFPS)* by:

- (a) ~~Developing and implementing~~ Implementing Ecologically Sustainable Forest Management (ESFM);
- (b) ~~Establishing and maintaining the~~ Comprehensive, Adequate and Representative (CAR) Reserve System;
- (c) ~~Facilitating the development of an~~ Supporting an internationally competitive wood production and wood products industry through facilitating efficient and sustainable wood production, and wood products industries, based on maximising value-adding opportunities and efficient use of wood resources; and
- (d) Promoting the conservation and management of the private Forest Estate.

Changes to the Agreement

8 This Agreement may only be amended with the consent, in writing, of both Parties. Parties agree to work cooperatively to address any differences between them as to the interpretation or implementation of the Agreement.

Monitoring the Agreement

General monitoring

8A. The implementation of this Agreement is monitored through the five-yearly reviews and the annual meetings between the Parties in the periods between the five-yearly reviews. Further:

- (a) The Parties agree to maintain open communication on matters relating to the implementation of this Agreement, including raising and responding to issues at any time.
- (b) The Parties agree that for efficiency and consistency with prior practices, the timing of monitoring and reporting of the North East and Southern

RFAs will be aligned with this Agreement and will complement NSW and national forest reporting.

- (c) The Parties agree that the assessment process, the consultation undertaken in early 2018 and the results of the monitoring of Sustainability Indicators in *A report on progress with implementation of the New South Wales Regional Forest Agreements: Second and third five-yearly reviews July 2004 – June 2014*, November 2017 constitute the five-yearly review that was due in 2019.
- (d) The next five-yearly review required by this Agreement will commence in 2024.
- (e) New South Wales agrees to develop and maintain a coordinated Monitoring, Evaluation and Reporting Plan, including the identification of research priorities, within the broader Forest Management Framework across relevant forest management tenures and to support RFA outcomes reporting for ESFM.

Annual meetings

8B. The Parties agree to hold annual officials-level, bi-lateral meetings in the years between each five-yearly review to monitor the implementation of the Agreement and discuss any matters or issues that arise.

8C. An online statement will be made publicly available on the outcomes of the meeting.

Five-yearly reviews

Five-yearly review process

8D. A review of the performance of this Agreement is to commence during the last year of each five year period during the term of the Agreement (the five-yearly review) with the release of the Five-yearly Review Scoping Agreement.

8E. The purpose of the five-yearly review is to examine New South Wales' Forest Management to demonstrate Ecologically Sustainable Forest Management, including to:

- (a) demonstrate adaptive Forest Management in accordance with the RFA;
- (b) demonstrate how the Parties have provided for the protection of Matters of National Environmental Significance, including identifying trends and the status of Matters of National Environmental Significance, in accordance with the RFA;
- (c) demonstrate how relevant Statutory Conservation Planning Documents have been implemented as part of the Forest Management Framework;
- (d) demonstrate how social and economic benefits of forestry and other forest uses are being achieved;
- (e) evaluate current and future research priorities across the Forest Estate; and
- (f) assess the extent to which key findings and/or recommendations for preceding five-yearly reviews have been addressed.

8F. The Parties will prepare a Progress Report addressing the items listed at clause 8E including across key environmental, social and economic indicators (Sustainability Indicators). As such, the Progress Report will be a key source of information in the five-yearly reviews under this Agreement.

Conduct of five-yearly review

8G. Five-yearly reviews are to be conducted by an independent person or body jointly appointed by the Parties.

8H. In conducting the five-yearly review, the independent person or body will:

- (a) take into account public comments;
- (b) use and take into account the relevant Progress Report;
- (c) use and take into account the document titled ‘Overview of the New South Wales Forest Management Framework, as updated from time to time;
- (d) develop and submit to the Parties a report detailing the five-yearly review process and its findings and recommendations, within three months of commencement.

8I. In accordance with subsection 10(6) of the *Regional Forest Agreements Act 2002* (Cth), the Commonwealth Minister responsible for forestry will table the report provided under paragraph 8H (d) in each House of the Parliament within 15 sitting days of that House after the report is provided to the Minister.

8J. The Parties will consider the five-yearly review recommendations and publish a joint government response to the recommendations within six months of receiving the review report.

8K. The Parties will make a determination of satisfactory performance under this Agreement in the joint government response. If satisfactory performance is not determined, the Parties will include in the joint government response a list of remedial actions and when they will be delivered. The subsequent five-yearly review process will assess whether remedial actions have been delivered.

8L. The purpose of the five-yearly review process under this Agreement is not to re-negotiate the Agreement.

Satisfactory completion of 5 yearly review

8M. A five-yearly review will be satisfactorily completed upon the public release of the joint government response to the review report, which is to include identified remedial actions pursuant to clause 8K. The five-year extension pursuant to clauses 6A and 6B will then take effect, unless the joint government response identifies that there are outstanding remedial actions from a previous five-yearly review that have not been delivered to the satisfaction of both Parties, in which case the five-year extension will not take effect until a supplementary joint government response demonstrating the completion of the outstanding remedial actions has been released.

Requirement for an audit

8N Either Party may initiate an audit, if in the opinion of the initiating Party, there has been, or is likely to be, an adverse finding or outcome relating to this Agreement, whether or not the outcome relates to non-compliance or likely non-compliance with the Agreement.

8O Before an audit process commences, the initiating Party must notify and consult with the other Party on the following:

- (a) the initiating Party's reason for initiating the audit or review;
- (b) the scope and criteria for the audit, and
- (c) the appointment of an independent auditor.

8P An audit may include:

- (a) an examination of the operation of this Agreement over a particular period of time; or
- (b) preparation of an audit report which addresses the criteria specified by the initiating Party.

8Q An audit should be conducted in the most efficient and effective manner possible to address the opinion of and concerns identified by the initiating Party.

8R The Parties agree to cooperate fully in any audit.

8S The initiating Party may publish any report produced under clause 8P(b), provided the initiating Party, prior to publication:

- (a) notifies the other Party of the intent to publish the report;
- (b) provides the other Party with a copy of a draft of the final report; and
- (c) provides the other Party with 20 business days to respond to the draft of the final report.

8T The costs of an audit will be borne by the initiating Party.

Dispute Resolution

9 The Parties agree that if a dispute arises between the Parties regarding this Agreement it must be resolved expeditiously in accordance with the provisions of clauses 10 to 14.

10 When a dispute arises, a Party may serve a notice on the other specifying:

- (a) the nature and substance of the matter or issue in dispute;
- (b) that it is a dispute to be resolved in accordance with clauses 10 to 14.

11 If a notice is served under clause 10 the Parties must attempt to settle the dispute within 14 days. At the expiration of that 14 days and, if agreed, any additional period the Parties must appoint a mediator to conduct a mediation concerning the matter or issue in dispute.

- 12 If the dispute is not settled under clause 11 and the Parties fail to appoint a mediator, either of them may request the President of the Law Council of Australia, or the equivalent officer of such body as in future may have the functions of the Law Council of Australia, to nominate a mediator to conduct the mediation.
- 13 The costs of a mediator appointed under clauses 11 or 12 are to be shared equally between the Parties.
- 14 Each of the Parties agrees to use its best endeavours to resolve the dispute through mediation.

Withdrawal from extension process

- 14A. If there is no resolution or agreement on a dispute in accordance with clauses 9 to 14 (including the failure of mediation), either the Commonwealth Minister responsible for forestry (in consultation with the Commonwealth Minister responsible for the environment) or New South Wales Minister(s) responsible for the environment and/or forestry may send to the other Party and publish a written notice of its intention, unless the dispute is resolved, to withdraw from the extension process in clause 6A and 6B .
- 14B. Any notice under clause 14A above must specify the time period in which the other Party must address the dispute.
- 14C. If, at the end of the specified time period, the dispute has not been resolved, the Commonwealth Minister responsible for forestry (in consultation with the Commonwealth Minister for the environment) or the New South Wales Minister(s) responsible for the environment and/or forestry may write to the other Party's government giving notice confirming the effective date of withdrawal from the extension process in clause 6A and 6B.
- 14D. In the event either Party withdraws from the extension process in clause 6A and 6B, negotiation of any subsequent extension to this Agreement will only be considered following the satisfactory completion of the penultimate five-yearly review (that is, the five-yearly review prior to the final five years of the Agreement's duration).
- 14E. In the event the Parties subsequently extend this Agreement subject to clause 14D and pursuant to clause 8M, the extension process in clause 6A and 6B will not apply to the extended Agreement unless otherwise agreed by the Parties.

Notices

- 15 Any notice or other communication to be given or made pursuant to this Agreement shall be in writing and addressed as the case may be as follows:

THE STATE
The Secretary
Department of Premier and Cabinet
52 Martin Place
SYDNEY NSW 2000

~~Director General
Premier's Department
Governor Macquarie Tower
1 Farrer Place
SYDNEY NSW 2000~~

THE COMMONWEALTH

The Secretary

Department of Agriculture and Water Resources

18 Marcus Clarke Street

CANBERRA ACT 2600

The Secretary

Department of the Prime Minister and Cabinet

3-5 National Circuit

BARTON ACT 2600

PART 2

- 16 This Part is not intended to create legally binding relations and provisions in Part 1 in so far as they relate to Part 2 are also not binding. Where there are references in this Part to obligations which are referred to in Part 3 and are intended to be legally binding, they are only included in Part 2 insofar as they provide context and for the sake of completeness so that the whole scheme which the Parties wish to implement is set out in this Part. The inclusion of references to these legally binding obligations in Part 2 does not derogate from the Parties intent that they be legally binding in Part 3.

FUNCTIONING OF THE AGREEMENT

~~Relationship to Previous Forest Agreements~~

- 17 (a) ~~This Agreement replaces the South East Forest Agreement (SEFA) signed by the Commonwealth and New South Wales Governments on 21 December 1993, except that the Parties agree that the remaining unspent Commonwealth and State funds committed through the SEFA will remain available for regional development initiatives in the Eden region. The Parties further agree to develop within six months of the date of this Agreement an appropriate mechanism to develop and consider these initiatives. NOT USED~~
- (b) ~~In relation to the Eden region, this Agreement replaces the *Deferred Forest Agreement*, signed by the Commonwealth and New South Wales Governments on 25 January 1996, and subsequently amended through correspondence dated 30 August 1997, following the New South Wales Government Interim Forestry Assessment decision of 23 September 1996.~~
- (c) ~~New South Wales, in signing this Agreement, states that the area deferred from timber harvesting by the New South Wales Government Interim Forestry Assessment decision of 23 September 1996 (ie the Interim Deferred Forest Area), no longer applies in relation to the Eden region.~~

Relationship to Statutory Obligations

- 18 This Agreement cannot impose on either Party or a third party any obligation that is inconsistent with Australia's international obligations, or a law of the Commonwealth or of New South Wales.
- 19 Neither Party will seek to use existing or future legislation to undermine or impede this Agreement.
- 20 ~~The Commonwealth, in signing the Agreement, confirms that its obligations under the *Australian Heritage Commission Act 1975* (C'wth) have been met. NOT USED~~
- 21 ~~Parties will manage their respective responsibilities with regard to the National Estate in accordance with the provisions of this Agreement as detailed in Attachment 3. NOT USED~~

- 22 ~~The Commonwealth confirms it has on or before the date of this Agreement entered into an agreement with the Australian Heritage Commission in which the Commission has agreed to perform and comply with all the agreements and confirmations which are specified in Attachment 3 as being agreements and confirmations on the part of the Commission.~~ NOT USED
- 23 ~~The Commonwealth, in signing the Agreement, confirms that its obligations under the *Environment Protection (Impact of Proposals) Act 1974* (C'wth) have been met. The Commonwealth also confirms that, under the administrative procedures of the Act, any activities covered by the Agreement, including the five yearly reviews and minor amendments to the Agreement, will not trigger further environmental impact assessment.~~ NOT USED
- 24 ~~The Commonwealth confirms that it has met its obligations in relation to this Agreement under the *Endangered Species Protection Act 1992* (C'wth) in so far as they were to be performed prior to the date of the commencement of this Agreement.~~ NOT USED
- 25 The Commonwealth notes that its obligations under the EPBC Act to promote protection of Listed Species and Communities endangered species protection will involve ongoing cooperative work with New South Wales agencies concerning the Eden region.

Matters of National Environmental Significance

Matters of National Environmental Significance (general)

- 25A New South Wales will use best endeavours to ensure that the Forest Management Framework provides for the protection of Matters of National Environmental Significance.
- 25B The Parties agree that research, monitoring, reporting, evaluation and the communication of findings are important to support decision making with regard to Matters of National Environmental Significance.
- 25C New South Wales will use best endeavours to continue to improve research, monitoring, reporting, evaluation and communication mechanisms as part of its adaptive Forest Management Framework in accordance with clause 44.
- 25D The Parties agree that the monitoring, audit, reporting and review processes set out in this Agreement provides an assurance that the Forest Management Framework takes into account the protection of Matters of National Environmental Significance.

Listed Species and Communities, including threatened flora and fauna

- 25E New South Wales will use best endeavours to ensure that the Forest Management Framework provides for the protection of Listed Species and Communities.
- 25F The Parties, recognising that priorities can change in light of new information, will continue to consult on the priorities for:

- (a) Listed Species and Communities, Forest Ecosystems, and Threatening Processes (further information at Attachment 2);
- (b) the preparation of all Statutory Conservation Planning Documents relevant to this Agreement; and
- (c) research on Listed Species and Communities, Forest Ecosystems, and Threatening Processes.

25G New South Wales will use best endeavours to ensure that any new or altered actions in the Forest Management Framework are developed and implemented over the term of the Agreement for Listed Species and Communities to:

- (a) provide for the maintenance of the relevant species;
- (b) have a sound scientific basis;
- (c) give consideration to relevant determinations made by the New South Wales Threatened Species Scientific Committee or Fisheries Scientific Committee;
- (d) be consistent with relevant Statutory Conservation Planning Documents; and
- (e) take note of public comment.

25H New South Wales will use best endeavours to ensure that the State's Statutory Conservation Planning Documents and Regulatory Instruments that include management actions, prescriptions or protections for Listed Species and Communities in accordance with the Forest Management Framework, will:

- (a) be maintained, implemented and updated on an as needs basis to provide ongoing protection for Listed Species and Communities;
- (b) be made publicly accessible.

World Heritage Places

~~26 Parties agree to actively investigate, and jointly participate in the further World Heritage assessment of the relevant Australia-wide themes specified in Section 3.4.2 (Table 17) of the World Heritage Expert Panel report, including any potential contribution from the Eden region. The Parties acknowledge that the World Heritage Values of a property included in the World Heritage List are protected by Part 3 of the EPBC Act, as the exemption to the application of Part 3 for Forestry Operations does not apply to a World Heritage Place pursuant to section 42 of the EPBC Act.~~

~~27 The Commonwealth agrees that it will give full consideration to the potential social and economic consequences of any World Heritage Nomination of places in the Eden region and that any such nomination will only occur after the fullest consultation and with agreement of the State. The Parties agree to participate in~~

the assessment of any future World Heritage Places consistent with the Australian World Heritage Intergovernmental Agreement.

- 28 ~~The Parties agree that any World Heritage Nomination involving any part of the forest estate in the Eden region will be from within the CAR Reserve System. The Parties agree that any World Heritage Nominations involving any part of the Forest Estate in the Eden region will be from areas within the Dedicated Reserve elements of the CAR Reserve System.~~
- 29 ~~The Parties agree that before any World Heritage Nomination is made: NOT USED~~
- ~~(a) all necessary management arrangements, including joint policy coordination arrangements will be agreed; and~~
 - ~~(b) all related funding issues will be resolved to the satisfaction of both Parties.~~

National Heritage Places

29A. New South Wales will use best endeavours to ensure that the Forest Management Framework provides for the protection of National Heritage Values of National Heritage Places in accordance with National Heritage Management Principles.

Commonwealth Heritage Places

29B. New South Wales will use best endeavours to ensure that the Forest Management Framework provides for the protection of Commonwealth Heritage Values through the management of Commonwealth Heritage Places in accordance with Commonwealth Heritage Management Principles.

Ramsar Wetlands

29C. The Parties acknowledge that the Forest Management Framework provides for the protection of the ecological character of Ramsar Wetlands, in accordance with Australia's obligations under the Ramsar Convention, by:

- (a) the application of Part 3 of the EPBC Act, as the exemption to the application of Part 3 of the EPBC Act for Forestry Operations does not apply to Ramsar Wetlands pursuant to section 42 of the EPBC Act;
- (b) management of Ramsar Wetlands, including having regard to Ramsar Wetland information sheets and Ramsar Wetland ecological character descriptions; and
- (c) management of the relevant threatened ecological communities listed in Schedule 2 of the *Biodiversity Conservation Act 2016* (NSW) or listed under the *Fisheries Management Act 1994* (NSW).

Export controls

30 Parties note that current Commonwealth export arrangements provide that, after 31 December 1999, exports of ~~hardwood~~ Woodchips and Unprocessed Wood from

native forests can occur from areas covered by an RFA, without the need for a licence under the *Export Control Act (1982) (Cth)*.

- 31 Parties note that no controls under the *Export Control Act 1982 (C'wthCth)* or any other export control law within the meaning of the *Regional Forest Agreements Act 2002 (Cth)* will apply to ~~hardwood Woodchips or and Unprocessed Wood~~ sourced from the Eden region while this Agreement is in place.
- 32 ~~New South Wales confirms that the CAR Reserve System has been established through this Agreement, including Attachment 12, and that conservation levels achieved will not subsequently be used as a basis for preventing timber harvesting being carried out on Private Lands. Consistent with clause 18 this is not to be interpreted as preventing voluntary conservation measures to protect CAR Values on Private Land.~~ NOT USED

Integrated Forestry Operations Approval applicable to the Eden region

- 33 New South Wales confirms that relevant Regulatory Instruments, such as the *Eden Region Forest Agreement (NSW, 5 March 1999)* and any Integrated Forestry Operations Approvals, for all or part of the Eden region are parts of the New South Wales Forest Management System Framework are means by which New South Wales will implement obligations ~~and undertakings~~ arising from this Agreement.
- 34 ~~The Parties note that until an Integrated Forestry Operations Approval is granted covering the Eden region, the environmental conditions in the Minister for Planning's approval of the *Eden Management Area Proposed Forestry Operations Environmental Impact Statement, SFNSW 1994* under the *Environment Planning and Assessment Act 1979 (NSW)* will continue to apply. Nonetheless, New South Wales agrees to implement the prescription component of the CAR Reserve System as described in Attachments 1, 2 and 3 immediately on signing this Agreement. Until an Integrated Forestry Operations Approval is granted as outlined in clause 46(g), a reference to an Integrated Forestry Operations Approval in Attachments 1, 2 and 3 of this Agreement is to be taken to mean the Minister for Planning's approval described above.~~ NOT USED
- 35 ~~New South Wales undertakes to notify the Commonwealth within fourteen days of any amendment or termination of a Forest Agreement or amendment, suspension or revocation of any Integrated Forestry Operations Approval which applies to the Eden region.~~ NOT USED

Regional Forest Agreement Bill 1998 (C'wlth)

- 36 ~~If the *Regional Forest Agreements Bill 1998 (C'wlth)* is enacted and commences, New South Wales may seek amendment of this Agreement as a result of such enactment or commencement.~~ NOT USED

Milestones

- 37 ~~This Agreement establishes milestones as given in Attachment 4 and Parties will report annually on their achievement during the first five years, using an appropriate public reporting mechanism.~~ NOT USED

Five-yearly review

- 38 ~~Within each five year period, a review of the performance of the Agreement will be undertaken. The purpose of the five yearly review is to provide an assessment of progress of the Agreement against the established milestones, and will include:~~ NOT USED
- ~~(a) The extent to which milestones and obligations have been met, including management of the National Estate;~~
 - ~~(b) The results of monitoring of Sustainability Indicators; and~~
 - ~~(c) Invited public comment on the performance of the Agreement.~~
- 39 ~~While the review process will not open up the Agreement to re-negotiation, both Parties may agree to some minor modifications to incorporate the results of the review as per clause 8.~~ NOT USED
- 40 ~~The outcomes of the review will be made public. The mechanism for the review will be determined by both Parties before the end of the five year period and the review will be completed within three months.~~ NOT USED
- 41 ~~The Commonwealth will table in the Commonwealth Parliament the signed Regional Forest Agreement and, when completed, the annual reports detailing achievement of the milestones for the first four years of the Agreement and the first five yearly review on performance against milestones and commitments.~~ NOT USED

ECOLOGICALLY SUSTAINABLE FOREST MANAGEMENT (ESFM)

- 42 The Parties agree that ESFM is an objective which requires a long term commitment to ~~continuous~~ continual improvement and that the key elements for achieving it are:
- ~~(a) The establishment and maintenance of a the~~ CAR Reserve System(Attachment 1);
 - ~~(b) The development of internationally competitive forest products industries~~ Efficient and sustainable wood production and wood products industries based on maximising value-adding opportunities and efficient use of wood resources; and
 - ~~(c) An integrated, complementary and strategic forest management systems~~ Forest Management Framework capable of responding to new information, including climate change risks and adaptation responses.
- 43 ~~The Parties recognise that many of the existing New South Wales processes and regulations are designed to produce effective outcomes in terms of fauna, flora, soil and water conservation on State forests. These elements provide a sound basis for the further development of systems and processes to achieve ESFM. The Parties recognise that the NSW Forest Management Framework is designed to produce effective outcomes for fauna, flora, soil and water conservation, and heritage~~

values on State forests and provides a sound basis for implementation and continual improvement of such to achieve ESFM.

- 44 ~~New South Wales confirms its commitment to the achievement of ESFM on Public and Private Land consistent with the principles of Ecologically Sustainable Forest Management at Attachment 14, and to the ongoing review and subsequent implementation of its legislation, policy, plans, Codes and Regional Prescriptions to ensure ESFM objectives can be achieved in a more efficient regulatory environment. New South Wales confirms its commitment to the ongoing implementation and achievement of ESFM on both Public Land and Private Land through the continued implementation and improvements to its Forest Management Framework and adaptive management in accordance with the ESFM principles in Attachment 14.~~

Monitoring and reporting on Ecologically Sustainable Forest Management

- 45 ~~New South Wales agrees that in providing for ESFM, its Forest Management System will be amended to implement the undertakings of this Agreement, including those specified in Attachments 5 and 7. The Parties recognise that:~~
- ~~(a) the Forest Management Framework is enhanced by adaptive management and continuing mechanisms to monitor, report and review the sustainability of forest management policies and practices;~~
 - ~~(b) fostering stakeholder understanding of ESFM in NSW is important; and~~
 - ~~(c) a range of processes and instruments exist which provide for public participation and consultation, as outlined in the summary document titled 'Overview of the New South Wales Forest Management Framework'.~~

Monitoring, Reporting and Consultative Mechanisms

- 46 ~~New South Wales undertakes to:~~
- ~~(a) Maintain a Forest Agreement covering the Eden region for the duration of this Agreement; Review and update the summary document titled 'Overview of the New South Wales Forest Management Framework', which describes the Forest Management Framework at a given point in time, as a minimum for each five-yearly review period;~~
 - ~~(b) Complete and publish plans of management for areas dedicated under the National Parks and Wildlife Act 1974 (NSW) by 1 January 2002; Use best endeavours to ensure that plans of management are developed and implemented for Dedicated Reserves under the National Parks and Wildlife Act 1974 (NSW) and for flora reserves under the Forestry Act 2012 (NSW) ensuring review and revision on a regular basis;~~
 - ~~(c) Complete and publish a Regional ESFM Plan for State forests under the Forestry Regulation 1994 (NSW) under the Forestry Act 1916 (NSW) by 1 April 2000; Implement the Regional ESFM Plan applicable to the Eden region (currently the Forest Management Plan for the Coastal Forests of~~

NSW (FCNSW 2016)) – or an equivalent instrument – ensuring review and revision on a regular basis;

- (d) Implement the Forest Management Zoning system for the Eden region by 1 October 1999; Ensure that the Forest Management Zoning system for the Eden region is maintained, implemented and reviewed on a regular basis;
- (e) Manage cultural values, both Aboriginal and non-Aboriginal, in the Eden region, in accordance with guidelines developed by New South Wales to meet the requirements in the EPBC Act, *National Parks and Wildlife Act 1974* (NSW) and the *Heritage Act 1977* (NSW), as amended from time to time; according to guidelines for the Eden region as outlined in clause 79, Attachment 3 and the principles in Attachment 9;
- (f) Develop and implement an inventory system for regrowth forests and review the calculation of Sustainable Yield using methods consistent with Attachment 11 and the principles and processes used in the Forest Resource and Management Evaluation System (FRAMES), in time for the first RFA review; Manage availability of timber resources for the State forest estate in accordance with Sustainable Yield estimates calculated using FRAMES or an equivalent, including to:
 - (i) take account of climate risks and adaptation responses;
 - (ii) ensure that FRAMES or an equivalent for the Eden region is maintained and continually improved and provide periodic reviews of wood product yields as documented in Attachment 11;
 - (iii) undertake and make publicly available an independent review of Sustainable Yield estimates for the Eden region during each five-yearly review period;
- (g) Grant within three months of the date of this Agreement and maintain Maintain for the duration of this Agreement an Integrated Forestry Operations Approval covering the Eden region, consistent with Attachments 1, 2 and 7;
- (h) Develop and implement environmental management systems in accordance with the principles outlined in Attachment 7 within five years. Maintain and implement a management system for public Forests that meets the criteria for an environmental management system meeting the requirements of ISO 14001 and demonstrates ESFM;
- (i) Identify and integrate relevant climate risks and adaptation responses into the monitoring, evaluation and reporting requirements in Regional ESFM Plans and plans of management under the *National Parks and Wildlife Act 1974* (NSW);
- (j) Ensure that there is a transparent, systematic and credible process for investigating alleged environmental incidents reported by members of the public in relation to Forestry Operations on Public and Private Land and that information about regulatory actions are made publicly available where appropriate; and

- (k) Establish and maintain a coordinated forum for stakeholder engagement.

Sustainability Indicators

- 46A Pursuant to clause 8F, the State will continue to publicly report on the results of monitoring of Sustainability Indicators every five years to align with and inform the five-yearly reviews required under this Agreement and reporting will be under the headings of the Montreal Process Criteria in Attachment 8.
- 47 ~~New South Wales will report on the results of monitoring of the Sustainability Indicators which are described in Attachment 9 of its *Eden Region Forest Agreement*. Reporting against the indicators will be consistent with the framework document *A Framework of Regional (Sub-National) Level Criteria and Indicators of Sustainable Forest Management in Australia* (Department of Primary Industries and Energy 1998) The Parties recognise that the document *Ecologically Sustainable Forest Management Criteria and Indicators for the NSW Forest Agreement regions* (EPA 2017) is consistent with *Australia's Sustainable Forest Management Framework of Criteria and Indicators 2008 – Policy Guidelines* (Commonwealth of Australia 2008) developed by the Montreal Implementation Group for Australia (MIG).~~
- 48 ~~Comprehensive Regional Assessments and the development of this Agreement have provided extensive opportunities for public participation and reporting. Parties recognise that the public reporting activities and on-going opportunities for public participation and consultation associated with existing New South Wales and Commonwealth processes and instruments will continue. A range of these processes and improvements are listed in Attachment 5. New South Wales agrees to review and revise its Sustainability Indicators to align with any relevant review of Sustainability Indicators at a national level.~~
- 49 ~~As required by the *Forestry and National Park Estate Act 1998* (NSW) New South Wales will report annually to Parliament on compliance with any Integrated Forestry Operations Approval for the Eden region and the New South Wales *Eden Region Forest Agreement*. New South Wales will also furnish a copy to the Commonwealth. NOT USED~~

Accreditation

- 50 ~~The Commonwealth accredits as providing for continuing improvement in ESFM New South Wales' Forest Management System (including its legislation, policies, Codes for the Eden region, plans and management practices applying to both Public and Private land), as agreed to be amended in this Agreement, particularly those amendments to the Forest Management System described in clauses 46(a), (c), (f), (g), (h) and 56. The System includes: NOT USED~~
- ~~● *The New South Wales *Eden Region Forest Agreement*;*~~
 - ~~● *Integrated Forestry Operations Approvals for the Eden region;*~~
 - ~~● *Regional ESFM Plan for the Eden region;*~~

- ~~New South Wales processes for forecasting Sustainable Yield from the Eden region;~~
- ~~Codes of Practice and Eco Field Guides;~~
- ~~The SFNSW Native Forest Management System; and~~
- ~~The NPWS Environmental Management System.~~

51 ~~The Parties note that export controls on the export of Unprocessed Wood and Woodchips sourced from New South Wales plantations have been removed in accordance with the Export Control (Unprocessed Wood) Regulations (C'wth), following accreditation and approval of the Codes of Practice applying to plantations. NOT USED~~

Sustainability Indicators

52 ~~Parties agree that the current Forest Management System will be enhanced by implementing mechanisms to monitor and review the sustainability of forest management practices. To ensure this occurs, Parties agree that: NOT USED~~

- (a) ~~The Sustainability Indicators referred to in clause 46 are consistent with the Montreal Process Criteria in Attachment 8, and take into account the *Framework of Regional (Sub National) Level Criteria and Indicators of Sustainable Forest Management in Australia* developed by the MIG;~~
- (b) ~~Both Parties agree that the indicators referred to in clause 46 are to be trialed and assessed during the first five year period to ensure they are practical, measurable, cost effective and capable of being implemented at the regional level;~~
- (c) ~~Reporting on the indicators referred to in clause 46 will be under the headings of the Montreal Process Criteria as in Attachment 8; and~~
- (d) ~~Both Parties agree to further develop, review, and if necessary revise Sustainability Indicators in time for the first five yearly review.~~

Private Land

53 ~~The Parties reaffirm their commitments made in the *National Forest Policy Statement (1992)* to the conservation and management of the private forest estate Forest Estate. The Parties note that Forestry Operations on Private Land in New South Wales are undertaken in accordance with the Private Native Forestry Code of Practice. The Parties note that New South Wales has provisions under the ~~*Native Vegetation Conservation Act 1997*~~ *Local Land Services Act 2013* (NSW) for native vegetation retention controls to regulate the clearance of native forest on Private Land.~~

53A New South Wales confirms that the CAR Reserve System is being maintained and implemented through this Agreement, including Attachment 12, and that conservation levels achieved will not subsequently be used as a basis for preventing timber harvesting in accordance with the Private Native Forestry Code of Practice

applying to the Eden region being carried out on Private Lands. Consistent with clause 18 this is not to be interpreted as preventing voluntary conservation measures and mechanisms to protect CAR Values on Private Land.

53B The Parties will use best endeavours to ensure any changes to the Regional Prescriptions applied to Private Land will not subsequently lead to a net deterioration in Environment and Heritage Values on Private Land.

53C The Parties recognise that Values Protected by Prescription on Private Land will be protected during Forestry Operations by adherence to Regulatory Instruments including the Private Native Forestry Code of Practice applying to the Eden region.

~~54 The Parties agree to encourage private forest owners to ensure that their management operations are~~ recognise the Private Native Forestry Code of Practice, applying to Forestry Operations on Private Land in the Eden region, which requires Forestry Operations to be consistent with ESFM practices.

55 CAR Values which are priorities for the CAR Reserve System and which occur on Private Land will be dealt with by the principles and mechanisms outlined in Attachments 1 and 12. Parties agree the values listed at Attachment 12 can be managed consistently with the JANIS Reserve Criteria through a range of mechanisms, with the consent of the ~~land owner~~ Private Land Owner, as specified in Attachment 12. Priorities for protection of Forest Ecosystems as at 1999 are given in Table 1 of Attachment 12. ~~All conservation mechanisms for the establishment of the Private Land component of the CAR Reserve System will be voluntary.~~

55A The Parties recognise the importance to the CAR Reserve System of Environment and Heritage Values on Private Land and the State agrees to continue to support processes that will facilitate the voluntary participation by Private Land Owners to protect CAR Values on Private Land. All conservation mechanisms for the establishment of the Private Land component of the CAR Reserve System will be voluntary.

~~56 New South Wales agrees to produce a code of practice for timber harvesting of native forest on Private Lands by the first five yearly review. NOT USED~~

Threatened Flora and Fauna

~~57 The Parties agree that the CAR Reserve System, actions under the New South Wales Biodiversity Strategy, *Threatened Species Conservation Act 1995* (NSW), and the *Endangered Species Protection Act 1992* (C'wlth), *Forestry and National Parks Estate Act 1998* (NSW) and the application of a range of management strategies, management plans and the Integrated Forestry Operations Approval will provide for the protection of rare or threatened flora and fauna species and ecological communities. NOT USED~~

~~58 Where threatened species, ecological communities and threatening processes restricted to New South Wales are listed under both the *Threatened Species Conservation Act 1995* (NSW) and the *Endangered Species Protection Act 1992* (C'wlth), any new or revised Recovery Plans or Threat Abatement Plans will be jointly prepared to meet the requirements of both Acts. Where Recovery Plans or~~

~~Threat Abatement Plans under the *Threatened Species Conservation Act 1995* (NSW) meet the requirement of the *Endangered Species Protection Act 1992* (C'wth), the Commonwealth will consider adopting them under Section 46 of the *Endangered Species Protection Act 1992* (C'wth). NOT USED~~

- 59 ~~The Parties agree that the management prescriptions or actions identified in jointly prepared and agreed Recovery Plans or Threat Abatement Plans, will be implemented as a matter of priority, including through the Integrated Forestry Operations Approval on State forest. NOT USED~~
- 60 ~~— Both Parties note that the Recovery Plan for the Long Footed Potoroo is currently being considered for adoption under Section 46 of the *Endangered Species Protection Act 1992* (C'wth) and the *Threatened Species Conservation Act 1995* (NSW). NOT USED~~
- 61 ~~Recovery Plans for items listed under both Acts and extending beyond New South Wales will be prepared jointly with New South Wales and other relevant governments to be considered for adoption under Section 46 of the *Endangered Species Protection Act 1992* (C'wth). NOT USED~~
- 62 ~~Parties will continue to consult on the priorities for listing threatened species, ecological communities and threatening processes, and the preparation of Recovery Plans, recognising that priorities can change in the light of new information. Currently agreed priorities and commitments for the next five years are outlined in Attachment 2. NOT USED~~

THE CAR RESERVE SYSTEM

- 63 ~~Parties agree that the primary function of the CAR Reserve System is to ensure the conservation and protection of Environment and Heritage Values. The Parties agree that the CAR Reserve System has been established and progressively added to for the purpose of ensuring the long-term conservation and protection of the values defined by the JANIS Reserve Criteria. The CAR Reserve System includes the land identified in Attachment 1.~~
- 63A ~~The Parties agree that the CAR Reserve System will continue to support the long-term conservation and protection of Environment and Heritage Values, including Listed Species and Communities.~~
- 64 ~~Parties agree that the CAR Reserve System as identified on Map 1 and presented in Attachment 1 and Attachment 12, and as amended from time to time, satisfies the JANIS Reserve Criteria. Each element of the CAR Reserve System will be administered in accordance with New South Wales legislation.~~
- 64A ~~The Parties agree that the CAR Reserve System established in accordance with this Agreement (including as it has been progressively added to and as further defined in Attachment 1 and Attachment 12), comprises:~~
- ~~(a) Dedicated Reserves; and~~
 - ~~(b) Informal Reserves; and~~

- (c) areas with CAR Values Protected by Prescription; and
- (d) Private Land with CAR Values protected under secure management arrangement by agreement with Private Land Owners.

Action to manage the CAR Reserve System on public land

65 New South Wales agrees to implement, manage and conserve the CAR Reserve System described in Attachment 1 and identified on Map 1.

65A The State will manage and conserve the Dedicated Reserve and Informal Reserve elements of the CAR Reserve System consistent with its obligations in relation to the relevant statutory principles and values of reservation set out in Part 4, Division 2 of the National Parks and Wildlife Act 1974 (NSW), or obligations under the Forestry Act 2012 (NSW).

65B Parties agree that through the acquisition of Private Land (by voluntary sale), transfer of lands of the Crown, or transfer of land from an existing reserve tenure to one of higher conservation protection status, enhancements to the CAR Reserve System could occur. Both Parties agree to use best endeavours such that enhancements to the CAR Reserve System will not impede access to State forest lands.

65C In the incorporation into the CAR Reserve System of lands of the Crown over which a licence or occupational permit is held NSW will:

- confirm the presence of CAR Values needed for reservation;
- through consultation, take into consideration any existing interests in the land of the licence or permit holder;
- ensure where practicable that suitable transition arrangements apply; and
- ensure that practical and legal access remains available where such access to adjacent private, licensed or leased land currently crosses or falls within land to be added to the CAR Reserve System under this Agreement.

~~66 Parties agree that changes to the CAR Reserve System will only occur in accordance with this Agreement, will be made publicly available, and will not lead to deterioration in the representation or protection of identified CAR Values, except that minor changes to the levels of representation or protection of specific CAR Values may occur as a result of actions that are in accordance with this Agreement. The Parties agree to ensure changes to the CAR Reserve System will:~~

- ~~a) only occur in accordance with this Agreement;~~
- ~~b) be made publicly available; and~~
- ~~c) not lead to deterioration in the representation or protection of identified CAR Values to below levels established by this Agreement in 1999, noting that minor changes to the levels of representation or protection of identified~~

CAR Values may occur as a result of actions that are in accordance with this Agreement.

66A New South Wales will:

- (a) discuss with and notify the Commonwealth of any proposed changes to the CAR Reserve System that will significantly impact Forestry Operations, wood supply to industry, or change the Sustainable Yield of the region by more than one per cent;
- (b) not make any changes to the CAR Reserve System that would reduce the total percentage for each Forest Ecosystem, non-forest ecosystem or Old Growth forest below the targets set in the JANIS Report, noting that minor changes may occur as a result of actions that are in accordance with this Agreement; and
- (c) use best endeavours to not reduce the Dedicated Reserve component of the CAR Reserve System to below the level of protection as at December 2017 as contained in Attachment 1 Clause 5 to this Agreement noting that minor changes may occur as a result of actions that are in accordance with this Agreement.

66B The State will maintain public records indicating the location, extent and purpose of any amendment to those elements of the CAR Reserve System in Informal Reserves or Values Protected by Prescription categories and the net impact that any amendments have on CAR Values.

Environment and Heritage Values

Protection of Environment and Heritage Values

67 ~~Parties agree that best endeavours will be used~~ to maintain the levels of protection of Environment and Heritage Values National Estate Values in a regional context; however, minor changes to the levels of protection of individual values may occur as a result of changes to the CAR Reserve System in State forest.

67A The Parties agree that the CAR Reserve System, established in accordance with this Agreement, and the application of the NSW Forest Management Framework, protects Environment and Heritage Values.

Climate change

67B The State agrees to manage its Forests in accordance with the NFPS objectives and policies as they relate to climate change, adaptation and carbon.

67C The Parties acknowledge:

- (a) climate change is driving more extreme weather events that will impact on Forest Management, including biodiversity and Listed Species and Communities, resource availability, and risk management for projected increases in frequency and magnitude of hazards including fire, floods, storms, sea level rise and heatwaves;
- (b) integrating climate change adaptation into Forest Management is required to

- build resilience and manage climate risks and meet the objectives of ESFM; and
- (c) the need to manage Forests to maintain or enhance the contribution of all elements of the Forest Estate to the effective management of carbon within the carbon cycle.

Environmental processes within forests

67D The State agrees to manage its Forests in accordance with the NFPS objectives and policies as they relate to water supply and catchment management and implement forest management practices that seek to:

- (a) ensure the availability of reliable, high-quality water supplies from forested land and to protect catchment values;
- (b) minimise soil compaction and soil disturbance to encourage healthy forest growth and minimise downstream impacts.

INDUSTRY AND REGIONAL DEVELOPMENT STABILITY

68 The Parties agree that State forest outside the CAR Reserve System is available for timber harvesting in accordance with this Agreement and the laws of New South Wales.

69 ~~The Parties will use best endeavours to ensure agree~~ that any changes to the total area of State forest or areas excluded from timber harvesting or Regional Prescriptions applied to State forest will not lead to a net deterioration in the capacity to supply wood from the Eden region ~~in terms of the volumes as specified in this Agreement and in terms of species and quality.~~

70 ~~(a)The Parties acknowledge that the forest based industries in the Eden region contribute to both the regional and State economies and are an essential component of many communities in the region. The Parties intend that this Agreement will enhance opportunities for further growth and development of forest based industries in the Eden region:~~

~~(b) The Agreement will provide long term stability for these industries through including long term certainty of timber supply. This stability will facilitate industry development through:~~

~~(i) New investment, Plantation development, reforestation, downstream processing, value adding and jobs growth in forests based industries;~~

~~(ii) Further introduction of new technology, enhanced utilisation of regrowth timber for sawn products, thinning of regrowth forests and more efficient utilisation of residue wood;~~

~~(c) There will be significant economic opportunities in other forest based industries, such as:~~

~~(i) tourism and recreation; and~~

~~(ii) mineral exploration and Mining.~~

In recognition of the contribution of timber and forest-based industries to the New South Wales' economy, the Parties intend that this Agreement will support future growth and development of New South Wales' industries associated with Forests and timber products specifically through:

- (a) certainty of resource access for the timber and forest-based industries;
- (b) encouraging increased production of Plantation-grown timber to supplement wood supply from native Forests;
- (c) facilitating timber and forest-based industries growth and development, in areas such as:
 - skills retention and workforce development;
 - research, innovation and extension;
 - strategic marketing, communications and education;
 - essential and strategic infrastructure;
 - resource management and access; and
 - regulatory modernisation;
- (d) providing for other forest based industries, including:
 - security of access to the Mining industry by continuing to recognise defined land tenures which allow for Mineral Exploration and Mining subject to the requirements of State and Commonwealth legislation; and
 - facilitating economic opportunities for tourism and recreation.

71 As part of providing greater security of access to forest resources, the Commonwealth will not prevent enterprises obtaining, using or exporting the quantities of timber, Woodchips ~~or~~ and Unprocessed Wood products sourced from the Eden region in accordance with this Agreement.

72 ~~The Parties note that the New South Wales Eden Region Forest Agreement establishes the sustainability strategy for timber supplies. New South Wales will implement Sustainable Yield in accordance with Attachment 11 to this Agreement.~~

72A NSW will ensure Sustainable Yield is calculated and managed consistent with the ESFM principles at Attachment 14.

73 New South Wales agrees to ~~supply to sawmills in~~ make available to timber and Forest-based industries, Forest Products at volumes no greater than Sustainable Yields for the Eden region, as amended from time to time and determined in accordance with Attachment 11, a minimum of 25 000 m³ per annum of Quota Sawlogs for the first five years and a minimum of 24 000 m³ per annum of Quota Sawlogs for the subsequent 15 years of the term of this Agreement. In addition, a minimum of 345 000 tonnes per annum of Pulpwood for 20 years is to be supplied from the Eden region. From this Pulpwood, up to 23 000 m³ per annum of suitable material will be selected to be supplied as non quota Sawlogs for 20 years.

- 74 ~~NOT USED~~ New South Wales agrees to regularly offer, through an open tendering or other competitive process, non quota specialty Sawlogs and craftwood sourced in the Eden region for the duration of this Agreement. The offers will be structured in terms of species, specifications, supply and volumes such that it will be feasible for users of low quantities of timbers to apply. Applications will be sought periodically through advertisements in regional newspapers and consultation with potential buyers.
- 75 ~~NOT USED~~ New South Wales agrees that if any timber becomes available through the harvesting trials outlined in its *Eden Region Forest Agreement* it all will be made available to industry provided this is consistent with this Agreement, including the provisions relating to Ecologically Sustainable Forest Management, and that there are no adverse environmental effects, including deleterious effects on CAR Values.
- 76 New South Wales agrees that the timber volumes made available under this Agreement will be reviewed using the processes described in clause 46 (f) and in accordance with the provisions of this Agreement. Any additional sustainable timber volumes identified in this way will be made available to industry provided this is consistent with this Agreement, including the provisions relating to Ecologically Sustainable Forest Management, and that there are no adverse environmental effects, including deleterious effects on CAR Values or Matters of National Environmental Significance.
- 77 Wherever possible New South Wales will enhance silvicultural programs and reforestation works to improve the productive capacity of State forests.
- 78 ~~Both Parties are committed to the development and implementation of hardwood timber industry development initiatives through the Forest Industries Structural Adjustment Program. Both Parties agree that this Agreement will promote the following objectives: NOT USED~~
- ~~(a) increasing the yield of Sawlogs, and bringing forward the time of harvest for Sawlogs from the region's regrowth forest,~~
 - ~~(b) increasing the recovery of sawn timber from residue wood through the development of a recovery mill,~~
 - ~~(c) maximising opportunities for employment in the timber and forest industry and for any workers displaced as a result of the implementation of the CAR Reserve System; and~~
 - ~~(d) development of an environmental management system, and MIG criteria and indicator monitoring program to ensure that Forest Products from the region are accredited under the ISO14000 series.~~

INDIGENOUS ABORIGINAL CULTURE AND HERITAGE

- 79 New South Wales agrees to ~~develop~~ maintain, implement and regularly review guidelines and a ~~package of other measures that will be implemented~~ to ensure the appropriate management of Aboriginal heritage including the maintenance of

traditional historic uses and values, and to facilitate ongoing ~~Aboriginal~~ involvement of Aboriginal people in the management of natural and cultural values of relevant forested land of the Eden region. The principles to be applied are at ~~Attachment 3 and~~ Attachment 9.

79A The Parties agree that the Forest Management Framework provides a framework for the protection of Aboriginal heritage values that aligns with the NSW legislative framework for Aboriginal cultural heritage management, including in relation to consultation and ongoing involvement with Aboriginal people and managing the impacts of forestry operations on Aboriginal cultural heritage values.

79B The Parties commit to ongoing Aboriginal involvement in forest management and as required by the Aboriginal Cultural Heritage Advisory Committee (or any successor) in relation to protection of significant sites and places.

80 This Agreement is not intended to influence either current or future Native Title claims in any way. The Parties acknowledge that if any implementation of this Agreement affects any native title rights and interests such implementation must be in accordance with the *Native Title Act 1993* (~~C^{wth}~~ Cth).

80A The Parties recognise that Aboriginal Land Councils in NSW can claim land vested in the Crown to compensate Aboriginal persons for historic dispossession of land and to support their social and economic development under the *Aboriginal Land Rights Act 1983* (NSW). Under section 36AA of the *Aboriginal Land Rights Act 1983* (NSW), Aboriginal Land Councils can also negotiate Aboriginal Land Agreements. The Parties agree that during the life of this Agreement its provisions do not restrict the rights of Aboriginal Land Councils to make land claims or have existing land claims determined over land the subject of this Agreement, or negotiate rights to use and enjoy such land as part of an Aboriginal Land Agreement under the *Aboriginal Land Rights Act 1983* (NSW).

80B In acknowledging the ongoing aspirations of Aboriginal persons to future ownership and/or roles in the management of Crown lands, the State agrees, so far as possible, not to transfer Public Land the subject of this Agreement to any other entity or authority unless:

- (a) if the land includes land for which a claim has been made under the *Aboriginal Land Rights Act 1983* (NSW), written consent for the transfer of the land has been given by:
 - (i) the Local Aboriginal Land Council for the Local Aboriginal Land Council area (as defined in that Act) in which the land is located, and
 - (ii) where the claim is made by the New South Wales Aboriginal Land Council, the New South Wales Aboriginal Land Council, and
- (b) in any other case the State will, so far as possible, ensure that notice of its intent to transfer the land is given to the NSW Aboriginal Land Council, and to the Local Aboriginal Land Council within whose constituted area the land is situated.

80C The Parties recognise the *United Nations Declaration on the Rights of Indigenous Peoples*, including the right for the Aboriginal people of New South Wales to practise and revitalise their cultural traditions and customs. This includes the right to maintain, protect and develop their cultural traditions and customs.

PLANTATIONS

81 ~~The Parties recognise that export controls have been removed from Unprocessed Wood and Woodchips sourced from New South Wales plantations in accordance with the Export Control (Unprocessed Wood) Regulations (C'wth). The Parties note that export controls on the export of Woodchips and Unprocessed Wood sourced from New South Wales Plantations have been removed in accordance with the *Export Control Act 1982 (Cth)*.~~

81A The Parties encourage the establishment and use of Plantation forests on existing essentially cleared land to generate social and economic values.

OTHER FOREST USES

82 Parties agree that ~~forest~~ Forest uses other than timber production will be determined in accordance with New South Wales legislation with due regard for protection of Environment and Heritage Values. In some limited circumstances that do not relate to the substance of this Agreement (for example foreign investment approval, export controls for non-forest products and major infrastructure developments) Commonwealth legislative provisions may also apply.

Mineral Exploration and Mining Operations

83 Parties recognise that under the *National ~~Park Parks~~ and Wildlife Act 1974 (NSW)*, issuing of new Mineral Exploration and Mining titles is not permitted (except by Act of Parliament) in national parks or historic sites, nature reserves, state game reserves, karst conservation reserves, Aboriginal areas and regional parks.

84 The Parties agree that Mining Operations are permitted within parts of the CAR Reserve System to the extent permitted by relevant State or Commonwealth legislation ~~which are State forest or Crown Reserves in Attachment 1. A~~ In addition to any requirements for the protection of Matters of National Environmental Significance under the EPBC Act, a condition of Mining Operations in Informal Reserves and areas with Values Protected by Prescription is that: CAR Values that are compatible with those Mining Operations be maintained; and for CAR Values not compatible with those Mining Operations, conservation be provided for elsewhere. Where a Mining Operation is not compatible with that part of the CAR Reserve System described as ~~values protected by prescription~~ Values Protected by Prescription in Attachment 1, ~~NSW~~ the State will use best endeavours to ensure that conservation of these values is provided for elsewhere.

85 New South Wales will ensure that any proposed Mining Operations will be subject to environmental impact assessment (including species impact statements where required) under the provisions of the *Environmental Planning and Assessment Act*

1979 (NSW). Mining Operations will be subject to the *Mining Act 1992* (NSW), ~~and the *Petroleum (Onshore) Act 1991* (NSW), the *Protection of the Environment Operations Act 1997* (NSW), and the EPBC Act.~~ Mining will be in accordance with an approved Mining Operations Plan and Annual Environmental Management Reports. Rehabilitation of any sites disturbed by Mining Operations will be carried out in accordance with the provisions of the relevant statutes (including the *Environmental Planning and Assessment Act 1979* (NSW) and the *Mining Act 1992* (NSW)) ~~and it will aim to achieve world's best practice.~~

COMPETITION PRINCIPLES

86 Parties recognise that under the Competition Principles Agreement, as amended from time to time, Governments aim to achieve more transparency and greater efficiency in Government owned business enterprises. The Commonwealth agrees that the day to day pricing and allocation arrangements for ~~wood~~ Forest Products from public ~~forests~~ Forests are matters for New South Wales. New South Wales confirms its commitment to the pricing and allocation principles set out in the *National Forest Policy Statement* and the application of competitive neutrality principles. ~~New South Wales confirms that legislation and policies relevant to the allocation and pricing of hardwood logs from State forests will be reviewed as part of the Competition Principles Agreement before the end of 1999. Competitive neutrality principles will be taken into account in any changes following the review.~~

RESEARCH

87 ~~The results of the Comprehensive Regional Assessments of the forest values of the Eden region indicated a number of areas requiring further research. New South Wales will establish a Research Liaison Committee to identify research priorities relating to forest management and publish a list of priorities within 12 months. The Parties agree that continuing research in a range of areas is vital to ensure that all aspects of Forest Management remain up to date with the latest information and technological developments. Parties have outlined themes for further research in Attachment 6.~~

88 ~~In developing priorities, the Research Liaison Committee will take account of priorities arising out of the Comprehensive Regional Assessment process for the Eden region, particularly those outlined in the document titled *Ecologically Sustainable Forest Management for the Eden RFA Assessment and Report on Knowledge and Information for Ecologically Sustainable Forest Management*. The Parties agree to hold discussions on research themes and coordination as part of annual meetings pursuant clause 8B.~~

89 New South Wales will prepare ~~by the first~~ for each five-yearly review, a Compendium ~~compendium~~ of New South Wales Forest ~~Research~~ research that will provide a bibliography of research in progress as well as published and unpublished works.

89A The Parties agree to document relevant Forest research undertaken in each reporting period and to update research themes in each five-yearly Progress Report.

- 90 Parties agree to consult each other in the development of joint research projects that may affect the Agreement and note that the subject ~~areas~~ themes and priorities may change throughout the duration of the Agreement.
- 91 Parties agree to make publicly available, wherever possible, research reports relevant to this Agreement.

DATA AGREEMENT

- 92 ~~Parties agree to develop an agreement concerning the management of the data including models used to develop this Agreement within six months of the date of this Agreement. The data agreement will cover:~~

- ~~• ownership and custodianship;~~
- ~~• archival lodging and location and associated documentation standards; and~~
- access, use and maintenance of the data.

~~The data principles at Attachment 13 will form the basis for the data agreement. The Parties recognise that the implementation and monitoring of this Agreement depends on appropriate mutual access to and availability of relevant information owned and held by each of them. The Parties agree to manage and provide access to data, including models used to develop and implement this Agreement.~~

- 93 ~~Parties also agree to lodge archival copies of data within six months of signing this Agreement. The Parties commit to a policy of open access to information and agree that all data held by each of them that is used for ongoing implementation and monitoring of this Agreement is published under the least restrictive AusGOAL endorsed licences (including Creative Commons) unless otherwise agreed, or where data is confidential or otherwise restricted.~~

PART 3

Nature of Obligations under this Part

94 It is the intention of the Parties that this Part is to create legally enforceable rights and obligations. It is also their intention that, in the event that any provision of this Part exceeds the power of either Party or is unenforceable for any other reason, that provision is to be read as not intending to create legally enforceable rights and obligations.

Forest Management

95 New South Wales will for the duration of the Agreement:

95.1 ~~NOT USED~~ ~~In accordance with clause 86, under the Competition Principles Agreement review legislation and policies relevant to the allocation and pricing of hardwood logs from State forest by the end of 1999;~~

95.2 ~~In accordance with clause 49, and~~ Report annually to the New South Wales Parliament on compliance with any Integrated Forestry Operations Approval applying to the Eden region as required by the *Forestry and National Parks Estate Act 1998* *Forestry Act 2012* (NSW) report annually to Parliament on compliance with any Integrated Forestry Operations Approval for the Eden region and the New South Wales *Eden Region Forest Agreement*;

95.3 ~~In accordance with clauses 35 and 49, furnish to~~ Notify the Commonwealth within 14 days that:

(a) ~~a copy of the annual reports on the New South Wales *Eden Region Forest Agreement* and Integrated Forestry Operations Approval for the Eden region, required by section 21 of the *Forestry and National Parks Estate Act 1998* (NSW) is available on a relevant State government website;~~

(b) ~~a copy of any Forest Agreement and Integrated Forestry Operations Approval for the Eden region, and any amendments to those that documents is available on a relevant State government website;~~

(c) ~~notification of there has been a termination, suspension or revocation of any Forest Agreement or Integrated Forestry Operations Approval applying to the Eden region; or~~

(d) there has been a termination of any Private Native Forestry Code of Practice applying to the Eden region;

95.4 ~~In accordance with clause 46(a), maintain~~ Implement and maintain an Forest Agreement covering Integrated Forestry Operations Approval applicable to the Eden region for the duration of this Agreement;

95.5 ~~In accordance with clause 46(c), complete and publish a~~ Implement and periodically review the Regional ESFM Plan containing the Ecologically Sustainable Forest Management strategy for State forests in the Eden region

made under the *Forestry Regulation 1994 2012* (NSW) under the *Forestry Act 1916 2012* (NSW) by 1 April 2000;

- 95.6 ~~In accordance with clause 46 (f) develop and implement an inventory system for regrowth forests and review the calculation of Sustainable Yield, using methods consistent with Attachment 11 and the principles and processes used in the Forest Resource and Management Evaluation System (FRAMES), in time for the first RFA review; Maintain a forest yield estimation system for State forest and periodically review the calculation of Sustainable Yield consistent with Attachment 11;~~
- 95.7 ~~In accordance with clause 56, produce a code of practice for timber harvesting of native forest on Private Lands by the first five yearly review; Maintain and implement a Private Native Forestry Code of Practice applying to the Eden region;~~
- 95.8 ~~In accordance with clause 46(g), grant within three months of the date of this Agreement and maintain for the duration of this Agreement an Integrated Forestry Operations Approval covering the Eden region consistent with Attachments 1, 2, 3 and 7; Discuss with and notify the Commonwealth on proposed changes of a significant nature to the Forest Management Framework;~~
- 95.9 ~~In accordance with clause 46(g), develop and Maintain and implement environmental management systems in accordance with the principles outlined in Attachment 7 ~~within five years.~~~~
- 96 The Commonwealth will:
- 96.1 Not prevent enterprises obtaining, using or exporting ~~the quantities of timber, Woodchips or~~ and Unprocessed Wood products sourced from the Eden region in accordance with this Agreement;
- 96.2 ~~Maintain accreditation of New South Wales' Forest Management System for the Eden region as agreed to be amended in this Agreement as set out in clause 50 providing any changes to the system are consistent with the provisions of this Agreement. Recognise that the Forest Management Framework, as amended from time to time and as it applies to the Eden region, demonstrates continual improvement, for the purposes of ESFM and relevant provisions of this Agreement.~~

Compensation

97 The Parties agree that:

- 97.1 If to protect the Environment and Heritage Values in native forests and in connection therewith the protection of:
- (a) CAR Values; or
 - (b) National Estate Values; or
 - (c) World Heritage Values; or

(d) Wild Rivers

the Commonwealth takes any Action during the period of this Agreement which is inconsistent with any provision of this Agreement and a foreseeable and probable consequence of which is to prevent or substantially limit:

- (e) the use of land which is not included within the CAR Reserve System for Forestry Operations which, immediately before the announcement of the proposed Commonwealth Action, are being undertaken or were intended to be undertaken at any time or the use of land which is not included within the CAR Reserve System or of land within that system but not within a Dedicated Reserve in which mineral exploration and mining is prohibited pursuant to a statutory licence, permit or authority permitting those Mining Operations or Extractive Operations which was in force immediately prior to the announcement of the proposed Commonwealth Action; or,
- (f) the sale or commercial use of Forest Products sourced from land which is not included within the CAR Reserve System or the first sale or first commercial use of Mining Products or Extractive Materials sourced from land which is not included within the CAR Reserve System or land within that system but not within a Dedicated Reserve in which mineral exploration and mining is prohibited for a purpose for which, immediately prior to the announcement of the proposed Commonwealth Action, they had been intended to be sold or used commercially at any time; or,
- (g) the construction on land which is not included within the CAR Reserve System of roads being built or intended to be built, immediately before the announcement of the proposed Commonwealth Action, where those roads' primary purpose is for the transportation of Forest Products sourced from land which is not included within the CAR Reserve System,

the Commonwealth will pay compensation to the State in accordance with the remaining provisions of clauses 97.2 to 97.20.

97.2 Subject to:

- (a) clauses 97.3, 97.4, 97.5, 97.6, 97.8, 97.9, 97.10, 97.11 and 97.12 the compensation to be paid by the Commonwealth to the State in accordance with clause 97.1 in relation to the prevention by Commonwealth Action of the use of land for Forestry Operations or prevention by Commonwealth Action of the sale or commercial use of Forest Products is the amount of the reasonable loss or damage sustained by reason of that prevention, calculated as at the time at which the prevention referred to in clause 97.1 occurred, by any person in any of the following classes of person:
 - (i) the Owner of the land or of the Forest Products on the land;
 - (ii) any person who, prior to the announcement of the proposed Commonwealth Action but not in anticipation of that Action, entered into a contract with the Owner of the land or of the Forest Products on

the land or with any person mentioned in sub-paragraph (iii) below for the carrying out of Forestry Operations on the land; and

(iii) any person who, prior to the announcement of the proposed Commonwealth Action but not in anticipation of that Action, entered into a contract with the Owner of the land or of the Forest Products on the land to purchase the Forest Products on the land.

(b) clauses 97.3, 97.4, 97.5, 97.6, 97.7, 97.8, 97.10, 97.11 and 97.12 the compensation to be paid by the Commonwealth to the State in accordance with clause 97.1 in relation to the prevention by Commonwealth Action of the use of land for Mining Operations or Extractive Operations or the first sale or first commercial use of Mining Products or Extractive Materials is the amount of the reasonable loss or damage sustained by reason of that prevention, calculated as at the time at which the prevention referred to in clause 97.1 occurred, by any person carrying on Mining Operations or Extractive Operations on the land pursuant to a statutory licence, permit or authority permitting those operations which was in force immediately prior to the announcement of the proposed Commonwealth Action.

(c) clauses 97.3, 97.6, 97.8, 97.9, 97.11 and 97.12 the compensation to be paid by the Commonwealth to the State in accordance with clause 97.1 in relation to the prevention by Commonwealth Action of construction of a road is the amount of reasonable loss or damage sustained by reason of that prevention, calculated as at the time at which the prevention referred to in clause 97.1 occurred, by any person who, immediately before the announcement of the proposed Commonwealth Action, was contracted to construct that road.

97.3 No amount of compensation is payable in the event of any loss or damage being sustained which would have been so sustained regardless of the Commonwealth Action. No compensation is payable hereunder in respect of any additional areas included pursuant to this Agreement in the CAR Reserve System.

97.4 The State warrants that no claim will be made in respect of areas where Forestry Operations or Mining Operations or Extractive Operations would not have been permitted by this Agreement and that any claims will be certified by it as being or not being in respect of such areas and as having been assessed by the State in this regard.

97.5 The State warrants that no claim will be made in respect of Forest Products or Mining Products or Extractive Materials which would not have been available for sale or commercial use under this Agreement and that any claims will be certified by it as being or not being in respect of such Products and as having been assessed by the State in this regard.

97.6 The State undertakes to supply to the Commonwealth on request information, including as to areas protected by prescription, required by the Commonwealth for the purposes of considering claims under this clause.

- 97.7 To the extent that clause 97.2(b) relates to loss or damage in respect of an exploration licence or assessment lease, that clause is to be read as providing for compensation to be payable only:
- (a) in respect of the part of the area to which that licence or lease relates that is affected by the Commonwealth Action; and
 - (b) up to the loss in market value of that licence or lease resulting from the prevention of the Mining Operations or Extractive Operations.
- 97.8 Any claim made by the State hereunder is to be notified in writing within six months after the loss or damage is sustained.
- 97.9 For the purposes of clauses 97.1(e) and (g), the intention to conduct Forestry Operations, or the intention to construct roads is to be established on the basis of contracts, documentation of management history or other records establishing clear intent and in existence immediately prior to the announcement of the proposed Commonwealth Action.
- 97.10 For the purposes of clause 97.1(f), the purpose for which there was an intention to sell or use commercially is to be established on the basis of contracts, documentation of management history or other records establishing clear intent and in existence immediately prior to the announcement of the proposed Commonwealth Action.
- 97.11 No compensation is payable under clause 97.2 in relation to any loss or damage which the person who sustained the loss or damage might have avoided by taking reasonable steps in mitigation including by the making of alternative contractual arrangements which would have avoided or reduced that loss or damage.
- 97.12 Clause 97.2 does not apply so as to entitle the State to recover compensation more than once in respect of the same loss or damage.
- 97.13 The initial procedure in relation to a claim for compensation under this clause is as follows:
- (a) a person who claims to have sustained loss or damage for which compensation is payable may lodge an initiating claim with the State;
 - (b) on receiving a claim, the State must make a corresponding claim for compensation to the Commonwealth;
 - (c) the State is to make the claim for compensation by a notice in writing to the Commonwealth which indicates the amount claimed, for whom the claim is made, the area to which it relates and gives detailed particulars of the basis for the claim, and of the manner in which it has been calculated;
 - (d) where there is a dispute concerning a claim for compensation, or on or before the expiry of 30 days after the receipt of the claim, the Commonwealth notifies the State that it does not accept the amount claimed, then either Party may serve a notice of dispute under clause 10;

- (e) in the event that the amount of compensation payable in response to a claim has not been agreed in the dispute resolution process for which clauses 10 to 14 provide, or the Commonwealth fails to pay the agreed amount of compensation to the State within 60 days of agreement (for reasons other than lack of the necessary appropriation), the Parties hereby refer the claim to arbitration;
- (f) an arbitration under this Agreement is to be conducted in accordance with the provisions of the *Commercial Arbitration Act 1984* (NSW) which are, to the extent permitted by the *Judiciary Act 1903* (C'wlth) and the Commonwealth constitution, incorporated by reference into this Agreement.

97.14 The procedure in relation to any arbitration required by reason of the provisions of clause 97.13 is as follows:

- (a) The Parties must meet to appoint an arbitrator within seven days of an unsuccessful mediation.
- (b) If the Parties are unable to agree on the appointment of an arbitrator, either of them may refer the matter to the President of the Law Council of Australia, or equivalent officer of such body as in future may have the functions of the Law Council of Australia, with a request that that person appoint an arbitrator.
- (c) At an arbitration under this clause:
 - (i) the Parties are entitled to representation by a legal practitioner qualified to practice in any State or Territory of Australia;
 - (ii) the arbitrator may order the Parties to discover any relevant documents prior to the hearing;
 - (iii) the arbitrator may order the Parties to exchange proofs of evidence of witnesses (whether expert or not) prior to the hearing;
 - (iv) the arbitrator may, in accordance with the *Commercial Arbitration Act 1984* (NSW), inform himself or herself, in relation to any matter in such manner as the arbitrator thinks fit; provided that if the arbitrator takes advice from any person who is not a Party to this Agreement as to the matters in issue, the arbitrator must provide the Parties with an opportunity to:
 - (1) make submissions on the matter in which the advice is to be taken;
 - (2) make submissions on the identity of the person from whom the advice is to be taken;
 - (3) make submission on the substance of any advice given before making any decision on the issue on which the advice is taken.

97.15 Unless the Commonwealth appeals the decision of the arbitrator under the *Commercial Arbitration Act 1984* (NSW), and subject to clause 97.18, the Commonwealth undertakes to pay the State the amount of any award made by an arbitrator under clause 97.14 as a debt due to the State, within 60 days of the award.

97.16 Except where the State is the person who sustained the relevant loss or damage, any payment of compensation made by the Commonwealth to the State in accordance with this clause will be paid to and received by the State as trustee for the person who sustained the relevant loss or damage.

97.17 Subject to clause 97.18(b), where the State receives monies as a trustee pursuant to clause 97.16, it will pay those monies to the person who sustained the relevant loss or damage within 30 days.

97.18 (a) Where the Commonwealth has agreed to pay compensation to the State under this clause, or an award of compensation has been made under clause 97.14 as a result of arbitration, and the Commonwealth claims that events have since taken place which have the result that the compensation so agreed or awarded no longer reflects the actual loss or damage that has been or will be sustained, the Commonwealth may by notice in writing to the State, decline to pay that compensation.

(b) If a notice under paragraph (a) is delivered after the State has received the compensation so agreed or awarded, but before the State has paid it to the person who sustained the relevant loss or damage, the State will not pay the compensation to that person.

(c) If a notice under paragraph (a) is delivered, the Parties will attempt to agree the amount of the compensation which the Commonwealth should pay, and -

(i) in default of agreement, will first seek to resolve the dispute by dispute resolution under clauses 10 to 14; and

(ii) in the event that the dispute is not so resolved, or the Commonwealth fails to pay the agreed amount of compensation to the State within 60 days of agreement (for reasons other than lack of the necessary appropriation), hereby refer the claim for compensation to arbitration in accordance with the *Commercial Arbitration Act 1984* (NSW).

(d) Subject to paragraph (e) of this clause, where an arbitration takes place in accordance with sub-paragraph (c)(ii), clauses 97.14 and 97.15 of this Agreement apply to that arbitration and to any amount awarded in that arbitration.

(e) If, following the observance of paragraph (c) of this clause, it is determined by agreement or award that the Commonwealth should pay a reduced amount of compensation to the State, the State will within 30 days of that determination -

- (i) repay to the Commonwealth the amount by which the compensation paid to it by the Commonwealth is reduced; and
 - (ii) pay the balance of the compensation to the person who sustained the relevant loss or damage.
- (f) If, following the observance of paragraph (c) of this clause, it is determined by agreement or award that the amount of compensation previously paid to the State is correct the State will within 30 days of that determination pay to the person who sustained the relevant loss or damage the amount of the compensation previously paid to it by the Commonwealth.

97.19 Where the State:

- (a) has received monies as a trustee pursuant to clause 97.16; and
 - (b) has made all reasonable endeavours to pay the monies to the person who sustained the relevant loss or damage; and
 - (c) but has been unable to do so within six months of receiving payment
- the State shall repay to the Commonwealth at the expiry of that period the monies so received.

97.20 In this clause

- (a) “Action” means
 - (i) the commencement of legislation or subordinate legislation; and
 - (ii) administrative action which is taken pursuant to legislation or subordinate legislation, or otherwise than in accordance with such legislation.
- (b) “Owner” means
 - (i) in relation to land
 - (1) the owner of any estate or interest in that land, including the Crown in right of the State; and
 - (2) any statutory corporation which has the power to carry on Forestry Operations or Mining Operations or Extractive Operations, as the case may be, on the land for profit.
 - (ii) in relation to Forest Products or Mining Products or Extractive Materials, as the case may be, the owner of any interest in those products.

Proposed Employment and Industry Development Initiatives

98 ~~The Parties will facilitate native forest hardwood timber industry initiatives through the implementation of respective responsibilities in the operation of the Forest Industry Structural Adjustment Program in accordance with jointly agreed guidelines. The Parties further agree to give priority to the consideration of the proposed initiatives outlined in Attachment 10. NOT USED~~

Termination

99 This Agreement may only be terminated by the Commonwealth:

(a) where the dispute resolution procedures in clauses 10 to 14 have been observed and the State has been given a 90 day period of notice on:

(i) a failure by the State to comply with clause 65, being a failure to implement the CAR Reserve System described in Attachment 1 and to manage and conserve the identified CAR Values; or

(ii) a failure to comply with clause 33 and 46(a), being a failure to maintain a current New South Wales Forest Agreement that reflects the outcomes of this Agreement throughout the life of this Agreement. The Commonwealth agrees not to terminate this Agreement because of a failure by New South Wales to maintain a Forest Agreement for the Eden region. However, the Parties acknowledge that if the State does not maintain a Forest Agreement covering the Eden region, termination of this Agreement by the Commonwealth would be authorised by s 7 of the *Regional Forest Agreements Act 2002 (Cth)*; or

(iii) a failure to comply with clause 46(c), ~~being a failure to produce and publish by 1 April 2000 a Regional ESFM Plan; or~~

(iv) a failure to comply with clause 46(f) , being a failure to implement the FRAMES inventory in the Eden region and review the calculation of Sustainable Yield ~~in time for the first RFA review; or~~

(v) a failure to comply with clauses 46(g), and (h) and clause 56;

other than a failure of a minor nature which is not one or part of a series of deliberate or reckless failures of a minor nature; and save that the above provisions do not apply if rectification is possible and has occurred before the end of the 90 day period; or

(b) on a fundamental failure by the State to comply with the spirit of the Agreement after the observance of the dispute resolution procedures in clauses 10 to 14.

100 This Agreement may only be terminated by the State:

(a) where the dispute resolution procedures in clauses 10 to 14 have been observed and the Commonwealth has been given a 90 day period of notice on:

(i) ~~NOT USED~~ a failure by the Commonwealth to comply with the terms of any agreement on native forest hardwood timber industry initiatives made pursuant to clause 98; or

(ii) a failure by the Commonwealth to comply with clause 97, being a failure to pay compensation due under that clause;

save that the above provisions do not apply if rectification is possible and has occurred before the end of the 90 day period; or

(b) on a fundamental failure by the Commonwealth to comply with the spirit of the Agreement after the observance of the dispute resolution procedures in clauses 10 to 14.

101 This Agreement may be terminated with the consent of the Commonwealth and the State.

Notice of intention to review before termination by consent

102 A consent under clause 101 is of no effect, unless:

102.1 it is given at least 12 months after a notice of intention to review the operation of this Agreement is published in the Commonwealth *Gazette* and a national newspaper and a newspaper circulating in New South Wales stating that a joint review is being undertaken by the Parties because they intend to terminate the Agreement by consent; ~~and~~

102.2 the Parties have conducted the joint review as in accordance with this clause; ~~;~~

102.3 the joint review must consider whether the operation of the Agreement has met the goals set out in Recitals A and B; ~~;~~

102.4 within eight months after the notice of intention to review is published under this clause, and after considering any submissions to the joint review, the Parties must make a report of the review publicly available; ~~and~~

102.5 if, under clauses 8D and 8E ~~38~~, a five-yearly review is to be conducted during the 12 month period after a notice of intention to review is published under this clause, and the joint review is conducted under this clause, the Parties may agree that the review under clauses 8D and 8E ~~38~~ need not be undertaken.

IN WITNESS WHEREOF this Agreement has been signed for and on behalf of the Parties as at the day and year first above written.

SIGNED by

the HONOURABLE JOHN WINSTON HOWARD MP, Prime Minister)
)

for and on behalf of the Commonwealth of Australia

in the presence of:)
)
)

SIGNED by

the HONOURABLE BOB CARR MLA, Premier)
)
)

for and on behalf of the State of New South Wales

in the presence of:)
)
)

ATTACHMENTS

ATTACHMENT 1

(clauses ~~34~~ 2, ~~42~~, ~~46(g)~~, ~~55~~, ~~63~~, ~~64~~, ~~64A~~, ~~65~~, ~~66~~, ~~66A~~, ~~84~~, ~~95.8~~, ~~99(a)(i)~~, Attachment 7)

COMPREHENSIVE, ADEQUATE AND REPRESENTATIVE (CAR) RESERVE SYSTEM

- 1 Map 1 and this Attachment identify the CAR Reserve System for the purpose of this Agreement, as amended from time to time.
- 2 The *National Forest Policy Statement* (NFPS) established that the CAR Reserve System will, in the first instance, be selected from Public Land. Provision is also made in the JANIS Reserve Criteria for inclusion of Private Land in the CAR Reserve System, with the agreement of landholders, where the Criteria cannot be met from Public Land.

PUBLIC LAND

- 3 In the Eden region, the CAR Reserve System on lands of the Crown primarily comprises areas established for conservation purposes (eg National Parks and Nature Reserves) and areas reserved for conservation in State forest.

CAR RESERVE SYSTEM COMPONENTS AND PROTECTION MECHANISMS

- 4 The CAR Reserve System on Public Land has the following three components:
 - *Dedicated Reserves*. This comprises reserves established through legislation for conservation purposes such as National Parks, Nature Reserves and Flora Reserves (Special Protection Zone, FMZ 1).
 - *Informal Reserves*. This comprises those parts of the Special Management Zone (FMZ 2) under the Forest Management Zoning system that are greater than 40ha, are more than 200m wide, or are directly adjacent to Dedicated Reserves. It also includes those areas dedicated as ~~Crown Reserves~~ State Conservation Areas under the provisions of the ~~Crown Lands Act 1989~~ National Parks and Wildlife Act 1974 (NSW) which are managed by the NSW National Parks and Wildlife Service. ~~Plans of Management for Crown Reserves will be prepared by 1 January 2002 as outlined in the New South Wales Eden Region Forest Agreement.~~
 - *Values ~~protected~~ Protected by Prescription*. These comprise those elements of habitat protected by Regional Prescriptions as detailed in the Integrated Forestry Operations Approvals covering the Eden region and areas within the Special Prescription Zone within the Harvesting Exclusions (FMZ 3A) and Special Prescription Zone (FMZ 3B) under the Forest Management Zoning system that will be ~~are~~ excluded from harvesting. They also include elements of the Special Management Zone (FMZ 2) that are less than 40ha and less than 200m wide. The Integrated Forestry Operations Approvals complements the Dedicated and Informal Reserve network and includes protection of rare non-commercial

forest types, Old Growth forest, rainforest and threatened species in all areas that have been identified to be primarily managed for sustainable production.

- 5 ~~As at December 2017, the~~ The Dedicated Reserve component of the CAR Reserve System covers ~~255 300~~ 273 000 ha, the Informal Reserve component ~~4 600~~ 4 000 ha and the prescriptive component ~~7 900~~ 20 000 ha. Together the Dedicated Reserve and Informal Reserve components of the CAR Reserve System cover an area of approximately ~~259 900~~ 276 000 ha (about ~~56~~ 58% of the Public Land in the region or ~~33~~ 34 % percent of the entire region).
- 6 Levels of protection for Forest Ecosystems and Old Growth forest achieved in the Dedicated Reserve, Informal Reserve and ~~the Values Protected by Prescription~~ prescription components of the CAR Reserve System are shown in Tables 1 and 2. The tabulated percentage area of these values in prescription includes elements of the Special Management Zone (FMZ 2) that are less than 40ha and less than 200m wide, as well as areas of Old Growth forest (and Forest Ecosystems within these areas) that will be managed by the Integrated Forestry Operations Approvals. ~~The contribution of those elements of Special Prescription Zones managed specifically for conservation, and areas of rare non-commercial Forest Ecosystems managed by the Integrated Forestry Operations Approvals, have not been quantified in the table as they were not able to be identified and mapped.~~
- 7 ~~New South Wales agrees to establish all Dedicated Reserve and Informal Reserve components of the CAR Reserve System within six months of signing this Agreement. The IFOA provides for protection of environmental values in addition to those protected in FMZ 2, FMZ 3A, FMZ 3B, mapped areas under the IFOA, or other CAR Reserves and quantified in Tables 1 and 2. The protections under the IFOA are updated and modified from time to time as a result of the continual improvement process to improve the effectiveness and efficiency of these conditions.~~

Integrated Forestry Operations Approval

Environment and Heritage Values Protected by prescription

- 8 ~~Subject to clause 34 the Integrated Forestry Operations Approval covering the Eden region will be the principal vehicle by which Environment and Heritage Values that are impracticable to include in reserves can be conserved. The JANIS Reserve Criteria provide for the management of such values through prescriptions. The Integrated Forestry Operations Approval will take account of the extent of reserved habitat, whether the prescriptions are operationally feasible, and the relative conservation status of each species. For Environment and Heritage Values that are not included in reserves, the JANIS Reserve Criteria provide for the management of such values through prescriptions. Within the General Management Zone of the Forest Management Zoning system (FMZ 4), Forestry Operations and other activities are permitted. The principal vehicles by which Environment and Heritage Values will be managed within FMZ 4 are:~~
 - The Integrated Forestry Operations Approval covering the Eden region will be the principal vehicle by which environment values are protected through prescription. The Integrated Forestry Operations Approval takes account of the

extent of reserved habitat, and balances an operationally efficient timber industry with the need to protect native plants and animals, ecosystems, soils and water.

- Aboriginal and non-Aboriginal cultural heritage guidelines made in accordance with relevant legislation and amended from time to time, provide prescriptions for the management of heritage values that are impracticable to include in reserves in the Eden region.

IDENTIFIED CAR VALUES AND THEIR PROTECTION AFFORDED THROUGH THE RFA

8A Levels of protection for Forest Ecosystems and Old Growth forest achieved in the CAR Reserve System are shown in Tables 1 and 2 of this Attachment as follows:

- Dedicated Reserves; as described in Clause 4 of this Attachment,
- Informal Reserves; as described in Clause 4 of this Attachment,
- Values Protected by Prescription; includes the areas within the Harvesting Exclusions Zone (FMZ 3A), the Special Prescription Zone (FMZ 3B), those areas of the Special Management Zone (FMZ 2) that, due to the size or shape, do not meet the Informal Reserve category outlined above, and mapped areas under the IFOA.

It should be noted that the IFOA affords additional protection over that included in the table.

Forest Management Zoning

~~9 New South Wales will, by 1 April 2000, produce a Regional ESFM Plan for the Eden region that includes Forest Management Zoning within State forests as described in the document *Forest Management Zoning in State Forests*, SFNSW 1999. Of Within the Forest Management Zoning system, of particular significance for the conservation of Forest Ecosystems and Old Growth forest are the:~~

- *Special Protection Zone (FMZ 1).* These areas are dedicated and managed to maximise the protection of natural and cultural values. Timber harvesting, removal of Forest Products and materials, grazing by domestic stock, gravel/hard rock quarrying and mineral and petroleum exploration are not generally permitted within this zone.
- *Special Management Zone (FMZ 2).* These areas are established following public comment and are gazetted and managed for the protection of natural and cultural conservation values where it is not possible or practicable to include them in the Special Protection Zone. Activities not permitted in this zone are similar to the Special Protection Zone except that mineral and petroleum exploration are permitted. Any mining proposal following from exploration will require standard environmental impact assessment and development approval processes.

- ~~*Special Prescription Zone.* These areas are managed for the conservation of identified values and/or Forest Ecosystems and their natural processes, whilst also facilitating other management and production activities. A case by case assessment of these areas will be undertaken to determine which forestry activities can occur. The decision is dependent on the specific special value involved.~~
- *Harvesting Exclusions Zone (FMZ 3A).* These are areas where harvesting is excluded but other management and production activities preclude zoning as Special Protection Zone (FMZ 1) or Special Management Zone (FMZ 2). These may be:
 - i) Dedicated leasehold where lease conditions permit activities such as grazing and timber supply for lease fencing etc, and in some cases residency, or
 - ii) Areas identified as important by the Department of Planning and Environment where there are current or imminent petroleum and Mineral Exploration and/or Mining Operations, or
 - iii) Other areas which are excluded from harvesting (eg. Net Harvestable Area (NHA) exclusions) but size, boundaries or management practicabilities preclude designation as FMZ 1 or FMZ 2.
- *Special Prescription Zone (FMZ 3B).* These areas are established for the protection and management of identified conservation values, whilst also allowing other management and production activities. These activities (which in some cases includes timber, Forest Product and materials extraction) are minimised in their design and implementation to maintain or enhance the values that the area is zoned to protect. A case by case assessment of these areas will be undertaken to determine which forestry activities can occur. The decision is dependent on the specific values involved.

Table 1. Representative conservation (percentage reservation status as at 1999 and December 2017) of Forest and Non-Forest Ecosystems in the CAR Reserve System in the Eden region based on vegetation mapping to establish the pre-1750 extent of Forest Ecosystems in the region^a.

Forest Ecosystems	Area		Percent Remaining as at 1999	Status ^b	Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at 1999				Percent of Forest Ecosystem (pre-1750) in the public components of the CAR reserve system, as at December 2017 ^c			
	Pre 1750 (ha)	Current As at 1999 (ha)			Dedicated Reserves	Informal Reserve ^c	Prescription ^d	Total	Dedicated Reserves	Informal Reserve ^c	Prescription ^d	Total
1 Dry Rainforest*	47	42	88.9	R	62.8	0.0	0.0	62.8	68	0	0	68
2 Myanba Rainforest	333	333	100.0	R	96.7	0.0	0.0	96.7	100	0	0	100
3 Rocky Top Dry Shrub Forest	1188	1188	100.0		86.5	0.3	0.0	86.8	88	0	0	88
4 <i>Acacia sylvestris</i> / Brogo Shrub Rainforest	6673	6288	94.2		54.4	0.0	0.0	54.4	54 [^]	0	0	54 [^]
5 Bunga Head Rainforest	7	7	100.0	R	100.0	0.0	0.0	100.0	100	0	0	100
6 Coastal Warm Temperate Rainforest	6466	6390	98.8	V	49.0	1.3	4.4	54.7	61	1	7	70
7 Hinterland Warm Temperate Rainforest	3052	3026	99.2	V	69.7	0.1	0.5	70.3	70 [^]	0	1	71
8 Cool Temperate Rainforest	1053	1053	100.0	R	84.6	0.1	0.7	85.4	86	0	6	91
9 Mountain Wet Layered Forest (<i>E. nitans</i>)	2267	1813	80.0		71.0	0.0	0.4	71.4	75	0	1	76
10 Mountain Wet Layered Forest (<i>E. fastigata</i>)	20033	17940	89.6		46.5	0.2	1.0	47.7	47	0	4	51
11 Tantawangalo Wet Shrub Forest	792	790	99.8	R	91.3	0.0	0.9	92.2	92	0	6	98
12 Mountain Wet Fern Forest	2302	2259	98.1		72.6	1.6	0.8	75.0	73	2	4	78
13 Hinterland Wet Fern Forest	48310	44032	91.1		56.0	0.4	0.6	57.0	58	0	1	59
14 Hinterland Wet Shrub Forest	26967	25875	96.0		32.7	1.8	4.3	38.8	36	1	8	45
15 Mountain Wet Herb Forest	41581	30875	74.3		39.0	0.3	0.6	39.9	39	0	4	44
16 Basalt Wet Herb Forest	14902	12208	81.9		23.2	0.7	0.5	24.4	25	0	2	26
17 Flats Wet Herb Forest	3553	2931	82.5	V	30.8	0.6	0.8	32.2	31	0	2	34
18 Brogo Wet Vine Forest	7850	4306	54.8	V	16.2	0.0	0.0	16.2	18	0	0	18
19 Bega Wet Shrub Forest	47710	16891	35.4	V	7.1	0.1	0.2	7.4	8	0	1	8
20 Bega Dry Grass Forest*	31951	3808	11.9	E	0.7	0.0	0.0	0.7	1	0	0	1
21 Candelo Dry Grass Forest*	17873	1463	8.2	E	0.5	0.0	0.0	0.5	1	0	0	1
24 Subalpine Dry Shrub Forest	95020	26584	28.0	V	3.8	0.1	0.1	4.0	5	0	0	5
25 Sandstone Dry Shrub Forest	1142	822	72.0	R	63.5	0.0	0.0	63.5	64 [^]	0	2	66 [^]
26 Tableland Dry Shrub Forest	28045	16114	57.5		20.4	0.2	1.7	22.3	21	0	3	24
27 Waalimma Dry Grass Forest	1324	1324	100.0	R	22.2	0.0	4.9	27.1	23	0	5	28
28 Wog Wog Dry Grass Forest	1304	922	70.7	R	67.6	0.0	0.0	67.7	69	0	0	69
29 Nalbaugh Dry Grass Forest	2597	1936	74.6		27.4	0.8	1.8	30.0	27	1	4	32
30 Wallagaraugh Dry Grass Forest	1663	914	55.0	R	21.8	0.1	7.3	29.2	23	0	7	30
31 Hinterland Dry Grass Forest	32925	27586	83.8		50.2	0.1	1.0	51.3	52	0	2	54

Forest Ecosystems	Area		Percent Remaining as at 1999	Status ^b	Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at 1999				Percent of Forest Ecosystem (pre-1750) in the public components of the CAR reserve system, as at December 2017 ^c			
	Pre 1750 (ha)	Current As at 1999 (ha)			Dedicated Reserves	Informal Reserve ^c	Prescription ^d	Total	Dedicated Reserves	Informal Reserve ^c	Prescription ^d	Total
32 Coastal Dry Shrub Forest (<i>E. longifolia</i>)	24520	23400	95.4		36.9	0.5	0.9	38.3	56	0	2	58
33 Coastal Dry Shrub Forest (<i>E. muelleriana</i>)	16298	16136	99.0		57.8	1.2	0.4	59.4	59	0	2	62
34 Brogo Dry Shrub Forest	16124	14144	87.7		34.5	0.1	1.0	35.6	50	0	1	51
35 Escarpment Dry Grass Forest	34571	22004	63.6		27.2	0.1	0.0	27.3	27	0	0	28
36 Dune Dry Shrub Forest*	1018	603	59.3	R	28.8	0.1	0.1	29.0	30	0	0	31
37 Coastal Dry Shrub Forest (<i>An. floribunda</i>)	16150	15147	93.8		33.7	1.1	6.1	40.9	35	1	10	45
40 Riverine Forest*	81	65	80.8	R,E	0.0	0.0	0.0	0.0	0	0	0	0
41 Mountain Dry Shrub Forest (<i>E. fraxinoides</i>)	1865	1864	100.0		83.6	0.0	0.0	83.6	84	0	3	87
42 Coastal Dry Shrub Forest (<i>E. obliqua</i>)	22040	21552	97.8		26.4	0.5	2.8	29.7	27	0	6	33
43 Mountain Dry Shrub Forest (<i>E. cypellocarpa</i>)	2492	2479	99.5		90.8	0.0	0.0	90.8	91	0	1	92
44 Foothills Dry Shrub Forest	3326	3142	94.5		69.9	1.0	0.1	71.0	70	1	3	74
45 Mountain Dry Shrub Forest (<i>E. sieberi</i>)	2024	1915	94.6		53.1	0.2	0.6	53.9	53	0	3	56
46 Lowland Dry Shrub Forest	15977	15120	94.6		45.8	2.0	1.0	48.8	50	2	2	55
47 Eden Dry Shrub Forest	17797	17141	96.3		69.0	1.2	0.6	70.8	71	1	2	75
48 Bega Dry Shrub Forest	4496	4455	99.1		75.3	0.0	0.2	75.5	93	0	0	93
49 Coastal Dry Shrub Forest (<i>E. agglomerata</i>)	32332	31835	98.5		26.0	1.2	1.2	28.4	27	1	6	33
50 Genoa Dry Shrub Forest	3702	3026	81.7		56.1	0.1	0.2	56.4	57	0	4	61
58 Swamp Forest	1080	953	88.3	R	42.3	1.2	8.5	52.0	45	1	33	78
71 Monaro Basalt Grass Woodland*	23442	3387	14.4	V	0.5	0.0	0.0	0.5	1	0	1	1
72 Numeralla Dry Shrub Woodland	11879	8240	69.4	V	4.3	0.3	0.0	4.6	5	0	0	5
73 Monaro Dry Grass Forest*	5412	3615	66.8	V	11.1	15.7	0.0	26.8	39	0	0	39
79 Timbillica Dry Shrub Forest	22917	22792	99.5		15.3	1.1	5.4	21.8	15	1	16	32
81 Wadbilliga Dry Shrub Forest	27347	27337	100.0		98.4	0.0	0.0	98.4	99	0	0	99
82 Wadbilliga Range Ash Forest	1007	1007	100.0	R	100.0	0.0	0.0	100.0	100	0	0	100
84 Wadbilliga Range Wet Forest	3495	3207	91.8		72.6	0.0	0.2	72.8	74	0	0	74
85 Wadbilliga Gorge Dry Forest	7743	7234	93.4		82.5	0.0	0.0	82.5	83^	0	0	83^
86 Wadbilliga River Valley Forest	1899	1894	99.7		89.6	0.0	0.0	89.6	91	0	0	91

Non-Forest Ecosystems	Area		Percent Remaining as at 1999	Status ^b	Percent of Non-Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at 1999				Percent of Non-Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at December 2017 ^c			
	Pre 1750 (ha)	Current As at 1999 (ha)			Dedicated Reserves	Informal Reserve ^c	Prescription ^d	Total	Dedicated Reserves	Informal Reserve ^c	Prescription ^d	Total
23 Monaro Grassland*	6461	331	5.1	E	0.0	0.0	0.0	0.0	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
38 Southern Riparian Scrub	611	516	84.5	R	47.0	1.7	1.8	50.5	<u>50</u>	<u>2</u>	<u>4</u>	<u>55</u>
39 Northern Riparian Scrub*	761	485	63.7	R	6.6	0.1	0.1	6.8	<u>8</u>	<u>0</u>	<u>0</u>	<u>9</u>
51 Rock Shrub (<i>K. ambigua</i>)	51	51	100.0	R	80.0	0.0	5.4	85.4	<u>80[^]</u>	<u>0</u>	<u>8</u>	<u>88[^]</u>
52 Mountain Rock Scrub	202	202	100.0	R	92.2	0.0	0.0	92.2	<u>92[^]</u>	<u>0</u>	<u>0</u>	<u>92[^]</u>
53 Montane Heath	1751	1350	77.1	V	32.0	9.7	0.0	41.7	<u>42</u>	<u>0</u>	<u>0</u>	<u>43</u>
54 Mountain Nadgee Heath	371	371	100.0	R	99.8	0.0	0.0	99.8	<u>99[^]</u>	<u>0</u>	<u>0</u>	<u>99[^]</u>
55 Coastal Lowland Heath	1676	1630	97.3		90.7	0.0	0.0	90.7	<u>95</u>	<u>0</u>	<u>0</u>	<u>95</u>
56 Swamp Heath	385	385	100.0	R	21.8	5.1	7.7	34.6	<u>22[^]</u>	<u>6</u>	<u>14</u>	<u>42[^]</u>
57 Lowland Swamp	2010	1892	94.1		52.8	11.4	11.3	75.5	<u>53</u>	<u>11</u>	<u>15</u>	<u>80</u>
59 Sub-alpine Bog	6634	1869	28.2	R	7.4	0.0	0.2	7.6	<u>8</u>	<u>0</u>	<u>1</u>	<u>9</u>
60 Floodplain Wetlands*	9420	3281	34.8	V	3.6	0.3	0.4	4.3	<u>4</u>	<u>0</u>	<u>1</u>	<u>5</u>
61 Coastal Scrub	2191	1504	68.7	V	52.0	0.0	0.0	52.0	<u>54</u>	<u>0</u>	<u>0</u>	<u>54</u>
63 Estuarine Wetland (<i>M. ericifolia</i>)	3021	930	30.8	R,V	3.6	0.1	0.1	3.8	<u>4</u>	<u>0</u>	<u>0</u>	<u>4</u>
64 Saltmarsh	368	295	80.0	R	20.1	0.2	0.0	20.3	<u>20[^]</u>	<u>1</u>	<u>0</u>	<u>21[^]</u>
66 Estuarine Wetland (<i>Av. marina</i>)	56	38	68.9	R	23.1	0.0	0.0	23.1	<u>36</u>	<u>0</u>	<u>0</u>	<u>36</u>
83 Wadbilliga Mallee Heath	3085	3085	100.0	R	99.2	0.0	0.0	99.2	<u>99</u>	<u>0</u>	<u>0</u>	<u>99</u>

NOTES ACCOMPANYING TABLE 1

- a. The figures shown in this table are based on modelled information mapped at a scale of 1:25 000 derived during the pre-1750 analysis of vegetation types in the Eden region, and are therefore only approximate.
- b. The status is based on: Rare (R) which has a total current area below 1000 hectares and a target of 100% of its current distribution. Endangered (E) which has < 10% remaining and a target of 100% of its current distribution. Vulnerable (V) which has between 10-30% remaining and a target of 60% of its current distribution. Some values were given their rare, endangered or vulnerable status due to other factors such as range of distribution, patch size and expert opinion on vulnerability. All remaining Forest Ecosystems have a target of 15% of their pre-1750 distribution.
- c. Informal Reserve includes Special Management Zones that are > 40ha and > 200m wide, or that are adjacent to Dedicated Reserves.
- d. Tabulated prescriptions include those elements of the Special Management Zone that are < 40ha and/or < 200m wide, and Forest Ecosystems protected by the Integrated Forestry Operations Approval Old Growth prescriptions.
- e. Source: compiled by ABARES from RFA data, including data from CRA reports, IFOAs, NPWS and FCNSW
- * These Forest Ecosystems have been identified as priorities for protection on Private Land (see Attachment 12).
- = These Forest Ecosystems will have additional protection from the Integrated Forestry Operations Approval.
- [^] The figure supplied by ABARES has been amended by DPI to address inconsistencies resulting from changes in spatial analysis systems and processes over time.

Table 2. Representative conservation of Old Growth forest in the CAR Reserve System as at 1999 and December 2017 in the Eden region^a.

Forest Ecosystem	Area of Forest Ecosystem (ha) as at <u>1999</u>	Percent of Forest Ecosystem as Old Growth as at <u>1999</u>	Area Old Growth (ha) as at <u>1999</u>	Percent of Old Growth forest in the CAR Reserve System as at <u>1999</u>				Percent of Old Growth forest in the CAR Reserve System as at <u>December 2017^c</u>			
				Dedicated Reserve	Informal Reserve	Prescription ^b	Total	Dedicated Reserve	Informal Reserve	Prescription ^b	Total
OG 9 Mountain Wet Layered Forest (<i>E. nitans</i>)	1813	24.5	444	95.9	0.0	0.0	95.9	<u>98</u>	<u>0</u>	<u>0</u>	<u>98</u>
OG 10 Mountain Wet Layered Forest (<i>E. fastigata</i>)	17940	21.7	3895	86.5	0.2	0.6	87.3	<u>87</u>	<u>0</u>	<u>2</u>	<u>89</u>
OG 11 Tantawangalo Wet Shrub Forest	790	26.1	206	97.6	0.0	1.5	99.1	<u>98</u>	<u>0</u>	<u>2</u>	<u>100</u>
OG 12 Mountain Wet Fern Forest	2259	26.2	592	85.6	0.0	0.5	86.1	<u>85</u>	<u>0</u>	<u>1</u>	<u>86</u>
OG 13 Hinterland Wet Fern Forest	44032	21.3	9360	81.4	0.4	0.6	82.4	<u>82</u>	<u>0</u>	<u>1</u>	<u>83</u>
OG 14 Hinterland Wet Shrub Forest	25875	15.1	3917	57.0	3.5	3.3	63.8	<u>59</u>	<u>3</u>	<u>6</u>	<u>67</u>
OG 15 Mountain Wet Herb Forest	30875	18.8	5804	78.4	0.0	0.3	78.7	<u>78</u>	<u>0</u>	<u>3</u>	<u>82</u>
OG 16 Basalt Wet Herb Forest	12208	13.7	1668	59.5	0.4	0.9	60.8	<u>61</u>	<u>0</u>	<u>1</u>	<u>62</u>
OG 17 Flats Wet Herb Forest	2931	9.6	280	60.7	0.4	0.0	61.1	<u>62</u>	<u>0</u>	<u>1</u>	<u>63</u>
OG 18 Brogo Wet Vine Forest	4306	9.5	407	55.6	0.0	0.0	55.6	<u>61</u>	<u>0</u>	<u>0</u>	<u>61</u>
OG 19 Bega Wet Shrub Forest	16891	15.1	2553	42.7	0.3	3.8	46.8	<u>47</u>	<u>0</u>	<u>2</u>	<u>49</u>
OG 20 Bega Dry Grass Forest	3808	7.9	299	15.4	0.0	0.0	15.4	<u>16</u>	<u>0</u>	<u>0</u>	<u>16</u>
OG 21 Candelo Dry Grass Forest	1463	17.3	253	24.5	0.0	0.0	24.5	<u>24</u>	<u>0</u>	<u>0</u>	<u>24</u>
OG 24 Subalpine Dry Shrub Forest	26584	28.2	7486	17.2	0.7	0.1	18.0	<u>21</u>	<u>0</u>	<u>0</u>	<u>22</u>
OG 25 Sandstone Dry Shrub Forest	822	21.5	177	99.4	0.0	0.0	99.4	<u>100</u>	<u>0</u>	<u>0</u>	<u>100</u>
OG 26 Tableland Dry Shrub Forest	16114	9.1	1472	55.0	0.2	21.1	76.3	<u>55</u>	<u>0</u>	<u>17</u>	<u>72</u>
OG 27 Waalimma Dry Grass Forest	1324	5.1	68	42.6	0.0	30.9	73.5	<u>43</u>	<u>0</u>	<u>25</u>	<u>68</u>
OG 28 Wog Wog Dry Grass Forest	922	12.9	119	92.4	0.0	0.0	92.4	<u>99</u>	<u>0</u>	<u>0</u>	<u>99</u>
OG 29 Nalbaugh Dry Grass Forest	1936	10.6	205	63.4	0.0	21.5	84.9	<u>64</u>	<u>0</u>	<u>20</u>	<u>84</u>
OG 30 Wallagaraugh Dry Grass Forest	914	8.1	74	44.6	0.0	24.3	68.9	<u>45[^]</u>	<u>0</u>	<u>19</u>	<u>64[^]</u>
OG 31 Hinterland Dry Grass Forest	27586	18.1	4993	75.1	0.1	0.5	75.7	<u>77</u>	<u>0</u>	<u>2</u>	<u>79</u>

Forest Ecosystem	Area of Forest Ecosystem (ha) as at 1999	Percent of Forest Ecosystem as Old Growth as at 1999	Area Old Growth (ha) as at 1999	Percent of Old Growth forest in the CAR Reserve System as at 1999				Percent of Old Growth forest in the CAR Reserve System as at December 2017 ^c			
				Dedicated Reserve	Informal Reserve	Prescription ^b	Total	Dedicated Reserve	Informal Reserve	Prescription ^b	Total
OG 32 Coastal Dry Shrub Forest (<i>E. longifolia</i>)	23400	10.4	2424	64.9	0.7	5.2	70.8	<u>72</u>	0	<u>3</u>	<u>75</u>
OG 33 Coastal Dry Shrub Forest (<i>E. muelleriana</i>)	16136	17.6	2839	78.7	1.5	0.1	80.3	<u>80</u>	<u>1</u>	<u>2</u>	<u>82</u>
OG 34 Brogo Dry Shrub Forest	14144	20.1	2841	62.5	0.1	0.7	63.3	<u>69</u>	<u>0</u>	<u>1</u>	<u>71</u>
OG 35 Escarpment Dry Grass Forest	22004	22.6	4971	60.7	0.2	0.1	61.0	<u>61</u>	<u>0</u>	<u>1</u>	<u>62</u>
OG 36 Dune Dry Shrub Forest	603	19.4	117	61.5	0.0	0.0	61.5	<u>62</u>	<u>0</u>	<u>0</u>	<u>62</u>
OG 37 Coastal Dry Shrub Forest (<i>An. floribunda</i>)	15147	18.5	2799	48.4	1.1	9.6	59.1	<u>49</u>	<u>1</u>	<u>14</u>	<u>63</u>
OG 41 Mountain Dry Shrub Forest (<i>E. fraxinoides</i>)	1864	18.9	353	88.1	0.0	0.0	88.1	<u>88</u>	<u>0</u>	<u>3</u>	<u>91</u>
OG 42 Coastal Dry Shrub Forest (<i>E. obliqua</i>)	21552	8.3	1778	57.0	0.7	26.2	83.9	<u>57</u>	<u>1</u>	<u>19</u>	<u>77</u>
OG 43 Mountain Dry Shrub Forest (<i>E. cypellocarpa</i>)	2479	20.8	516	90.3	0.0	0.0	90.3	<u>90</u>	<u>0</u>	<u>0</u>	<u>91</u>
OG 44 Foothills Dry Shrub Forest	3142	23.8	748	82.5	0.0	0.3	82.8	<u>83</u>	<u>0</u>	<u>5</u>	<u>88</u>
OG 45 Mountain Dry Shrub Forest (<i>E. sieberi</i>)	1915	18.1	346	88.4	0.0	0.0	88.4	<u>89</u>	<u>0</u>	<u>1</u>	<u>90</u>
OG 46 Lowland Dry Shrub Forest	15120	31.0	4687	55.8	4.5	1.2	61.5	<u>57</u>	<u>4</u>	<u>3</u>	<u>65</u>
OG 47 Eden Dry Shrub Forest	17141	25.3	4332	75.8	2.9	0.9	79.6	<u>77</u>	<u>3</u>	<u>2</u>	<u>83</u>
OG 48 Bega Dry Shrub Forest	4455	17.4	776	89.3	0.0	0.0	89.3	<u>93</u>	<u>0</u>	<u>0</u>	<u>93</u>
OG 49 Coastal Dry Shrub Forest (<i>E. agglomerata</i>)	31835	10.6	3380	59.6	2.3	1.5	63.4	<u>60</u>	<u>2</u>	<u>4</u>	<u>66</u>
OG 50 Genoa Dry Shrub Forest	3026	28.1	849	88.9	0.2	0.6	89.7	<u>89</u>	<u>0</u>	<u>0</u>	<u>90</u>
OG 58 Swamp Forest	953	12.7	121	86.0	0.0	7.4	93.4	<u>88</u>	<u>2</u>	<u>7</u>	<u>96</u>
OG 71 Monaro Basalt Grass Woodland	3387	11.4	388	12.4	0.0	0.0	12.4	<u>14</u>	<u>0</u>	<u>4</u>	<u>18</u>
OG 72 Numeralla Dry Shrub Woodland	8240	26.9	2214	13.8	1.4	0.0	15.2	<u>15</u>	<u>0</u>	<u>0</u>	<u>15</u>
OG 73 Monaro Dry Grass Forest	3615	20.2	732	31.7	25.8	0.0	57.5	<u>66</u>	<u>0</u>	<u>0</u>	<u>66</u>
OG 79 Timbillica Dry Shrub Forest	22792	6.7	1525	33.2	2.8	46.4	82.4	<u>33</u>	<u>2</u>	<u>43</u>	<u>78</u>
OG 81 Wadbilliga Dry Shrub Forest	27337	40.6	11101	99.1	0.0	0.0	99.1	<u>99</u>	<u>0</u>	<u>0</u>	<u>99</u>

Forest Ecosystem	Area of Forest Ecosystem (ha) as at 1999	Percent of Forest Ecosystem as Old Growth as at 1999	Area Old Growth (ha) as at 1999	Percent of Old Growth forest in the CAR Reserve System as at 1999				Percent of Old Growth forest in the CAR Reserve System as at December 2017 ^c			
				Dedicated Reserve	Informal Reserve	Prescription ^b	Total	Dedicated Reserve	Informal Reserve	Prescription ^b	Total
OG 82 Wadbilliga Range Ash Forest	1007	39.5	398	100.0	0.0	0.0	100.0	100	0	0	100
OG 84 Wadbilliga Range Wet Forest	3207	39.6	1270	90.0	0.0	0.0	90.0	90	0	0	90
OG 85 Wadbilliga Gorge Dry Forest	7234	27.9	2016	92.3	0.0	0.0	92.3	92	0	0	92
OG 86 Wadbilliga River Valley Forest	1894	28.3	535	90.6	0.0	0.0	90.6	91	0	0	91
Total Area	515 019 ha		98 326 ha								

NOTES ACCOMPANYING TABLE 2

- a. The figures shown in this table are based on modelled information mapped at a scale of 1:25 000 derived during the pre-1750 analysis of vegetation types in the Eden region, and are therefore only approximate.
- b. This comprises those elements of Special Management Zones that are < 40ha and/or < 200m wide and Old Growth forest protected by the Integrated Forestry Operations Approval.
- c. Source: compiled by ABARES from RFA data, including data from CRA reports, IFOAs, NPWS and FCNSW

^ The figure supplied by ABARES has been amended by DPI to address inconsistencies resulting from changes in spatial analysis systems and processes over time

Rainforest Protection

~~10 All rainforest, as mapped during the Eden CRA and classified according to Keith, Bedward and Smith (1995), *Vegetation of the South East Forests of New South Wales*, NSW National Parks and Wildlife Service, unpublished report, or any replacement agreed to between the two Governments, including a 20m buffer, will be excluded from timber harvesting through the Integrated Forestry Operations Approvals. Forestry Operations are prohibited from all rainforest, including a 20m buffer, by the Integrated Forestry Operations Approval applicable to the Eden region.~~

Old Growth forest

10B Forestry Operations are prohibited from all Old Growth forest in the Eden region by the Integrated Forestry Operations Approval.

Additional Protection for Forest Ecosystems

~~11 Forestry Operations are prohibited from rare Rare non-commercial Forest Ecosystems will also be protected from timber harvesting activities by the Integrated Forestry Operations Approvals applicable to the Eden region. These Forest Ecosystems include 20 Bega Dry Grass Forest, 21 Candelo Dry Grass Forest, 71 Monaro Basalt Grass Woodland, 36 Dune Dry Shrub Forest, 38 Southern Riparian Scrub; 39 Northern Riparian Scrub, 40 Riverine Forest and 58 Swamp Forest.~~

11A Forestry Operations are prohibited from Threatened Ecological Communities (TECs) by the Integrated Forestry Operations Approval applicable to the Eden region.

~~12 Under the *Forestry and National Park Estate Act 1998 National Park Estate (Land Transfers) Act 1998* (NSW), Schedule 5 (~~Crown Land managed by the NSW National Parks and Wildlife Service that are~~ State forests vested in NPW Minister subject to leasehold interests), some Forest Ecosystems will have additional protection from harvesting. These include 58 Swamp Forest, 19 Bega Wet Shrub Forest, 26 Tableland Dry Shrub Forest, 30 Wallagaraugh Dry Grass Forest and 31 Hinterland Dry Grass Forest.~~

Wilderness

~~13 Almost all (99%) of Wilderness, as defined in the JANIS Reserve Criteria (ie National Wilderness Inventory (Lesslie and Maslen 1995) minimum rating 12 in patches greater than 8 000ha), in the Eden region is protected within Dedicated Reserves under this Agreement.~~

Management of CAR Values

~~14 Management plans identified in Section 2.3 of the New South Wales *Eden Region Forest Agreement* for Dedicated Reserve and Informal Reserve elements of the CAR Reserve System will clearly identify the CAR Values and the actions being taken in each reserve to appropriately manage and conserve those values.~~

- 45 As an integral component of managing CAR values New South Wales agrees to implement systematic and targeted fauna and flora surveys in Dedicated Reserves and Informal Reserves to complement surveys carried out under the IFOAs. The extent of survey work undertaken will be subject to available funding.

Protections on Public Land subject to Plantation authorisation

- 46 For Plantations on Public Land, the Plantations and Reafforestation (Code) Regulation 2001 (NSW), contains standards for the protection of soil and water, Biodiversity, and places, objects or items of heritage significance.

THREATENED FLORA, FAUNA LISTED SPECIES AND COMMUNITIES

- 1 Both Parties recognise the range of mechanisms to conserve the habitat of ~~endangered and vulnerable flora and fauna~~ Listed Species and Communities in the Eden region. These include: (i) protection within the CAR Reserve System; (ii) protection of key habitat components using the Integrated Forestry Operations Approval; (iii) protection of key habitats such as rainforest, heaths, swamps and other wet communities, rocky outcrops and ~~rare~~ threatened ecological communities; and (iv) ~~the development, maintenance and implementation of Recovery Plans, Priorities Action Statement projects and Saving our Species conservation projects of Recovery Plans Biodiversity Conservation Programs~~ for species, populations and communities listed under the ~~Threatened Species Conservation Act 1995 Biodiversity Conservation Act 2016~~ (NSW) and the ~~Endangered Species Protection Act 1992~~ development, maintenance and implementation of relevant Statutory Conservation Planning Documents under the ~~Fisheries Management Act 1994~~ (NSW) and for species, populations and communities listed under the EPBC Act, ~~Environment Protection and Biodiversity Conservation Act 1999~~ (C'wth). Key species are protected by a combination of reservation and prescription.
- 2 ~~Current priorities~~ Priorities at the signing of the Eden RFA for developing Recovery Plans for threatened forest dependent fauna and flora for the ~~next first~~ first five years of this Agreement are provided in Table 1. Parties note that the list at Table 1 is indicative only and ~~timeframes are dependent upon funding~~. These priorities may change and new priorities may arise in response to additional information, funding etc.
- 3 Where NSW Statutory Conservation Planning Documents Recovery Plans under the ~~Threatened Species Conservation Act 1995 Biodiversity Conservation Act 2016~~ (NSW) or the ~~Fisheries Management Act 1994~~ (NSW) meet the requirements of the EPBC Act ~~Endangered Species Protection Act 1992~~ (C'wth), the Commonwealth will consider adopting them under Section 46 of the EPBC Act ~~Endangered Species Protection Act 1992~~ (C'wth).

Threatening Processes

- 4 ~~Threat Abatement Plans under the Endangered Species Protection Act 1992~~ (C'wth) for Predation by the Feral Cat and Predation by the European Red Fox (*Vulpes vulpes*) have been finalised and approved by the Minister. Other priorities for Threat Abatement Plans under the Act include Competition and Land Degradation by the European Rabbit, Competition and Land Degradation by the Feral Goat, and Dieback caused by the root rot fungus (*Phytophthora cinnamoni*). A Threat Abatement Plan under the ~~Threatened Species Conservation Act 1995~~ (NSW) for Predation by the European Red Fox is due for completion in December 1999. Threatening processes are those listed as a key threatening process under the Biodiversity Conservation Act 2016 (NSW), Fisheries Management Act 1994 (NSW) and the EPBC Act in recognition that the process adversely affects or may threaten the survival, abundance or evolutionary development of a native species or

ecological community. Threatening Processes are managed under the Biodiversity Conservation Program or with Threat Abatement Plans under the EPBC Act or other coordinated programs across land tenure. Some Threatening Processes affecting Forests are mitigated by the settings in the Integrated Forestry Operations Approval applicable to the Eden region.

Table 1: Priority species for preparation of Recovery Plans (~~over next five years~~ as at 1999 and showing current status)

Scientific name	Common Name	NSW Status	National Status	<u>Management stream under the NSW Biodiversity Conservation Program</u>	<u>Current status of national recovery plans and conservation advice</u>	<u>Completion Date</u>
<i>Potorous longipes</i>	Long-footed Potoroo	Endangered <u>Critically endangered</u>	Endangered	<u>Partnership</u>	<u>Nationally adopted recovery plan in place 2001 and in force; Conservation advice made 2016</u>	NSW Plan by June 1999, National Plan June 1999
<i>Isoodon obesulus</i>	Southern Brown Bandicoot	Endangered	<u><i>Isoodon obesulus</i> (south-eastern) is listed as Endangered</u>	<u>Site-managed</u>	<u>Conservation Advice made 2016</u>	NSW Plan by Dec 1999
<i>Pseudomys fumeus</i>	Smoky Mouse	Endangered <u>Critically endangered</u>	<u>Endangered</u>	<u>Site-managed</u>	<u>National recovery plan adopted in 2008 and in force.</u>	NSW Plan by Dec 1999
<i>Phascolarctos cinereus</i>	Koala (SE NSW Population)	Vulnerable	<u><i>Phascolarctos cinereus</i> (combined populations of Qld, NSW and the ACT) is listed as Vulnerable</u>	<u>Iconic Species</u>	<u>Conservation Advice made 2012</u>	NSW Plan by Dec 2000
<i>Mixophyes balbus</i>	Stuttering Barred Frog	Endangered	<u>Vulnerable</u>	<u>Landscape</u>	<u>National recovery plan adopted in 2012 and in force</u>	NSW Plan by Dec 1999
<i>Heleioporus australiacus</i>	Giant Burrowing Frog	Vulnerable	<u>Vulnerable</u>	<u>Landscape</u>	<u>Conservation advice made 2014</u>	NSW Plan by Dec 2002

Scientific name	Common Name	NSW Status	National Status	Management stream under the NSW Biodiversity Conservation Program	Current status of national recovery plans and conservation advice	Completion Date
<i>Dasyurus maculatus</i>	Tiger Quoll	Vulnerable	Vulnerable <u><i>Dasyurus maculatus maculatus</i> (SE mainland population) listed as Endangered</u>	Landscape	National recovery plan adopted in 2016 and in force	NSW Plan by June 2001, National Plan July 2002
<i>Lathamus discolor</i>	Swift Parrot	Vulnerable <u>Endangered</u>	Vulnerable <u>Critically Endangered</u>	Landscape	National recovery plan adopted in 2012 and in force; Conservation Advice made in 2016	National Plan complete, NSW plan by Dec 1999
<i>Ninox strenua</i> , <i>Tyto novaehollandiae</i> , <i>Tyto tenebricosa</i>	Large Forest Owls: Powerful Owl, Masked Owl, Sooty Owl	Vulnerable				NSW Plan by June 2000
<i>Ninox strenua</i>	Powerful Owl	Vulnerable	Not listed under the EPBC Act	Landscape	NSW recovery plan for Large Forest Owls adopted in 2006.	
<i>Tyto novaehollandiae</i>	Masked Owl	Vulnerable	Not listed under the EPBC Act	Landscape	NSW recovery plan for Large Forest Owls adopted in 2006.	
<i>Tyto tenebricosa</i>	Sooty Owl	Vulnerable	Not listed under the EPBC Act	Landscape	NSW recovery plan for Large Forest Owls adopted in 2006.	
<i>Xanthomyza phrygia</i>	Regent Honeyeater	Endangered <u>Critically endangered</u>	Endangered <u>Critically endangered</u>	Site-managed	National recovery plan adopted in 2016 and in force; Conservation Advice made 2015	National Plan complete, NSW Plan by Dec 2000

Scientific name	Common Name	NSW Status	National Status	Management stream under the NSW Biodiversity Conservation Program	Current status of national recovery plans and conservation advice	Completion Date
<i>Acacia constablei</i>	Constables Narrabarba Wattle	Vulnerable	Vulnerable	Site-managed	Conservation Advice made 2014	National/NSW Plan by Dec 1999
<i>Acacia georgensis</i>	Dr. George's Bega Wattle	Vulnerable	Vulnerable	Keep-watch	Conservation Advice made 2014	National/NSW Plan by Dec 1999
<i>Eucalyptus imlayensis</i>	Imlay Mallee	Endangered Critically endangered	Vulnerable Endangered		Conservation Advice made 2008	National/NSW Plan by Dec 1999
<i>Eucalyptus parvula</i>	Small-leaved Gum	Vulnerable Endangered	Vulnerable		Conservation Advice made 2008	National/NSW Plan by Dec 2000
<i>Genoplesium rhyoliticum</i>	Rhyolite Midge Orchid	Endangered	Endangered	Site-managed	Conservation Advice made 2014	National/NSW Plan by Dec 1999
<i>Monotoca rotundifolia</i>	Trailing Monotoca	Endangered	Not listed under the EPBC Act	Data-deficient		National/NSW Plan by Dec 2001
<i>Phebalium ralstonii</i>	Ralston's Phebalium	Vulnerable	Vulnerable	Site-managed	Conservation Advice made 2014	National/NSW Plan by Dec 1999
<i>Pomaderris cotoneaster</i>	Cotoneaster Pomaderris	Endangered	Endangered	Site-managed	National recovery plan adopted in 2010 and in force	National/NSW Plan by Dec 2000
<i>Pomaderris elachophylla</i>	Lacy Pomaderris	Endangered	Not listed under the EPBC Act	Partnership		National/NSW Plan by Dec 2000
<i>Viola cleistogamoides</i>	Hidden Violet	Endangered	Not listed under the EPBC Act	Partnership		National/NSW Plan by June 1999
<i>Westringia davidii</i>	David's Westingia	Vulnerable	Vulnerable	Site-managed	Conservation Advice made 2014	National/NSW Plan by Dec 1999
<i>Zieria buxijugum</i>	Box Zieria	Endangered Critically endangered	Endangered	Site-managed	National recovery plan adopted in 2004 and in force; Conservation Advice made 2016	National/NSW Plan by Dec 1999

<u>Scientific name</u>	<u>Common Name</u>	<u>NSW Status</u>	<u>National Status</u>	<u>Management stream under the NSW Biodiversity Conservation Program</u>	<u>Current status of national recovery plans and conservation advice</u>	<u>Completion Date</u>
<i>Zieria formosa</i>	Shapely Zieria	Endangered <u>Critically endangered</u>	Endangered	<u>Site-managed</u>	<u>National recovery plan adopted in 2004 and in force; Conservation Advice made 2016</u>	National/NSW Plan by Dec 1999
<i>Zieria parrisiae</i>	Parris' Zieria	Endangered <u>Critically endangered</u>	Endangered <u>Critically endangered</u>	<u>Site-managed</u>	<u>National recovery plan adopted in 2004 and in force; Conservation Advice made 2018</u>	National/NSW Plan by Dec 1999

Table notes:

(1) Site-managed: species can be successfully secured in the wild by carrying out targeted management actions at specific sites

Landscape: generally distributed across large areas and subject to threats at landscape scale

Iconic: species which the community places a high value on and has particular expectations for conservation

Data deficient: there is insufficient knowledge available on the ecology, distribution and/or management requirements to enable a site-managed species project

Partnership: has less than 10% of its population/distribution occurring within NSW

Keep Watch: lower priority for investment in management.

ATTACHMENT 3 NOT USED
(clauses 20, 22, 34, 46(e) and (g), 79, 95.8)

NATIONAL ESTATE VALUES

Protection and Management of National Estate Values

~~1 Parties endorse the findings of the Commonwealth/NSW joint study of the National Estate in the Eden region (the Joint Study) and agree that National Estate Values exist as documented in publicly available plots of GIS coverages and the following published documents:~~

- ~~(a) *JANIS and Natural National Estate Conservation Requirements for the Eden Region*, NPWS Southern Zone CRA Unit;~~
- ~~(b) *National Estate Extensive Natural Values: Eden CRA Region*, Report undertaken for the NSW CRA/RFA Steering Committee project number NE 36/EH;~~
- ~~(c) *Places of Geoheritage Significance in NSW CRA Forest Regions*, Osbourne, R. A. L, B. Docker and L. Salem (1998);~~
- ~~(d) *Identification of Places of Natural History Significance in NSW CRA Forest Regions: 2. Sites of Potential National Estate Value*, Denny, M (1998);~~
- ~~(e) *Community Heritage Workshop Report, Volumes 1 to 3*, D. Marshall (EA) (1998);~~
- ~~(f) *Eden CRA Region Overview Thematic History (Non-Indigenous)*, Joan Kent (NPWS) (1997);~~
- ~~(g) *Eden Forest History and Heritage Assessment (Non-Indigenous), Cultural Heritage Field Survey and Data Validation*, NPWS, project number NE 16/EH (1998);~~
- ~~(h) *Assessment of Places of Aesthetic Significance in the Eden CRA Region*, EA, project number NA 15/EH (1998).~~

~~5 Parties recognise that the extensive and systematic information and regional framework provided by the Joint Study and this Agreement provide a unique regional context for National Estate Values in the Eden region.~~

~~6 Parties agree that many of the National Estate Values are adequately reserved in the CAR Reserve System (including its Dedicated Reserve, Informal Reserve and prescription elements). The State will protect in a regional context the full range of National Estate Values on Public Land, through the application of the Forest Management System in accordance with this Agreement, and the implementation of the improvements agreed in Attachment 7.~~

~~7 Parties agree that National Estate Values will be managed on the basis of the following principles:~~

- ~~Integrated regional management is the basis for effective conservation of National Estate Values;~~
 - ~~Protection decisions should be based on the extensiveness of each value within the region, taking into account its abundance, spatial and temporal distribution, spatial characteristics, variation and condition;~~
 - ~~Protection decisions should not be based on individual expressions of the value in isolation;~~
 - ~~Protection decisions should consider the sensitivity of each National Estate Value to various types of disturbance, with sensitive natural values having adequate representation in the CAR Reserve System;~~
 - ~~Management in all Public Land tenures should address National Estate Values and make provision for their maintenance in management plans;~~
 - ~~Protection of National Estate Values is achieved by the CAR Reserve System and other legislated protection mechanisms and within State forests through statutory management plans and by active management;~~
 - ~~It is productive, effective and necessary to work with the community to manage heritage values.~~
- 8 ~~Parties endorse the joint preparation of a set of Statewide Guidelines for the Management of Cultural Heritage Values and Places in New South Wales Forests based on the outcomes of the Protecting Cultural Heritage Values and Places in NSW Forests project. Both Parties agree to finalise these guidelines by the end of 1999. When completed New South Wales agrees to manage in accordance with these guidelines, noting the provisions of this Agreement prevail in the case of any inconsistency. The guidelines are based on the principles of the Australia ICOMOS Charter on the Conservation of Places of Cultural Significance (Burra Charter) which provides the framework for the protection of cultural heritage sites and places.~~
- 9 ~~Parties agree to maintain the databases of the values identified in the Joint Study and cooperate in relation to access to the data.~~
- 10 ~~Parties agree that the sensitivity or resilience of each National Estate Value, and the appropriate approach to the management of each value is indicated in Table 1 and subject to Attachment 7.~~

Existing listings

- 11 ~~Parties note that the Australian Heritage Commission (the Commission) has agreed to update the Statements of Significance and condition and description statements for all existing listings to incorporate the results of the Joint Study. Both Parties note that existing National Estate places will remain in the Register of the National Estate where the results of the Joint Study confirm the presence of National Estate Values.~~

Listings Arising From the Joint Study

- ~~12 Parties note that new listings recommended to the Commission will include National Estate Values protected by reservation, reserve management prescription, site exclusion, consultation processes or other measures appropriate to the value, or which are robust and not affected by harvesting or other off reserve management regimes or activity.~~
- ~~13 Parties note that the Commission will work in cooperation with New South Wales in delineating places for National Estate listing. The identification of these areas will be based on the following principles:~~
- ~~• New listings in Dedicated Reserves and Informal Reserves, the boundaries of which are unlikely to change, should be distinct places and may be based on any National Estate Values;~~
 - ~~• Listing of other National Estate places outside the CAR Reserve System will be based on robust values and those values that are protected by forest management prescription. Areas of contiguous values will be listed as a single National Estate place;~~
 - ~~• Boundaries for listing National Estate places outside the CAR Reserve System will be based on identified values and will follow natural topographic features and/or roads as appropriate. In areas where a National Estate Value overlaps an Informal Reserve, but also continues outside that reserve, the full coverage of the value will be listed and it will be recognised that a portion of this value is protected.~~
- ~~14 For places arising from the Joint Study, only places identified by the above principles will be listed in the Register of the National Estate.~~
- ~~15 Parties note that the identification and assessment of National Estate Values for the CRA has been completed with the exception of Indigenous heritage. Parties note that the Commission will continue to consult with New South Wales and Indigenous communities in an effort to finalise the identification and assessment of Indigenous heritage places and values.~~
- ~~16 Parties note that in the Eden region some National Estate Values were dealt with adequately through the assessment of other values. These values are well represented in the CAR Reserve System through the conservation of other National Estate Values or of CAR Values. Other National Estate Values were considered by experts not to be present in the region or were not above threshold for consideration as National Estate in any known sites in the region. These values include vegetation succession (A.2), and fauna and flora species richness (A.3). Some values, being localised, are covered by protection mechanisms agreed in the RFA. See Table 1 for further details.~~

Future Listings

- ~~17 Parties note that the Commission does not intend to undertake any further regional studies of forests in the Eden region.~~

- ~~18 Parties note that the Commission confirms that, based on the Joint Study, there is no evidence to identify additional extensive National Estate Values in the forested areas of the Eden region and that it therefore does not anticipate listing additional large places in the region.~~
- ~~19 Parties note that the Commission will refer future nominations to them. The Parties agree to work cooperatively and in a timely fashion in considering whether such nominations will be recommended to the Commission for listing. Both Parties are to compare the nominations with the existing agreed Eden National Estate database, and to consider any new research or information provided.~~
- ~~20 Parties will jointly agree on any future recommendations to the Commission for listing. Parties note that the Commission will work cooperatively with New South Wales on the detail of any consequent listings that may arise.~~
- ~~21 Parties agree that all National Estate Values will be considered in forest management decisions and note that the advice of the Commission will be sought in relation to proposed actions by the Commonwealth which are outside the scope of this Agreement and which might adversely affect National Estate Values in the Eden region. This includes any proposed actions that may affect National Estate Values in areas outside the CAR Reserve System and which have not been listed on the Register of the National Estate. Parties note that the Commission has agreed to take into account the undertakings in this Agreement in providing its advice, and will provide such advice in a regional context.~~
- ~~22 Parties note that the Commission may delegate preparation of section 30 advice with respect to National Estate in the Eden region to an appropriate official in a New South Wales Agency. This delegation would be limited to the Eden region, and those operations that affect those aspects of the forest estate documented in the CRA.~~

WITHOUT PREJUDICE

Table 1. Protection of National Estate Values on Public Land

Category 1: Values that are adequately protected at a regional level in the Dedicated Reserve or Informal Reserve components of the CAR Reserve System established under this Agreement.

National Estate Values	Sensitivity ^a and resilience ^b to forestry activities covered by the RFA	Percentage of value on Public Land in reserves			Existing and/or off-reserve protection mechanisms	Additional agreed actions under the Eden RFA
		Dedicated Reserve	Informal Reserve	Total		
Wilderness (A.2, B.1)^c	High sensitivity to unnatural disturbance. Low resilience to forestry activities.	99	-	99	<i>Wilderness Act 1977.</i>	NPWS Environmental Management System (by April 2001)
Old Growth Forest (A.2 & B.1)^c Important Fauna Habitat (A.2) ^d	High sensitivity to logging, grazing, unnatural fire and other forestry activities. Low resilience to forestry activities. A2-Old Growth B1 (Rare) Old Growth—See Table 2 in Attachment 1	76	1	77	<i>Threatened Species Conservation Act 1995;</i> <i>Environmental Planning and Assessment Act 1979;</i> <i>National Parks and Wildlife Act 1974;</i> <i>Endangered Species Protection Act 1992;</i> <i>Native Vegetation Conservation Act 1997;</i> <i>Integrated Forestry Operations Approvals, Forest Management Zoning, and Management Plans.</i>	Regional ESFM Plan (by April 2000); Native Forest Management System (by April 2001); NPWS Environmental Management System (by April 2001)
Flora and Fauna Refugia (A.1 & A.2) Primitive and Relictual Species (A1) ^d Representative Wetlands (D.1) ^d Important Fauna Habitat (A.2) ^d	High sensitivity to logging, grazing, unnatural fire and other forestry activities. Low resilience to forestry activities.	77	1	78	<i>Threatened Species Conservation Act 1995;</i> <i>Environmental Planning and Assessment Act 1979;</i> <i>National Parks and Wildlife Act 1974;</i> <i>Endangered Species Protection Act 1995;</i> <i>Integrated Forestry Operations Approvals, Forest Management Zoning, and Management Plans.</i>	Regional ESFM Plan (by April 2000); Native Forest Management System (by April 2001); NPWS Environmental Management System (by April 2001); NSW Biodiversity Strategy

WITHOUT PREJUDICE

National Estate Values	Sensitivity ^a and resilience ^b to forestry activities covered by the RFA	Percentage of value on Public Land in reserves			Existing and/or off reserve protection mechanisms	Additional agreed actions under the Eden RFA
		Dedicated Reserve	Informal Reserve	Total		
Rare Vegetation Communities (B.1)^c Representative Vegetation (D.1) ^d Remnant Vegetation (A.2) ^d	High sensitivity to logging, grazing, unnatural fire and other forestry activities. Low resilience to forestry activities.	48	4	52	<i>Threatened Species Conservation Act 1995;</i> <i>Environmental Planning and Assessment Act 1979;</i> <i>National Parks and Wildlife Act 1974;</i> <i>Endangered Species Protection Act 1992;</i> <i>Native Vegetation Conservation Act 1997;</i> Integrated Forestry Operations Approvals, Forest Management Zoning, and Management Plans.	Regional ESFM Plan (by April 2000); Native Forest Management System (by April 2001); NPWS Environmental Management System (by April 2001)
Natural Landscapes (A.2 & B.1)	High sensitivity to logging, grazing, unnatural fire and other forestry activities. Low resilience to forestry activities.	77	1	78	<i>Heritage Act 1977, Wilderness Act 1977.</i>	Regional ESFM Plan (by April 2000); Native Forest Management System (by April 2001); NPWS Environmental Management System (by April 2001)
Undisturbed Catchments (A2 & B1)	High sensitivity to logging, grazing, unnatural fire and other forestry activities. Low resilience to forestry activities.	93	-	93	<i>Heritage Act 1977, Wilderness Act 1977.</i>	Regional ESFM Plan (by April 2000); Section 2.5 (Wild Rivers) of the New South Wales-Eden Region Forest Agreement; Native Forest Management System (by April 2001); NPWS Environmental Management System (by April 2001)

NOTES ACCOMPANYING TABLE 1

^a Sensitivity — to disturbance, relates to extent of loss or diminution in a value due to the effects of disturbance.

^b Resilience — relates to the extent of likely recovery of a diminished value, and to the time and management effort required to achieve this recovery.

^c JANIS values for which there were specific numerical targets.

^d Criteria in plain type face are values which were assessed indirectly as part of the assessment of the criteria in bold type face.

WITHOUT PREJUDICE

Category 2: Values that are adequately protected at a regional level through the Dedicated Reserve or Informal Reserve components of the CAR Reserve System established under this Agreement and existing off reserve protection mechanisms

National Estate Values	Sensitivity ^a and resilience ^b to forestry activities covered by the RFA	Percentage of value on Public Land in reserves			Existing off reserve protection mechanisms	Additional agreed actions under the Eden RFA
		Dedicated Reserve	Informal Reserve	Total		
Centres of Endemism – Flora and Fauna (A.1)	Value is dependent on individual species response. Species sensitive to logging, grazing, and unnatural fire are at particular risk.	51	-	51	<i>Threatened Species Conservation Act 1995;</i> <i>Environmental Planning and Assessment Act 1979;</i> <i>National Parks and Wildlife Act 1974;</i> <i>Endangered Species Protection Act 1992;</i> Integrated Forestry Operations Approvals, Forest Management Zoning, and Management Plans.	Regional ESFM Plan (by April 2000); Native Forest Management System (by April 2001); NPWS Environmental Management System (by April 2001); NSW Biodiversity Strategy
Primitive and Relictual Flora (A.1)	High sensitivity to logging, grazing, unnatural fire and other forestry activities. Low resilience to forestry activities.	73	3	75	<i>Threatened Species Conservation Act 1995;</i> <i>Environmental Planning and Assessment Act 1979;</i> <i>National Parks and Wildlife Act 1974;</i> <i>Endangered Species Protection Act 1992;</i> Integrated Forestry Operations Approvals, Forest Management Zoning, and Management Plans.	Regional ESFM Plan (by April 2000); Native Forest Management System (by April 2001); NPWS Environmental Management System (by April 2001); NSW Biodiversity Strategy
Disjunct Flora (A.1)	Value is dependent on individual species response. Species sensitive to logging, grazing, and unnatural fire are at particular risk.	64	2	66	<i>Threatened Species Conservation Act 1995;</i> <i>Environmental Planning and Assessment Act 1979;</i> <i>National Parks and Wildlife Act 1974;</i> <i>Endangered Species Protection Act 1992;</i> Integrated Forestry Operations Approvals, Forest Management Zoning, and Management Plans.	Regional ESFM Plan (by April 2000); Native Forest Management System (by April 2001); NPWS Environmental Management System (by April 2001); NSW Biodiversity Strategy

WITHOUT PREJUDICE

National Estate Values	Sensitivity ^a and resilience ^b to forestry activities covered by the RFA	Percentage of value on Public Land in reserves			Existing off-reserve protection mechanisms	Additional agreed actions under the Eden RFA
		Dedicated Reserve	Informal Reserve	Total		
Vegetation Community Diversity (A3)	Value is dependent on individual community. Communities sensitive to logging, grazing, and unnatural fire are at particular risk.	57	1	58	<i>Threatened Species Conservation Act 1995;</i> <i>Environmental Planning and Assessment Act 1979;</i> <i>National Parks and Wildlife Act 1974;</i> <i>Endangered Species Protection Act 1992;</i> <i>Native Vegetation Conservation Act 1997;</i> Integrated Forestry Operations Approvals, Forest Management Zoning, and Management Plans.	Regional ESFM Plan (by April 2000); Native Forest Management System (by April 2001); NPWS Environmental Management System (by April 2001); NSW Biodiversity Strategy
Research, Type Localities, Teaching and Benchmark Sites (C.1)	Value is dependent on individual site purpose. Sites sensitive to logging, grazing, and unnatural fire are at particular risk.	29	-	29	<i>Threatened Species Conservation Act 1995;</i> <i>Crown Lands Act 1989;</i> <i>Heritage Act 1977;</i> <i>Soil Conservation Act 1938;</i> <i>Environmental Planning and Assessment Act 1979;</i> <i>Native Vegetation Conservation Act 1997;</i> <i>Protection of the Environment Operations Act 1997;</i> <i>Clean Water Act 1970.</i>	Regional ESFM Plan (by April 2000); Native Forest Management System (by April 2001); NPWS Environmental Management System (by April 2001)
Geoconservation Values (A1, A2, A.3, B.1, C.1, C.2, D.1, H.1)	Values are generally not sensitive to most forest uses, however some surface values are sensitive to soil disturbance and fire.	22	1	23	<i>Crown Lands Act (1989);</i> <i>Heritage Act 1977;</i> <i>Soil Conservation Act 1938;</i> <i>Environmental Planning and Assessment Act 1979;</i> <i>Native Vegetation Conservation Act 1997;</i> <i>Protection of the Environment Operations Act 1997;</i> <i>Clean Water Act 1970.</i>	Regional ESFM Plan (by April 2000)

WITHOUT PREJUDICE

National Estate Values	Sensitivity ^a and resilience ^b to forestry activities covered by the RFA	Percentage of value on Public Land in reserves			Existing off-reserve protection mechanisms	Additional agreed actions under the Eden RFA
		Dedicated Reserve	Informal Reserve	Total		
Historic Values (A.3, A.4, B.2, C.2, D.2, F.1, & H.1)	Sensitive to moderately sensitive dependant on the integrity of the site and extant fabric.	33	5	38	<i>Heritage Act 1977;</i> <i>National Parks and Wildlife Act 1974;</i> <i>Environmental Planning and Assessment Act 1979;</i> Forest Management Zones, Codes of Practice, and Forest Management Plans.	Cultural Heritage Management Guidelines (by end 1999); Regional ESFM Plan (by April 2000); Native Forest Management System (by April 2001); Joint NPWS/SFNSW Regional Recreation and Tourism Plans (by April 2001); NPWS Environmental Management System (by April 2001)
Social / Community Heritage Value (G.1)	Sensitive to moderately sensitive dependant on nature of association.	70	-	70	<i>Heritage Act 1977;</i> <i>National Parks and Wildlife Act 1974;</i> Forest Management Zones, Codes of Practice, and Forest Management Plans.	Cultural Heritage Management Guidelines (by end 1999); Regional ESFM Plan (by April 2000); Joint NPWS/SFNSW Regional Recreation and Tourism Plans (by April 2001); NPWS Environmental Management System (by April 2001)
Aesthetic Value (E.1)	Moderately sensitive dependant on the nature of the aesthetic experience and the type of feature.	79	-	79	<i>Heritage Act 1977;</i> <i>National Parks and Wildlife Act 1974;</i> Forest Management Zones, Code of Practice, and Forest Management Plans.	Cultural Heritage Management Guidelines (by end 1999); Regional ESFM Plan (by April 2000); Native Forest Management System (by April 2001); Joint NPWS/SFNSW Regional Recreation and Tourism Plans (by April 2001); NPWS Environmental Management System (by April 2001)

WITHOUT PREJUDICE

National Estate Values	Sensitivity ^a and resilience ^b to forestry activities covered by the RFA	Percentage of value on Public Land in reserves			Existing off-reserve protection mechanisms	Additional agreed actions under the Eden RFA
		Dedicated Reserve	Informal Reserve	Total		
Rare Flora (B.1) Flora Species at the Limits of Their Range (A.1) ^d	Value is dependent on individual species response. Species sensitive to logging, grazing, and unnatural fire are at particular risk.	Not Applicable	Not Applicable	Not Applicable	<i>Threatened Species Conservation Act 1995;</i> <i>Environmental Planning and Assessment Act 1979;</i> <i>National Parks and Wildlife Act 1974;</i> <i>Endangered Species Protection Act 1992;</i> Integrated Forestry Operations Approvals, Forest Management Zoning, and Management Plans.	Regional ESFM Plan (by April 2000); Native Forest Management System (by April 2001); NPWS Environmental Management System (by April 2001); NSW Biodiversity Strategy
Rare Fauna (B.1) Disjunct Fauna (A.1) ^d Fauna Species at the Limits of Their Range (A.1) ^d	High sensitivity to logging, grazing, unnatural fire and other forestry activities. Medium resilience to forestry activities.	Not Applicable	Not Applicable	Not Applicable	<i>Threatened Species Conservation Act 1995;</i> <i>Environmental Planning and Assessment Act 1979;</i> <i>National Parks and Wildlife Act 1974;</i> <i>Endangered Species Protection Act 1992;</i> Integrated Forestry Operations Approvals, Forest Management Zoning, and Management Plans.	Regional ESFM Plan (by April 2000); Native Forest Management System (by April 2001); NPWS Environmental Management System (by April 2001); NSW Biodiversity Strategy

NOTES ACCOMPANYING TABLE 1

^aSensitivity—to disturbance, relates to extent of loss or diminution in a value due to the effects of disturbance.

^bResilience—relates to the extent of likely recovery of a diminished value, and to the time and management effort required to achieve this recovery.

^cJANIS values for which there were specific numerical targets.

^dCriteria in plain type face are values which were assessed indirectly as part of the assessment of the criteria in bold type face.

WITHOUT PREJUDICE

ATTACHMENT 4 ~~NOT USED~~
(~~clause 37~~)

MILESTONES

Clause	Action	Timeline
5	The Parties to determine the process for extending the Agreement for a further period	As part of the third five-yearly review
17	The Parties to develop and consider regional development initiatives to be funded from unspent Commonwealth and State funds committed under the South East Forest Agreement	Within six months of signing this Agreement.
37	Parties to report annually on the achievement of milestones in this Agreement	Annually for the first five years
40	The Parties to determine the mechanism for the five-year review	Before the end of the five-year review period
46(b)	New South Wales to complete and publish plans of management for areas dedicated under the <i>National Parks and Wildlife Act 1974</i> (NSW)	By 1 January 2002
46(e)	New South Wales to complete and publish a Regional ESFM Plan for State forests	By 1 April 2000
46(d)	New South Wales to implement the Forest Management Zoning system for the Eden region	By 1 October 1999
46(f)	New South Wales to develop and implement an inventory system for regrowth forests and review the calculation of Sustainable Yield, using methods consistent with Attachment 11 and the principles and processes used in the Forest Resource and Management Evaluation System (FRAMES)	In time for the first five-yearly review.
46(g)	New South Wales to grant an Integrated Forestry Operations Approval covering the Eden region.	Within three months of signing
46(g)	New South Wales to develop and implement environmental management systems	Within five years of signing
49	New South Wales to report annually to Parliament on compliance with any Integrated Forestry Operations Approval for the Eden region and the New South Wales <i>Eden Region Forest Agreement</i> , and to furnish a copy to the Commonwealth	Annually from 1999
52(d)	Both Parties to further develop, review, and if necessary revise Sustainability Indicators	In time for the first five-yearly review

WITHOUT PREJUDICE

Clause	Action	Timeline
56	New South Wales to produce a code of practice for Timber Harvesting of native forest on Private Lands	By the first five-yearly review
86	New South Wales to review legislation and policies relevant to the allocation and pricing of hardwood logs from State forests as part of the Competition Principles Agreement	Before the end of 1999
87	New South Wales to establish a Research Liaison Committee and publish a list of research priorities	Within 12 months of signing
89	New South Wales to prepare a Compendium of New South Wales Forest Research	By the first five-yearly review
92 and 93	New South Wales and the Commonwealth to develop a data agreement and lodge archival copies of data	Within six months of signing
Att 1 Point 4	New South Wales to prepare plans of management for Crown Reserves	By 1 January 2002
Att 1 Point 7	New South Wales to establish all Dedicated Reserve and Informal Reserve components of the CAR Reserve System	Within six months of signing
Att 2 Table 1	New South Wales to develop Recovery Plans for species listed in Table 1	Within five years of signing
Att 3 Point 8	Both Parties to finalise Statewide Guidelines for the Management of Cultural Heritage Values and Places	End of 1999
Att 5 Point 1(p)	New South Wales to publish a State of Parks report	By April 2000
Att 5 Point 2(b)	New South Wales to publish the document Ecologically Sustainable Forest Management for the Eden RFA Assessment.	Within six months of signing
Att 5 Point 2(e)	New South Wales to document the basis for silvicultural practices and publish silvicultural guidelines for commercial forest types.	By 31 March 2000
Att 5 Point 2(d)	New South Wales to publish the results from the Yambulla and Tantawangalo Research Catchments	By the year 2000
Att 5 Point 2(e)	New South Wales to publish the results from the Eden Burning Study	By the first five-yearly review
Att 5 Point 2(f)	New South Wales to document and publish a description of the NSW Forest Management System covering Public and Private Lands	In time for the first five-yearly review

WITHOUT PREJUDICE

Clause	Action	Timeline
Att 5 Point 2(g)	New South Wales to publish a description of the FRAMES system referred to in clause 46 (f)	Within three months
Att 5 Point 2(h)	New South Wales to publish a description of the methods and results of calculating Sustainable Yield on Public Land.	By the first five-yearly review
Att 5 Point 2(h)	New South Wales to publish independent audits of Sustainable Yield as outlined in Attachment 11	For the second and subsequent five-yearly reviews
Att 5 Point 2(i)	New South Wales to table in each House of Parliament an annual report on the New South Wales <i>Eden Region Forest Agreement</i> in accordance with the <i>Forestry and National Park Estate Act 1998</i> (NSW) which will include an ESFM report and the outcomes of compliance with any Integrated Forestry Operations Approval for the region	Annually from 1999
Att 7 Point 12	New South Wales to incorporate codes of practice that address bush and other fires within Regional ESFM Plans and plans of management for areas dedicated under the <i>National Parks and Wildlife Act 1974</i> (NSW)	By the first five-yearly review
Att 7 Point 13	New South Wales to establishing a process, including public reporting, for regular audits of compliance and reviews of Codes of Practice, Eco Field Guides and/ Regional Prescriptions	By December 2002
Att 7 Point 13	New South Wales to undertake audits as described above.	By the first and subsequent five-yearly reviews of the Agreement
Att 11 Point 1	The Parties to commission, complete and publish a review of the systems and processes used, and the Sustainable Yield calculated from Public Land as a result of the New South Wales review of Sustainable Yield described in clause 46 (f)	By the first five-yearly review
Att 11 Point 2	New South Wales to undertake, complete and publish independent audits of Sustainable Yield	In time for the second and subsequent five-yearly reviews.
Att 11 Point 5	New South Wales to establish a continuous FRAMES development program for the Eden region consistent with the Statewide FRAMES	By the first five-yearly review

The milestones in this Attachment should be read in conjunction with the relevant clauses in the Agreement.

WITHOUT PREJUDICE

ATTACHMENT 5 NOT USED
(clauses 44 and 48)

~~PUBLIC REPORTING AND CONSULTATIVE MECHANISMS~~

~~Existing Commitments~~

~~1 The following processes currently include public reporting and consultative mechanisms relevant to the management of The Eden region's forests :~~

- ~~(a) preparation and amendment of Forest Agreements under the *Forestry and National Park Estate Act 1998* (NSW);~~
- ~~(b) preparation and amendment of Regional ESFM Plans under the Forestry Regulation 1974 (NSW) under the *Forestry Act 1916* (NSW);~~
- ~~(c) preparation and amendment of plans of management under the *National Parks and Wildlife Act 1974* (NSW);~~
- ~~(d) preparation and amendment of Integrated Forestry Operations Approvals under the *Forestry and National Park Estate Act 1998* (NSW);~~
- ~~(e) preparation and review of Codes of Practice;~~
- ~~(f) preparation, amendment and review of District Bushfire Management Committee plan of operations and Bush Fire Risk Management Plans (*Rural Fires Act 1997* (NSW));~~
- ~~(g) activities associated with the implementation of the *Threatened Species Conservation Act 1995* (NSW);~~
- ~~(h) activities associated with the implementation of the *Wilderness Act 1987* (NSW);~~
- ~~(i) nomination, preparation and possible contraventions of Recovery Plans and Threat Abatement Plans prepared under the *Endangered Species Protection Act 1992* (C'wth);~~
- ~~(j) listing of places on the Register of the National Estate under the *Australian Heritage Commission Act 1975* (C'wth);~~
- ~~(k) publication of State of the Environment reports including reporting against performance measures, Sustainability Indicators, audits, public participation, research and reviews;~~
- ~~(l) consultation with the Aboriginal community in relation to Aboriginal cultural heritage information;~~
- ~~(m) catchment management committees~~

WITHOUT PREJUDICE

- ~~(n) production of annual ESFM Reports on progress for meeting targets in Regional ESFM Plans and reporting on criteria, indicators and targets for the Eden region in accordance with the New South Wales *Eden Region Forest Agreement*~~
- ~~(o) production of annual Environmental and Social Values Report at a statewide level on the progress and performance of State Forests of NSW in accordance with the New South Wales *Eden Region Forest Agreement*~~
- ~~(p) publication of a New South Wales State of Parks report by April 2000~~
- ~~(q) production of an annual report for the New South Wales *Eden Region Forest Agreement* with respect to Ecologically Sustainable Forest Management in the region, and compliance with any Integrated Forestry Operations Approval for the region. As required by the *Forestry and National Park Estate Act 1998* (NSW).~~

Additional reporting and consultative mechanisms

~~2—Additional reporting and consultative mechanisms to be implemented by the State include:~~

- ~~(a) development of public participation mechanisms through the introduction of new partnerships (for example, the International Model Forest Network);~~
- ~~(b) publishing the document Ecologically Sustainable Forest Management for the Eden RFA Assessment within six months;~~
- ~~(c) Document the basis for silvicultural practices and publish silvicultural guidelines for commercial forest types by the 31 March 2000.~~
- ~~(d) publishing the results from the Yambulla and Tantawangalo Research Catchments by the year 2000;~~
- ~~(e) publishing the results from the Eden Burning Study by the first five yearly review;~~
- ~~(f) documenting and publishing a description of the New South Wales Forest Management System covering Public and Private Lands in time for the first five-yearly review.~~
- ~~(g) publishing within three months a description of the FRAMES system referred to in clause 46 (f).~~
- ~~(h) publishing by the first five yearly review a description of the methods and results of calculating Sustainable Yield on Public Land, and publishing in time for subsequent five yearly reviews independent audits of Sustainable Yield, as outlined in Attachment 11.~~
- ~~(i) from 1999 the New South Wales government will table in each House of Parliament an annual report on its *Eden Region Forest Agreement* which will include an ESFM report and the outcomes of compliance with any Integrated Forestry Operations Approval for the region.~~

WITHOUT PREJUDICE

ATTACHMENT 6 (clause 87)

RESEARCH PRIORITIES

- 1 The Parties agree to hold annual discussions on research themes, coordination and potential future directions.
- 2 New South Wales will prepare for each five-yearly review, a compendium of New South Wales Forest research that will provide a bibliography of research in progress, as well as published and unpublished works.
- 3 Research priorities for this Agreement will be updated in each five-yearly Progress Report and discussed at annual meetings.
- 4 The Parties agree to include a summary of forest related research in each five-yearly Progress Report and include an update on current research themes.
- 5 Current research themes include:
 - Forest ecology and sustainability, including flora, fauna, soil and water conservation;
 - Forest health and biosecurity;
 - Forest Products innovation and value adding;
 - Forest resource assessment and security;
 - Forest carbon, bioenergy and biofuels;
 - Climate change impacts and adaptive management;
 - Effectiveness of management prescriptions;
 - Socio-economic values of forest based industries;
 - Cultural values and cultural use;
 - Fire ecology;
 - Long-term water quality and quantity impacts associated with forestry operations; and
 - Matters of National Environmental Significance.
- ~~1 The major priority of future research in New South Wales will be an understanding of environmental impacts and the development of appropriate mechanisms to monitor and continually improve the sustainability of forest management practices. Accordingly, statewide research will continue on the following themes:~~

WITHOUT PREJUDICE

- ~~(a) silviculture;~~
- ~~(b) flora and fauna conservation;~~
- ~~(c) soil and water conservation;~~
- ~~(d) fire ecology;~~
- ~~(e) stem defect and wood quality in regrowth forests;~~
- ~~(f) climate change;~~
- ~~(g) biological inventory;~~
- ~~(h) value added end use;~~
- (i) Sustainability Indicators.

WITHOUT PREJUDICE

ATTACHMENT 7
(clauses 44, 46(g) and (g), 95.8, 95.9 and Attachment 3)

CONTINUAL IMPROVEMENTS TO OF THE NEW SOUTH WALES² FOREST MANAGEMENT SYSTEMS FRAMEWORK

New South Wales will further implement, adapt and improve its Forest Management Framework System across forest management agencies and land tenures by:

1 ~~NSW National Parks and Wildlife Service developing~~ maintaining an Environmental Management System environmental management system (EMS) or equivalent management system demonstrating ESFM, for lands dedicated under the *National Parks and Wildlife Act 1974* (NSW) consistent with the following broad principles:

- an appropriate environmental policy should be in place;
- the environmental aspects arising from the organisation's past, existing or planned activities, products or services should be identified to determine the environmental impacts of significance;
- relevant legislative and regulatory arrangements should be identified;
- priorities should be identified and appropriate environmental objectives and targets set;
- a structure and program(s) to implement the policy and achieve objectives and targets should be established;
- planning, monitoring, corrective action, auditing and review activities should be facilitated to ensure both that the policy is complied with and that the ~~environmental management system~~ EMS or equivalent management system remains appropriate;
- the system should be capable of adapting to changing circumstances.

2 ~~State Forests of NSW developing a Native Forest Management System as an EMS, with the objective of achieving system certification comparable with the ISO 14000 series~~ Forestry Corporation of NSW maintaining a Forestry Corporation of NSW Hardwood Forest Management System as an EMS and maintaining EMS certification under ISO14001 or a demonstrated equivalent environmental management system.

3 ~~Adopting the New South Wales Biodiversity Strategy, taking into account the issues raised during its public consultation phase~~ Implementing the New South Wales Biodiversity Strategy or any subsequent biodiversity strategy which complements ESFM.

4 ~~Establishing Regional Vegetation Management Plans~~ Implementing a native vegetation regulatory map and regulatory framework under the *Local Land Services Act 2013* (NSW) which are coordinated together with other management plans, and

WITHOUT PREJUDICE

~~which documents~~ allow for specific activities to occur ~~under Codes of Practice that~~ comply with Regulatory Instruments.

- 5 Improving the coordination and effective use of resources allocated to research for ESFM in New South Wales.
- 6 Providing ongoing formal public participation processes to raise awareness and understanding of ESFM and how it can be achieved in New South Wales forests.
- ~~7 Developing and implementing an~~ Implementing information management systems to facilitate the sharing of data for the use by all agencies, including local government, involved in the management of forested land.
- 8 Improving the cooperation and coordination between NSW Government agencies so as to achieve integrated management for conservation, wood production, and other values in Forests on both Public Land and Private Land ~~both public and private forests.~~
- 8A Developing and implementing a community awareness program to build understanding of ESFM and clearly relate these to management requirements for conservation and to the Regulatory Instruments governing activities in both public and private forests.
- 9 Improving administrative arrangements to ensure Ecologically Sustainable Forest Management on private forests including providing technical advice, extension services and research including assistance in the estimation of Sustainable Yield.
- ~~10~~ Maintaining and enhancing competency based training for field staff and forest operators staff or contractors undertaking Forestry Operations in flora and fauna identification and management, heritage management, soil and water protection, silvicultural training, inventory and management information systems, and Aboriginal cultural awareness and Aboriginal site identification. and product segregation.
- ~~11 Developing~~ Maintaining a Regional ESFM Plans or equivalent instrument which includes the ESFM strategy for the Eden region consistent with the New South Wales Eden Region Forest Agreement, any applicable Integrated Forestry Operation Approval applicable to the Eden region, and statutory requirements, and including:
 - Specification and description of the range of values and processes to be managed, including objectives and targets of management;
 - Descriptions of and links to Regulatory Instruments, standard operating procedures and guides or manuals Codes of Practice, ESFM plans, Eco Field Guides and associated silvicultural prescriptions;
 - Determination of Sustainable Yield ~~of wood values;~~
 - Ongoing arrangements for monitoring activities specified in the plan and reporting against plan objectives and targets;

WITHOUT PREJUDICE

- Processes for regular reviews of the plans involving public consultation.
- ~~12 Incorporating by the first five yearly review within Regional ESFM Plans and plans of management under the *National Parks and Wildlife Act 1974* (NSW), provisions that address bush and other fires to ensure ecologically sustainable management of the forest estate. These plans will be consistent with the NSW Biodiversity Strategy and any Bush Fire Risk Management Plans. Integrating bush fire management, including hazard reduction burning activities, across tenure via co-ordinated Bush Fire Management Plans under the *Rural Fires Act 1997* (NSW).~~
- ~~13 Establishing a process, including public reporting, for regular audits of compliance and reviews of Codes of Practice, Eco Field Guides and/ Regional Prescriptions by December 2002 and undertake audits at first and subsequent five yearly reviews of the Agreement. This process is to be included in any environmental management system, including the SFNSW Native Forest Management System. Integrating pest animal and weed control activities across tenure via Regional Strategic Pest Animal Management Plans and Regional Strategic Weed Management Plans, which have been developed to support regional implementation of the *Biosecurity Act 2015* (NSW) and NSW Biosecurity Strategy.~~
- ~~14 Granting Maintaining an Integrated Forestry Operations Approval under the *Forestry and National Park Estate Act 1998* Forestry Act 2012 applicable to for the Eden region, noting that the Integrated Forestry Operations Approval will include the following:~~
- terms under which Forestry Operations may legally occur;
 - conservation for ~~Environment and Heritage Values~~ environment values to levels of achievement consistent with Attachments ~~1, 2 and 3~~ 1 and 2;
 - measures for biodiversity conservation, environmental protection and conservation of soil and water protection and threatened fish protection;
 - ~~procedures for auditing and reporting compliance with the terms of the Integrated Forestry Operations Approval, including documentation requirements;~~
 - linkages to prescribed fire management arrangements; and
 - measures for the recording and collection of data to inform adaptive management and continual improvement of the Integrated Forestry Operations Approval.
 - ~~procedures for providing information to reviews and processes for incorporating results into a subsequent Integrated Forestry Operations Approvals.~~
- ~~15 The Parties note that procedures for reviewing Integrated Forestry Operations Approvals are set out in the *Forestry and National Park Estate Act 1998* Forestry Act 2012 (NSW).~~

WITHOUT PREJUDICE

16 The Parties note that the terms of an Integrated Forestry Operations Approval will have primacy over other elements of the ~~SFNSW Native Forestry Corporation of NSW Hardwood~~ Forest Management System. The Parties recognise that the ~~SFNSW Native Forestry Corporation of NSW Hardwood~~ Forest Management System (including ~~Codes of Practice, Eco Field Guides,~~ the Regional ESFM Plan, ~~the order of works plan, the plan of operations,~~ and harvesting plans), will be the mechanism for implementing the terms of the Integrated Forestry Operations Approval on State forest.

WITHOUT PREJUDICE

ATTACHMENT 8
(clause ~~46A~~ 52(a) and (e))

MONTREAL PROCESS CRITERIA FOR THE CONSERVATION AND SUSTAINABLE MANAGEMENT OF TEMPERATE AND BOREAL FORESTS

- Criterion 1: Conservation of biological diversity
- Ecosystem diversity
 - Species diversity
 - Genetic diversity
- Criterion 2: Maintenance of productive capacity of forest ecosystems
- Criterion 3: Maintenance of ecosystem health and vitality
- Criterion 4: Conservation and maintenance of soil and water resources
- Criterion 5: Maintenance of forest contribution to global carbon cycles
- Criterion 6: Maintenance and enhancement of long term multiple socio-economic benefits to meet the needs of societies
- Production and consumption
 - Recreation and tourism
 - Investment in the forest sector
 - Cultural, social and spiritual needs and values
 - Employment and community needs
- Criterion 7: Legal, institutional and economic framework for forest conservation and sustainable management

A framework for development of these criteria and indicators is described in the document, *A Framework of Regional (Sub-National) Level Criteria and Indicators of Sustainable Forest Management in Australia* (Department of Primary Industries and Energy 1998) *Australia's Sustainable Forest Management Framework of Criteria and Indicators 2008-Policy Guidelines* (Commonwealth of Australia, 2008).

WITHOUT PREJUDICE

ATTACHMENT 9 (clauses 46(e), 79)

MANAGING LANDS OF SIGNIFICANCE TO INDIGENOUS ABORIGINAL PEOPLE

- 4 New South Wales agrees to continue to manage CAR Reserve System reserve and State forest on Public Land lands with significance to Indigenous Aboriginal people according to the following principles:
- ~~It is recognised by both the Commonwealth and State Government that the sum of the cultural heritage of the Aboriginal people of New South Wales is not confined to archaeological sites and artefacts but may include natural values such as flora, fauna and landforms.~~
 - It is appreciated by both Parties that the Aboriginal people of NSW have a spiritual, social, cultural and economic relationship with their traditional lands and waters, sky, ceremonial and viewing corridors and songlines, including natural values such as flora, fauna and landforms.
 - The Parties recognise that the cultural heritage of the Aboriginal peoples of NSW is a living cultural heritage, and intrinsic to their well-being.
 - The Parties recognise that the cultural heritage of the Aboriginal peoples of NSW comprises both intangible elements (such as beliefs, knowledge and practices) and tangible elements (such as objects, landforms, and ancestral remains).
 - ~~The Parties recognise are aware of the aspirations Aboriginal people have in regards to ownership and/or management of traditional of lands and the rights of Aboriginal Land Councils under the *Aboriginal Land Rights Act 1983* (NSW) for certain Crown lands to be returned to Aboriginal peoples, and are committed to a working relationship with Aboriginal communities for co-operative management of Government managed lands as agreed which may include lands managed by NSW National Parks and Wildlife Service and State Forests.~~
 - Both Parties appreciate that the *Native Title Act 1993* (Cth) provides opportunities for Aboriginal people to make application to the Federal Court for their native title rights to be determined and to negotiate Indigenous Land Use Agreements with the NSW Government for the management of public lands in their native title area.
 - The Parties recognise the rights Aboriginal people have in regards to management of traditional lands, and are committed to a working relationship with Aboriginal communities for co-operative design of relevant strategies and policies and co-operative management of Government managed lands as agreed, which may include lands managed by NSW National Parks and Wildlife Service and the Forestry Corporation of NSW.

WITHOUT PREJUDICE

- An integral part of this commitment to co-operative management is the transmission of culture to provide opportunity increase in opportunities for local Aboriginal people to gain valuable land management access training and subsequent to gain employment, where possible, to ensure that Aboriginal people can continue to strategically manage effectively participate in the management of their traditional country, where that country includes Forests on Public Land.
- The New South Wales Government has provided for Aboriginal people to own lands reserved under the *National Parks and Wildlife Act 1974* (NSW) that are of cultural significance to them through the *National Parks and Wildlife Amendment (Aboriginal Ownership) Act 1996* (NSW). Both Parties ~~appreciate~~ acknowledge that there are National Parks and reserves within the Eden region that may meet the terms of the ~~Act~~ *National Parks and Wildlife Act 1974* (NSW), and actively advocate the assessment of the Eden region for this purpose.
- Both Parties support initiatives between Government agencies (both State and Local) and Aboriginal communities, that will both strategically manage and preserve New South Wales' rich cultural heritage, and ensure that ~~all development~~ the maintenance and enhancement of the CAR reserve Reserve System ~~appropriately~~ considers Indigenous Aboriginal interests and values.
- The Parties will, with Aboriginal stakeholders, identify funding opportunities to support Aboriginal participation in forest management, in particular any Forest Estate areas identified as of special significance to Aboriginal people in the Eden region, for example Working on Country and Indigenous Protected Area programs.
- Aboriginal parties will be invited to participate in any new partnership arrangement evolved out of this Agreement for the management of the CAR reserves Reserve System.
- The management arrangements for access to and use of Ben Boyd National Park and Nadgee Nature Reserve will be resolved by a formal process between the NSW National Parks and Wildlife Service and Aboriginal people.
- The Parties recognise that ~~Aboriginal people may~~ Traditional Owners under the Native Title Act 1993 (Cth) have the opportunity to obtain or maintain right to access to and use certain Government managed lands for the purposes of cultural practice recreational, as well as traditional values and uses, and ceremonial purposes, and that opportunities may exist for the commercial development of areas of cultural/economic significance. This includes access to Forest Products.
- The NSW Government recognises that opportunities exist for Aboriginal people in the commercial development of areas of economic significance or in the commercial use of Forest Products, and agrees to respond to requests from the Aboriginal community to develop these opportunities, for example through existing training and mentoring programs.

WITHOUT PREJUDICE

2 The Parties agree to use best endeavours to meet and exceed government Aboriginal employment and procurement targets in the Eden RFA region, particularly in relation to public Forests and cultural heritage management.

Management of additional areas of National Park

~~2 The creation of 33 000 hectares of National Parks additions in the Eden region, including the addition of 7 760 hectares to the Brogo Wilderness and the declaration of the new 15 950 hectares Yowrie Wilderness is a key outcome. The need is recognised for additional NSW National Parks and Wildlife Service staff to be employed in the management of the additional reserve areas, including four Aboriginal staff to specifically manage areas of significance to the Aboriginal community. Fourteen positions including four Aboriginal staff are expected to be employed in cultural heritage and joint management initiatives, supported by \$1.2 million per annum over five years funded by the New South Wales Government.~~

WITHOUT PREJUDICE

ATTACHMENT 10 NOT USED
(clause 98)

PROPOSED EMPLOYMENT AND INDUSTRY DEVELOPMENT INITIATIVES

~~Consistent with clause 98 the following proposed employment and industry development initiatives will be given priority for consideration. The indicative funding requirements and employment benefits outlined below have been developed by New South Wales.~~

Eden Recovery Mill

~~3 Tablelands Sawmills Pty Ltd currently operates hardwood sawmills at Bombala and Cooma and is undertaking restructuring of sawmilling in the region following the CRA process. This initiative will see Tablelands Sawmills develop a new recovery sawmill at Eden, utilising Quota Sawlogs and non quota Sawlogs, kilns drying and other processes to maximise production of solid wood products, to maximise value-adding opportunities. The recovery sawmill will be constructed on the old Boral sawmill site in Eden and will employ workers from the existing Tablelands sawmills at Cooma and Bombala.~~

~~*Indicative funding requirements* : \$12 million for the project which would include a significant contribution from industry.~~

~~*Employment benefit at indicative funding levels*: 44 positions in total, which would include 4 additional jobs in sawmilling when the recovery operation is fully implemented.~~

Export of Pulplogs from Bombala Plantations

~~4 This project, which commenced operation in January 1999, provides for a short-term harvesting and haulage subsidy for thinning the 34 000 hectare softwood plantation at Bombala and exporting the pulplogs to Indonesia, Korea and Japan. The project utilises the new log export facilities at Port Kembla and will provide maximum regional benefits as well as creating employment opportunities including opportunities for displaced timber workers.~~

~~*Indicative funding requirements*: \$1.333 million per annum over three years.~~

~~*Employment benefit at indicative funding levels*: 30 new positions.~~

Commercial Regrowth Thinning

~~5 Opportunities exist in the Eden region to expand the mechanised thinning of regrowth native forest. This initiative would provide financial assistance to enable transfer of activities from mature stand harvesting to commercial regrowth thinning. Financial assistance would be required for a period of five years enabling sufficient growth of the productive forest to enable operations on a fully commercial basis after this time.~~

WITHOUT PREJUDICE

Indicative funding requirements: \$2.0 million over 5 years.

Employment benefit at indicative funding levels: 5 positions.

Sustainable Sawlog Production (Thinning and Fertilising)

~~6—Since 1996 State Forests of NSW has undertaken a pilot project in the Eden Management Area to undertake thinning of young regrowth stands using brushcutters and chainsaws. The results indicate that this work is beneficial in promoting the future volume and value of Sawlogs and other high value log products. This forest management initiative would extend this thinning program.~~

Indicative funding requirements: \$700 000 per annum over five years

Employment benefit: 11 new positions for five years.

Resource Inventory

~~7—It is a fundamental requirement that further resource inventories be undertaken to continually monitor the extent and growth of the regrowth timber resource in the Eden region. This is and will be used to support ongoing management of the timber production forest to include regrowth stands so that identification of their timing as a source of future Sawlog supplies is achieved.~~

Indicative funding requirements : \$1 million over 5 years

Employment benefit at indicative funding levels: 4 new positions for five years.

Aboriginal Community Development

~~8—There is a clear need to provide Aboriginal communities with increased opportunities to pursue traditional cultural activities, cultural heritage management and new economic ventures. This initiative will provide jobs in the Aboriginal community through training and use of Aboriginal cultural heritage management skills. However, development of suitable infrastructure is important to meet the needs of the community and to undertake cultural heritage management activities. This initiative recognises the need for funding in order to plan on site works before such ventures could become self funding.~~

Indicative funding requirements: \$150 000 over 2 years.

Employment benefit at indicative funding levels: Would develop jobs in the local Aboriginal community, via the provision of suitable training and infrastructure requirements.

Training in Environmental Management

~~9—State Forests of NSW and the industry are developing a further series of training courses in environmental management that will meet national competency standards. The training course will be designed to underpin the Environmental Management System (EMS) to be implemented by State Forests. The courses will focus on a ‘continuous improvement’ objective via a specific contractor skill~~

WITHOUT PREJUDICE

~~improvement strategy. The courses under development will complement timber workers' existing training, by incorporating flora and fauna management, archaeology and cultural heritage. It is intended that all industry personnel will undertake this training over a two year period. Financial assistance in the form of seed funding would be necessary for the development and delivery of the courses and to ensure that they are self-sustaining in the longer term.~~

~~*Indicative funding requirements:* \$1 million over a two year period.~~

~~*Employment benefit at indicative funding levels:* Although considered employment neutral, there would be a need for administrators and course facilitators for the duration of the training.~~

WITHOUT PREJUDICE

ATTACHMENT 11
(clauses 2, 46(f), 72, 73, 95.6)

SUSTAINABLE YIELD SYSTEMS AND PROCESSES

~~1 The Parties agree to commission a review of the systems and processes used, and the Sustainable Yield calculated from Public Land as a result of the New South Wales review of Sustainable Yield described in clause 46 (f), to be completed and published in time for the first five yearly review. The Parties agree that Sustainable Yield calculations and the method and processes used, are important in realising ESFM on the State forest and Crown-timber land estate.~~

1A The Parties agree that FRAMES provides a sound basis for volume allocations at the strategic level and will be used to estimate Sustainable Yield. Further information on FRAMES and its history and implementation can be found in the document *Forest Resource and Management Evaluation System (FRAMES) – A Report on its Development and Implementation to 30 June 2016* (FCNSW).

~~2 New South Wales will undertake independent audits of Sustainable Yield to be completed and published in time for each subsequent five yearly review New South Wales will review and update Sustainable Yield calculations from State forest at least once every five-year review period, or more frequently on an as needs basis. Sustainable Yield calculations will be based on modelling with the goal of yielding the maximum non-declining yield of High Quality Logs over a minimum period of 100 years.~~

~~3 Reviews and audits carried out in accordance with paragraphs 1 and 2 shall have regard to the commitments in paragraph 5. New South Wales will commission an independent audit of Sustainable Yield calculations at least once every five-yearly review period having regard to the elements in item 5.~~

3A New South Wales will make publicly available the independent audit of Sustainable Yield calculations by publication on the website of the relevant department or agency. Sustainable Yield calculations will address relevant Forest Products for the Eden region, which may include High Quality Logs, Low Quality Logs, Pulpwood and Other Wood Products.

~~4 Any changes in the volumes specified in clause 73 volume allocations to the timber and forest-based industries will be based on Sustainable Yield and be consistent with modelling using FRAMES or an equivalent system.~~

~~5 New South Wales will establish a continuous FRAMES development program for the Eden region consistent with the Statewide FRAMES and including the following elements before the first five yearly review New South Wales will maintain a continual improvement program for FRAMES including the following elements:~~

- ~~• Establishing processes for appropriate internal reviews and audits of Sustainable Yield as part of the Forestry Corporation of NSW Hardwood Forest Management System.~~

WITHOUT PREJUDICE

- Document and review systems, processes, models and databases used in the calculation of Sustainable Yield specifically:
 - growth models and growth model inputs;
 - inventory plot currency and measurement;
 - spatial inputs that determine the modelled net harvest area;
 - silviculture, product recovery, yield tables and modelling assumptions to ensure that the modelled outputs reflect current practices and actual yields;
 - resource risk management aspects and mitigations (e.g. changes to the model due to resource loss through fire, changes to legislation or Regulatory Instruments that alter access to the resource and invalidate current modelling assumptions, or other impacts associated with climate change); and
 - monitor and publish a reconciliation of predicted versus actual Forest Products yields in the third and fifth years of every five-year period.
- ~~Continuous monitoring of predicted versus actual annual product yields and component measures as described in Section 3.5 of the New South Wales Eden Region Forest Agreement;~~
- ~~Increasing the number and coverage of permanent growth plots to cover an appropriate range of sites, as described in Section 3.1 of the New South Wales Eden Region Forest Agreement;~~
- ~~Continuing permanent growth plot measurement, updating growth models and development of new models to reflect changing silviculture and thinning regimes;~~
- ~~Implementing an ongoing system of strategic inventory plot measurement as described in section 3.5 of the New South Wales Eden Region Forest Agreement;~~
- ~~Implementing a harvest monitoring and mapping program that progressively improves estimates of net harvestable area and informs monitoring and reporting against Sustainability Indicators as described in Attachment 9 of the New South Wales Eden Region Forest Agreement;~~
- ~~Implementing a system to validate simulation models and carry out sensitivity analyses to help determine the likely error associated with the estimate of Sustainable Yield;~~
- ~~Implementing a repeatable process for scheduling Sustainable Yield that optimises sustainable use objectives consistent with the New South Wales Eden Region Forest Agreement;~~

WITHOUT PREJUDICE

- ~~Implementing a process to take into account the risk of fire, changes in Integrated Forestry Operations Approvals and other potential risks in calculating Sustainable Yield;~~
- ~~Documenting systems, processes, models and databases used in the calculation of Sustainable Yield;~~
- ~~Establishing processes for appropriate internal reviews and audits of Sustainable Yield as part of the SFNSW Native Forest Management System.~~

WITHOUT PREJUDICE

ATTACHMENT 12
(clauses ~~32~~53A, 55, 64, 64A and Attachment 1)

CONSERVATION MECHANISMS ON PRIVATE LAND

- 1 Both Parties agree that CAR Values on Private Land are complementary to the CAR Reserve System identified on Public Land.
- 2 Both Parties agree that in complementing the CAR Reserve System on Public Land, conservation on Private Land can only be voluntary.
- 2A Both Parties recognise that for Private Land to be included in the CAR Reserve System, the conservation mechanism (as outlined in point 5) applied must be legally binding and in-perpetuity.
- 3 Both Parties agree that the ~~principles that~~ following objectives should apply to the voluntary ~~protection~~ conservation of CAR Values on Private Land ~~are as follows:~~
 - seek to maximise protection of agreed CAR Values;
 - that the processes are clearly understood by the community;
 - ~~are~~ that real partnerships are developed;
 - that the outcomes will provide benefits for all parties; and
 - that actions must be strategic and integrated.
- 4 Both Parties agree that the most important elements in any mechanism designed to achieve conservation management on private forested land in the Eden region are:
 - effectiveness of the outcomes;
 - ownership of the process;
 - simplicity of the process;
 - clarity of roles of the participants;
 - certainty of the outcomes;
 - flexibility in the approaches adopted; and
 - equity between participants.
- 5 Both Parties agree that a range of conservation mechanisms are applicable to Private Land. These may include mechanisms which are legally binding and in-perpetuity, or non-legally binding and/or fixed term, such as:
 - voluntary options under the Conservation Partners Program;

WITHOUT PREJUDICE

- ~~Voluntary Conservation Agreements~~;
 - landholder initiated agreements;
 - noncontractual voluntary agreements;
 - fee for service;
 - voluntary acquisition;
 - fixed term common law contract;
 - in perpetuity common law contract;
 - community grants;
 - property management plans;
 - voluntary land and water management plans; and
 - other mechanisms that may be developed to suit individual landholders or situations.
- 6 Both Parties agree that capacity building within the private landholder estate to support individual and community decision making are prerequisites to the voluntary processes outlined above.
- 7 Forest Ecosystems that require conservation on Private Land have been listed and prioritised in Table 1.
- ~~8 NSW will establish a Regional Vegetation Committee in the Eden region and provide it with funding to provide for the conservation of Forest Ecosystems that are rare or non-existent on Public Lands. Short term employment positions are expected to be available over two years. The areas of priority Forest Ecosystems and Non-Forest Ecosystems in the CAR Reserve System on Private Land as at June 2016 are provided in Table 1A.~~

Table 1 Priorities for the CAR Reserve System on Private Land

Priority for voluntary protection of Forest Ecosystems <u>on Private Land</u>		
High Priority	Moderate Priority	Low Priority
<i>Forests</i>		
20 Bega Dry Grass Forest	1 Dry Rainforest	22A 73 Monaro Dry Grass Forest
21 Candelo Dry Grass Forest	71 Monaro Basalt Grass Woodland	
40 Riverine Forest	36 Dune Dry Shrub Forest	
<i>Non-Forests</i>		
23 Monaro Grassland	39 Northern Riparian Scrub	

WITHOUT PREJUDICE

60 Floodplain Wetlands		
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Table 1A Area of priority Forest Ecosystems and Non-Forest Ecosystems in the Eden RFA region CAR Reserve System on Private Land as at June 2016

<u>Forest Ecosystem</u>	<u>Total Ecosystem Area (hectares)</u>	<u>Area in CAR Reserve System on Private Land (hectares)</u>	<u>Proportion in CAR Reserve System on Private Land as at 30 June 2016 (%)</u>
20 Bega Dry Grass Forest	3,808	63	1.7
21 Candelo Dry Grass Forest	1,463	5	0.3
40 Riverine Forest	65	0	0
1 Dry Rainforest	42	0	0
71 Monaro Basalt Grass Woodland	3,387	2	0.1
36 Dune Dry Shrub Forest	603	10	1.7
73 Monaro Dry Grass Forest	3,615	0	0
<u>Non-Forest Ecosystem</u>			
73 Monaro Grassland	331	0	0
60 Floodplain Wetlands	516	0	0
39 Northern Riparian Scrub	485	2	0.4

It should be noted that these are priorities only for protection by voluntary conservation mechanisms.

Rainforest Protection

- 9 Rainforest is protected from Forestry Operations in accordance with the Private Native Forestry Code of Practice.

Old Growth forest

- 10 Old Growth forest is protected from Forestry Operations in accordance with the Private Native Forestry Code of Practice.

Additional Protection for Forest Ecosystems

- 11 Under the Private Native Forestry Code of Practice, Forestry Operations in and adjacent to specified landscape features must comply with requirements to protect these features. This includes requirements to protect endangered ecological communities, endangered populations, vulnerable ecological communities, wetlands, heathland, rocky outcrops and steep slopes.
- 12 The Private Native Forestry Code of Practice contains standards for the protection of threatened ecological communities and threatened species.

Protections on Private Land subject to Plantation authorisation

- 13 For Plantations on Private Land, the Plantations and Reafforestation (Code) Regulation 2001 (NSW), contains standards for the protection of soil and water, biodiversity, and places, objects or items of heritage significance.

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ATTACHMENT 13 NOT USED
(clause 92)

~~DATA ACCESS PRINCIPLES~~

~~1. Introduction~~

~~The intention of these principles is to ensure that the data used in the NSW Regional Forest Agreements (RFAs) is readily accessible and available to assist in the development and ongoing implementation of the RFA. It is not generally intended that the data will be used as a mechanism for obtaining income for either government.~~

~~This document is intended to provide procedures for issues related to data access, distribution, ownership and custodianship for the NSW CRA/RFA process.~~

~~This document expands on the data related principles described in the Scoping Agreement for the NSW RFA. Where an interpretation of a Scoping Agreement principle is made the Scoping Agreement is referred to.~~

~~The Scoping Agreement does not explicitly deal with access to software tools that will be used in the NSW CRA/RFA. Access to software tools by agencies and other stakeholders will be dealt with by the Steering Committee on a case by case basis.~~

~~Non-government participants will have access to data in accordance with this document until the signing of the relevant RFA. In all instances data will be provided to non-government participants at avoidable cost only.~~

~~The issue of ongoing access to data by non-government participants beyond the signing of the RFA will be addressed as part of the development of the RFA in accordance with the principles set out in this document.~~

~~2. Definitions~~

~~For the purpose of this paper the following definitions will apply:~~

~~*Archived Data:* These data includes source, derived and assessment data which was used to develop the RFA, and shall be accompanied by metadata. The Data Archive is designed to ensure base line data is available for undertaking RFA reviews. Access shall be consistent with the principles contained in this document and arranged through the custodian.~~

~~*Assessment Data:* All assessment and integration project outputs and products required to complete the NSW Regional Forest Agreements (as determined by the Joint Steering Committee).~~

~~*Avoidable Cost:* Cost of supply or transfer. The cost incurred in supplying or transferring the information, which would not have been incurred had the transaction not taken place.~~

~~*Custodian:* A custodian of data, or component of that data, is an individual or organisation having the responsibility to ensure that the data is collected and maintained according to specifications and~~

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priorities determined by consultation with the user community, and made available to the community under conditions and in a format that conform with established standards and policies (eg ANZLIC Guidelines for Custodianship, 1998).

<i>Data Availability:</i>	Access and exchange of data via electronic and other means and with the knowledge and advice of the custodian subject to a data agreement.
<i>Data Licence Agreement:</i>	A document which authorises the use of a data set or a number of datasets for a specified purpose. The Licence agreement will also specify any restrictions on the use of the data sets.
<i>Derived Data:</i>	This includes data which is obtained by analysis, modelling, aggregation or other complex manipulation of data. A derived data set can have either source data or other derived data sets as inputs to its creation.
<i>Existing Data:</i>	Data and/or data sets that existed in either Commonwealth or NSW State agencies prior to commencement of assessment or integration projects.
<i>Metadata:</i>	Information about data or datasets including descriptions or specifications of source data or derived information. Metadata are to be recorded in a standard format.
<i>Owner:</i>	The individual organisation or jurisdiction that holds the intellectual property rights over a particular set of information or data.
<i>Software Licence:</i>	A document authorising the use of Software for either general use or for specified purposes.
<i>Software:</i>	Systems, programs and other software tools to be used in assessments (CRAs) and negotiation/integration.
<i>Source Data:</i>	Data which is not obtainable from other data or derivable by combining other data sets.
<i>Trustee:</i>	The individual or organisation holding and maintaining a data set for CRA/RFA use. The trustee may hold and distribute data on behalf of the custodian for CRA/RFA purposes. The responsibilities of the Trustee are only valid prior to the signing of the RFA/s to which the data relates.

3. Metadata

The Australia New Zealand Land Information Council (ANZLIC) metadata standards as supplemented for the NSW CRA/RFA process (see CRA Data Manual) will be used to describe all Source Data and Derived Information. Metadata for a given data set is the responsibility of the custodian for that data set and will be freely exchanged in electronic form.

All Metadata must be approved by the Steering Committee.

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~~The ANZLIC metadata standard has been adopted as the metadata standard for the NSW CRA/RFA. (Reference: ANZLIC Guidelines: Core Metadata Elements: Version 1—Metadata for high level land and geographic data directories in Australia and New Zealand. ANZLIC 1996.).~~

~~4. Data Access Categories~~

~~There are three categories of data access:~~

- ~~i) Restricted~~
- ~~ii) Licensed~~
- ~~iii) Unrestricted~~

~~It is envisaged that, over time, data may be reclassified from one access category to another, subject to the approval of the data owner(s) and the notification of the custodian of this reclassification.~~

~~5. Existing Source Data~~

~~It is the responsibility of each Technical Committee to ensure that every project conforms to the data audit procedures. The Data Audit Process document describes the process to be followed for data audit and accreditation for the NSW RFAs.~~

~~All source data will be described by standard metadata preferably supplied by the provider.~~

~~Existing access arrangements imposed by the custodian shall apply to existing source data. Where source data is used as an input to a derived dataset, access to the derived dataset shall be consistent with the principles outlined in section 7 of this document.~~

~~Where a need is demonstrated, existing source data will be exchanged between participants subject to a data agreement and to any confidentiality provisions which limits its usage beyond that specifically agreed to for the purposes of the RFA.~~

~~Release of existing source data will be determined by the Steering Committee in accordance with section 19d of the Scoping Agreement.~~

~~6. Newly Funded Data~~

~~The NSW Scoping Agreement states:~~

~~“Where the Commonwealth contributes funds for data collection or collation, the new and enhanced data will be considered jointly owned and New South Wales agrees to provide this data to the Commonwealth electronically in map and tabular form as appropriate.” (clause 22)~~

~~Furthermore, it is the responsibility of the Steering Committee to “agree on the ownership of all data and priorities for data exchange” (clause 6).~~

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~~Therefore, in accordance with the principles of the Scoping Agreement, all information whose collection and collation is jointly funded by the Commonwealth and the State for the implementation, monitoring or reporting of the RFA, wherever it is prepared in a form capable of ownership, will become jointly owned unless otherwise agreed by the joint Commonwealth and NSW Steering Committee (see Single Ownership of Newly Funded Data below).~~

~~Details of custodianship, management, maintenance, access and use will be agreed to on a case by case basis, according to whether data is classified as 'Restricted', 'Licensed' or 'Unrestricted'. Each of these categories has different content, management, maintenance access and use as detailed below. The classification of each dataset will be agreed on a case by case basis and will apply to the datasets agreed for the purposes of the RFA.~~

~~Assessment data consisting of newly funded data will be freely exchanged and available to the non-custodian Government and stakeholders for the purpose of the RFA and subject to any confidentiality provisions contained in the Scoping Agreement (SA para 20 refers).~~

~~All newly funded source data will be described by standard metadata.~~

Jointly Owned Newly Funded Data

Restricted Data

- ~~• Restricted data is data which is considered sensitive by a data owner(s) and is only available to third parties by agreement of both owners on a case by case basis.~~
- ~~• The State and Commonwealth governments will agree on the appointment of a single custodian to manage, maintain and release the data.~~
- ~~• A non-custodian owner will be provided with an up to date copy of the data on request.~~

~~Except where both data owners agree, Restricted Data may only be used for:~~

- ~~• RFA purposes (to be defined)~~
- ~~• Provision of advice to State or Commonwealth Ministers~~
- ~~• Fulfilling statutory obligations that do not relate to the RFA~~

~~Access to Restricted Data by third parties will be subject to users entering into a formal licence agreement with the custodian. It will be the custodian's responsibility to obtain the agreement of both owners before the data may be released.~~

~~The custodian will maintain a register of all data transfers which will be available to either government.~~

WITHOUT PREJUDICE

Licensed Data

- ~~Licensed data will be available to third parties under a licence agreement with the custodian.~~
- ~~The State and Commonwealth governments will agree on the appointment of a single Custodian to manage, maintain and release the data.~~
- ~~A non-custodian owner will be provided with an up to date copy of the data on request.~~

~~Licensed data may be used:~~

- ~~by the Commonwealth or State for any internal government purpose; or~~
- ~~by any third party upon request.~~

~~The custodian will maintain a register of all data transfers which will be available to either government.~~

Unrestricted Data

- ~~Unrestricted data is freely available to the public without restriction.~~
- ~~The State and Commonwealth governments will agree on the appointment of a single custodian to manage, maintain and release each dataset.~~

~~Unrestricted data and products may be used:~~

- ~~for unrestricted use subject only to the copyright interests of the data owners being protected by the inclusion of the normal copyright symbol and a prominent statement on all data that “copyright is vested in the Crown in Right of the State of New South Wales and the Crown in Right of the Commonwealth of Australia”.~~

Singly Owned Newly Funded Data

~~Where the RFA process has funded only the enhancement of, or minor additions to, existing data there may be a case for granting single ownership of the new and enhanced data to the owner of the existing data. In such instances the Data Owner will instruct the custodian to grant the other government a licence agreement in accordance with the data classification.~~

7. ~~Derived Data~~

~~It is recognised that derived data relates to those coverages and products used at the time of Integration and not any later modifications of those data.~~

~~Derived data will customarily be jointly owned by the Commonwealth and NSW governments subject to the agreement of the custodian (or custodians in the case of multiple source data layers) and the lead agency involved in its derivation.~~

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~~The custodian of the derived data will be agreed to by both governments subject to the agreement of the custodian of the source data and the lead agency~~

~~involved in its derivation.~~

~~Both governments agree to negotiate in good faith to resolve the issues of ownership, custodianship and access to the data.~~

~~Derived data will fall into three access categories, namely restricted data, licensed data and unrestricted data.~~

Restricted Derived Data

- ~~• Restricted data is data which is considered sensitive by a source data owner or the lead agency responsible for the derivation of the data. It is only available to third parties by agreement of both owners on a case by case basis.~~
- ~~• The State and Commonwealth governments will agree on the appointment of a single custodian to manage, maintain and release the data.~~
- ~~• A non custodian owner will be provided with an up to date copy of the data on request.~~

~~Except where both data owners agree, Restricted data may only be used for:~~

- ~~• RFA purposes (to be defined);~~
- ~~• Provision of advice to State or Commonwealth Ministers;~~
- ~~• Fulfilling statutory obligations that do not relate to the RFA.~~

~~Access to Restricted data by third parties will be subject to users entering into a formal licence agreement with the custodian. It will be the custodian's responsibility to obtain the agreement of both owners before the data may be released.~~

Licensed Derived Data

- ~~• Licensed Derived data will be available to third parties by agreement with the custodian.~~
- ~~• The State and Commonwealth governments will agree on the appointment of a single Custodian to manage, maintain and release the data.~~
- ~~• A non custodian owner will be provided with an up to date copy of the data on request.~~

~~Licensed Derived Data may be used:~~

- ~~• by the Commonwealth or State for any internal government purpose; or~~
- ~~• by any third party upon request.~~

WITHOUT PREJUDICE

~~Access to Licensed Derived data by third parties will be subject to users entering into a formal licence agreement signed by the custodian. The custodian will maintain a register of all data transfers which will be available to either government on request.~~

~~Each of the agreed derived data sets is to be described by metadata by the dataset creator and as approved by the Steering Committee.~~

~~Assessment data consisting of derived data sets and products will be freely exchanged and available to the non-custodian government and stakeholders for the purpose of the RFA and subject to any confidentiality provisions contained in the Scoping Agreement (SA para 20 refers).~~

~~During the RFA process, the provision and presentation of derived information to third parties will be determined by the Steering Committee.~~

~~Issues relating to the intellectual property of derived data sets will be~~

~~addressed in a fashion consistent with that outlined above on a case by case basis consistent with clause 19 (d) of the Scoping Agreement.~~

~~*Unrestricted Derived Data*~~

- ~~• Unrestricted derived data is freely available to the public without restriction.~~
- ~~• The State and Commonwealth governments will agree on the appointment of a single custodian to manage, maintain and release each dataset.~~

~~Unrestricted Derived Data and products may be used:~~

- ~~• for unrestricted use subject only to the copyright interests of the data owners being protected by the inclusion of the normal copyright symbol and a prominent statement on all data that “copyright is vested in the Crown in Right of the State of New South Wales and the Crown in Right of the Commonwealth of Australia”.~~

~~**8. Assessment Data**~~

~~For each study in the RFA process, the Steering Committee will agree on what data sets (draft and final) will be required to enable the RFA to be developed.~~

~~This assessment data will usually comprise both derived data and source data, for example, fauna and flora models, woody/non-woody cover and the planning unit layer.~~

~~Some data may also be required to provide context for the integration phase of the process.~~

~~Where necessary, agreement may be needed from the relevant Technical Committee on how these derived information sets are expressed as products. An example would be a map showing a number of classes at a particular scale.~~

~~Assessment data will be released for distribution as final draft with endorsement of the relevant Technical Committee. To be considered a final draft, a data set will include metadata to the agreed standard.~~

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~~The final data to be used in integration and options development must be approved by the Steering Committee with advice of the Technical Committees.~~

~~Assessment data will normally be available to all relevant parties to the CRA/RFA at the completion of the relevant project, subject to paragraph 19(d) outlined in the Scoping Agreement and other appropriate sections of this document.~~

~~9. Participant access to works in progress~~

~~The release of draft data is generally discouraged due to difficulties directly related to the incomplete nature of the dataset. These difficulties include decreased data integrity and issues that arise from having more than one representation of the same theme. However, it is recognised that there are a number of instances where it appropriate for some groups or individuals to obtain access to draft datasets.~~

~~*Approval by Chairs of Technical Committee*~~

~~Generally, approval for the release of draft data shall be decided on a case by case basis by the Co Chairs of the technical committee responsible for the project to which the draft data relates.~~

~~Draft data may be released:~~

- ~~• to test or prototype an approach, or to trial formatting and data conversion techniques (N.B. Data is to be used for testing purposes only, and not used to derive a product for use in the CRA/RFA process); or~~
- ~~• to satisfy statutory requirements not related to the RFA (e.g. use of fauna records to assist SFNSW in setting fauna management prescriptions as part of harvest plan preparation).~~

~~If the release of draft data is approved, data may be released to:~~

- ~~• agency personnel, stakeholders or consultants who are actively involved in the conduct of the project (i.e. performs compilation, collation, validation, interpretation or analyses tasks) to which the data relates, or a project reliant on the draft data for testing purposes; and/or~~
- ~~• agency personnel who are reliant on the draft data to satisfy statutory requirements on behalf of the agency requesting the draft data.~~

~~*Approval by Chairs of Data Management Group*~~

~~In circumstances where a project is dependent on the output data from other projects to facilitate its completion, release of an incomplete dataset may increase the risk of having two diverging datasets for the same theme. Requests for the release of draft data in such cases shall be determined by the Co Chairs of the CRA Data Management Group.~~

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Project managers should consider the following issues before requesting release of draft data for such purposes (the Co-Chairs will also base their decision on consideration of these issues):

- the consequences for the project of the requesting agency of not receiving the draft data;
- the scope for the project to wait for the completed dataset; and
- the likelihood of two diverging datasets for the same theme occurring and the impact on the CRA/RFA process of such an occurrence.

Where access to draft data is approved the Data Trustee will provide access and a data licence agreement for the draft data. The Data Trustee will make the data available to the recipient:

- as early as possible after the request;
- in electronic form;
- with metadata attached (as per the CRA Data Manual) including information indicating the limitations of the particular version; and;
- appropriate advice on the use of the data

10. — Data Licence

Unless otherwise agreed by the owner(s) of the data, all data distributed to third parties or for use within the RFA process will be accompanied by a data licence covering access and use. The custodian of the data will issue the licence. For use within the RFA it would be expected that the Trustee of the data set would co-ordinate the issue of the licence and distribution of the data set.

Following the signing of the RFA, unless other processes are established, data access and issue of licences will be the direct responsibility of the custodian.

11. — Data Request Form

The NSW RFA Request for Data form (Attachment 1) should be forwarded to the data custodian and, if approved, a data licence will be supplied.

12. — RFA Data Archive

The intention and purpose of the RFA Data Archive is to ensure baseline data is available for undertaking RFA reviews, not for general access.

The RFA Data Archive will include copies of all information, including metadata, required for the purposes of meeting Regional Forest Agreement obligations and undertaking RFA assessments (as determined by the Steering Committee). Where possible the data will be stored in a published format (e.g. shapefile, RTF, HTML). The

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~~Archive will include a list of the data, custodian and access category and will be finalised for each RFA region prior to signing the RFA.~~

~~Prior to the signing of the Regional Forest Agreement the responsible agencies will lodge an electronic copy of the relevant information products used in the RFA process in the Archive. Copies of the data will be held at two State and two Commonwealth locations. When this is prevented for existing source data (through provisions of Clauses 19c and 19d of the Scoping Agreement) the data must be archived by the custodian in a manner satisfactory to both governments. This form of remote archiving of data should be avoided wherever possible.~~

~~Management and Maintenance of the RFA Data Archive~~

~~The managers of the NSW copy of the RFA Data Archive will be State Forests of New South Wales and NSW National Parks and Wildlife Service.~~

~~The managers of the Commonwealth copies of the RFA Data Archive will be Environment Australia—Department of Environment, and Department of Primary Industries and Energy.~~

~~All archiving of data must provide appropriate security and continuing recoverability of data (preferably by CD ROM).~~

~~Use of the RFA Data Archive~~

~~The governments will have access to all data in the Archive as baseline data for RFA review purposes:~~

- ~~• to meet obligations described in the Regional Forest Agreement;~~
- ~~• to meet statutory obligations; and~~
- ~~• for the purposes associated with the provision of advice to State or Commonwealth Ministers.~~

~~Data from the archive will be accessible, via the custodian, consistent with the principles in this document.~~

~~Data in the Archive will not be changed unless to correct an error occurring during the archiving process, in which case all data archives held by governments must be notified and updated by the custodian.~~

~~Access to data from the Archive by non government participants will be restricted. Requests for access will be dealt with on a case by case basis in consultation with the custodian.~~

~~The Data Archive will not otherwise be accessible to third parties.~~

~~13. Data Access to Non RFA Participants~~

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~~Data access to non RFA participants will be addressed on a case by case basis, consistent with appropriate sections of this document, using the Data Request Form (attached), through the custodian.~~

~~14. Participant Access to Assessment Data Post RFA Signing~~

~~Not later than one month after the signing of the RFA, each participant will delete or cause not to be accessed all copies of data which they do not own but were provided with for RFA purposes.~~

~~A copy of the Licensed and Unrestricted Access data as archived will be supplied to all participants subject to the provisions of Clause 19d of the Scoping Agreement.~~

~~15. Contacts~~

~~Correspondence should be marked to the attention of the GIS Manager in the relevant agency.~~

NSW National Parks and Wildlife Service

~~PO Box 1967~~

~~HURSTVILLE NSW 2220~~

~~Ph: 02 9585 6444~~

State Forests of NSW

~~Bldg 2, 423 Pennant Hills Road~~

~~PENNANT HILLS NSW 2120~~

~~Ph: 02 9980 4100~~

Department of Agriculture, Fisheries and Forestry — Bureau of Rural Sciences

~~PO Box E11~~

~~BARTON ACT 2600~~

~~Ph: 02 6272 4689~~

Environment Australia, Department of Environment

~~GPO Box 787~~

~~CANBERRA ACT 2600~~

~~Ph: 02 6274 1051~~

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ATTACHMENT 14
(clause 44, 72A)

PRINCIPLES OF ECOLOGICALLY SUSTAINABLE FOREST MANAGEMENT (ESFM)

Principle 1: Maintain or increase the full suite of forest values for present and future generations across the NSW native forest estate

- The principle of intergenerational equity (that in meeting the needs of the present generation, the ability of the future generations to meet their own needs is not compromised) is embodied in this principle.
- Ensure that ESFM at the regional and smaller scales is implemented by ecologically appropriate planning and operational practices, and that ESFM targets are set and indicators of performance are monitored.
- Ensure the long-term maintenance of the full range of values of the NSW existing forest estate. The intention is to maintain or increase not only the full range of values, but also the magnitude or level at which those values are maintained or increased.
- Encourage the increased production of plantation-grown timber and the social and economic benefits flowing from this increased production to supplement the wood supply from native forests.

Aims for values include

A Biodiversity

- Biological diversity of forests at the ecosystem, species and genetic levels where biological diversity includes natural patterns of ecosystems, species and gene pools in time and space.
- Address the requirements of vulnerable species.
- Assist with the recovery of threatened species, and maintain the full range of ecological communities at viable levels.
- Protect landscape values through the careful planning of operations and the reservation of appropriate patches and corridors of vegetation.

B The productive capacity and sustainability of forest ecosystems

- Maintain ecological processes within forests (such as the formation of soil, energy flows and the carbon, nutrient and water cycles, fauna and flora communities and their interactions).
- Maintain or increase the ability of forest ecosystems to produce biomass whether utilised by society or as part of nutrient and energy cycles.

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- Ensure the rate of removal of any forest products is consistent with ecologically sustainable levels.
- Ensure the deleterious effects of activities/disturbances which threaten forests, forest health or forest values are minimised.

C Forest ecosystem health and vitality

- Reduce or avoid threats to forest ecosystems from introduced diseases, exotic plants and animals, unnatural regimes of fire or flooding, wind shear, land clearing and urbanisation.
- Promote good environmental practice in relation to pest management.
- Ensure the deleterious effects of activities/disturbances within forests, their scale and intensity, including their cumulative effects are minimised.
- Restore and maintain the suite of attributes (ecological condition, species composition and structure of native forests) where forest health and vitality have been degraded.

D Soil and water

- Maintain the chemical and biological functions of soils by protecting soils from unnatural nutrient losses, exposure, degradation and loss.
- Maintain the physical integrity of soils by protecting soils from erosion, mass movement, instability, compaction, pulverisation and loss.
- Protect water quality (physical, chemical, biological) by measures controlling disturbance resulting from forest activities.
- Identify and maintain at appropriate levels, water yield and flow duration in catchments.

E Positive contribution of forests to global geochemical cycles

- Maintain the positive contribution of forests to the global geochemical cycle (includes climate, air and water quality and deposition).

F Long-term social and economic benefits

- Maintain and enhance, on an ecologically sustainable basis, production of wood and wood products, including value adding, investment and resource security.
- Provided it is ecologically sustainable, set, maintain or enhance the level of use of non-wood products and uses, including bee-keeping, grazing, mining, recreation and tourism, reliable water supply.

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- Maintain and enhance, on an ecologically sustainable basis, the provision of employment and community needs such as economic diversification, investment skills, education, jobs stability, training and Indigenous needs.
- Encourage the establishment and use of plantation forests on existing cleared land to expand social and economic values.
- Maintain and enhance the intangible social welfare benefits which forests provide.

G Natural and cultural heritage values

- Protect social, natural and cultural heritage values and sites, including aesthetic, landscape, historic, cultural, educational, scenic, spiritual and scientific values, including Indigenous values and sites.

Principle 2 Ensure public participation, access to information, accountability and transparency in the delivery of ESFM.

- Ensure public participation in decision-making processes at local, regional and State and Federal levels.
- Ensure comprehensive, timely and reasonable public access to information.
- Ensure transparency, openness and accountability in decision making processes and performance.

Principle 3 Ensure legislation, policies, institutional framework, codes, standards and practices related to forest management require and provide incentives for ecologically sustainable management of the native forest estate.

Establish a process for shared management and administration, recognising the customary and traditional rights of Indigenous people, and the interests of private landholders and other stakeholders in an area's management.

Principle 4 Apply precautionary principles for prevention of environmental degradation

The incorporation of the precautionary principle into decision making has been endorsed by State and Commonwealth Governments (Commonwealth of Australia 1992 p. 49, IGAE 1992) and is defined as '*where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. In the application of the precautionary principle, public and private decisions should be guided by:*

- *careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment; and*
- *an assessment of the risk-weighted consequences of various options.'*

WITHOUT PREJUDICE

Principle 5 Apply best available knowledge and adaptive management processes

ESFM would utilise the concept of adaptive management and ~~continuous~~ continual improvement based on best science and expert advice and targeted research on critical gaps in knowledge, monitoring or evaluation.

ANNEXURE 2 CLEAN VERSION OF THE AMENDED REGIONAL FOREST AGREEMENT

REGIONAL FOREST AGREEMENT

for the

EDEN REGION

of

NEW SOUTH WALES

between

THE COMMONWEALTH OF AUSTRALIA

&

THE STATE OF NEW SOUTH WALES

AUGUST 1999 (includes 2018 VARIATION)

Eden Regional Forest Agreement

THIS AGREEMENT is made on the 26th day of August 1999

BETWEEN

THE STATE OF NEW SOUTH WALES, (“New South Wales” or “the State”), and
THE COMMONWEALTH OF AUSTRALIA (“the Commonwealth”).

Recitals

WHEREAS:

Purpose of Agreement

- A. This Regional Forest Agreement (RFA) establishes the framework for the management of the forests of the Eden region. Parties are committed to ensuring the Agreement is durable and the commitments are delivered to ensure effective conservation, sustainable forest management and industry stability outcomes.
- B. This Agreement is a Regional Forest Agreement, for the purposes of the *Export Control Act 1982* (Cth), the *Regional Forest Agreements Act 2002* (Cth) and the *Environment Protection and Biodiversity Conservation Act 1999* (Cth). As such the Agreement :
- (a) identifies areas in the region that the Parties believe are required for the purposes of a Comprehensive, Adequate and Representative Reserve System, and provides for the conservation of those areas; and
 - (b) provides for the ecologically sustainable management and use of forested areas in the region; and
 - (c) is for the purpose of providing long-term stability of forests and forest industries; and
 - (d) has regard to studies and projects carried out in relation to all of the following matters that are relevant to the region:
 - (i) environmental values, including Old Growth, Wilderness, endangered species, National Estate Values and World Heritage Values;
 - (ii) Indigenous heritage values;
 - (iii) economic values of forested areas and forest industries;
 - (iv) social values (including community needs); and
 - (v) principles of Ecologically Sustainable Forest Management.

- C. This Agreement is divided into Parts. Part 1 applies to the whole Agreement. Part 2 is not intended to create legally binding relations. Part 3 is intended to create legally binding relations. The Attachments are not intended to create legally binding relations except to the extent that this is necessary to give effect to Part 3.

NOW IT IS AGREED as follows:

PART 1

Interpretation

- 1 This Agreement is to be interpreted, unless the contrary intention appears, with reference to the definitions and general provisions specified in clauses 2 and 3.

Definitions and General Provisions

- 2 In this Agreement unless the contrary intention appears:

“Aboriginal” for the purposes of this agreement means the First Peoples of NSW;

“Agreement” means all parts of this Agreement between the Commonwealth of Australia and the State of New South Wales and includes the Attachments to this Agreement;

“Australian World Heritage Intergovernmental Agreement” means the Australian World Heritage Intergovernmental Agreement, as agreed by the Commonwealth, the States and the Territories, as amended from time to time;

“Biodiversity” means biodiversity as defined in the JANIS Report;

“CAR Values” means the conservation values as described by the JANIS Reserve Criteria;

“Commonwealth Heritage Management Principles” has the same meaning as “Commonwealth Heritage management principles” in section 341Y of the EPBC Act;

“Commonwealth Heritage Place” has the same meaning as “Commonwealth Heritage place” in section 341C(3) of the EPBC Act;

“Commonwealth Heritage Values” has the same meaning as “Commonwealth Heritage values” in section 341D of the EPBC Act;

“Comprehensive Adequate and Representative Reserve System” or **“CAR Reserve System”** means areas under any of the following categories of land tenure - as described in the JANIS Report - Dedicated Reserves, Informal Reserves and other areas on Public Land protected by Regional Prescriptions (eg under any Integrated Forestry Operation Approval applicable to the Eden region), and areas of Private Land where the CAR Values are protected under secure management arrangement by agreement with private landholders. This reserve system is based on the principles of comprehensiveness, adequacy and representativeness;

“Competition Principles Agreement” means the agreement of the same name updated by the Council of Australian Governments in 2007;

“Comprehensive Regional Assessment” or **“CRA”** means the assessment process carried out pursuant to Attachment 1 of the NSW RFAs Scoping Agreement for New South Wales Regional Forest Agreements between the Commonwealth of Australia and the State of New South Wales;

“Crown Land” means land that is vested in the Crown or was acquired under the Closer Settlements Acts as in force before their repeal, not in either case being:

- (a) land dedicated for a public purpose; or
- (b) land that has been sold or lawfully contracted to be sold and in respect of which the purchase price or other consideration for the sale has been received by the Crown;

“Dedicated Reserve” means a formal reserve equivalent to International Union for the Conservation of Nature and Natural Resources (IUCN) Protected Area Management Categories I, II, III, or IV as defined by the IUCN Commission for National Parks and Protected Areas (1994). The status of Dedicated Reserves is secure, requiring action by the New South Wales Parliament or in accordance with New South Wales legislation for reservation or revocation. In New South Wales, Dedicated Reserves include, but are not limited to, parks under the *National Parks and Wildlife Act 1974* (NSW), flora reserves under the *Forestry Act 2012* (NSW), and areas mapped as Special Protection Zone (FMZ 1), under the NSW Forest Management Zoning system ;

“Ecologically Sustainable Forest Management” or **“ESFM”** means forest management and use in accordance with the specific objectives and policies for ecologically sustainable development as detailed in the *National Forest Policy Statement* and as further described in Attachment 14;

“Environment and Heritage Values” means values assessed as part of the CRA. These included Biodiversity, Forest Ecosystems, Old Growth forests, Wilderness, endangered species, National Estate Values, World Heritage Values and Indigenous heritage values;

“EPBC Act” means the *Environment Protection and Biodiversity Conservation Act 1999* (Cth);

“Extractive Material” means sand, gravel, clay, soil, turf, rock, stone or similar substances, not being a Mineral as defined in this Agreement;

“Extractive Operation” means the winning of Extractive Material, or, an industry or undertaking (not including Mining), which depends for its operations on the winning of Extractive Material from the land upon which it is carried on;

“Five-yearly Review Scoping Agreement” means a scoping agreement between the Commonwealth of Australia and the State of New South Wales for each five-yearly review, including any agreed priorities, procedures and funding arrangements for the conduct of the five-yearly review;

“Forest” means a Forest Ecosystem listed in Table 1 of Attachment 1; the land on which a Forest Ecosystem listed in Table 1 of Attachment 1 occurs; or a Plantation of trees for timber production. The carrying out of Forestry Operations on an area does not prevent it from remaining a Forest;

“Forest Agreement” means a Forest Agreement as defined in the *Forestry Act 2012* (NSW);

“Forestry Corporation of NSW” or **“FCNSW”** means the Forestry Corporation of NSW, a State Owned Corporation under the *State Owned Corporations Act 1989* (NSW);

“Forestry Corporation of NSW Hardwood Forest Management System” means the system of policies, processes and procedures used by Forestry Corporation of NSW to ensure forest activities achieve ESFM, including a system of monitoring, audit and management review that allows for continual improvement and adaptive management and maintaining EMS certification under ISO 14001 or a demonstrated equivalent environmental management system;

“Forest Ecosystem” means, for the purposes of the Agreement, a forest ecosystem as defined in the JANIS Report. Forest Ecosystems in the Eden region are listed in Attachment 1 of this Agreement;

“Forest Estate” means all Forests growing on Public Land or Private Land;

“Forest Management” means the management and administration of all Forests including State forest, national parks, other conservation reserves or Crown land, private native forest and Plantations;

“Forest Management Framework” means the New South Wales suite of legislation, regulations, other regulatory instruments and guidance. The elements of the framework are described in the report entitled ‘*Overview of the New South Wales Forest Management Framework*’ as published by the NSW Government and as amended from time to time;

“Forest Management Zoning” or **“FMZ”** is a land classification system which sets out, in map format, management intent across State forest. It is based on the “Components of the CAR System” in the JANIS Report, to clearly differentiate between those areas of State forest which are specifically set aside for conservation purposes (and utilising statutory protection in some cases) and those areas which are available for timber harvesting and other activities. The system is described in the document *Managing our forests sustainably: Forest Management Zoning in NSW State Forests*, State Forests of NSW [1999] and as amended from time to time;

“Forestry Operations” means:

- (a) logging operations, namely, the cutting and removal of timber from land for the purpose of timber production;

- (b) forest products operations, namely, the harvesting of Forest Products that are of economic value;
- (c) on-going forest management operations, namely, activities relating to the management of land for timber production such as thinning, bush fire hazard reduction and other silvicultural activities; and
- (d) transport of Forest Products;

“**Forest Products**” means timber and forest products as defined in the *Forestry Act 2012* (NSW);

“**Forest Resource and Management Evaluation System**” or “**FRAMES**” means the Forestry Corporation of NSW statewide forest resource inventory, growth modelling, simulation and harvest scheduling system for New South Wales’ public hardwood forest resource. ;

“**Harvesting Exclusions Zone**” or “**FMZ3A**” means the zone of the name ‘Zone 3A – Harvest Exclusions’ under the NSW Forest Management Zoning system;

“**High Quality Logs**” means logs which are suitable for high-value solid log products such as poles, piles and girders as well as logs suited for processing into sawn timber or veneer;

“**Indigenous**” means the Aboriginal and Torres Strait Islander peoples of Australia. ‘Indigenous’ is used in this document to mirror its use in Commonwealth legislation. Otherwise ‘Aboriginal’ is used to refer to the First Peoples of NSW.

“**Informal Reserve**” means a reserve that contains and is managed for Environment and Heritage Values which contribute to the CAR Reserve System and meets the principles for Informal Reserves as described in the JANIS Report. In New South Wales, it includes, but is not limited to, areas mapped as Special Management Zone (FMZ 2), which meet the size and design criteria for Informal Reserves, under the NSW Forest Management Zoning system;

“**Integrated Forestry Operations Approval**” or “**IFOA**” means an Integrated Forestry Operations Approval as defined in the *Forestry Act 2012* (NSW);

“**ISO 14001**” means *AS/NZS ISO 14001: 2015, Environmental Management Systems: Requirements with guidance for use*, Standards Australia (as amended from time to time);

“**JANIS Report**” means the report by the Joint Australian and New Zealand Environment and Conservation Council (ANZECC) / Ministerial Council on Forestry, Fisheries and Aquaculture (MCFFA) National Forests Policy Statement Implementation Sub-committee, titled *Nationally Agreed Criteria for the Establishment of a Comprehensive, Adequate and Representative Reserve System for Forests in Australia*, published by the Commonwealth of Australia in 1997;

“JANIS Reserve Criteria” or **“Criteria”** means the criteria as described in the JANIS Report for establishing the CAR Reserve System addressing Biodiversity, Old Growth forest and Wilderness, taking account of reserve design and management and social and economic considerations;

“Listed Species and Communities” means species and communities listed in accordance with Part 13 of the EPBC Act, *Biodiversity Conservation Act 2016* (NSW) or *Fisheries Management Act 1994* (NSW), including threatened and endangered species, threatened ecological communities, migratory species and other listed categories (or equivalent);

“Low Quality Logs” means undersize or defective log sections that do not meet a high quality specification but are still suitable for processing into sawn timber or veneer;

“Matters of National Environmental Significance” for the purpose of this Agreement means those matters protected by Part 3 of the EPBC Act as matters of national environmental significance, including:

- (a) World Heritage Values of declared World Heritage Places;
- (b) National Heritage Values of National Heritage Places;
- (c) ecological character of Ramsar Wetlands;
- (d) listed species and communities in the EPBC Act (excluding those categories referred to in paragraphs 178(1)(a) and (f), and paragraph 181(1)(c) of the EPBC Act);

“Mineral” means any substance prescribed by the regulations of the *Mining Act 1992* (NSW) as a mineral or petroleum as prescribed under the *Petroleum (Onshore) Act 1991* (NSW), and includes coal, oil shale and petroleum but does not include uranium;

“Mineral Exploration” means prospecting under an authority or other title under either the *Mining Act 1992* (NSW) or the *Petroleum (Onshore) Act 1991* (NSW);

“Mining” means mining under an authority or other title under the *Mining Act 1992* (NSW) and includes production of petroleum under the *Petroleum (Onshore) Act 1991* (NSW);

“Mining Operations” means operations or works carried out in the course of Mining, or Mineral Exploration;

“Montreal Process Criteria” means the Montreal Process criteria for the conservation and sustainable management of temperate and boreal forests;

“Montreal Process Implementation Group for Australia” or **“MIG”** means the Montreal Process Implementation Group established by the Commonwealth and all State and Territory Governments;

“National Estate” means those places as defined under section 4 of the repealed *Australian Heritage Commission Act 1975* (Cth);

“National Estate Values” means values attributed by the former Australian Heritage Commission to National Estate places;

“National Forest Policy Statement” or **“NFPS”** means the *National Forest Policy Statement 1992* endorsed by the Commonwealth and all State and Territory Governments;

“National Heritage Management Principles” has the same meaning as “National Heritage management principles” in section 324Y of the EPBC Act;

“National Heritage Place” has the same meaning as “National Heritage place” in section 324C(3) of the EPBC Act;

“National Heritage Values” has the same meaning as “National Heritage values” in section 324D of the EPBC Act;

“NSW National Parks and Wildlife Service” or **“NPWS”** means the New South Wales National Parks and Wildlife Service;

“NSW RFAs Scoping Agreement” means the Scoping Agreement for New South Wales Regional Forest Agreements between the Commonwealth and the State of New South Wales signed on 25 January 1996;

“Old Growth forest” means old growth forest as defined in the JANIS Report;

“Other Wood Products” means timber that is not processed as a high quality, low quality or Pulpwood log, including firewood, biomaterial and fencing products;

“Owner” means:

- (a) in relation to land:
 - (i) the owner of any estate or interest in that land, including the Crown in right of the State; and
 - (ii) any statutory corporation which has the power to carry on Forestry Operations or Mining Operations as the case may be, on the land;
- (b) in relation to Forest Products or Mining products, as the case may be, the owner of any interest in those products.

“Parties” means the State of New South Wales and the Commonwealth of Australia;

“Party” means a Party to this Agreement;

“Plantations” means intensively managed stands of trees of either native or exotic species, created by the regular placement of seedlings or seed, but not principally for the purpose of the production of food or any other farm produce other than timber;

“Private Land” means lands other than Public Land and land owned or leased by the Commonwealth;

“Progress Report” means a report prepared by the Parties on the performance of this Agreement for each five-yearly review;

“Public Land” means lands of the New South Wales Crown;

“Pulpwood” means logs cut and prepared primarily for the manufacture of wood pulp;

“Ramsar Convention” means the Convention on Wetlands of International Importance Especially as Waterfowl Habitat;

“Ramsar Wetlands” means those places defined under section 17 of the EPBC Act;

“Recovery Plan” means a recovery plan made or adopted under the EPBC Act, or an equivalent instrument made under the *Biodiversity Conservation Act 2016* (NSW), or the *Fisheries Management Act 1994* (NSW) ;

“Regional ESFM Plan” means a plan covering State forests in the region that has the status of a management plan under the *Forestry Act 2012* (NSW) and meeting additional requirements under the Forestry Regulation 2012 (NSW);

“Regional Forest Agreement” or **“RFA”** means a Regional Forest Agreement within the meaning of the *Regional Forest Agreements Act 2002* (Cth);

“Regional Prescriptions” means those prescriptions within the Forest Management Framework that are applicable to Forestry Operations in the Eden region. These prescriptions include but are not limited to silvicultural prescriptions and environment protection measures covered by Regulatory Instruments, Forest Management Zoning, and Aboriginal and non-Aboriginal cultural heritage guidelines;

“Regulatory Instruments” means the State’s suite of statutory and regulatory tools used to achieve ESFM for forestry operations currently in place (or as amended from time to time), including, but not limited to:

- Integrated Forestry Operations Approval applicable to the Eden region under the *Forestry Act 2012* (NSW);
- Forestry Regulation 2012 made under the *Forestry Act 2012* (NSW);

- Plantations and Reafforestation (Code) Regulation 2001 made under the *Plantations and Reafforestation Act 1999* (NSW);
- Private Native Forestry Code of Practice for Southern NSW, 2008;
- Additional, new or amended Regulatory Instruments as released from time to time by the NSW Government;

“**Sawlog**” means logs which are suitable for processing into sawn timber;

“**Special Management Zone**” or “**FMZ 2**” means the zone of the name ‘Zone 2 – Special Management’ as described under the NSW Forest Management Zoning system;

“**Special Prescription Zone**” or “**FMZ 3B**” means the zone of the name ‘Zone 3B – Special Prescription’ as described under the NSW Forest Management Zoning system;

“**Special Protection Zone**” or “**FMZ 1**” means the zone of the name ‘Zone 1 – Special Protection’ as described under the NSW Forest Management Zoning system

“**State forest**” means land dedicated as State forest under the *Forestry Act 2012* (NSW);

“**Statutory Conservation Planning Document**” means a conservation advice, recovery plan, threat abatement plan or wildlife conservation plan made or adopted in accordance with the EPBC Act, or equivalent instruments or programs under the *Biodiversity Conservation Act 2016* (NSW) or the *Fisheries Management Act 1994* (NSW);

“**Sustainability Indicators**” means qualitative or quantitative measures, at the regional (sub-national) level developed to assess the criteria for sustainable forest management, as described in *Ecologically Sustainable Forest Management Criteria and Indicators for the NSW Forest Agreement regions* (EPA 2017), and as amended from time to time;

“**Sustainable Yield**” means the long term estimated wood yield from forests that can be maintained from a given region in perpetuity under a given management strategy and suite of sustainable use objectives, as determined using the processes described in Attachment 11, and as amended from time to time;

“**Threat Abatement Plan**” means a threat abatement plan made or adopted under the EPBC Act;

“**Threatening Process**” means a threatening process listed as a key threatening process under the *Biodiversity Conservation Act 2016* (NSW), *Fisheries Management Act 1994* (NSW) and the EPBC Act in recognition that the process adversely affects or may threaten the survival, abundance or evolutionary development of a native species or ecological community;

“Values Protected by Prescription” means *values protected by prescription* as defined in the JANIS Report and includes areas in the Forest Management Zoning system including those areas in FMZ 2 that do not meet Informal Reserve criteria, FMZ 3A, FMZ 3B and other mapped areas under the IFOA applicable to the Eden region.

“Wilderness” means wilderness as defined in the JANIS Report;

“Wilderness Values” means the values of the same name as defined in the JANIS Report and the NSW RFAs Scoping Agreement between NSW and the Commonwealth;

“Wild Rivers” means a water course, water course network, or a connected network of water bodies, of natural origin and exhibiting natural flow (perennial, intermittent or episodic) in which the biological, hydrological and geomorphological processes associated with the river flow; and the biological, hydrological and geomorphological processes in those parts of the catchment with which the river is intimately linked; have not been significantly altered by modern or colonial society;

“Woodchips and Unprocessed Wood” means goods that are prescribed goods under the *Export Control (Hardwood Wood Chips) Regulations 1996* (Cth) or the *Export Control (Unprocessed Wood) Regulations* (Cth), or would be prescribed goods under those regulations if not for the *Export Control (Regional Forest Agreements) Regulations* (Cth);

“World Heritage List” means the list kept under that title under Article 11 of the Convention Concerning the Protection of the World Cultural and Natural Heritage;

“World Heritage Nomination” means the submission by the Commonwealth of a nominated area to the UNESCO World Heritage Committee for assessment as a World Heritage area consistent with section 314 of the EPBC Act and the World Heritage Operational Guidelines for the Implementation of the World Heritage Convention;

“World Heritage Place” means a property on the World Heritage List;

“World Heritage Values” has the same meaning as in section 12(3) of the EPBC Act.

3 In this Agreement unless the contrary intention appears:

- (a) A reference to a clause or Attachment is a reference to a clause or Attachment to this Agreement and a reference to this Agreement includes a reference to an Attachment;
- (b) A reference to this Agreement or another instrument is a reference to this Agreement or that other instrument as amended or varied from time to time;

- (c) A reference to a statute or ordinance includes any consolidations, amendments, re-enactments or replacements thereof and also includes regulations and other instruments made under them;
- (d) A reference to a code or other instrument includes any consolidations or amendments thereof;
- (e) A word importing the singular includes the plural and vice versa, a word importing a gender includes each other gender and a reference to a person includes an individual, firm, body corporate, association (whether incorporated or not), government, governmental or semi-governmental body, local authority or agency;
- (f) A reference to an act, matter or thing includes the whole or any part of that act, matter or thing and a reference to a group of acts, matters, things or persons includes each act, matter, thing or person in that group;
- (g) Where any terms and conditions are added to an Attachment of this Agreement it is agreed that those terms and conditions will form part of this Agreement;
- (h) Headings are inserted for convenience and do not affect the interpretation of this Agreement.

Definition of the region

- 4 The area covered by this Agreement is the Eden region as shown in Map 1 accompanying this Agreement.

Duration of Agreement

- 5 This Agreement takes effect on 26 August 1999 and, unless earlier terminated in accordance with clause 99, 100, 101 or 102, will remain in force until 26 August 2039, or until a later date pursuant to clause 6A and 6B.

- 6 The process for extending the Agreement for a further period was determined jointly by the Parties as part of the third five-yearly review.

6A Subject to clause 6B, upon the satisfactory completion of each five-yearly review in accordance with clause 8M, the Agreement will be extended for a further five years.

6B The extension of this Agreement under clause 6A will occur upon the satisfactory completion of the five-yearly review due to commence in 2024 and thereafter upon the satisfactory completion of each subsequent five-yearly review until this Agreement is terminated by the Parties or subsequent extensions of this Agreement are withdrawn in accordance with clause 14C.

Basis of Agreement – National Forest Policy Statement

- 7 The Parties confirm their commitment to the goals, objectives and implementation of the *National Forest Policy Statement (NFPS)* by:

- (a) Implementing Ecologically Sustainable Forest Management (ESFM);
- (b) Establishing and maintaining the Comprehensive, Adequate and Representative (CAR) Reserve System;
- (c) Supporting an internationally competitive wood production and wood products industry through facilitating efficient and sustainable wood production, and wood products industries, based on maximising value-adding opportunities and efficient use of wood resources; and
- (d) Promoting the conservation and management of the private Forest Estate.

Changes to the Agreement

- 8 This Agreement may only be amended with the consent, in writing, of both Parties. Parties agree to work cooperatively to address any differences between them as to the interpretation or implementation of the Agreement.

Monitoring the Agreement

General monitoring

- 8A. The implementation of this Agreement is monitored through the five-yearly reviews and the annual meetings between the Parties in the periods between the five-yearly reviews. Further:
- (a) The Parties agree to maintain open communication on matters relating to the implementation of this Agreement, including raising and responding to issues at any time.
 - (b) The Parties agree that for efficiency and consistency with prior practices, the timing of monitoring and reporting of the North East and Southern RFAs will be aligned with this Agreement and will complement NSW and national forest reporting.
 - (c) The Parties agree that the assessment process, the consultation undertaken in early 2018 and the results of the monitoring of Sustainability Indicators in *A report on progress with implementation of the New South Wales Regional Forest Agreements: Second and third five-yearly reviews July 2004 – June 2014*, November 2017 constitute the five-yearly review that was due in 2019.
 - (d) The next five-yearly review required by this Agreement will commence in 2024.
 - (e) New South Wales agrees to develop and maintain a coordinated Monitoring, Evaluation and Reporting Plan, including the identification of research priorities, within the broader Forest Management Framework across relevant forest management tenures and to support RFA outcomes reporting for ESFM.

Annual meetings

8B. The Parties agree to hold annual officials-level, bi-lateral meetings in the years between each five-yearly review to monitor the implementation of the Agreement and discuss any matters or issues that arise.

8C. An online statement will be made publicly available on the outcomes of the meeting.

Five-yearly reviews

Five-yearly review process

8D. A review of the performance of this Agreement is to commence during the last year of each five year period during the term of the Agreement (the five-yearly review) with the release of the Five-yearly Review Scoping Agreement.

8E. The purpose of the five-yearly review is to examine New South Wales' Forest Management to demonstrate Ecologically Sustainable Forest Management, including to:

- (a) demonstrate adaptive Forest Management in accordance with the RFA;
- (b) demonstrate how the Parties have provided for the protection of Matters of National Environmental Significance, including identifying trends and the status of Matters of National Environmental Significance, in accordance with the RFA;
- (c) demonstrate how relevant Statutory Conservation Planning Documents have been implemented as part of the Forest Management Framework;
- (d) demonstrate how social and economic benefits of forestry and other forest uses are being achieved;
- (e) evaluate current and future research priorities across the Forest Estate; and
- (f) assess the extent to which key findings and/or recommendations for preceding five-yearly reviews have been addressed.

8F. The Parties will prepare a Progress Report addressing the items listed at clause 8E including across key environmental, social and economic indicators (Sustainability Indicators). As such, the Progress Report will be a key source of information in the five-yearly reviews under this Agreement.

Conduct of five-yearly review

8G. Five-yearly reviews are to be conducted by an independent person or body jointly appointed by the Parties.

8H. In conducting the five-yearly review, the independent person or body will:

- (a) take into account public comments;
- (b) use and take into account the relevant Progress Report;
- (c) use and take into account the document titled '*Overview of the New South Wales Forest Management Framework*, as updated from time to time;
- (d) develop and submit to the Parties a report detailing the five-yearly review process and its findings and recommendations, within three months of commencement.

- 8I. In accordance with subsection 10(6) of the *Regional Forest Agreements Act 2002* (Cth), the Commonwealth Minister responsible for forestry will table the report provided under paragraph 8H (d) in each House of the Parliament within 15 sitting days of that House after the report is provided to the Minister.
- 8J. The Parties will consider the five-yearly review recommendations and publish a joint government response to the recommendations within six months of receiving the review report.
- 8K. The Parties will make a determination of satisfactory performance under this Agreement in the joint government response. If satisfactory performance is not determined, the Parties will include in the joint government response a list of remedial actions and when they will be delivered. The subsequent five-yearly review process will assess whether remedial actions have been delivered.
- 8L. The purpose of the five-yearly review process under this Agreement is not to re-negotiate the Agreement.

Satisfactory completion of 5 yearly review

- 8M. A five-yearly review will be satisfactorily completed upon the public release of the joint government response to the review report, which is to include identified remedial actions pursuant to clause 8K. The five-year extension pursuant to clauses 6A and 6B will then take effect, unless the joint government response identifies that there are outstanding remedial actions from a previous five-yearly review that have not been delivered to the satisfaction of both Parties, in which case the five-year extension will not take effect until a supplementary joint government response demonstrating the completion of the outstanding remedial actions has been released.

Requirement for an audit

- 8N. Either Party may initiate an audit, if in the opinion of the initiating Party, there has been, or is likely to be, an adverse finding or outcome relating to this Agreement, whether or not the outcome relates to non-compliance or likely non-compliance with the Agreement.
- 8O. Before an audit process commences, the initiating Party must notify and consult with the other Party on the following:
- (a) the initiating Party's reason for initiating the audit or review;
 - (b) the scope and criteria for the audit, and
 - (c) the appointment of an independent auditor.
- 8P. An audit may include:
- (a) an examination of the operation of this Agreement over a particular period of time; or
 - (b) preparation of an audit report which addresses the criteria specified by the initiating Party.
- 8Q. An audit should be conducted in the most efficient and effective manner possible to address the opinion of and concerns identified by the initiating Party.

- 8R The Parties agree to cooperate fully in any audit.
- 8S The initiating Party may publish any report produced under clause 8P(b), provided the initiating Party, prior to publication:
- (a) notifies the other Party of the intent to publish the report;
 - (b) provides the other Party with a copy of a draft of the final report; and
 - (c) provides the other Party with 20 business days to respond to the draft of the final report.
- 8T The costs of an audit will be borne by the initiating Party.

Dispute Resolution

- 9 The Parties agree that if a dispute arises between the Parties regarding this Agreement it must be resolved expeditiously in accordance with the provisions of clauses 10 to 14.
- 10 When a dispute arises, a Party may serve a notice on the other specifying:
- (a) the nature and substance of the matter or issue in dispute;
 - (b) that it is a dispute to be resolved in accordance with clauses 10 to 14.
- 11 If a notice is served under clause 10 the Parties must attempt to settle the dispute within 14 days. At the expiration of that 14 days and, if agreed, any additional period the Parties must appoint a mediator to conduct a mediation concerning the matter or issue in dispute.
- 12 If the dispute is not settled under clause 11 and the Parties fail to appoint a mediator, either of them may request the President of the Law Council of Australia, or the equivalent officer of such body as in future may have the functions of the Law Council of Australia, to nominate a mediator to conduct the mediation.
- 13 The costs of a mediator appointed under clauses 11 or 12 are to be shared equally between the Parties.
- 14 Each of the Parties agrees to use its best endeavours to resolve the dispute through mediation.

Withdrawal from extension process

- 14A. If there is no resolution or agreement on a dispute in accordance with clauses 9 to 14 (including the failure of mediation), either the Commonwealth Minister responsible for forestry (in consultation with the Commonwealth Minister responsible for the environment) or New South Wales Minister(s) responsible for the environment and/or forestry may send to the other Party and publish a written notice of its intention, unless the dispute is resolved, to withdraw from the extension process in clause 6A and 6B .
- 14B. Any notice under clause 14A above must specify the time period in which the other Party must address the dispute.

- 14C. If, at the end of the specified time period, the dispute has not been resolved, the Commonwealth Minister responsible for forestry (in consultation with the Commonwealth Minister for the environment) or the New South Wales Minister(s) responsible for the environment and/or forestry may write to the other Party's government giving notice confirming the effective date of withdrawal from the extension process in clause 6A and 6B.
- 14D. In the event either Party withdraws from the extension process in clause 6A and 6B, negotiation of any subsequent extension to this Agreement will only be considered following the satisfactory completion of the penultimate five-yearly review (that is, the five-yearly review prior to the final five years of the Agreement's duration).
- 14E. In the event the Parties subsequently extend this Agreement subject to clause 14D and pursuant to clause 8M, the extension process in clause 6A and 6B will not apply to the extended Agreement unless otherwise agreed by the Parties.

Notices

- 15 Any notice or other communication to be given or made pursuant to this Agreement shall be in writing and addressed as the case may be as follows:

THE STATE

The Secretary
Department of Premier and Cabinet
52 Martin Place
SYDNEY NSW 2000

THE COMMONWEALTH

The Secretary
Department of Agriculture and Water Resources
18 Marcus Clarke Street
CANBERRA ACT 2600

PART 2

- 16 This Part is not intended to create legally binding relations and provisions in Part 1 in so far as they relate to Part 2 are also not binding. Where there are references in this Part to obligations which are referred to in Part 3 and are intended to be legally binding, they are only included in Part 2 insofar as they provide context and for the sake of completeness so that the whole scheme which the Parties wish to implement is set out in this Part. The inclusion of references to these legally binding obligations in Part 2 does not derogate from the Parties intent that they be legally binding in Part 3.

FUNCTIONING OF THE AGREEMENT

- 17 NOT USED

Relationship to Statutory Obligations

- 18 This Agreement cannot impose on either Party or a third party any obligation that is inconsistent with Australia's international obligations, or a law of the Commonwealth or of New South Wales.
- 19 Neither Party will seek to use existing or future legislation to undermine or impede this Agreement.
- 20 NOT USED
- 21 NOT USED
- 22 NOT USED
- 23 NOT USED
- 24 NOT USED
- 25 The Commonwealth notes that its obligations under the EPBC Act to promote protection of Listed Species and Communities will involve ongoing cooperative work with New South Wales agencies concerning the Eden region.

Matters of National Environmental Significance

- 25A New South Wales will use best endeavours to ensure that the Forest Management Framework provides for the protection of Matters of National Environmental Significance.
- 25B The Parties agree that research, monitoring, reporting, evaluation and the communication of findings are important to support decision making with regard to Matters of National Environmental Significance.
- 25C New South Wales will use best endeavours to continue to improve research, monitoring, reporting, evaluation and communication mechanisms as part of its adaptive Forest Management Framework in accordance with clause 44.

25D The Parties agree that the monitoring, audit, reporting and review processes set out in this Agreement provides an assurance that the Forest Management Framework takes into account the protection of Matters of National Environmental Significance.

Listed Species and Communities, including threatened flora and fauna

25E New South Wales will use best endeavours to ensure that the Forest Management Framework provides for the protection of Listed Species and Communities.

25F The Parties, recognising that priorities can change in light of new information, will continue to consult on the priorities for:

- (a) Listed Species and Communities, Forest Ecosystems, and Threatening Processes (further information at Attachment 2);
- (b) the preparation of all Statutory Conservation Planning Documents relevant to this Agreement; and
- (c) research on Listed Species and Communities, Forest Ecosystems, and Threatening Processes.

25G New South Wales will use best endeavours to ensure that any new or altered actions in the Forest Management Framework are developed and implemented over the term of the Agreement for Listed Species and Communities to:

- (a) provide for the maintenance of the relevant species;
- (b) have a sound scientific basis;
- (c) give consideration to relevant determinations made by the New South Wales Threatened Species Scientific Committee or Fisheries Scientific Committee;
- (d) be consistent with relevant Statutory Conservation Planning Documents; and
- (e) take note of public comment.

25H New South Wales will use best endeavours to ensure that the State's Statutory Conservation Planning Documents and Regulatory Instruments that include management actions, prescriptions or protections for Listed Species and Communities in accordance with the Forest Management Framework, will:

- (a) be maintained, implemented and updated on an as needs basis to provide ongoing protection for Listed Species and Communities;
- (b) be made publicly accessible.

World Heritage Places

26 The Parties acknowledge that the World Heritage Values of a property included in the World Heritage List are protected by Part 3 of the EPBC Act, as the exemption

to the application of Part 3 for Forestry Operations does not apply to a World Heritage Place pursuant to section 42 of the EPBC Act.

- 27 The Parties agree to participate in the assessment of any future World Heritage Places consistent with the Australian World Heritage Intergovernmental Agreement.
- 28 The Parties agree that any World Heritage Nominations involving any part of the Forest Estate in the Eden region will be from areas within the Dedicated Reserve elements of the CAR Reserve System.
- 29 NOT USED

National Heritage Places

- 29A. New South Wales will use best endeavours to ensure that the Forest Management Framework provides for the protection of National Heritage Values of National Heritage Places in accordance with National Heritage Management Principles.

Commonwealth Heritage Places

- 29B. New South Wales will use best endeavours to ensure that the Forest Management Framework provides for the protection of Commonwealth Heritage Values through the management of Commonwealth Heritage Places in accordance with Commonwealth Heritage Management Principles.

Ramsar Wetlands

- 29C. The Parties acknowledge that the Forest Management Framework provides for the protection of the ecological character of Ramsar Wetlands, in accordance with Australia's obligations under the Ramsar Convention, by:
 - (a) the application of Part 3 of the EPBC Act, as the exemption to the application of Part 3 of the EPBC Act for Forestry Operations does not apply to Ramsar Wetlands pursuant to section 42 of the EPBC Act;
 - (b) management of Ramsar Wetlands, including having regard to Ramsar Wetland information sheets and Ramsar Wetland ecological character descriptions; and
 - (c) management of the relevant threatened ecological communities listed in Schedule 2 of the *Biodiversity Conservation Act 2016* (NSW) or listed under the *Fisheries Management Act 1994* (NSW).

Export controls

- 30 Parties note that current Commonwealth export arrangements provide that, after 31 December 1999, exports of Woodchips and Unprocessed Wood from native forests can occur from areas covered by an RFA, without the need for a licence under the *Export Control Act* (1982) (Cth).

31 Parties note that no controls under the *Export Control Act 1982* (Cth) or any other export control law within the meaning of the *Regional Forest Agreements Act 2002* (Cth) will apply to Woodchips and Unprocessed Wood sourced from the Eden region while this Agreement is in place.

32 NOT USED

Integrated Forestry Operations Approval applicable to the Eden region

33 New South Wales confirms that relevant Regulatory Instruments, such as the Integrated Forestry Operations Approval, for all or part of the Eden region are parts of the New South Wales Forest Management Framework are means by which New South Wales will implement obligations arising from this Agreement.

34 NOT USED

35 NOT USED

36 NOT USED

37 NOT USED

38 NOT USED

39 NOT USED

40 NOT USED

41 NOT USED

ECOLOGICALLY SUSTAINABLE FOREST MANAGEMENT (ESFM)

42 The Parties agree that ESFM is an objective which requires a long term commitment to continual improvement and that the key elements for achieving it are:

- (a) The establishment and maintenance of the CAR Reserve System;
- (b) Efficient and sustainable wood production and wood products industries based on maximising value-adding opportunities and efficient use of wood resources; and
- (c) An integrated, complementary and strategic Forest Management Framework capable of responding to new information, including climate change risks and adaptation responses.

43 The Parties recognise that the NSW Forest Management Framework is designed to produce effective outcomes for fauna, flora, soil and water conservation, and heritage values on State forests and provides a sound basis for implementation and continual improvement of such to achieve ESFM.

- 44 New South Wales confirms its commitment to the ongoing implementation and achievement of ESFM on both Public Land and Private Land through the continued implementation and improvements to its Forest Management Framework and adaptive management in accordance with the ESFM principles in Attachment 14.

Monitoring and reporting on Ecologically Sustainable Forest Management

- 45 The Parties recognise that:

- (a) the Forest Management Framework is enhanced by adaptive management and continuing mechanisms to monitor, report and review the sustainability of forest management policies and practices;
- (b) fostering stakeholder understanding of ESFM in NSW is important; and
- (c) a range of processes and instruments exist which provide for public participation and consultation, as outlined in the summary document titled '*Overview of the New South Wales Forest Management Framework*'.

- 46 New South Wales undertakes to:

- (a) Review and update the summary document titled '*Overview of the New South Wales Forest Management Framework*', which describes the Forest Management Framework at a given point in time, as a minimum for each five-yearly review period;
- (b) Use best endeavours to ensure that plans of management are developed and implemented for Dedicated Reserves under the *National Parks and Wildlife Act 1974* (NSW) and for flora reserves under the *Forestry Act 2012* (NSW) ensuring review and revision on a regular basis;
- (c) Implement the Regional ESFM Plan applicable to the Eden region (currently the *Forest Management Plan for the Coastal Forests of NSW* (FCNSW 2016)) – or an equivalent instrument – ensuring review and revision on a regular basis;
- (d) Ensure that the Forest Management Zoning system for the Eden region is maintained, implemented and reviewed on a regular basis;
- (e) Manage cultural values, both Aboriginal and non-Aboriginal, in the Eden region, in accordance with guidelines developed by New South Wales to meet the requirements in the EPBC Act, *National Parks and Wildlife Act 1974* (NSW) and the *Heritage Act 1977* (NSW), as amended from time to time;
- (f) Manage availability of timber resources for the State forest estate in accordance with Sustainable Yield estimates calculated using FRAMES or an equivalent, including to:
 - (i) take account of climate risks and adaptation responses;

- (ii) ensure that FRAMES or an equivalent for the Eden region is maintained and continually improved and provide periodic reviews of wood product yields as documented in Attachment 11;
 - (iii) undertake and make publicly available an independent review of Sustainable Yield estimates for the Eden region during each five-yearly review period;
- (g) Maintain for the duration of this Agreement an Integrated Forestry Operations Approval covering the Eden region, consistent with Attachments 1, 2 and 7;
- (h) Maintain and implement a management system for public Forests that meets the criteria for an environmental management system meeting the requirements of ISO 14001 and demonstrates ESFM;
- (i) Identify and integrate relevant climate risks and adaptation responses into the monitoring, evaluation and reporting requirements in Regional ESFM Plans and plans of management under the *National Parks and Wildlife Act 1974* (NSW);
- (j) Ensure that there is a transparent, systematic and credible process for investigating alleged environmental incidents reported by members of the public in relation to Forestry Operations on Public and Private Land and that information about regulatory actions are made publicly available where appropriate; and
- (k) Establish and maintain a coordinated forum for stakeholder engagement.

Sustainability Indicators

46A Pursuant to clause 8F, the State will continue to publicly report on the results of monitoring of Sustainability Indicators every five years to align with and inform the five-yearly reviews required under this Agreement and reporting will be under the headings of the Montreal Process Criteria in Attachment 8.

47 The Parties recognise that the document *Ecologically Sustainable Forest Management Criteria and Indicators for the NSW Forest Agreement regions* (EPA 2017) is consistent with *Australia's Sustainable Forest Management Framework of Criteria and Indicators 2008 – Policy Guidelines* (Commonwealth of Australia 2008) developed by the Montreal Implementation Group for Australia (MIG).

48 New South Wales agrees to review and revise its Sustainability Indicators to align with any relevant review of Sustainability Indicators at a national level.

49 NOT USED

50 NOT USED

51 NOT USED

52 NOT USED

Private Land

53 The Parties reaffirm their commitments made in the *National Forest Policy Statement (1992)* to the conservation and management of the private Forest Estate. The Parties note that Forestry Operations on Private Land in New South Wales are undertaken in accordance with the Private Native Forestry Code of Practice. The Parties note that New South Wales has provisions under the *Local Land Services Act 2013* (NSW) for native vegetation retention controls to regulate the clearance of native forest on Private Land.

53A New South Wales confirms that the CAR Reserve System is being maintained and implemented through this Agreement, including Attachment 12, and that conservation levels achieved will not subsequently be used as a basis for preventing timber harvesting in accordance with the Private Native Forestry Code of Practice applying to the Eden region being carried out on Private Lands. Consistent with clause 18 this is not to be interpreted as preventing voluntary conservation measures and mechanisms to protect CAR Values on Private Land.

53B The Parties will use best endeavours to ensure any changes to the Regional Prescriptions applied to Private Land will not subsequently lead to a net deterioration in Environment and Heritage Values on Private Land.

53C The Parties recognise that Values Protected by Prescription on Private Land will be protected during Forestry Operations by adherence to Regulatory Instruments including the Private Native Forestry Code of Practice applying to the Eden region.

54 The Parties recognise the Private Native Forestry Code of Practice, applying to Forestry Operations on Private Land in the Eden region, which requires Forestry Operations to be consistent with ESFM practices.

55 CAR Values which are priorities for the CAR Reserve System and which occur on Private Land will be dealt with by the principles and mechanisms outlined in Attachments 1 and 12. Parties agree the values listed at Attachment 12 can be managed consistently with the JANIS Reserve Criteria through a range of mechanisms, with the consent of the Private Land Owner, as specified in Attachment 12. Priorities for protection of Forest Ecosystems as at 1999 are given in Table 1 of Attachment 12.

55A The Parties recognise the importance to the CAR Reserve System of Environment and Heritage Values on Private Land and the State agrees to continue to support processes that will facilitate the voluntary participation by Private Land Owners to protect CAR Values on Private Land. All conservation mechanisms for the establishment of the Private Land component of the CAR Reserve System will be voluntary.

56 NOT USED

57 NOT USED

58 NOT USED

59 NOT USED

60 NOT USED

61 NOT USED

62 NOT USED

THE CAR RESERVE SYSTEM

63 The Parties agree that the CAR Reserve System has been established and progressively added to for the purpose of ensuring the long-term conservation and protection of the values defined by the JANIS Reserve Criteria. The CAR Reserve System includes the land identified in Attachment 1.

63A The Parties agree that the CAR Reserve System will continue to support the long-term conservation and protection of Environment and Heritage Values, including Listed Species and Communities.

64 Parties agree that the CAR Reserve System as identified on Map 1 and presented in Attachment 1 and Attachment 12, and as amended from time to time, satisfies the JANIS Reserve Criteria. Each element of the CAR Reserve System will be administered in accordance with New South Wales legislation.

64A The Parties agree that the CAR Reserve System established in accordance with this Agreement (including as it has been progressively added to and as further defined in Attachment 1 and Attachment 12), comprises:

- (a) Dedicated Reserves; and
- (b) Informal Reserves; and
- (c) areas with CAR Values Protected by Prescription; and
- (d) Private Land with CAR Values protected under secure management arrangement by agreement with Private Land Owners.

Action to manage the CAR Reserve System on public land

65 New South Wales agrees to implement, manage and conserve the CAR Reserve System described in Attachment 1 and identified on Map 1.

65A The State will manage and conserve the Dedicated Reserve and Informal Reserve elements of the CAR Reserve System consistent with its obligations in relation to the relevant statutory principles and values of reservation set out in Part 4, Division 2 of the *National Parks and Wildlife Act 1974* (NSW), or obligations under the *Forestry Act 2012* (NSW).

65B Parties agree that through the acquisition of Private Land (by voluntary sale), transfer of lands of the Crown, or transfer of land from an existing reserve tenure to one of higher conservation protection status, enhancements to the CAR Reserve System could occur. Both Parties agree to use best endeavours such that

enhancements to the CAR Reserve System will not impede access to State forest lands.

65C In the incorporation into the CAR Reserve System of lands of the Crown over which a licence or occupational permit is held NSW will:

- confirm the presence of CAR Values needed for reservation;
- through consultation, take into consideration any existing interests in the land of the licence or permit holder;
- ensure where practicable that suitable transition arrangements apply; and
- ensure that practical and legal access remains available where such access to adjacent private, licensed or leased land currently crosses or falls within land to be added to the CAR Reserve System under this Agreement.

66 The Parties agree to ensure changes to the CAR Reserve System will:

- a) only occur in accordance with this Agreement;
- b) be made publicly available; and
- c) not lead to deterioration in the representation or protection of identified CAR Values to below levels established by this Agreement in 1999, noting that minor changes to the levels of representation or protection of identified CAR Values may occur as a result of actions that are in accordance with this Agreement.

66A New South Wales will:

- (a) discuss with and notify the Commonwealth of any proposed changes to the CAR Reserve System that will significantly impact Forestry Operations, wood supply to industry, or change the Sustainable Yield of the region by more than one per cent;
- (b) not make any changes to the CAR Reserve System that would reduce the total percentage for each Forest Ecosystem, non-forest ecosystem or Old Growth forest below the targets set in the JANIS Report, noting that minor changes may occur as a result of actions that are in accordance with this Agreement; and
- (c) use best endeavours to not reduce the Dedicated Reserve component of the CAR Reserve System to below the level of protection as at December 2017 as contained in Attachment 1 Clause 5 to this Agreement noting that minor changes may occur as a result of actions that are in accordance with this Agreement.

66B The State will maintain public records indicating the location, extent and purpose of any amendment to those elements of the CAR Reserve System in Informal Reserves or Values Protected by Prescription categories and the net impact that any amendments have on CAR Values.

Environment and Heritage Values

Protection of Environment and Heritage Values

- 67 Parties agree to maintain the levels of protection of Environment and Heritage Values in a regional context; however, minor changes to the levels of protection of individual values may occur as a result of changes to the CAR Reserve System in State forest.
- 67A The Parties agree that the CAR Reserve System, established in accordance with this Agreement, and the application of the NSW Forest Management Framework, protects Environment and Heritage Values.

Climate change

- 67B The State agrees to manage its Forests in accordance with the NFPS objectives and policies as they relate to climate change, adaptation and carbon.
- 67C The Parties acknowledge:
- (a) climate change is driving more extreme weather events that will impact on Forest Management, including biodiversity and Listed Species and Communities, resource availability, and risk management for projected increases in frequency and magnitude of hazards including fire, floods, storms, sea level rise and heatwaves;
 - (b) integrating climate change adaptation into Forest Management is required to build resilience and manage climate risks and meet the objectives of ESFM; and
 - (c) the need to manage Forests to maintain or enhance the contribution of all elements of the Forest Estate to the effective management of carbon within the carbon cycle.

Environmental processes within forests

- 67D The State agrees to manage its Forests in accordance with the NFPS objectives and policies as they relate to water supply and catchment management and implement forest management practices that seek to:
- (a) ensure the availability of reliable, high-quality water supplies from forested land and to protect catchment values;
 - (b) minimise soil compaction and soil disturbance to encourage healthy forest growth and minimise downstream impacts.

INDUSTRY STABILITY

- 68 The Parties agree that State forest outside the CAR Reserve System is available for timber harvesting in accordance with this Agreement and the laws of New South Wales.

- 69 The Parties will use best endeavours to ensure that any changes to the total area of State forest or areas excluded from timber harvesting or Regional Prescriptions applied to State forest will not lead to a net deterioration in the capacity to supply wood from the Eden region.
- 70 In recognition of the contribution of timber and forest-based industries to the New South Wales' economy, the Parties intend that this Agreement will support future growth and development of New South Wales' industries associated with Forests and timber products specifically through:
- (a) certainty of resource access for the timber and forest-based industries;
 - (b) encouraging increased production of Plantation-grown timber to supplement wood supply from native Forests;
 - (c) facilitating timber and forest-based industries growth and development, in areas such as:
 - (d) skills retention and workforce development; research, innovation and extension; strategic marketing, communications and education; essential and strategic infrastructure; resource management and access; and regulatory modernisation; providing for other forest based industries, including:
 - security of access to the Mining industry by continuing to recognise defined land tenures which allow for Mineral Exploration and Mining subject to the requirements of State and Commonwealth legislation; and
 - facilitating economic opportunities for tourism and recreation.
- 71 As part of providing greater security of access to forest resources, the Commonwealth will not prevent enterprises obtaining, using or exporting the quantities of timber, Woodchips and Unprocessed Wood products sourced from the Eden region in accordance with this Agreement.
- 72 New South Wales will implement Sustainable Yield in accordance with Attachment 11 to this Agreement.
- 72A NSW will ensure Sustainable Yield is calculated and managed consistent with the ESFM principles at Attachment 14.
- 73 New South Wales agrees to make available to timber and Forest-based industries, Forest Products at volumes no greater than Sustainable Yields for the Eden region, as amended from time to time and determined in accordance with Attachment 11.
- 74 NOT USED
- 75 NOT USED
- 76 New South Wales agrees that the timber volumes made available under this Agreement will be reviewed using the processes described in clause 46 (f) and in accordance with the provisions of this Agreement. Any additional sustainable timber volumes identified in this way will be made available to industry provided this is consistent with this Agreement, including the provisions relating to

Ecologically Sustainable Forest Management, and that there are no adverse environmental effects, including deleterious effects on CAR Values or Matters of National Environmental Significance.

77 Wherever possible New South Wales will enhance silvicultural programs and reforestation works to improve the productive capacity of State forests.

78 NOT USED

ABORIGINAL CULTURE AND HERITAGE

79 New South Wales agrees to maintain, implement and regularly review guidelines and other measures to ensure the appropriate management of Aboriginal heritage including the maintenance of traditional historic uses and values, and to facilitate ongoing involvement of Aboriginal people in the management of natural and cultural values of relevant forested land of the Eden region. The principles to be applied are at Attachment 9.

79A The Parties agree that the Forest Management Framework provides a framework for the protection of Aboriginal heritage values that aligns with the NSW legislative framework for Aboriginal cultural heritage management, including in relation to consultation and ongoing involvement with Aboriginal people and managing the impacts of forestry operations on Aboriginal cultural heritage values.

79B The Parties commit to ongoing Aboriginal involvement in forest management and as required by the Aboriginal Cultural Heritage Advisory Committee (or any successor) in relation to protection of significant sites and places.

80 This Agreement is not intended to influence either current or future Native Title claims in any way. The Parties acknowledge that if any implementation of this Agreement affects any native title rights and interests such implementation must be in accordance with the *Native Title Act 1993* (Cth).

80A The Parties recognise that Aboriginal Land Councils in NSW can claim land vested in the Crown to compensate Aboriginal persons for historic dispossession of land and to support their social and economic development under the *Aboriginal Land Rights Act 1983* (NSW). Under section 36AA of the *Aboriginal Land Rights Act 1983* (NSW), Aboriginal Land Councils can also negotiate Aboriginal Land Agreements. The Parties agree that during the life of this Agreement its provisions do not restrict the rights of Aboriginal Land Councils to make land claims or have existing land claims determined over land the subject of this Agreement, or negotiate rights to use and enjoy such land as part of an Aboriginal Land Agreement under the *Aboriginal Land Rights Act 1983* (NSW).

80B In acknowledging the ongoing aspirations of Aboriginal persons to future ownership and/or roles in the management of Crown lands, the State agrees, so far as possible, not to transfer Public Land the subject of this Agreement to any other entity or authority unless:

- (a) if the land includes land for which a claim has been made under the *Aboriginal Land Rights Act 1983* (NSW), written consent for the transfer of the land has been given by:
- (i) the Local Aboriginal Land Council for the Local Aboriginal Land Council area (as defined in that Act) in which the land is located, and
 - (ii) where the claim is made by the New South Wales Aboriginal Land Council, the New South Wales Aboriginal Land Council, and
- (b) in any other case the State will, so far as possible, ensure that notice of its intent to transfer the land is given to the NSW Aboriginal Land Council, and to the Local Aboriginal Land Council within whose constituted area the land is situated.

80C The Parties recognise the *United Nations Declaration on the Rights of Indigenous Peoples*, including the right for the Aboriginal people of New South Wales to practise and revitalise their cultural traditions and customs. This includes the right to maintain, protect and develop their cultural traditions and customs.

PLANTATIONS

81 The Parties note that export controls on the export of Woodchips and Unprocessed Wood sourced from New South Wales Plantations have been removed in accordance with the *Export Control Act 1982* (Cth).

81A The Parties encourage the establishment and use of Plantation forests on existing essentially cleared land to generate social and economic values.

OTHER FOREST USES

82 Parties agree that Forest uses other than timber production will be determined in accordance with New South Wales legislation with due regard for protection of Environment and Heritage Values. In some limited circumstances that do not relate to the substance of this Agreement (for example foreign investment approval, export controls for non-forest products and major infrastructure developments) Commonwealth legislative provisions may also apply.

Mineral Exploration and Mining Operations

83 Parties recognise that under the *National Parks and Wildlife Act 1974* (NSW), issuing of new Mineral Exploration and Mining titles is not permitted (except by Act of Parliament) in national parks or historic sites, nature reserves, state game reserves, karst conservation reserves, Aboriginal areas and regional parks.

84 The Parties agree that Mining Operations are permitted within parts of the CAR Reserve System to the extent permitted by relevant State or Commonwealth legislation. In addition to any requirements for the protection of Matters of National Environmental Significance under the EPBC Act, a condition of Mining Operations in Informal Reserves and areas with Values Protected by Prescription is that: CAR Values that are compatible with those Mining Operations be maintained; and for CAR Values not compatible with those Mining Operations,

conservation be provided for elsewhere. Where a Mining Operation is not compatible with that part of the CAR Reserve System described as Values Protected by Prescription in Attachment 1, the State will use best endeavours to ensure that conservation of these values is provided for elsewhere.

- 85 New South Wales will ensure that any proposed Mining Operations will be subject to environmental impact assessment (including species impact statements where required) under the provisions of the *Environmental Planning and Assessment Act 1979* (NSW). Mining Operations will be subject to the *Mining Act 1992* (NSW), the *Petroleum (Onshore) Act 1991* (NSW), the *Protection of the Environment Operations Act 1997* (NSW), and the EPBC Act. Mining will be in accordance with an approved Mining Operations Plan and Annual Environmental Management Reports. Rehabilitation of any sites disturbed by Mining Operations will be carried out in accordance with the provisions of the relevant statutes (including the *Environmental Planning and Assessment Act 1979* (NSW) and the *Mining Act 1992* (NSW)).

COMPETITION PRINCIPLES

- 86 Parties recognise that under the Competition Principles Agreement, as amended from time to time, Governments aim to achieve more transparency and greater efficiency in Government owned business enterprises. The Commonwealth agrees that the day to day pricing and allocation arrangements for Forest Products from public Forests are matters for New South Wales. New South Wales confirms its commitment to the pricing and allocation principles set out in the *National Forest Policy Statement* and the application of competitive neutrality principles.

RESEARCH

- 87 The Parties agree that continuing research in a range of areas is vital to ensure that all aspects of Forest Management remain up to date with the latest information and technological developments. Parties have outlined themes for further research in Attachment 6.
- 88 The Parties agree to hold discussions on research themes and coordination as part of annual meetings pursuant clause 8B.
- 89 New South Wales will prepare for each five-yearly review, a compendium of New South Wales Forest research that will provide a bibliography of research in progress as well as published and unpublished works.
- 89A The Parties agree to document relevant Forest research undertaken in each reporting period and to update research themes in each five-yearly Progress Report.
- 90 Parties agree to consult each other in the development of joint research projects that may affect the Agreement and note that the subject themes and priorities may change throughout the duration of the Agreement.
- 91 Parties agree to make publicly available, wherever possible, research reports relevant to this Agreement.

DATA

- 92 The Parties recognise that the implementation and monitoring of this Agreement depends on appropriate mutual access to and availability of relevant information owned and held by each of them. The Parties agree to manage and provide access to data, including models used to develop and implement this Agreement.
- 93 The Parties commit to a policy of open access to information and agree that all data held by each of them that is used for ongoing implementation and monitoring of this Agreement is published under the least restrictive AusGOAL endorsed licences (including Creative Commons) unless otherwise agreed, or where data is confidential or otherwise restricted.

PART 3

Nature of Obligations under this Part

94 It is the intention of the Parties that this Part is to create legally enforceable rights and obligations. It is also their intention that, in the event that any provision of this Part exceeds the power of either Party or is unenforceable for any other reason, that provision is to be read as not intending to create legally enforceable rights and obligations.

Forest Management

95 New South Wales will for the duration of the Agreement:

95.1 NOT USED

95.2 Report annually to the New South Wales Parliament on compliance with any Integrated Forestry Operations Approval applying to the Eden region as required by the *Forestry Act 2012* (NSW) ;

95.3 Notify the Commonwealth within 14 days that:

- (a) a copy of the annual report on the Integrated Forestry Operations Approval for the Eden region is available on a relevant State government website;
- (b) a copy of any Integrated Forestry Operations Approval for the Eden region, and any amendments to that document is available on a relevant State government website;
- (c) there has been a termination, suspension or revocation of any Integrated Forestry Operations Approval applying to the Eden region; or
- (d) there has been a termination of any Private Native Forestry Code of Practice applying to the Eden region;

95.4 Implement and maintain an Integrated Forestry Operations Approval applicable to the Eden region ;

95.5 Implement and periodically review the Regional ESFM Plan containing the Ecologically Sustainable Forest Management strategy for State forests in the Eden region made under the *Forestry Regulation 2012* (NSW) under the *Forestry Act 2012* (NSW) ;

95.6 Maintain a forest yield estimation system for State forest and periodically review the calculation of Sustainable Yield consistent with Attachment 11;

95.7 Maintain and implement a Private Native Forestry Code of Practice applying to the Eden region;

95.8 Discuss with and notify the Commonwealth on proposed changes of a significant nature to the Forest Management Framework;

95.9 Maintain and implement environmental management systems in accordance with the principles outlined in Attachment 7.

96 The Commonwealth will:

96.1 Not prevent enterprises obtaining, using or exporting timber, Woodchips and Unprocessed Wood products sourced from the Eden region in accordance with this Agreement;

96.2 Recognise that the Forest Management Framework, as amended from time to time and as it applies to the Eden region, demonstrates continual improvement, for the purposes of ESFM and relevant provisions of this Agreement.

Compensation

97 The Parties agree that:

97.1 If to protect the Environment and Heritage Values in native forests and in connection therewith the protection of:

- (a) CAR Values; or
- (b) National Estate Values; or
- (c) World Heritage Values; or
- (d) Wild Rivers

the Commonwealth takes any Action during the period of this Agreement which is inconsistent with any provision of this Agreement and a foreseeable and probable consequence of which is to prevent or substantially limit:

- (e) the use of land which is not included within the CAR Reserve System for Forestry Operations which, immediately before the announcement of the proposed Commonwealth Action, are being undertaken or were intended to be undertaken at any time or the use of land which is not included within the CAR Reserve System or of land within that system but not within a Dedicated Reserve in which mineral exploration and mining is prohibited pursuant to a statutory licence, permit or authority permitting those Mining Operations or Extractive Operations which was in force immediately prior to the announcement of the proposed Commonwealth Action; or,
- (f) the sale or commercial use of Forest Products sourced from land which is not included within the CAR Reserve System or the first sale or first commercial use of Mining Products or Extractive Materials sourced from land which is not included within the CAR Reserve System or land within that system but not within a Dedicated Reserve in which mineral exploration and mining is prohibited for a purpose for which, immediately prior to the announcement of the proposed Commonwealth Action, they had been intended to be sold or used commercially at any time; or,

- (g) the construction on land which is not included within the CAR Reserve System of roads being built or intended to be built, immediately before the announcement of the proposed Commonwealth Action, where those roads' primary purpose is for the transportation of Forest Products sourced from land which is not included within the CAR Reserve System,

the Commonwealth will pay compensation to the State in accordance with the remaining provisions of clauses 97.2 to 97.20.

97.2 Subject to:

- (a) clauses 97.3, 97.4, 97.5, 97.6, 97.8, 97.9, 97.10, 97.11 and 97.12 the compensation to be paid by the Commonwealth to the State in accordance with clause 97.1 in relation to the prevention by Commonwealth Action of the use of land for Forestry Operations or prevention by Commonwealth Action of the sale or commercial use of Forest Products is the amount of the reasonable loss or damage sustained by reason of that prevention, calculated as at the time at which the prevention referred to in clause 97.1 occurred, by any person in any of the following classes of person:
 - (i) the Owner of the land or of the Forest Products on the land;
 - (ii) any person who, prior to the announcement of the proposed Commonwealth Action but not in anticipation of that Action, entered into a contract with the Owner of the land or of the Forest Products on the land or with any person mentioned in sub-paragraph (iii) below for the carrying out of Forestry Operations on the land; and
 - (iii) any person who, prior to the announcement of the proposed Commonwealth Action but not in anticipation of that Action, entered into a contract with the Owner of the land or of the Forest Products on the land to purchase the Forest Products on the land.
- (b) clauses 97.3, 97.4, 97.5, 97.6, 97.7, 97.8, 97.10, 97.11 and 97.12 the compensation to be paid by the Commonwealth to the State in accordance with clause 97.1 in relation to the prevention by Commonwealth Action of the use of land for Mining Operations or Extractive Operations or the first sale or first commercial use of Mining Products or Extractive Materials is the amount of the reasonable loss or damage sustained by reason of that prevention, calculated as at the time at which the prevention referred to in clause 97.1 occurred, by any person carrying on Mining Operations or Extractive Operations on the land pursuant to a statutory licence, permit or authority permitting those operations which was in force immediately prior to the announcement of the proposed Commonwealth Action.
- (c) clauses 97.3, 97.6, 97.8, 97.9, 97.11 and 97.12 the compensation to be paid by the Commonwealth to the State in accordance with clause 97.1 in relation to the prevention by Commonwealth Action of construction of a road is the amount of reasonable loss or damage sustained by reason of that prevention, calculated as at the time at which the prevention referred to in clause 97.1 occurred, by any person who, immediately before the

announcement of the proposed Commonwealth Action, was contracted to construct that road.

- 97.3 No amount of compensation is payable in the event of any loss or damage being sustained which would have been so sustained regardless of the Commonwealth Action. No compensation is payable hereunder in respect of any additional areas included pursuant to this Agreement in the CAR Reserve System.
- 97.4 The State warrants that no claim will be made in respect of areas where Forestry Operations or Mining Operations or Extractive Operations would not have been permitted by this Agreement and that any claims will be certified by it as being or not being in respect of such areas and as having been assessed by the State in this regard.
- 97.5 The State warrants that no claim will be made in respect of Forest Products or Mining Products or Extractive Materials which would not have been available for sale or commercial use under this Agreement and that any claims will be certified by it as being or not being in respect of such Products and as having been assessed by the State in this regard.
- 97.6 The State undertakes to supply to the Commonwealth on request information, including as to areas protected by prescription, required by the Commonwealth for the purposes of considering claims under this clause.
- 97.7 To the extent that clause 97.2(b) relates to loss or damage in respect of an exploration licence or assessment lease, that clause is to be read as providing for compensation to be payable only:
- (a) in respect of the part of the area to which that licence or lease relates that is affected by the Commonwealth Action; and
 - (b) up to the loss in market value of that licence or lease resulting from the prevention of the Mining Operations or Extractive Operations.
- 97.8 Any claim made by the State hereunder is to be notified in writing within six months after the loss or damage is sustained.
- 97.9 For the purposes of clauses 97.1(e) and (g), the intention to conduct Forestry Operations, or the intention to construct roads is to be established on the basis of contracts, documentation of management history or other records establishing clear intent and in existence immediately prior to the announcement of the proposed Commonwealth Action.
- 97.10 For the purposes of clause 97.1(f), the purpose for which there was an intention to sell or use commercially is to be established on the basis of contracts, documentation of management history or other records establishing clear intent and in existence immediately prior to the announcement of the proposed Commonwealth Action.
- 97.11 No compensation is payable under clause 97.2 in relation to any loss or damage which the person who sustained the loss or damage might have avoided by taking reasonable steps in mitigation including by the making of alternative

contractual arrangements which would have avoided or reduced that loss or damage.

97.12 Clause 97.2 does not apply so as to entitle the State to recover compensation more than once in respect of the same loss or damage.

97.13 The initial procedure in relation to a claim for compensation under this clause is as follows:

- (a) a person who claims to have sustained loss or damage for which compensation is payable may lodge an initiating claim with the State;
- (b) on receiving a claim, the State must make a corresponding claim for compensation to the Commonwealth;
- (c) the State is to make the claim for compensation by a notice in writing to the Commonwealth which indicates the amount claimed, for whom the claim is made, the area to which it relates and gives detailed particulars of the basis for the claim, and of the manner in which it has been calculated;
- (d) where there is a dispute concerning a claim for compensation, or on or before the expiry of 30 days after the receipt of the claim, the Commonwealth notifies the State that it does not accept the amount claimed, then either Party may serve a notice of dispute under clause 10;
- (e) in the event that the amount of compensation payable in response to a claim has not been agreed in the dispute resolution process for which clauses 10 to 14 provide, or the Commonwealth fails to pay the agreed amount of compensation to the State within 60 days of agreement (for reasons other than lack of the necessary appropriation), the Parties hereby refer the claim to arbitration;
- (f) an arbitration under this Agreement is to be conducted in accordance with the provisions of the *Commercial Arbitration Act 1984* (NSW) which are, to the extent permitted by the *Judiciary Act 1903* (C'wlth) and the Commonwealth constitution, incorporated by reference into this Agreement.

97.14 The procedure in relation to any arbitration required by reason of the provisions of clause 97.13 is as follows:

- (a) The Parties must meet to appoint an arbitrator within seven days of an unsuccessful mediation.
- (b) If the Parties are unable to agree on the appointment of an arbitrator, either of them may refer the matter to the President of the Law Council of Australia, or equivalent officer of such body as in future may have the functions of the Law Council of Australia, with a request that that person appoint an arbitrator.
- (c) At an arbitration under this clause:

- (i) the Parties are entitled to representation by a legal practitioner qualified to practice in any State or Territory of Australia;
- (ii) the arbitrator may order the Parties to discover any relevant documents prior to the hearing;
- (iii) the arbitrator may order the Parties to exchange proofs of evidence of witnesses (whether expert or not) prior to the hearing;
- (iv) the arbitrator may, in accordance with the *Commercial Arbitration Act 1984* (NSW), inform himself or herself, in relation to any matter in such manner as the arbitrator thinks fit; provided that if the arbitrator takes advice from any person who is not a Party to this Agreement as to the matters in issue, the arbitrator must provide the Parties with an opportunity to:
 - (1) make submissions on the matter in which the advice is to be taken;
 - (2) make submissions on the identity of the person from whom the advice is to be taken;
 - (3) make submission on the substance of any advice given before making any decision on the issue on which the advice is taken.

97.15 Unless the Commonwealth appeals the decision of the arbitrator under the *Commercial Arbitration Act 1984* (NSW), and subject to clause 97.18, the Commonwealth undertakes to pay the State the amount of any award made by an arbitrator under clause 97.14 as a debt due to the State, within 60 days of the award.

97.16 Except where the State is the person who sustained the relevant loss or damage, any payment of compensation made by the Commonwealth to the State in accordance with this clause will be paid to and received by the State as trustee for the person who sustained the relevant loss or damage.

97.17 Subject to clause 97.18(b), where the State receives monies as a trustee pursuant to clause 97.16, it will pay those monies to the person who sustained the relevant loss or damage within 30 days.

- 97.18
- (a) Where the Commonwealth has agreed to pay compensation to the State under this clause, or an award of compensation has been made under clause 97.14 as a result of arbitration, and the Commonwealth claims that events have since taken place which have the result that the compensation so agreed or awarded no longer reflects the actual loss or damage that has been or will be sustained, the Commonwealth may by notice in writing to the State, decline to pay that compensation.
 - (b) If a notice under paragraph (a) is delivered after the State has received the compensation so agreed or awarded, but before the State has paid it to the person who sustained the relevant loss or damage, the State will not pay the compensation to that person.

- (c) If a notice under paragraph (a) is delivered, the Parties will attempt to agree the amount of the compensation which the Commonwealth should pay, and -
 - (i) in default of agreement, will first seek to resolve the dispute by dispute resolution under clauses 10 to 14; and
 - (ii) in the event that the dispute is not so resolved, or the Commonwealth fails to pay the agreed amount of compensation to the State within 60 days of agreement (for reasons other than lack of the necessary appropriation), hereby refer the claim for compensation to arbitration in accordance with the *Commercial Arbitration Act 1984* (NSW).
- (d) Subject to paragraph (e) of this clause, where an arbitration takes place in accordance with sub-paragraph (c)(ii), clauses 97.14 and 97.15 of this Agreement apply to that arbitration and to any amount awarded in that arbitration.
- (e) If, following the observance of paragraph (c) of this clause, it is determined by agreement or award that the Commonwealth should pay a reduced amount of compensation to the State, the State will within 30 days of that determination -
 - (i) repay to the Commonwealth the amount by which the compensation paid to it by the Commonwealth is reduced; and
 - (ii) pay the balance of the compensation to the person who sustained the relevant loss or damage.
- (f) If, following the observance of paragraph (c) of this clause, it is determined by agreement or award that the amount of compensation previously paid to the State is correct the State will within 30 days of that determination pay to the person who sustained the relevant loss or damage the amount of the compensation previously paid to it by the Commonwealth.

97.19 Where the State:

- (a) has received monies as a trustee pursuant to clause 97.16; and
- (b) has made all reasonable endeavours to pay the monies to the person who sustained the relevant loss or damage; and
- (c) but has been unable to do so within six months of receiving payment

the State shall repay to the Commonwealth at the expiry of that period the monies so received.

97.20 In this clause

- (a) "Action" means
 - (i) the commencement of legislation or subordinate legislation; and

- (ii) administrative action which is taken pursuant to legislation or subordinate legislation, or otherwise than in accordance with such legislation.
- (b) “Owner” means
- (i) in relation to land
 - (1) the owner of any estate or interest in that land, including the Crown in right of the State; and
 - (2) any statutory corporation which has the power to carry on Forestry Operations or Mining Operations or Extractive Operations, as the case may be, on the land for profit.
 - (ii) in relation to Forest Products or Mining Products or Extractive Materials, as the case may be, the owner of any interest in those products.

98 NOT USED

Termination

99 This Agreement may only be terminated by the Commonwealth:

- (a) where the dispute resolution procedures in clauses 10 to 14 have been observed and the State has been given a 90 day period of notice on:
 - (i) a failure by the State to comply with clause 65, being a failure to implement the CAR Reserve System described in Attachment 1 and to manage and conserve the identified CAR Values; or
 - (ii) a failure to comply with clause 33 and 46(a), being a failure to maintain a current New South Wales Forest Agreement that reflects the outcomes of this Agreement throughout the life of this Agreement. The Commonwealth agrees not to terminate this Agreement because of a failure by New South Wales to maintain a Forest Agreement for the Eden region. However, the Parties acknowledge that if the State does not maintain a Forest Agreement covering the Eden region, termination of this Agreement by the Commonwealth would be authorised by s 7 of the *Regional Forest Agreements Act 2002* (Cth); or
 - (iii) a failure to comply with clause 46**Error! Reference source not found.**; or
 - (iv) a failure to comply with clause 46(f), being a failure to implement the FRAMES inventory in the Eden region and review the calculation of Sustainable Yield ; or
 - (v) a failure to comply with clauses 46(g), and (h) and clause **Error! Reference source not found.**;

other than a failure of a minor nature which is not one or part of a series of deliberate or reckless failures of a minor nature; and save that the above provisions do not apply if rectification is possible and has occurred before the end of the 90 day period; or

- (b) on a fundamental failure by the State to comply with the spirit of the Agreement after the observance of the dispute resolution procedures in clauses 10 to 14.

100 This Agreement may only be terminated by the State:

- (a) where the dispute resolution procedures in clauses 10 to 14 have been observed and the Commonwealth has been given a 90 day period of notice on:

- (i) NOT USED

- (ii) a failure by the Commonwealth to comply with clause 97, being a failure to pay compensation due under that clause;

save that the above provisions do not apply if rectification is possible and has occurred before the end of the 90 day period; or

- (b) on a fundamental failure by the Commonwealth to comply with the spirit of the Agreement after the observance of the dispute resolution procedures in clauses 10 to 14.

101 This Agreement may be terminated with the consent of the Commonwealth and the State.

Notice of intention to review before termination by consent

102 A consent under clause 101 is of no effect, unless:

102.1 it is given at least 12 months after a notice of intention to review the operation of this Agreement is published in the Commonwealth *Gazette* and a national newspaper and a newspaper circulating in New South Wales stating that a joint review is being undertaken by the Parties because they intend to terminate the Agreement by consent;

102.2 the Parties have conducted the joint review as in accordance with this clause ;

102.3 the joint review must consider whether the operation of the Agreement has met the goals set out in Recitals A and B ;

102.4 within eight months after the notice of intention to review is published under this clause, and after considering any submissions to the joint review, the Parties must make a report of the review publicly available ; and

102.5 if, under clauses 8D and 8E, a five-yearly review is to be conducted during the 12 month period after a notice of intention to review is published under this

clause, and the joint review is conducted under this clause, the Parties may agree that the review under clauses 8D and 8E need not be undertaken.

IN WITNESS WHEREOF this Agreement has been signed for and on behalf of the Parties as at the day and year first above written.

SIGNED by

the HONOURABLE JOHN WINSTON HOWARD MP, Prime Minister)
)
)

for and on behalf of the Commonwealth of Australia

in the presence of:)
)
)

SIGNED by

the HONOURABLE BOB CARR MLA, Premier)
)
)

for and on behalf of the State of New South Wales

in the presence of:)
)
)

ATTACHMENTS

ATTACHMENT 1

(clauses 2, 46(g), 55, 63, 64, 64A, 65, 66, 66A, 84, 99(a)(i), Attachment 7)

COMPREHENSIVE, ADEQUATE AND REPRESENTATIVE (CAR) RESERVE SYSTEM

- 1 Map 1 and this Attachment identify the CAR Reserve System for the purpose of this Agreement, as amended from time to time.
- 2 The *National Forest Policy Statement* (NFPS) established that the CAR Reserve System will, in the first instance, be selected from Public Land. Provision is also made in the JANIS Reserve Criteria for inclusion of Private Land in the CAR Reserve System, with the agreement of landholders, where the Criteria cannot be met from Public Land.

PUBLIC LAND

- 3 In the Eden region, the CAR Reserve System on lands of the Crown primarily comprises areas established for conservation purposes (eg National Parks and Nature Reserves) and areas reserved for conservation in State forest.

CAR RESERVE SYSTEM COMPONENTS AND PROTECTION MECHANISMS

- 4 The CAR Reserve System on Public Land has the following three components:
 - *Dedicated Reserves*. This comprises reserves established through legislation for conservation purposes such as National Parks, Nature Reserves and Flora Reserves (Special Protection Zone, FMZ 1).
 - *Informal Reserves*. This comprises those parts of the Special Management Zone (FMZ 2) under the Forest Management Zoning system that are greater than 40ha, are more than 200m wide, or are directly adjacent to Dedicated Reserves. It also includes those areas dedicated as State Conservation Areas under the provisions of the *National Parks and Wildlife Act 1974* (NSW) which are managed by the NSW National Parks and Wildlife Service.
 - *Values Protected by Prescription*. These comprise those elements of habitat protected by Regional Prescriptions as detailed in the Integrated Forestry Operations Approval covering the Eden region and areas within the Harvesting Exclusions (FMZ 3A) and Special Prescription Zone (FMZ 3B) under the Forest Management Zoning system that are excluded from harvesting. They also include elements of the Special Management Zone (FMZ 2) that are less than 40ha and less than 200m wide. The Integrated Forestry Operations Approval complements the Dedicated and Informal Reserve network and includes protection of rare non-commercial forest types, Old Growth forest, rainforest and threatened species in all areas that have been identified to be primarily managed for sustainable production.

- 5 As at December 2017, the Dedicated Reserve component of the CAR Reserve System covers 273 000 ha, the Informal Reserve component 4 000 ha and the prescriptive component 20 000 ha. Together the Dedicated Reserve and Informal Reserve components of the CAR Reserve System cover an area of approximately 276 000 ha (about 58% of the Public Land in the region or 34 % percent of the entire region).
- 6 Levels of protection for Forest Ecosystems and Old Growth forest achieved in the Dedicated Reserve, Informal Reserve and the Values Protected by Prescription components of the CAR Reserve System are shown in Tables 1 and 2. The tabulated percentage area of these values in prescription includes elements of the Special Management Zone (FMZ 2) that are less than 40ha and less than 200m wide, as well as areas of Old Growth forest (and Forest Ecosystems within these areas) that will be managed by the Integrated Forestry Operations Approval . .
- 7 The IFOA provides for protection of environmental values in addition to those protected in FMZ 2, FMZ 3A, FMZ 3B, mapped areas under the IFOA, or other CAR Reserves and quantified in Tables 1 and 2. The protections under the IFOA are updated and modified from time to time as a result of the continual improvement process to improve the effectiveness and efficiency of these conditions.

Environment and Heritage Values Protected by prescription

- 8 For Environment and Heritage Values that are not included in reserves, the JANIS Reserve Criteria provide for the management of such values through prescriptions. Within the General Management Zone of the Forest Management Zoning system (FMZ 4), Forestry Operations and other activities are permitted. The principal vehicles by which Environment and Heritage Values will be managed within FMZ 4 are:
 - The Integrated Forestry Operations Approval covering the Eden region will be the principal vehicle by which environment values are protected through prescription. The Integrated Forestry Operations Approval takes account of the extent of reserved habitat, and balances an operationally efficient timber industry with the need to protect native plants and animals, ecosystems, soils and water.
 - Aboriginal and non-Aboriginal cultural heritage guidelines made in accordance with relevant legislation and amended from time to time, provide prescriptions for the management of heritage values that are impracticable to include in reserves in the Eden region.

IDENTIFIED CAR VALUES AND THEIR PROTECTION AFFORDED THROUGH THE RFA

8A Levels of protection for Forest Ecosystems and Old Growth forest achieved in the CAR Reserve System are shown in Tables 1 and 2 of this Attachment as follows:

- Dedicated Reserves; as described in Clause 4 of this Attachment,
- Informal Reserves; as described in Clause 4 of this Attachment,

- Values Protected by Prescription; includes the areas within the Harvesting Exclusions Zone (FMZ 3A), the Special Prescription Zone (FMZ 3B), those areas of the Special Management Zone (FMZ 2) that, due to the size or shape, do not meet the Informal Reserve category outlined above, and mapped areas under the IFOA.

It should be noted that the IFOA affords additional protection over that included in the table.

Forest Management Zoning

9 Within the Forest Management Zoning system, of particular significance for the conservation of Forest Ecosystems and Old Growth forest are :

- *Special Protection Zone (FMZ 1)*. These areas are dedicated and managed to maximise the protection of natural and cultural values. Timber harvesting, removal of Forest Products and materials, grazing by domestic stock, gravel/hard rock quarrying and mineral and petroleum exploration are not generally permitted within this zone.
- *Special Management Zone (FMZ 2)*. These areas are established following public comment and are gazetted and managed for the protection of natural and cultural conservation values where it is not possible or practicable to include them in the Special Protection Zone. Activities not permitted in this zone are similar to the Special Protection Zone except that mineral and petroleum exploration are permitted. Any mining proposal following from exploration will require standard environmental impact assessment and development approval processes.
- *Harvesting Exclusions Zone (FMZ 3A)*. These are areas where harvesting is excluded but other management and production activities preclude zoning as Special Protection Zone (FMZ 1) or Special Management Zone (FMZ 2). These may be:
 - i) Dedicated leasehold where lease conditions permit activities such as grazing and timber supply for lease fencing etc, and in some cases residency, or
 - ii) Areas identified as important by the Department of Planning and Environment where there are current or imminent petroleum and Mineral Exploration and/or Mining Operations, or
 - iii) Other areas which are excluded from harvesting (eg. Net Harvestable Area (NHA) exclusions) but size, boundaries or management practicabilities preclude designation as FMZ 1 or FMZ 2.
- *Special Prescription Zone (FMZ 3B)*. These areas are established for the protection and management of identified conservation values, whilst also allowing other management and production activities. These activities (which in some cases includes timber, Forest Product and materials extraction) are minimised in their design and implementation to maintain or enhance the values

that the area is zoned to protect. A case by case assessment of these areas will be undertaken to determine which forestry activities can occur. The decision is dependent on the specific values involved.

Table 1. Representative conservation (percentage reservation status as at 1999 and December 2017) of Forest and Non-Forest Ecosystems in the CAR Reserve System in the Eden region based on vegetation mapping to establish the pre-1750 extent of Forest Ecosystems in the region^a.

Forest Ecosystems	Area		Percent Remaining as at 1999	Status ^b	Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at 1999				Percent of Forest Ecosystem (pre-1750) in the public components of the CAR reserve system, as at December 2017 ^c			
	Pre 1750 (ha)	As at 1999 (ha)			Dedicated Reserves	Informal Reserve ^c	Prescription ^d	Total	Dedicated Reserves	Informal Reserve ^c	Prescription ^d	Total
1 Dry Rainforest*	47	42	88.9	R	62.8	0.0	0.0	62.8	68	0	0	68
2 Myanba Rainforest	333	333	100.0	R	96.7	0.0	0.0	96.7	100	0	0	100
3 Rocky Top Dry Shrub Forest	1188	1188	100.0		86.5	0.3	0.0	86.8	88	0	0	88
4 <i>Acacia sylvestris</i> / Brogo Shrub Rainforest	6673	6288	94.2		54.4	0.0	0.0	54.4	54 [^]	0	0	54[^]
5 Bunga Head Rainforest	7	7	100.0	R	100.0	0.0	0.0	100.0	100	0	0	100
6 Coastal Warm Temperate Rainforest	6466	6390	98.8	V	49.0	1.3	4.4	54.7	61	1	7	70
7 Hinterland Warm Temperate Rainforest	3052	3026	99.2	V	69.7	0.1	0.5	70.3	70 [^]	0	1	71
8 Cool Temperate Rainforest	1053	1053	100.0	R	84.6	0.1	0.7	85.4	86	0	6	91
9 Mountain Wet Layered Forest (<i>E. nitans</i>)	2267	1813	80.0		71.0	0.0	0.4	71.4	75	0	1	76
10 Mountain Wet Layered Forest (<i>E. fastigata</i>)	20033	17940	89.6		46.5	0.2	1.0	47.7	47	0	4	51
11 Tantawangalo Wet Shrub Forest	792	790	99.8	R	91.3	0.0	0.9	92.2	92	0	6	98
12 Mountain Wet Fern Forest	2302	2259	98.1		72.6	1.6	0.8	75.0	73	2	4	78
13 Hinterland Wet Fern Forest	48310	44032	91.1		56.0	0.4	0.6	57.0	58	0	1	59
14 Hinterland Wet Shrub Forest	26967	25875	96.0		32.7	1.8	4.3	38.8	36	1	8	45
15 Mountain Wet Herb Forest	41581	30875	74.3		39.0	0.3	0.6	39.9	39	0	4	44
16 Basalt Wet Herb Forest	14902	12208	81.9		23.2	0.7	0.5	24.4	25	0	2	26
17 Flats Wet Herb Forest	3553	2931	82.5	V	30.8	0.6	0.8	32.2	31	0	2	34
18 Brogo Wet Vine Forest	7850	4306	54.8	V	16.2	0.0	0.0	16.2	18	0	0	18
19 Bega Wet Shrub Forest	47710	16891	35.4	V	7.1	0.1	0.2	7.4	8	0	1	8
20 Bega Dry Grass Forest*	31951	3808	11.9	E	0.7	0.0	0.0	0.7	1	0	0	1
21 Candelo Dry Grass Forest*	17873	1463	8.2	E	0.5	0.0	0.0	0.5	1	0	0	1
24 Subalpine Dry Shrub Forest	95020	26584	28.0	V	3.8	0.1	0.1	4.0	5	0	0	5
25 Sandstone Dry Shrub Forest	1142	822	72.0	R	63.5	0.0	0.0	63.5	64 [^]	0	2	66[^]
26 Tableland Dry Shrub Forest	28045	16114	57.5		20.4	0.2	1.7	22.3	21	0	3	24
27 Waalimma Dry Grass Forest	1324	1324	100.0	R	22.2	0.0	4.9	27.1	23	0	5	28
28 Wog Dry Grass Forest	1304	922	70.7	R	67.6	0.0	0.0	67.7	69	0	0	69
29 Nalbaugh Dry Grass Forest	2597	1936	74.6		27.4	0.8	1.8	30.0	27	1	4	32
30 Wallagaraugh Dry Grass Forest	1663	914	55.0	R	21.8	0.1	7.3	29.2	23	0	7	30
31 Hinterland Dry Grass Forest	32925	27586	83.8		50.2	0.1	1.0	51.3	52	0	2	54

Forest Ecosystems	Area		Percent Remaining as at 1999	Status ^b	Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at 1999				Percent of Forest Ecosystem (pre-1750) in the public components of the CAR reserve system, as at December 2017 ^c			
	Pre 1750 (ha)	As at 1999 (ha)			Dedicated Reserves	Informal Reserve ^c	Prescription ^d	Total	Dedicated Reserves	Informal Reserve ^c	Prescription ^d	Total
32 Coastal Dry Shrub Forest (<i>E. longifolia</i>)	24520	23400	95.4		36.9	0.5	0.9	38.3	56	0	2	58
33 Coastal Dry Shrub Forest (<i>E. muelleriana</i>)	16298	16136	99.0		57.8	1.2	0.4	59.4	59	0	2	62
34 Brogo Dry Shrub Forest	16124	14144	87.7		34.5	0.1	1.0	35.6	50	0	1	51
35 Escarpment Dry Grass Forest	34571	22004	63.6		27.2	0.1	0.0	27.3	27	0	0	28
36 Dune Dry Shrub Forest*	1018	603	59.3	R	28.8	0.1	0.1	29.0	30	0	0	31
37 Coastal Dry Shrub Forest (<i>An. floribunda</i>)	16150	15147	93.8		33.7	1.1	6.1	40.9	35	1	10	45
40 Riverine Forest*	81	65	80.8	R,E	0.0	0.0	0.0	0.0	0	0	0	0
41 Mountain Dry Shrub Forest (<i>E. fraxinoides</i>)	1865	1864	100.0		83.6	0.0	0.0	83.6	84	0	3	87
42 Coastal Dry Shrub Forest (<i>E. obliqua</i>)	22040	21552	97.8		26.4	0.5	2.8	29.7	27	0	6	33
43 Mountain Dry Shrub Forest (<i>E. cypellocarpa</i>)	2492	2479	99.5		90.8	0.0	0.0	90.8	91	0	1	92
44 Foothills Dry Shrub Forest	3326	3142	94.5		69.9	1.0	0.1	71.0	70	1	3	74
45 Mountain Dry Shrub Forest (<i>E. sieberi</i>)	2024	1915	94.6		53.1	0.2	0.6	53.9	53	0	3	56
46 Lowland Dry Shrub Forest	15977	15120	94.6		45.8	2.0	1.0	48.8	50	2	2	55
47 Eden Dry Shrub Forest	17797	17141	96.3		69.0	1.2	0.6	70.8	71	1	2	75
48 Bega Dry Shrub Forest	4496	4455	99.1		75.3	0.0	0.2	75.5	93	0	0	93
49 Coastal Dry Shrub Forest (<i>E. agglomerata</i>)	32332	31835	98.5		26.0	1.2	1.2	28.4	27	1	6	33
50 Genoa Dry Shrub Forest	3702	3026	81.7		56.1	0.1	0.2	56.4	57	0	4	61
58 Swamp Forest	1080	953	88.3	R	42.3	1.2	8.5	52.0	45	1	33	78
71 Monaro Basalt Grass Woodland*	23442	3387	14.4	V	0.5	0.0	0.0	0.5	1	0	1	1
72 Numeralla Dry Shrub Woodland	11879	8240	69.4	V	4.3	0.3	0.0	4.6	5	0	0	5
73 Monaro Dry Grass Forest*	5412	3615	66.8	V	11.1	15.7	0.0	26.8	39	0	0	39
79 Timbillica Dry Shrub Forest	22917	22792	99.5		15.3	1.1	5.4	21.8	15	1	16	32
81 Wadbilliga Dry Shrub Forest	27347	27337	100.0		98.4	0.0	0.0	98.4	99	0	0	99
82 Wadbilliga Range Ash Forest	1007	1007	100.0	R	100.0	0.0	0.0	100.0	100	0	0	100
84 Wadbilliga Range Wet Forest	3495	3207	91.8		72.6	0.0	0.2	72.8	74	0	0	74
85 Wadbilliga Gorge Dry Forest	7743	7234	93.4		82.5	0.0	0.0	82.5	83 [^]	0	0	83 [^]
86 Wadbilliga River Valley Forest	1899	1894	99.7		89.6	0.0	0.0	89.6	91	0	0	91

Non-Forest Ecosystems	Area		Percent Remaining as at 1999	Status ^b	Percent of Non-Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at 1999				Percent of Non-Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at December 2017 ^e			
	Pre 1750 (ha)	As at 1999 (ha)			Dedicated Reserves	Informal Reserve ^c	Prescription ^d	Total	Dedicated Reserves	Informal Reserve ^c	Prescription ^d	Total
23 Monaro Grassland*	6461	331	5.1	E	0.0	0.0	0.0	0.0	0	0	0	0
38 Southern Riparian Scrub	611	516	84.5	R	47.0	1.7	1.8	50.5	50	2	4	55
39 Northern Riparian Scrub*	761	485	63.7	R	6.6	0.1	0.1	6.8	8	0	0	9
51 Rock Shrub (<i>K. ambigua</i>)	51	51	100.0	R	80.0	0.0	5.4	85.4	80 [^]	0	8	88 [^]
52 Mountain Rock Scrub	202	202	100.0	R	92.2	0.0	0.0	92.2	92 [^]	0	0	92 [^]
53 Montane Heath	1751	1350	77.1	V	32.0	9.7	0.0	41.7	42	0	0	43
54 Mountain Nadgee Heath	371	371	100.0	R	99.8	0.0	0.0	99.8	99 [^]	0	0	99 [^]
55 Coastal Lowland Heath	1676	1630	97.3		90.7	0.0	0.0	90.7	95	0	0	95
56 Swamp Heath	385	385	100.0	R	21.8	5.1	7.7	34.6	22 [^]	6	14	42 [^]
57 Lowland Swamp	2010	1892	94.1		52.8	11.4	11.3	75.5	53	11	15	80
59 Sub-alpine Bog	6634	1869	28.2	R	7.4	0.0	0.2	7.6	8	0	1	9
60 Floodplain Wetlands*	9420	3281	34.8	V	3.6	0.3	0.4	4.3	4	0	1	5
61 Coastal Scrub	2191	1504	68.7	V	52.0	0.0	0.0	52.0	54	0	0	54
63 Estuarine Wetland (<i>M. ericifolia</i>)	3021	930	30.8	R,V	3.6	0.1	0.1	3.8	4	0	0	4
64 Saltmarsh	368	295	80.0	R	20.1	0.2	0.0	20.3	20 [^]	1	0	21 [^]
66 Estuarine Wetland (<i>Av. marina</i>)	56	38	68.9	R	23.1	0.0	0.0	23.1	36	0	0	36
83 Wadbilliga Mallee Heath	3085	3085	100.0	R	99.2	0.0	0.0	99.2	99	0	0	99

NOTES ACCOMPANYING TABLE 1

- The figures shown in this table are based on modelled information mapped at a scale of 1:25 000 derived during the pre-1750 analysis of vegetation types in the Eden region, and are therefore only approximate.
- The status is based on: Rare (R) which has a total current area below 1000 hectares and a target of 100% of its current distribution. Endangered (E) which has < 10% remaining and a target of 100% of its current distribution. Vulnerable (V) which has between 10-30% remaining and a target of 60% of its current distribution. Some values were given their rare, endangered or vulnerable status due to other factors such as range of distribution, patch size and expert opinion on vulnerability. All remaining Forest Ecosystems have a target of 15% of their pre-1750 distribution.
- Informal Reserve includes Special Management Zones that are > 40ha and > 200m wide, or that are adjacent to Dedicated Reserves.
- Tabulated prescriptions include those elements of the Special Management Zone that are < 40ha and/or < 200m wide, and Forest Ecosystems protected by the Integrated Forestry Operations Approval Old Growth prescriptions.
- Source: compiled by ABARES from RFA data, including data from CRA reports, IFOAs, NPWS and FCNSW
- * These Forest Ecosystems have been identified as priorities for protection on Private Land (see Attachment 12).
- = These Forest Ecosystems will have additional protection from the Integrated Forestry Operations Approval.
- [^] The figure supplied by ABARES has been amended by DPI to address inconsistencies resulting from changes in spatial analysis systems and processes over time.

Table 2. Representative conservation of Old Growth forest in the CAR Reserve System as at 1999 and December 2017 in the Eden region^a.

Forest Ecosystem	Area of Forest Ecosystem (ha) as at 1999	Percent of Forest Ecosystem as Old Growth as at 1999	Area Old Growth (ha) as at 1999	Percent of Old Growth forest in the CAR Reserve System as at 1999				Percent of Old Growth forest in the CAR Reserve System as at December 2017 ^c			
				Dedicated Reserve	Informal Reserve	Prescription ^b	Total	Dedicated Reserve	Informal Reserve	Prescription ^b	Total
OG 9 Mountain Wet Layered Forest (<i>E. nitans</i>)	1813	24.5	444	95.9	0.0	0.0	95.9	98	0	0	98
OG 10 Mountain Wet Layered Forest (<i>E. fastigata</i>)	17940	21.7	3895	86.5	0.2	0.6	87.3	87	0	2	89
OG 11 Tantawangalo Wet Shrub Forest	790	26.1	206	97.6	0.0	1.5	99.1	98	0	2	100
OG 12 Mountain Wet Fern Forest	2259	26.2	592	85.6	0.0	0.5	86.1	85	0	1	86
OG 13 Hinterland Wet Fern Forest	44032	21.3	9360	81.4	0.4	0.6	82.4	82	0	1	83
OG 14 Hinterland Wet Shrub Forest	25875	15.1	3917	57.0	3.5	3.3	63.8	59	3	6	67
OG 15 Mountain Wet Herb Forest	30875	18.8	5804	78.4	0.0	0.3	78.7	78	0	3	82
OG 16 Basalt Wet Herb Forest	12208	13.7	1668	59.5	0.4	0.9	60.8	61	0	1	62
OG 17 Flats Wet Herb Forest	2931	9.6	280	60.7	0.4	0.0	61.1	62	0	1	63
OG 18 Brogo Wet Vine Forest	4306	9.5	407	55.6	0.0	0.0	55.6	61	0	0	61
OG 19 Bega Wet Shrub Forest	16891	15.1	2553	42.7	0.3	3.8	46.8	47	0	2	49
OG 20 Bega Dry Grass Forest	3808	7.9	299	15.4	0.0	0.0	15.4	16	0	0	16
OG 21 Candelo Dry Grass Forest	1463	17.3	253	24.5	0.0	0.0	24.5	24	0	0	24
OG 24 Subalpine Dry Shrub Forest	26584	28.2	7486	17.2	0.7	0.1	18.0	21	0	0	22
OG 25 Sandstone Dry Shrub Forest	822	21.5	177	99.4	0.0	0.0	99.4	100	0	0	100
OG 26 Tableland Dry Shrub Forest	16114	9.1	1472	55.0	0.2	21.1	76.3	55	0	17	72
OG 27 Waalimma Dry Grass Forest	1324	5.1	68	42.6	0.0	30.9	73.5	43	0	25	68
OG 28 Wog Dry Grass Forest	922	12.9	119	92.4	0.0	0.0	92.4	99	0	0	99
OG 29 Nalbaugh Dry Grass Forest	1936	10.6	205	63.4	0.0	21.5	84.9	64	0	20	84
OG 30 Wallagaraugh Dry Grass Forest	914	8.1	74	44.6	0.0	24.3	68.9	45 [^]	0	19	64[^]
OG 31 Hinterland Dry Grass Forest	27586	18.1	4993	75.1	0.1	0.5	75.7	77	0	2	79

Forest Ecosystem	Area of Forest Ecosystem (ha) as at 1999	Percent of Forest Ecosystem as Old Growth as at 1999	Area Old Growth (ha) as at 1999	Percent of Old Growth forest in the CAR Reserve System as at 1999				Percent of Old Growth forest in the CAR Reserve System as at December 2017 ^c			
				Dedicated Reserve	Informal Reserve	Prescription ^b	Total	Dedicated Reserve	Informal Reserve	Prescription ^b	Total
OG 32 Coastal Dry Shrub Forest (<i>E. longifolia</i>)	23400	10.4	2424	64.9	0.7	5.2	70.8	72	0	3	75
OG 33 Coastal Dry Shrub Forest (<i>E. muelleriana</i>)	16136	17.6	2839	78.7	1.5	0.1	80.3	80	1	2	82
OG 34 Brogo Dry Shrub Forest	14144	20.1	2841	62.5	0.1	0.7	63.3	69	0	1	71
OG 35 Escarpment Dry Grass Forest	22004	22.6	4971	60.7	0.2	0.1	61.0	61	0	1	62
OG 36 Dune Dry Shrub Forest	603	19.4	117	61.5	0.0	0.0	61.5	62	0	0	62
OG 37 Coastal Dry Shrub Forest (<i>An. floribunda</i>)	15147	18.5	2799	48.4	1.1	9.6	59.1	49	1	14	63
OG 41 Mountain Dry Shrub Forest (<i>E. fraxinoides</i>)	1864	18.9	353	88.1	0.0	0.0	88.1	88	0	3	91
OG 42 Coastal Dry Shrub Forest (<i>E. obliqua</i>)	21552	8.3	1778	57.0	0.7	26.2	83.9	57	1	19	77
OG 43 Mountain Dry Shrub Forest (<i>E. cypellocarpa</i>)	2479	20.8	516	90.3	0.0	0.0	90.3	90	0	0	91
OG 44 Foothills Dry Shrub Forest	3142	23.8	748	82.5	0.0	0.3	82.8	83	0	5	88
OG 45 Mountain Dry Shrub Forest (<i>E. sieberi</i>)	1915	18.1	346	88.4	0.0	0.0	88.4	89	0	1	90
OG 46 Lowland Dry Shrub Forest	15120	31.0	4687	55.8	4.5	1.2	61.5	57	4	3	65
OG 47 Eden Dry Shrub Forest	17141	25.3	4332	75.8	2.9	0.9	79.6	77	3	2	83
OG 48 Bega Dry Shrub Forest	4455	17.4	776	89.3	0.0	0.0	89.3	93	0	0	93
OG 49 Coastal Dry Shrub Forest (<i>E. agglomerata</i>)	31835	10.6	3380	59.6	2.3	1.5	63.4	60	2	4	66
OG 50 Genoa Dry Shrub Forest	3026	28.1	849	88.9	0.2	0.6	89.7	89	0	0	90
OG 58 Swamp Forest	953	12.7	121	86.0	0.0	7.4	93.4	88	2	7	96
OG 71 Monaro Basalt Grass Woodland	3387	11.4	388	12.4	0.0	0.0	12.4	14	0	4	18
OG 72 Numeralla Dry Shrub Woodland	8240	26.9	2214	13.8	1.4	0.0	15.2	15	0	0	15
OG 73 Monaro Dry Grass Forest	3615	20.2	732	31.7	25.8	0.0	57.5	66	0	0	66
OG 79 Timbillica Dry Shrub Forest	22792	6.7	1525	33.2	2.8	46.4	82.4	33	2	43	78
OG 81 Wadbilliga Dry Shrub Forest	27337	40.6	11101	99.1	0.0	0.0	99.1	99	0	0	99

Forest Ecosystem	Area of Forest Ecosystem (ha) as at 1999	Percent of Forest Ecosystem as Old Growth as at 1999	Area Old Growth (ha) as at 1999	Percent of Old Growth forest in the CAR Reserve System as at 1999				Percent of Old Growth forest in the CAR Reserve System as at December 2017 ^c			
				Dedicated Reserve	Informal Reserve	Prescription ^b	Total	Dedicated Reserve	Informal Reserve	Prescription ^b	Total
OG 82 Wadbilliga Range Ash Forest	1007	39.5	398	100.0	0.0	0.0	100.0	100	0	0	100
OG 84 Wadbilliga Range Wet Forest	3207	39.6	1270	90.0	0.0	0.0	90.0	90	0	0	90
OG 85 Wadbilliga Gorge Dry Forest	7234	27.9	2016	92.3	0.0	0.0	92.3	92	0	0	92
OG 86 Wadbilliga River Valley Forest	1894	28.3	535	90.6	0.0	0.0	90.6	91	0	0	91
Total Area	515 019 ha		98 326 ha								

NOTES ACCOMPANYING TABLE 2

- a. The figures shown in this table are based on modelled information mapped at a scale of 1:25 000 derived during the pre-1750 analysis of vegetation types in the Eden region, and are therefore only approximate.
- b. This comprises those elements of Special Management Zones that are < 40ha and/or < 200m wide and Old Growth forest protected by the Integrated Forestry Operations Approval.
- c. Source: compiled by ABARES from RFA data, including data from CRA reports, IFOAs, NPWS and FCNSW

^ The figure supplied by ABARES has been amended by DPI to address inconsistencies resulting from changes in spatial analysis systems and processes over time

Rainforest Protection

- 10 Forestry Operations are prohibited from all rainforest, including a 20m buffer, by the Integrated Forestry Operations Approval applicable to the Eden region.

Old Growth forest

- 10B Forestry Operations are prohibited from all Old Growth forest in the Eden region by the Integrated Forestry Operations Approval.

Additional Protection for Forest Ecosystems

- 11 Forestry Operations are prohibited from rare non-commercial Forest Ecosystems by the Integrated Forestry Operations Approval applicable to the Eden region. These Forest Ecosystems include 20 Bega Dry Grass Forest, 21 Candelo Dry Grass Forest, 71 Monaro Basalt Grass Woodland, 36 Dune Dry Shrub Forest, 38 Southern Riparian Scrub; 39 Northern Riparian Scrub, 40 Riverine Forest and 58 Swamp Forest.

- 11A Forestry Operations are prohibited from Threatened Ecological Communities (TECs) by the Integrated Forestry Operations Approval applicable to the Eden region.

- 12 Under the *National Park Estate (Land Transfers) Act 1998* (NSW), Schedule 5 (State forests vested in NPW Minister subject to leasehold interests), some Forest Ecosystems will have additional protection from harvesting. These include 58 Swamp Forest, 19 Bega Wet Shrub Forest, 26 Tableland Dry Shrub Forest, 30 Wallagaraugh Dry Grass Forest and 31 Hinterland Dry Grass Forest.

Wilderness

- 13 Almost all (99%) of Wilderness, as defined in the JANIS Reserve Criteria (ie National Wilderness Inventory (Lesslie and Maslen 1995) minimum rating 12 in patches greater than 8 000ha), in the Eden region is protected within Dedicated Reserves under this Agreement.

Management of CAR Values

- 14 Management plans for Dedicated Reserve and Informal Reserve elements of the CAR Reserve System will clearly identify the CAR Values and the actions being taken in each reserve to appropriately manage and conserve those values.
- 15 As an integral component of managing CAR values New South Wales agrees to implement systematic and targeted fauna and flora surveys in Dedicated Reserves and Informal Reserves to complement surveys carried out under the IFOAs. The extent of survey work undertaken will be subject to available funding.

Protections on Public Land subject to Plantation authorisation

16 For Plantations on Public Land, the Plantations and Reafforestation (Code) Regulation 2001 (NSW), contains standards for the protection of soil and water, Biodiversity, and places, objects or items of heritage significance.

LISTED SPECIES AND COMMUNITIES

- 1 Both Parties recognise the range of mechanisms to conserve the habitat of Listed Species and Communities in the Eden region. These include: (i) protection within the CAR Reserve System; (ii) protection of key habitat components using the Integrated Forestry Operations Approval; (iii) protection of key habitats such as rainforest, heaths, swamps and other wet communities, rocky outcrops and threatened ecological communities; and (iv) Biodiversity Conservation Programs for species, and communities listed under the *Biodiversity Conservation Act 2016* (NSW) and the development, maintenance and implementation of relevant Statutory Conservation Planning Documents under the *Fisheries Management Act 1994* (NSW) and for species, populations and communities listed under the EPBC Act. . Key species are protected by a combination of reservation and prescription.
- 2 Priorities at the signing of the Eden RFA for developing Recovery Plans for threatened forest dependent fauna and flora for the first five years of this Agreement are provided in Table 1. Parties note that the list at Table 1 is indicative only. These priorities may change and new priorities may arise in response to additional information, funding etc.
- 3 Where NSW Statutory Conservation Planning Documents under the *Biodiversity Conservation Act 2016* (NSW) or the *Fisheries Management Act 1994* (NSW) meet the requirements of the EPBC Act, the Commonwealth will consider adopting them under the EPBC Act.

Threatening Processes

- 4 Threatening processes are those listed as a key threatening process under the *Biodiversity Conservation Act 2016* (NSW), *Fisheries Management Act 1994* (NSW) and the EPBC Act in recognition that the process adversely affects or may threaten the survival, abundance or evolutionary development of a native species or ecological community. Threatening Processes are managed under the Biodiversity Conservation Program or with Threat Abatement Plans under the EPBC Act or other coordinated programs across land tenure. Some Threatening Processes affecting Forests are mitigated by the settings in the Integrated Forestry Operations Approval applicable to the Eden region.

Table 1: Priority species for preparation of Recovery Plans (as at 1999 and showing current status)

Scientific name	Common Name	NSW Status	National Status	Management stream under the NSW Biodiversity Conservation Program	Current status of national recovery plans and conservation advice
<i>Potorous longipes</i>	Long-footed Potoroo	Critically endangered	Endangered	Partnership	Nationally adopted recovery plan in place 2001 and in force; Conservation advice made 2016
<i>Isoodon obesulus</i>	Southern Brown Bandicoot	Endangered	<i>Isoodon obesulus</i> (south-eastern) is listed as Endangered	Site-managed	Conservation Advice made 2016
<i>Pseudomys fumeus</i>	Smoky Mouse	Critically endangered	Endangered	Site-managed	National recovery plan adopted in 2008 and in force.
<i>Phascolarctos cinereus</i>	Koala (SE NSW Population)	Vulnerable	<i>Phascolarctos cinereus</i> (combined populations of Qld, NSW and the ACT) is listed as Vulnerable	Iconic Species	Conservation Advice made 2012
<i>Mixophyes balbus</i>	Stuttering Barred Frog	Endangered	Vulnerable	Landscape	National recovery plan adopted in 2012 and in force
<i>Heleioporus australiacus</i>	Giant Burrowing Frog	Vulnerable	Vulnerable	Landscape	Conservation advice made 2014

Scientific name	Common Name	NSW Status	National Status	Management stream under the NSW Biodiversity Conservation Program	Current status of national recovery plans and conservation advice
<i>Dasyurus maculatus</i>	Tiger Quoll	Vulnerable	<i>Dasyurus maculatus maculatus</i> (SE mainland population) listed as Endangered	Landscape	National recovery plan adopted in 2016 and in force
<i>Lathamus discolor</i>	Swift Parrot	Endangered	Critically Endangered	Landscape	National recovery plan adopted in 2012 and in force; Conservation Advice made in 2016
<i>Ninox strenua</i>	Powerful Owl	Vulnerable	Not listed under the EPBC Act	Landscape	NSW recovery plan for Large Forest Owls adopted in 2006.
<i>Tyto novaehollandiae</i>	Masked Owl	Vulnerable	Not listed under the EPBC Act	Landscape	NSW recovery plan for Large Forest Owls adopted in 2006.
<i>Tyto tenebricosa</i>	Sooty Owl	Vulnerable	Not listed under the EPBC Act	Landscape	NSW recovery plan for Large Forest Owls adopted in 2006.
<i>Xanthomyza phrygia</i>	Regent Honeyeater	Critically endangered	Critically endangered	Site-managed	National recovery plan adopted in 2016 and in force; Conservation Advice made 2015
<i>Acacia constablei</i>	Narrabarba Wattle	Vulnerable	Vulnerable	Site-managed	Conservation Advice made 2014
<i>Acacia georgensis</i>	Bega Wattle	Vulnerable	Vulnerable	Keep-watch	Conservation Advice made 2014

Scientific name	Common Name	NSW Status	National Status	Management stream under the NSW Biodiversity Conservation Program	Current status of national recovery plans and conservation advice
<i>Eucalyptus imlayensis</i>	Imlay Mallee	Critically endangered	Endangered		Conservation Advice made 2008
<i>Eucalyptus parvula</i>	Small-leaved Gum	Endangered	Vulnerable		Conservation Advice made 2008
<i>Genoplesium rhyoliticum</i>	Rhyolite Midge Orchid	Endangered	Endangered	Site-managed	Conservation Advice made 2014
<i>Monotoca rotundifolia</i>	Trailing Monotoca	Endangered	Not listed under the EPBC Act	Data-deficient	
<i>Phebalium ralstonii</i>	Ralston's Phebalium	Vulnerable	Vulnerable	Site-managed	Conservation Advice made 2014
<i>Pomaderris cotoneaster</i>	Cotoneaster Pomaderris	Endangered	Endangered	Site-managed	National recovery plan adopted in 2010 and in force
<i>Pomaderris elachophylla</i>	Lacy Pomaderris	Endangered	Not listed under the EPBC Act	Partnership	
<i>Viola cleistogamoides</i>	Hidden Violet	Endangered	Not listed under the EPBC Act	Partnership	
<i>Westringia davidii</i>	David's Westringia	Vulnerable	Vulnerable	Site-managed	Conservation Advice made 2014
<i>Zieria buxijugum</i>	Box Zieria	Critically endangered	Endangered	Site-managed	National recovery plan adopted in 2004 and in force; Conservation Advice made 2016
<i>Zieria formosa</i>	Shapely Zieria	Critically endangered	Endangered	Site-managed	National recovery plan adopted in 2004 and in force; Conservation Advice made 2016
<i>Zieria parrisiae</i>	Parris' Zieria	Critically endangered	Critically endangered	Site-managed	National recovery plan adopted in 2004 and in

Scientific name	Common Name	NSW Status	National Status	Management stream under the NSW Biodiversity Conservation Program	Current status of national recovery plans and conservation advice
					force; Conservation Advice made 2018

Table notes:

(1) **Site-managed:** species can be successfully secured in the wild by carrying out targeted management actions at specific sites

Landscape: generally distributed across large areas and subject to threats at landscape scale

Iconic: species which the community places a high value on and has particular expectations for conservation

Data deficient: there is insufficient knowledge available on the ecology, distribution and/or management requirements to enable a site-managed species project

Partnership: has less than 10% of its population/distribution occurring within NSW

Keep Watch: lower priority for investment in management.

ATTACHMENT 3 NOT USED

ATTACHMENT 4 NOT USED

ATTACHMENT 5 NOT USED

RESEARCH PRIORITIES

- 1 The Parties agree to hold annual discussions on research themes, coordination and potential future directions.
- 2 New South Wales will prepare for each five-yearly review, a compendium of New South Wales Forest research that will provide a bibliography of research in progress, as well as published and unpublished works.
- 3 Research priorities for this Agreement will be updated in each five-yearly Progress Report and discussed at annual meetings.
- 4 The Parties agree to include a summary of forest related research in each five-yearly Progress Report and include an update on current research themes.
- 5 Current research themes include:
 - Forest ecology and sustainability, including flora, fauna, soil and water conservation;
 - Forest health and biosecurity;
 - Forest Products innovation and value adding;
 - Forest resource assessment and security;
 - Forest carbon, bioenergy and biofuels;
 - Climate change impacts and adaptive management;
 - Effectiveness of management prescriptions;
 - Socio-economic values of forest based industries;
 - Cultural values and cultural use;
 - Fire ecology;
 - Long-term water quality and quantity impacts associated with forestry operations; and
 - Matters of National Environmental Significance.

**CONTINUAL IMPROVEMENT OF THE NEW SOUTH WALES FOREST
MANAGEMENT FRAMEWORK**

New South Wales will implement, adapt and improve its Forest Management Framework across forest management agencies and land tenures by:

- 1 NSW National Parks and Wildlife Service maintaining an environmental management system (EMS) or equivalent management system demonstrating ESFM, for lands dedicated under the *National Parks and Wildlife Act 1974* (NSW) consistent with the following broad principles:
 - an appropriate environmental policy should be in place;
 - the environmental aspects arising from the organisation's past, existing or planned activities, products or services should be identified to determine the environmental impacts of significance;
 - relevant legislative and regulatory arrangements should be identified;
 - priorities should be identified and appropriate environmental objectives and targets set;
 - a structure and program(s) to implement the policy and achieve objectives and targets should be established;
 - planning, monitoring, corrective action, auditing and review activities should be facilitated to ensure both that the policy is complied with and that the EMS or equivalent management system remains appropriate;
 - the system should be capable of adapting to changing circumstances.
- 2 Forestry Corporation of NSW maintaining a Forestry Corporation of NSW Hardwood Forest Management System as an EMS and maintaining EMS certification under ISO14001 or a demonstrated equivalent environmental management system.
- 3 Implementing the New South Wales Biodiversity Strategy or any subsequent biodiversity strategy which complements ESFM.
- 4 Implementing a native vegetation regulatory map and regulatory framework under the *Local Land Services Act 2013* (NSW) which together with other management documents allow for specific activities to occur that comply with Regulatory Instruments.
- 5 Improving the coordination and effective use of resources allocated to research for ESFM in New South Wales.

- 6 Providing ongoing formal public participation processes to raise awareness and understanding of ESFM and how it can be achieved in New South Wales forests.
- 7 Implementing information management systems to facilitate the sharing of data for the use by all agencies, including local government, involved in the management of forested land.
- 8 Improving the cooperation and coordination between NSW Government agencies so as to achieve integrated management for conservation, wood production, and other values in Forests on both Public Land and Private Land.
- 8A Developing and implementing a community awareness program to build understanding of ESFM and clearly relate these to management requirements for conservation and to the Regulatory Instruments governing activities in both public and private forests.
- 9 Improving administrative arrangements to ensure Ecologically Sustainable Forest Management on private forests including providing technical advice, extension services and research including assistance in the estimation of Sustainable Yield.
- 10 Maintaining and enhancing competency based training for field staff and staff or contractors undertaking Forestry Operations in flora and fauna identification and management, heritage management, soil and water protection, silvicultural training, inventory and management information systems, and Aboriginal cultural awareness and Aboriginal site identification. .
- 11 Maintaining a Regional ESFM Plan or equivalent instrument which includes the ESFM strategy for the Eden region consistent with any Integrated Forestry Operation Approval applicable to the Eden region, and statutory requirements, and including:
 - Specification and description of the range of values and processes to be managed, including objectives and targets of management;
 - Descriptions of and links to Regulatory Instruments, standard operating procedures and guides or manuals ;
 - Determination of Sustainable Yield ;
 - Ongoing arrangements for monitoring activities specified in the plan and reporting against plan objectives and targets;
 - Process for regular reviews of the plan involving public consultation.
- 12 Integrating bush fire management, including hazard reduction burning activities, across tenure via co-ordinated Bush Fire Management Plans under the *Rural Fires Act 1997* (NSW).
- 13 Integrating pest animal and weed control activities across tenure via Regional Strategic Pest Animal Management Plans and Regional Strategic Weed

Management Plans, which have been developed to support regional implementation of the *Biosecurity Act 2015* (NSW) and NSW Biosecurity Strategy.

14 Maintaining an Integrated Forestry Operations Approval under the *Forestry Act 2012* applicable to the Eden region, noting that the Integrated Forestry Operations Approval will include the following:

- terms under which Forestry Operations may legally occur;
- conservation for environment values to levels of achievement consistent with Attachments 1 and 2;
- measures for biodiversity conservation, soil and water protection and threatened fish protection;
- linkages to prescribed fire management arrangements; and
- measures for the recording and collection of data to inform adaptive management and continual improvement of the Integrated Forestry Operations Approval.

15 The Parties note that procedures for reviewing Integrated Forestry Operations Approvals are set out in the *Forestry Act 2012* (NSW).

16 The Parties note that the terms of an Integrated Forestry Operations Approval will have primacy over other elements of the Forestry Corporation of NSW Hardwood Forest Management System. The Parties recognise that the Forestry Corporation of NSW Hardwood Forest Management System (including the Regional ESFM Plan, , the plan of operations, and harvesting plans), will be the mechanism for implementing the terms of the Integrated Forestry Operations Approval on State forest.

**MONTREAL PROCESS CRITERIA FOR THE CONSERVATION AND
SUSTAINABLE MANAGEMENT OF TEMPERATE AND BOREAL
FORESTS**

- Criterion 1: Conservation of biological diversity
- Ecosystem diversity
 - Species diversity
 - Genetic diversity
- Criterion 2: Maintenance of productive capacity of forest ecosystems
- Criterion 3: Maintenance of ecosystem health and vitality
- Criterion 4: Conservation and maintenance of soil and water resources
- Criterion 5: Maintenance of forest contribution to global carbon cycles
- Criterion 6: Maintenance and enhancement of long term multiple socio-economic benefits to meet the needs of societies
- Production and consumption
 - Recreation and tourism
 - Investment in the forest sector
 - Cultural, social and spiritual needs and values
 - Employment and community needs
- Criterion 7: Legal, institutional and economic framework for forest conservation and sustainable management

A framework for development of these criteria and indicators is described in the document, *Australia's Sustainable Forest Management Framework of Criteria and Indicators 2008-Policy Guidelines* (Commonwealth of Australia, 2008).

ATTACHMENT 9
(clauses 46(e), 79)

MANAGING LANDS OF SIGNIFICANCE TO ABORIGINAL PEOPLE

1 New South Wales agrees to continue to manage CAR Reserve System and State forest on Public Land with significance to Aboriginal people according to the following principles:

- It is appreciated by both Parties that the Aboriginal people of NSW have a spiritual, social, cultural and economic relationship with their traditional lands and waters, sky, ceremonial and viewing corridors and songlines, including natural values such as flora, fauna and landforms.
- The Parties recognise that the cultural heritage of the Aboriginal peoples of NSW is a living cultural heritage, and intrinsic to their well-being.
- The Parties recognise that the cultural heritage of the Aboriginal peoples of NSW comprises both intangible elements (such as beliefs, knowledge and practices) and tangible elements (such as objects, landforms, and ancestral remains).
- The Parties recognise the aspirations Aboriginal people have in regards to ownership of lands and the rights of Aboriginal Land Councils under the *Aboriginal Land Rights Act 1983* (NSW) for certain Crown lands to be returned to Aboriginal peoples .
- Both Parties appreciate that the *Native Title Act 1993* (Cth) provides opportunities for Aboriginal people to make application to the Federal Court for their native title rights to be determined and to negotiate Indigenous Land Use Agreements with the NSW Government for the management of public lands in their native title area.
- The Parties recognise the rights Aboriginal people have in regards to management of traditional lands, and are committed to a working relationship with Aboriginal communities for co-operative design of relevant strategies and policies and co-operative management of Government managed lands as agreed, which may include lands managed by NSW National Parks and Wildlife Service and the Forestry Corporation of NSW.
- An integral part of this commitment to co-operative management is the transmission of culture to provide opportunity for local Aboriginal people to access training and to gain employment, to ensure that Aboriginal people can effectively participate in the management of their traditional country, where that country includes Forests on Public Land.
- The New South Wales Government has provided for Aboriginal people to own lands reserved under the *National Parks and Wildlife Act 1974* (NSW) that are of cultural significance to them through the *National Parks and Wildlife Amendment (Aboriginal Ownership) Act 1996* (NSW). Both Parties

acknowledge that there are National Parks and reserves within the Eden region that may meet the terms of the *National Parks and Wildlife Act 1974* (NSW), and actively advocate the assessment of the Eden region for this purpose.

- Both Parties support initiatives between Government agencies (both State and Local) and Aboriginal communities, that will both strategically manage and preserve New South Wales' rich cultural heritage, and ensure that the maintenance and enhancement of the CAR Reserve System considers Aboriginal interests and values.
 - The Parties will, with Aboriginal stakeholders, identify funding opportunities to support Aboriginal participation in forest management, in particular any Forest Estate areas identified as of special significance to Aboriginal people in the Eden region, for example Working on Country and Indigenous Protected Area programs.
 - Aboriginal parties will be invited to participate in any new partnership arrangement evolved out of this Agreement for the management of the CAR Reserve System.
 - The management arrangements for access to and use of Ben Boyd National Park and Nadgee Nature Reserve will be resolved by a formal process between the NSW National Parks and Wildlife Service and Aboriginal people.
 - The Parties recognise that Traditional Owners under the *Native Title Act 1993* (Cth) have the right to access and use certain Government managed lands for the purposes of cultural practice . This includes access to Forest Products.
 - The NSW Government recognises that opportunities exist for Aboriginal people in the commercial development of areas of economic significance or in the commercial use of Forest Products, and agrees to respond to requests from the Aboriginal community to develop these opportunities, for example through existing training and mentoring programs.
- 2 The Parties agree to use best endeavours to meet and exceed government Aboriginal employment and procurement targets in the Eden RFA region, particularly in relation to public Forests and cultural heritage management.

ATTACHMENT 10 NOT USED

SUSTAINABLE YIELD SYSTEMS AND PROCESSES

- 1 The Parties agree that Sustainable Yield calculations and the method and processes used, are important in realising ESFM on the State forest and Crown-timber land estate.
- 1A The Parties agree that FRAMES provides a sound basis for volume allocations at the strategic level and will be used to estimate Sustainable Yield. Further information on FRAMES and its history and implementation can be found in the document *Forest Resource and Management Evaluation System (FRAMES) – A Report on its Development and Implementation to 30 June 2016* (FCNSW).
- 2 New South Wales will review and update Sustainable Yield calculations from State forest at least once every five-year review period, or more frequently on an as needs basis. Sustainable Yield calculations will be based on modelling with the goal of yielding the maximum non-declining yield of High Quality Logs over a minimum period of 100 years.
- 3 New South Wales will commission an independent audit of Sustainable Yield calculations at least once every five-yearly review period having regard to the elements in item 5.
- 3A New South Wales will make publicly available the independent audit of Sustainable Yield calculations by publication on the website of the relevant department or agency. Sustainable Yield calculations will address relevant Forest Products for the Eden region, which may include High Quality Logs, Low Quality Logs, Pulpwood and Other Wood Products.
- 4 Any changes in volume allocations to the timber and forest-based industries will be based on Sustainable Yield and be consistent with modelling using FRAMES or an equivalent system.
- 5 New South Wales will maintain a continual improvement program for FRAMES including the following elements:
 - Establishing processes for appropriate internal reviews and audits of Sustainable Yield as part of the Forestry Corporation of NSW Hardwood Forest Management System.
 - Document and review systems, processes, models and databases used in the calculation of Sustainable Yield specifically:
 - growth models and growth model inputs;
 - inventory plot currency and measurement;
 - spatial inputs that determine the modelled net harvest area;

- silviculture, product recovery, yield tables and modelling assumptions to ensure that the modelled outputs reflect current practices and actual yields;
- resource risk management aspects and mitigations (e.g. changes to the model due to resource loss through fire, changes to legislation or Regulatory Instruments that alter access to the resource and invalidate current modelling assumptions, or other impacts associated with climate change); and
- monitor and publish a reconciliation of predicted versus actual Forest Products yields in the third and fifth years of every five-year period.

ATTACHMENT 12
(clauses 53A, 55, 64, 64A and Attachment 1)

CONSERVATION MECHANISMS ON PRIVATE LAND

- 1 Both Parties agree that CAR Values on Private Land are complementary to the CAR Reserve System identified on Public Land.
- 2 Both Parties agree that in complementing the CAR Reserve System on Public Land, conservation on Private Land can only be voluntary.
- 2A Both Parties recognise that for Private Land to be included in the CAR Reserve System, the conservation mechanism (as outlined in point 5) applied must be legally binding and in-perpetuity.
- 3 Both Parties agree that the following objectives should apply to the voluntary conservation of CAR Values on Private Land :
 - seek to maximise protection of agreed CAR Values;
 - that the processes are clearly understood by the community;
 - that real partnerships are developed;
 - that the outcomes will provide benefits for all parties; and
 - that actions must be strategic and integrated.
- 4 Both Parties agree that the most important elements in any mechanism designed to achieve conservation management on private forested land in the Eden region are:
 - effectiveness of the outcomes;
 - ownership of the process;
 - simplicity of the process;
 - clarity of roles of the participants;
 - certainty of the outcomes;
 - flexibility in the approaches adopted; and
 - equity between participants.
- 5 Both Parties agree that a range of conservation mechanisms are applicable to Private Land. These may include mechanisms which are legally binding and in-perpetuity, or non-legally binding and/or fixed term, such as:
 - voluntary options under the Conservation Partners Program;

- landholder initiated agreements;
 - noncontractual voluntary agreements;
 - fee for service;
 - voluntary acquisition;
 - fixed term common law contract;
 - in perpetuity common law contract;
 - community grants;
 - property management plans;
 - voluntary land and water management plans; and
 - other mechanisms that may be developed to suit individual landholders or situations.
- 6 Both Parties agree that capacity building within the private landholder estate to support individual and community decision making are prerequisites to the voluntary processes outlined above.
- 7 Forest Ecosystems that require conservation on Private Land have been listed and prioritised in Table 1.
- 8 The areas of priority Forest Ecosystems and Non-Forest Ecosystems in the CAR Reserve System on Private Land as at June 2016 are provided in Table 1A.

Table 1 Priorities for the CAR Reserve System on Private Land

Priority for voluntary protection of Forest Ecosystems on Private Land		
High Priority	Moderate Priority	Low Priority
<i>Forests</i>		
20 Bega Dry Grass Forest	1 Dry Rainforest	73 Monaro Dry Grass Forest
21 Candelo Dry Grass Forest	71 Monaro Basalt Grass Woodland	
40 Riverine Forest	36 Dune Dry Shrub Forest	
<i>Non-Forests</i>		
23 Monaro Grassland	39 Northern Riparian Scrub	
60 Floodplain Wetlands		

Table 1A Area of priority Forest Ecosystems and Non-Forest Ecosystems in the Eden RFA region CAR Reserve System on Private Land as at June 2016

Forest Ecosystem	Total Ecosystem Area (hectares)	Area in CAR Reserve System on Private Land (hectares)	Proportion in CAR Reserve System on Private Land as at 30 June 2016 (%)
20 Bega Dry Grass Forest	3,808	63	1.7
21 Candelo Dry Grass Forest	1,463	5	0.3
40 Riverine Forest	65	0	0
1 Dry Rainforest	42	0	0
71 Monaro Basalt Grass Woodland	3,387	2	0.1
36 Dune Dry Shrub Forest	603	10	1.7
73 Monaro Dry Grass Forest	3,615	0	0
Non-Forest Ecosystem			
73 Monaro Grassland	331	0	0
60 Floodplain Wetlands	516	0	0
39 Northern Riparian Scrub	485	2	0.4

It should be noted that these are priorities only for protection by voluntary conservation mechanisms.

Rainforest Protection

- 9 Rainforest is protected from Forestry Operations in accordance with the Private Native Forestry Code of Practice.

Old Growth forest

- 10 Old Growth forest is protected from Forestry Operations in accordance with the Private Native Forestry Code of Practice.

Additional Protection for Forest Ecosystems

- 11 Under the Private Native Forestry Code of Practice, Forestry Operations in and adjacent to specified landscape features must comply with requirements to protect these features. This includes requirements to protect endangered ecological communities, endangered populations, vulnerable ecological communities, wetlands, heathland, rocky outcrops and steep slopes.
- 12 The Private Native Forestry Code of Practice contains standards for the protection of threatened ecological communities and threatened species.

Protections on Private Land subject to Plantation authorisation

- 13 For Plantations on Private Land, the Plantations and Reafforestation (Code) Regulation 2001 (NSW), contains standards for the protection of soil and water, biodiversity, and places, objects or items of heritage significance.

ATTACHMENT 13 NOT USED

**PRINCIPLES OF ECOLOGICALLY SUSTAINABLE FOREST
MANAGEMENT (ESFM)**

Principle 1: Maintain or increase the full suite of forest values for present and future generations across the NSW native forest estate

- The principle of intergenerational equity (that in meeting the needs of the present generation, the ability of the future generations to meet their own needs is not compromised) is embodied in this principle.
- Ensure that ESFM at the regional and smaller scales is implemented by ecologically appropriate planning and operational practices, and that ESFM targets are set and indicators of performance are monitored.
- Ensure the long-term maintenance of the full range of values of the NSW existing forest estate. The intention is to maintain or increase not only the full range of values, but also the magnitude or level at which those values are maintained or increased.
- Encourage the increased production of plantation-grown timber and the social and economic benefits flowing from this increased production to supplement the wood supply from native forests.

Aims for values include

A Biodiversity

- Biological diversity of forests at the ecosystem, species and genetic levels where biological diversity includes natural patterns of ecosystems, species and gene pools in time and space.
- Address the requirements of vulnerable species.
- Assist with the recovery of threatened species, and maintain the full range of ecological communities at viable levels.
- Protect landscape values through the careful planning of operations and the reservation of appropriate patches and corridors of vegetation.

B The productive capacity and sustainability of forest ecosystems

- Maintain ecological processes within forests (such as the formation of soil, energy flows and the carbon, nutrient and water cycles, fauna and flora communities and their interactions).
- Maintain or increase the ability of forest ecosystems to produce biomass whether utilised by society or as part of nutrient and energy cycles.

- Ensure the rate of removal of any forest products is consistent with ecologically sustainable levels.
- Ensure the deleterious effects of activities/disturbances which threaten forests, forest health or forest values are minimised.

C Forest ecosystem health and vitality

- Reduce or avoid threats to forest ecosystems from introduced diseases, exotic plants and animals, unnatural regimes of fire or flooding, wind shear, land clearing and urbanisation.
- Promote good environmental practice in relation to pest management.
- Ensure the deleterious effects of activities/disturbances within forests, their scale and intensity, including their cumulative effects are minimised.
- Restore and maintain the suite of attributes (ecological condition, species composition and structure of native forests) where forest health and vitality have been degraded.

D Soil and water

- Maintain the chemical and biological functions of soils by protecting soils from unnatural nutrient losses, exposure, degradation and loss.
- Maintain the physical integrity of soils by protecting soils from erosion, mass movement, instability, compaction, pulverisation and loss.
- Protect water quality (physical, chemical, biological) by measures controlling disturbance resulting from forest activities.
- Identify and maintain at appropriate levels, water yield and flow duration in catchments.

E Positive contribution of forests to global geochemical cycles

- Maintain the positive contribution of forests to the global geochemical cycle (includes climate, air and water quality and deposition).

F Long-term social and economic benefits

- Maintain and enhance, on an ecologically sustainable basis, production of wood and wood products, including value adding, investment and resource security.
- Provided it is ecologically sustainable, set, maintain or enhance the level of use of non-wood products and uses, including bee-keeping, grazing, mining, recreation and tourism, reliable water supply.

- Maintain and enhance, on an ecologically sustainable basis, the provision of employment and community needs such as economic diversification, investment skills, education, jobs stability, training and Indigenous needs.
- Encourage the establishment and use of plantation forests on existing cleared land to expand social and economic values.
- Maintain and enhance the intangible social welfare benefits which forests provide.

G Natural and cultural heritage values

- Protect social, natural and cultural heritage values and sites, including aesthetic, landscape, historic, cultural, educational, scenic, spiritual and scientific values, including Indigenous values and sites.

Principle 2 Ensure public participation, access to information, accountability and transparency in the delivery of ESFM.

- Ensure public participation in decision-making processes at local, regional and State and Federal levels.
- Ensure comprehensive, timely and reasonable public access to information.
- Ensure transparency, openness and accountability in decision making processes and performance.

Principle 3 Ensure legislation, policies, institutional framework, codes, standards and practices related to forest management require and provide incentives for ecologically sustainable management of the native forest estate.

Establish a process for shared management and administration, recognising the customary and traditional rights of Indigenous people, and the interests of private land-holders and other stakeholders in an area's management.

Principle 4 Apply precautionary principles for prevention of environmental degradation

The incorporation of the precautionary principle into decision making has been endorsed by State and Commonwealth Governments (Commonwealth of Australia 1992 p. 49, IGAE 1992) and is defined as *'where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. In the application of the precautionary principle, public and private decisions should be guided by:*

- *careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment; and*
- *an assessment of the risk-weighted consequences of various options.'*

Principle 5 Apply best available knowledge and adaptive management processes

ESFM would utilise the concept of adaptive management and continual improvement based on best science and expert advice and targeted research on critical gaps in knowledge, monitoring or evaluation.



Australian Government Solicitor

DEED OF VARIATION

DEED OF VARIATION IN RELATION TO THE REGIONAL FOREST AGREEMENT
FOR THE NORTH EAST REGION

The Commonwealth of Australia

The State of New South Wales

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DEED OF VARIATION

DEED OF VARIATION IN RELATION TO THE REGIONAL FOREST AGREEMENT FOR THE NORTH EAST REGION

Date

This deed is made on _____ 2018.

Parties

This deed is made between and binds the following parties:

1. The **Commonwealth of Australia** (the **Commonwealth**)
2. The **State of New South Wales** (the **State**)

Context

This deed is made in the following context:

- A. The parties entered into the Regional Forest Agreement to establish a framework for the management of certain forests.
- B. The parties have agreed to amend the Regional Forest Agreement on the terms and conditions contained in this deed.
- C. Except as amended by this deed, the Regional Forest Agreement continues in full force and effect without amendment.

Operative provisions

In consideration of the mutual promises contained in this deed, the parties to this deed agree as follows:

1. Definitions and Interpretation

Definitions

- 1.1. In this deed, unless the contrary intention indicates otherwise:

Effective Date	means the date of this deed.
Regional Forest Agreement	means the Regional Forest Agreement for the North East Region (Upper North East and Lower North East Regions) dated 31 March 2000 between the Commonwealth and the State, as amended from time to time.

Interpretation

- 1.2. In this deed, unless the contrary intention appears:
- a. clause headings are for convenient reference only and have no effect in limiting or extending the language of provisions to which they refer;

- b. if any word or phrase is given a defined meaning, any other part of speech or other grammatical form of that word or phrase has a corresponding meaning;
- c. the annexures form part of this deed; and
- d. in the interpretation of this deed no rules of construction apply to the disadvantage of any party on the basis that it put forward this deed.

Guidance on construction of deed

- 1.3. As far as possible all provisions of this deed will be construed so as not to be void or otherwise unenforceable.
- 1.4. If anything in this deed is void or otherwise unenforceable then it will be severed and the rest of the deed remains in force.
- 1.5. A provision of this deed will not be construed to the disadvantage of a party solely on the basis that it proposed that provision.
- 1.6. In the event of conflict between this deed and the Regional Forest Agreement, the provisions of this deed will prevail.

Commencement

- 1.7. The terms of this deed apply on and from the date of this deed.

2. Amendment of the Regional Forest Agreement

- 2.1. With effect from the Effective Date, the Regional Forest Agreement is amended as set out in Annexure 1. For the avoidance of doubt, unless the context indicates otherwise:
 - a. text that is underlined is inserted into the Regional Forest Agreement; and
 - b. text that is struck through is deleted from the Regional Forest Agreement.
- 2.2. Each party acknowledges that a clean version of the Regional Forest Agreement, as amended by this deed with effect from the Effective Date pursuant to clause 2.1, is set out in Annexure 2.

3. Confirmations

Each of the parties confirms and acknowledges that:

- a. this deed varies the Regional Forest Agreement, and does not terminate, discharge, rescind or replace the Regional Forest Agreement;
- b. except as expressly agreed in this deed, its obligations and covenants under, and the provisions of, the Regional Forest Agreement continue and remain in full force and effect;

- c. nothing in this deed:
 - i. prejudices or adversely affects any right, power, authority, discretion or remedy which arose under or in connection with the Regional Forest Agreement before the date of this deed; or
 - ii. discharges, releases or otherwise affects any liability or obligation which arose under or in connection with the Regional Forest Agreement before the date of this deed; and
- d. notwithstanding anything in this deed, nothing in this deed is intended to make legally binding any obligations in the Regional Forest Agreement that the parties have expressed an intent to be non-binding.

4. Costs

- 4.1. Each party will bear its own costs and expenses (including legal costs) arising out of and incidental to the negotiation, preparation, execution and delivery of this deed.

5. Entire agreement and variation

- 5.1. This deed contains the entire agreement of the parties with respect to its subject matter and supersedes all prior understandings and representations between the parties with respect to its subject matter.
- 5.2. Each party will take such steps, execute all such documents and do all such acts and things as may be reasonably required by any other party to give effect to this deed.
- 5.3. The provisions of this deed will not be varied either in law or in equity except by agreement in writing signed by the parties.

6. Applicable law

- 6.1. This deed is to be construed in accordance with, and any matter related to it is to be governed by, the laws of the jurisdiction that govern the Regional Forest Agreement.

7. Counterparts

- 7.1. This deed may be executed in any number of counterparts and by each party in separate counterparts. All counterparts together constitute the one agreement.

Signing Page

EXECUTED as a deed.

SIGNED, SEALED AND)
DELIVERED for and on behalf)
of The Commonwealth of)
Australia by:)

Name of signatory

Signature

In the presence of:

Name of witness

Signature of witness

SIGNED, SEALED AND)
DELIVERED for and on behalf)
of the State of New South)
Wales by:)

Name of signatory

Signature

In the presence of:

Name of witness

Signature of witness

ANNEXURE 1 AMENDED REGIONAL FOREST AGREEMENT

~~FINAL~~

~~NORTH EAST NSW RFA~~

~~Sensitive: NSW Cabinet~~

REGIONAL FOREST AGREEMENT

for

NORTH EAST

NEW SOUTH WALES

(Upper North East and Lower North East Regions)

between

THE COMMONWEALTH OF AUSTRALIA

&

THE STATE OF NEW SOUTH WALES

MARCH 2000 (includes 2018 VARIATION)

North East Regional Forest Agreement

THIS AGREEMENT is made on the 31st day of March 2000

BETWEEN

THE STATE OF NEW SOUTH WALES, (“New South Wales” or “the State”), and
THE COMMONWEALTH OF AUSTRALIA (“the Commonwealth”).

Recitals

WHEREAS:

Purpose of Agreement

- A. This Regional Forest Agreement (RFA) establishes the framework for the management of the forests of the Upper North East and Lower North East regions. Parties are committed to ensuring the Agreement is durable and that the ~~obligations and commitments that it contains~~ are delivered to ensure effective conservation, sustainable forest management and ~~forest~~ industry stability outcomes.
- B. This Agreement is a Regional Forest Agreement, for the purposes of the *Export Control Act 1982 (C'wthCth)*, the *Regional Forest Agreements Act 2002 (Cth)* and the *Environment Protection and Biodiversity Conservation Act 1999 (Cth)*. ~~Export Control (Hardwood Wood Chips) (1996) Regulations (C'wth), and the Export Control (Regional Forest Agreements) Regulations (C'wth)~~. As such the Agreement :
- (a) identifies areas in the region or regions that the Parties believe are required for the purposes of a Comprehensive, Adequate and Representative Reserve System, and provides for the conservation of those areas; and
 - (b) provides for the ecologically sustainable management and use of forested areas in the regions; and
 - (c) is for the purpose of providing long-term stability of forests and forest industries; and
 - (d) has regard to studies and projects carried out in relation to all of the following matters that are relevant to the regions:
 - (i) environmental values, including Old Growth, Wilderness, endangered species, National Estate Values and World Heritage Values;
 - (ii) Indigenous heritage values;
 - (iii) economic values of forested areas and forest industries;

(iv) social values (including community needs); and

(v) principles of Ecologically Sustainable Forest Management.

- C. This Agreement is divided into Parts. Part 1 applies to the whole Agreement. Part 2 is not intended to create legally binding relations. Part 3 is intended to create legally binding relations. The Attachments are not intended to create legally binding relations except to the extent that this is necessary to give effect to Part 3.

NOW IT IS AGREED as follows:

PART 1

Interpretation

- 1 This Agreement is to be interpreted, unless the contrary intention appears, with reference to the definitions and general provisions specified in clauses 2 and 3.

Definitions and General Provisions

- 2 In this Agreement unless the contrary intention appears:

“Aboriginal” for the purposes of this agreement means the First Peoples of NSW;

“Agreement” means all parts of this Agreement between the Commonwealth of Australia and the State of New South Wales and includes the Attachments to this Agreement;

~~**“Australian Heritage Commission”** or **“the Commission”** means the Commission established by the *Australian Heritage Commission Act 1975* (C’wth);~~

“Australian World Heritage Intergovernmental Agreement” means the Australian World Heritage Intergovernmental Agreement, as agreed by the Commonwealth, the States and the Territories, as amended from time to time;

“Biodiversity” means biodiversity as defined in the JANIS Report;

“CAR Values” means the conservation values as described by the JANIS Reserve Criteria;

“Commonwealth Heritage Management Principles” has the same meaning as “Commonwealth Heritage management principles” in section 341Y of the EPBC Act;

“Commonwealth Heritage Place” has the same meaning as “Commonwealth Heritage place” in section 341C(3) of EPBC Act;

“Commonwealth Heritage Values” has the same meaning as “Commonwealth Heritage values” in section 341D of EPBC Act;

“Comprehensive Adequate and Representative Reserve System” or **“CAR Reserve System”** means areas under any of the following categories of land tenure - as described in the JANIS Report - Dedicated Reserves, Informal Reserves and other areas on Public Land protected by ~~prescription~~ Regional Prescriptions (eg under any Integrated Forestry Operation Approvals applicable to the North East region), and areas of Private Land where the CAR Values are protected under secure management arrangement by agreement with private

landholders. This reserve system is based on the principles of comprehensiveness, adequacy and representativeness;

~~“Codes of Practice” or “Codes” means the State’s suite of codes identified in this Agreement or described in the *New South Wales CRA/RFA Steering Committee: Assessment of Management Systems and Processes for Achieving Ecologically Sustainable Forest Management in New South Wales: Independent Expert Working Group Report* published by the Commonwealth and New South Wales Governments April 1998. Codes include the:~~

- ~~• Timber Plantations (Environmental Protection) Harvesting Code 1997 (Schedule 1 of Timber Plantations (Harvest Guarantee) Regulation 1997 (NSW)) and the equivalent Code under the *Plantations and Reafforestation Act (1999)* when it commences;~~
- ~~• State Forests of NSW Forests Practices Code : Part 1: Timber Harvesting in State Forests Plantations (July 1995) (Under review);~~
- ~~• State Forests of NSW Forests Practices Code : Part 2: Timber Harvesting in Native Forests (November 1995) (Under review);~~
- ~~• State Forests of NSW Forests Practices Code : Part 3: Plantation Establishment and Maintenance (Draft of August 1996) (Under review);~~
- ~~• State Forests of NSW Forest Practices Code : Part 4: Forest Roads and Fire Trails (February 1999);~~
- ~~• State Forests of NSW Forest Practices Code : Part 5: Wildlife Management in Native Forests (due for completion by April 2000);~~
- ~~• Integrated Forestry Operations Approvals for the Upper North East and Lower North East regions; and~~
- ~~• Additional or new Codes identified in the *New South Wales Upper North East Region Forest Agreement* and *Lower North East Region Forest Agreement*;~~

~~“Competition Principles Agreement” means the agreement of the same name described in the *Compendium of National Competition Policy Agreements*, January 1997, National Competition Council updated by the Council of Australian Governments in 2007;~~

~~“Comprehensive Regional Assessment” or “CRA” means the assessment process carried out pursuant to Attachment 1 of the *NSW RFAs Scoping Agreement* for New South Wales Regional Forest Agreements between the Commonwealth of Australia and the State of New South Wales;~~

~~“Crown Land” means land that is vested in the Crown or was acquired under the *Closer Settlements Acts* as in force before their repeal, not in either case being;~~

- (a) land dedicated for a public purpose; or
- (b) land that has been sold or lawfully contracted to be sold and in respect of which the purchase price or other consideration for the sale has been received by the Crown.

~~“Crown Reserve” means land dedicated or reserved as a reserve under the Crown Lands Act 1989 (NSW) and managed by the NSW National Parks and Wildlife Service;~~

~~“Data” means all Source Data, Derived Data, Assessment Data, and models listed in the Schedules as defined in Attachment 13 to this Agreement;~~

~~“Dedicated Reserve” means a formal reserve equivalent to International Union for the Conservation of Nature and Natural Resources (IUCN) Protected Area Management Categories I, II, III, or IV as defined by the IUCN Commission for National Parks and Protected Areas (1994). The status of Dedicated Reserves is secure, requiring action by the New South Wales Parliament or in accordance with New South Wales legislation for reservation or revocation. In New South Wales, Dedicated Reserves include, but are not limited to, parks under the *National Parks and Wildlife Act 1974* (NSW), ~~and~~ and flora reserves under the *Forestry Act 1916 2012* (NSW), and areas mapped as Special Protection Zone (FMZ 1), under the NSW (Special Protection Zones under the Forest Management Zoning system);~~

~~“Deferred Forest Agreement” means the Deferred Forest Agreement between the Commonwealth and the State of New South Wales signed on 25th January 1996 as subsequently amended;~~

~~“Eco Field Guide” means *An Overview of Forest Management in North East New South Wales, SFNSW, (in prep), A Field Guide to Forest Management in North East New South Wales, SFNSW, (in prep) and the Native Forest Silviculture Manual, SFNSW, (in Prep);*~~

~~“Ecologically Sustainable Forest Management” or “ESFM” means forest management and use in accordance with the specific objectives and policies for ecologically sustainable development as detailed in the *National Forest Policy Statement*. Principles are elaborated and as further described in Attachment 14;~~

~~“Environment and Heritage Values” means those values assessed pursuant to Attachment 1 of the RFA Scoping Agreement;~~

“Environment and Heritage Values” means values assessed as part of the CRA. These included Biodiversity, Forest Ecosystems, Old Growth forests, Wilderness, endangered species, National Estate Values, World Heritage Values and Indigenous heritage values;

“EPBC Act” means the *Environment Protection and Biodiversity Conservation Act 1999* (Cth);

“Extractive Material” means sand, gravel, clay, soil, turf, rock, stone or similar substances, not being a Mineral, as defined in this Agreement;

“Extractive Operation” means the winning of Extractive Material, or, an industry or undertaking (not including Mining), which depends for its operations on the winning of Extractive Material from the land upon which it is carried on;

“Five-yearly Review Scoping Agreement” means a scoping agreement between the Commonwealth of Australia and the State of New South Wales for each five-yearly review, including any agreed priorities, procedures and funding arrangements for the conduct of the five-yearly review;

“Forest” means: a Forest Ecosystem listed in Table 1 of Attachments 1(A) and 1(B); the land on which a Forest Ecosystem listed in Table 1 of Attachments 1(A) and 1(B) occurs; ~~and or, a Plantation~~ plantation of trees for timber production. The carrying out of a ~~forestry operation~~ Forestry Operations on an area does not prevent it from remaining as a Forest;

“Forest Agreement” means a Forest Agreement as defined in the *Forestry and National Park Estate Act 1998* 2012 (NSW);

“Forest Ecosystem” means for the purposes of the Agreement a Forest ~~forest~~ ecosystem as defined in the JANIS Report. Forest Ecosystems ~~as they exist at the present time in the North East region are described~~ listed in Attachments 1(A) and 1(B) of this Agreement;

“Forest Estate” means all Forests growing on Public Land or Private Land;

“Forest Management” means the management and administration of all Forests including State forest, national parks, other conservation reserves or Crown land, private native forest and Plantations.

“Forest Management System Framework” means the New South Wales ~~Forest Management System~~ suite of legislation, regulations, other regulatory instruments and guidance. The elements of the framework are as described in the report entitled *Assessment of Management Systems and Processes for Achieving Ecologically Sustainable Forest Management in New South Wales*[†]; ~~Independent Expert Working Group Report published by the Commonwealth and New South Wales Governments April 1998 and as modified by the Forestry and National Park Estate Act 1998 (NSW).~~ ‘Overview of the New South Wales Forest Management Framework’ as published by the NSW Government and as amended from time to time ~~Major elements of the system include Forest Agreements, Integrated Forestry Operations Approvals, Codes of Practice, Eco-Field Guides and Regional ESFM Plans;~~

“Forest Management Zoning” or “FMZ” is a land classification system which ~~identifies~~ sets out, in map format, management intent across State forest. It is based on the “Components of the CAR System” in the JANIS Report, to

[†] Reference to this report in this Agreement does not imply or convey any agreement with or agreement to any commentary or recommendation but is restricted to description of the forest management system described within that report.

clearly differentiate between those areas of State forest which are specifically set aside for conservation purposes (and utilising statutory protection in some cases) and those areas which are available for timber harvesting and other activities. The system is described in the document *Forest Management Zoning in State Forests, SFNSW 1999* Managing our forests sustainably: Forest Management Zoning in NSW State Forests, State Forests of NSW [1999], and as amended from time to time;

“Forestry Corporation of NSW” or **“FCNSW”** means the Forestry Corporation of NSW, a State Owned Corporation under the *State Owned Corporations Act 1989* (NSW);

“Forestry Corporation of NSW SFNSW Native Hardwood Forest Management System” means the system of the same name described in the New South Wales *Upper North East Region Forest Agreement* and the *Lower North East Forest Agreement* of policies, processes and procedures used by Forestry Corporation of NSW to ensure forest activities achieve ESFM, including a system of monitoring, audit and management review that allows for continual improvement and adaptive management and maintaining EMS certification under ISO 14001 or a demonstrated equivalent environmental management system;

“Forestry Operations” means:

- (a) logging operations, namely, the cutting and removal of timber from land for the purpose of timber production;
- (b) forest products operations, namely, the harvesting of Forest Products that are of economic value;
- (c) on-going forest management operations, namely, activities relating to the management of land for timber production such as thinning, bush fire hazard reduction and other silvicultural activities; and
- (d) transport of Forest Products;

“Forest Products” means timber and forest products as defined in the *Forestry and National Park Estate Act 1998 2012* (NSW);

“Forest Resource and Management Evaluation System” or **“FRAMES”** means ~~State Forests~~ the Forestry Corporation of New South Wales NSWs’ statewide forest resource inventory, growth modelling, simulation and harvest scheduling system for New South Wales’ public native hardwood forest resource. This system is documented in the project reports *Strategic Inventory, Biometric Models, Yield Simulator, Strategic Yield Scheduler* and *Application of Protective Measures and Forest Practices into a Quantitative Database for UNE and LNE Regions*;

“Harvesting Exclusions Zone” or **“FMZ 3A”** (~~Zone 3A~~) means the zone of the same name ‘Zone 3A – Harvest Exclusions’ under the NSW Forest

Management Zoning system in the document *Forest Management Zoning in State Forests*, SFNSW 1999;

~~"High Quality Large Sawlogs"~~ means High Quality Sawlogs having a centre diameter under bark of at least 40cm;

~~"High Quality Sawlogs"~~ means sawlogs of 2.4 metres or more in length, which meet the SFNSW specifications for high quality;

~~"High Quality Small Sawlogs"~~ means High Quality Sawlogs having a centre diameter under bark of less than 40cm;

"High Quality Logs" means logs which are suitable for high-value solid log products such as poles, piles and girders as well as logs suited for processing into sawn timber or veneer;

"Indigenous" means the Aboriginal and Torres Strait Islander peoples of Australia. 'Indigenous' is used in this document to mirror its use in Commonwealth legislation. Otherwise 'Aboriginal' is used to refer to the First Peoples of NSW.

"Informal Reserve" means a reserve that contains and is managed for Environment and Heritage Values which contribute to the CAR Reserve System and meets the principles for Informal Reserves as described in the JANIS Report. In New South Wales, it includes, but is not limited to, ~~parts of the Special Management Zone~~ areas mapped as Special Management Zone (FMZ 2), which meet the size and design criteria for Informal Reserves, under the NSW Forest Management Zoning system;

"Integrated Forestry Operations Approval" or "IFOA" means an ~~Integrated Forestry Operations Approval~~ Integrated Forestry Operations Approval ~~or Integrated Forestry Operations Approvals~~ as defined in the *Forestry and National Park Estate Act 1998-2012* (NSW);

~~"ISO 14000 Series"~~ means ~~AS/NZS ISO 14000 series, Environmental Management Systems, Standards Australia, 1996;~~

"ISO 14001" means *AS/NZS ISO 14001: 2015, Environmental Management Systems: Requirements with guidance for use, Standards Australia (as amended from time to time);*

"JANIS Report" means the report by the Joint Australian and New Zealand Environment and Conservation Council (ANZECC) / Ministerial Council on Forestry, Fisheries and Aquaculture (MCFFA) National Forests Policy Statement Implementation Sub-committee, titled *Nationally Agreed Criteria for the Establishment of a Comprehensive, Adequate and Representative Reserve System for Forests in Australia*, published by the Commonwealth of Australia in 1997;

"JANIS Reserve Criteria" or "Criteria" means the criteria as described in the JANIS Report for establishing the CAR Reserve System addressing

Biodiversity, Old Growth forest and Wilderness, taking account of reserve design and management and social and economic considerations;

~~“Large Veneer Logs” means veneer logs having a centre diameter under bark of at least 40 cm;~~

“Listed Species and Communities” means species and communities listed in accordance with Part 13 of the EPBC Act, *Biodiversity Conservation Act 2016* (NSW) or *Fisheries Management Act 1994* (NSW), including threatened and endangered species, threatened ecological communities, migratory species and other listed categories (or equivalent);

~~“Long term Timber Supply Strategy” means the strategy described in Attachment 12 to this Agreement.~~

“Low Quality Logs” means undersize or defective log sections that do not meet a high quality specification but are still suitable for processing into sawn timber or veneer;

“Matters of National Environmental Significance” for the purpose of this Agreement means those matters protected by Part 3 of the EPBC Act as matters of national environmental significance, including:

- (a) World Heritage Values of declared World Heritage Places;
- (b) National Heritage Values of National Heritage Places;
- (c) ecological character of Ramsar Wetlands;
- (d) listed species and communities in the EPBC Act (excluding those categories referred to in paragraphs 178(1)(a) and (f), and paragraph 181(1)(c) of the EPBC Act).

“Mineral” means any substance prescribed by the regulations of the *Mining Act 1992* (NSW) as a mineral, ~~and~~ or petroleum as prescribed under the *Petroleum (Onshore) Act 1991* (NSW), and includes coal, oil shale and petroleum but does not include uranium;

“Mineral Exploration” means prospecting under an authority or other title under either the *Mining Act 1992* (NSW) or the *Petroleum (Onshore) Act 1991* (NSW);

“Mining” means mining under an authority or other title under the *Mining Act 1992* (NSW) and includes production of petroleum under the *Petroleum (Onshore) Act 1991* (NSW) ~~any operation or work carried out to obtain Minerals;~~

“Mining Operations” means operations or works carried out in the course of Mining, or Mineral Exploration ~~operations authorised by an exploration licence~~

~~or an assessment lease under the *Mining Act 1992* (NSW) or the *Petroleum (Onshore) Act 1991* (NSW);~~

“Montreal Process Criteria” means the Montreal Process criteria for the conservation and sustainable management of temperate and boreal forests;

“Montreal Process Implementation Group for Australia” or **“MIG”** means the Montreal Process Implementation Group established by the Commonwealth and all State and Territory Governments;

“National Estate” means those places as defined under section 4 of the ~~repealed~~ *Australian Heritage Commission Act 1975* (~~C^{wth}~~ Cth);

“National Estate Values” means values attributed by the ~~former~~ Australian Heritage Commission to ~~the~~ National Estate places;

“National Forest Policy Statement” or **“NFPS”** means the *National Forest Policy Statement* (1992) endorsed by the Commonwealth and all State and Territory Governments;

“National Heritage Management Principles” has the same meaning as “National Heritage management principles” in section 324Y of the EPBC Act;

“National Heritage Place” has the same meaning as “National Heritage place” in section 324C(3) of the EPBC Act;

“National Heritage Values” has the same meaning as “National Heritage values” in section 324D of the EPBC Act;

~~**“NPWS Environmental Management System”** means the system of the same name described in the New South Wales *Upper North East Region Forest Agreement* and *Lower North East Region Forest Agreement*;~~

“NSW National Parks and Wildlife Service” or **“NPWS”** means the New South Wales National Parks and Wildlife Service;

“NSW RFAs Scoping Agreement” means the Scoping Agreement for New South Wales Regional Forest Agreements between the Commonwealth and the State of New South Wales signed on 25~~th~~ January 1996;

“Old Growth forest” means old growth forest as defined in the JANIS Report;

“Other Wood Products” means timber that is not processed as a high quality, low quality or Pulpwood log, including firewood, biomaterial and fencing products;

“Owner” means:

(a) in relation to land:

(i) the owner of any estate or interest in that land, including the Crown

in right of the State; and

(ii) any statutory corporation which has the power to carry on Forestry Operations or Mining Operations as the case may be, on the land;

(b) in relation to Forest Products or Mining products, as the case may be, the owner of any interest in those products.

“Parties” means the State of New South Wales and the Commonwealth of Australia;

“Party” means a Party to this Agreement;

“Plantations” means intensively managed stands of trees of either native or exotic species, created by the regular placement of seedlings or seed, but not principally for the purpose of the production of food or any other farm produce other than timber;

“Private Land” means lands other than Public Land and land owned or leased by the Commonwealth;

“Progress Report” means a report prepared by the Parties on the performance of this Agreement for each five-yearly review;

“Public Land” means lands of the New South Wales Crown;

“Pulpwood” means logs cut and prepared primarily for the manufacture of wood pulp;

“Ramsar Convention” means the Convention on Wetlands of International Importance Especially as Waterfowl Habitat;

“Ramsar Wetlands” means those places defined under section 17 of the EPBC Act;

“Recovery Plan” ~~includes~~ means a recovery plan made or adopted under the EPBC Act, or an equivalent instrument made under the Biodiversity Conservation Act 2016 (NSW), or the Fisheries Management Act 1994 (NSW) Part 3 of the Endangered Species Protection Act 1992 (C’wth) and/or relevant parts of the Threatened Species Conservation Act 1995 (NSW);

“Regional ESFM Plan” means a plan covering State forests in the region that has the status of a management plan ~~under the Forestry Regulation 1999 (NSW)~~ under the Forestry Act 1916 2012 (NSW) and meeting additional requirements under the Forestry Regulation 2012 (NSW);

“Regional Forest Agreement” or **“RFA”** means a Regional Forest Agreement within the meaning of the ~~Export Control (Hardwood Wood Chips) (1996) Regulations (C’wth)~~ Regional Forest Agreements Act 2002 (Cth);

“Regional Prescriptions” ~~include~~ means those prescriptions within the Forest Management Framework that are applicable to Forestry Operations in the Upper North East and Lower North East regions. These prescriptions include but are not limited to silvicultural prescriptions and systems, and environment protection measures covered by the Codes of Practices, Eco Field Guides, and the Integrated Forestry Operations Approval applying to the region Regulatory Instruments, Forest Management Zoning, and Aboriginal and non-Aboriginal cultural heritage guidelines;

“Register of the National Estate” ~~means the register of the same name kept pursuant to the Australian Heritage Commission Act 1975 (C’wth);~~

“Regulatory Instruments” means the State’s suite of statutory and regulatory tools used to achieve ESFM for forestry operations currently in place (or as amended from time to time), including, but not limited to:

- Integrated Forestry Operations Approval applicable to the North East region under the *Forestry Act 2012* (NSW);
- Forestry Regulation 2012 made under the *Forestry Act 2012* (NSW);
- Plantations and Reafforestation (Code) Regulation 2001 made under the *Plantations and Reafforestation Act 1999* (NSW);
- Private Native Forestry Code of Practice for Northern NSW, 2013;
- Additional, new or amended Regulatory Instruments as released from time to time by the NSW Government;

“Sawlog” means logs which are suitable for processing into sawn timber;

“Special Management Zone” or “FMZ 2” ~~means the zone of the same name ‘Zone 2 – Special Management’ as described under the NSW Forest Management Zoning system S21A of the *Forestry and National Park Estate Act 1998* and described in the document *Forest Management Zoning in State Forests, SFNSW, 1999;*~~

“Special Prescription Zone” or “FMZ 3B” (Zone 3B) ~~means the zone of the same name ‘Zone 3B – Special Prescription’ as described under the NSW Forest Management Zoning system in the document *Forest Management Zoning in State Forests, SFNSW 1999;*~~

“Special Protection Zone” or “FMZ 1” (Zone 1), ~~means the zone of the same name ‘Zone 1 – Special Protection’ as described under the NSW Forest Management Zoning system described in the document *Forest Management Zoning in State Forests, SFNSW 1999;*~~

“State forest” means land dedicated as State forest under the *Forestry Act 1916 2012* (NSW);

~~“State Forests of NSW” or “SFNSW” means the Forestry Commission of New South Wales, constituted as a corporation under the *Forestry Act 1916* (NSW) operating as State Forests of New South Wales;~~

~~“Statement of Significance” means a statement of significance made by the Australian Heritage Commission for a place which forms part of the National Estate;~~

“Statutory Conservation Planning Document” means a conservation advice, recovery plan, threat abatement plan or wildlife conservation plan made or adopted in accordance with the EPBC Act, or equivalent instruments or programs under the *Biodiversity Conservation Act 2016* (NSW) or the *Fisheries Management Act 1994* (NSW);

“Sustainability Indicators” means qualitative or quantitative measures, at the regional (sub-national) level developed to assess the criteria for sustainable forest management, as described in *Ecologically Sustainable Forest Management Criteria and Indicators for the NSW Forest Agreement regions* (EPA 2017), and as amended from time to time;

“Sustainable Yield” means the long term estimated wood yield from forests that can be maintained from a given region in perpetuity under a given management strategy and suite of sustainable use objectives, as determined using the processes described in Attachment 12, and as amended from time to time;

~~“Sustainable Wood Supply Strategy” means the intent to manage yields of High Quality Large Sawlogs and Large Veneer Logs from the forest at a specific and constant level for twenty years under a given management strategy and suite of sustainable use objectives. It recognises that a transition to long term Sustainable Yield will be phased in to accommodate social and economic considerations;~~

“Threat Abatement Plan” means a threat abatement plan made or adopted under Part 3 of the *Endangered Species Protection Act 1992* (C’wth) the EPBC Act;

“Threatening Process” means a threatening process listed as a key threatening process under the *Biodiversity Conservation Act 2016* (NSW), *Fisheries Management Act 1994* (NSW) and the EPBC Act in recognition that the process adversely affects or may threaten the survival, abundance or evolutionary development of a native species or ecological community;

“Values Protected by Prescription” means *values protected by prescription* as defined in the JANIS Report and includes areas in the Forest Management Zoning system including those areas in FMZ 2 that do not meet Informal Reserve criteria, FMZ 3A, FMZ 3B and other mapped areas under any IFOA applicable to the North East region.

“Wilderness” means wilderness as defined in the JANIS Report;

“Wilderness Values” means the values of the same name as defined in the JANIS Report and the NSW RFAs Scoping Agreement between NSW and the Commonwealth;

“Wild Rivers” means a water course, water course network, or a connected network of water bodies, of natural origin and exhibiting natural flow (perennial, intermittent or episodic) in which the biological, hydrological and geomorphological processes associated with the river flow; and the biological, hydrological and geomorphological processes in those parts of the catchment with which the river is intimately linked; have not been significantly altered by modern or colonial society;

“Woodchips and Unprocessed Wood” means ~~those goods that are prescribed goods under within the meaning of the *Export Control (Hardwood Wood Chips) (1996) Regulations (1996) (C’wth Cth); the Export Control (Regional Forest Agreements) Regulations (C’wth); and or the Export Control (Unprocessed Wood) Regulations (C’wth Cth), or would be prescribed goods under those regulations if not for the *Export Control (Regional Forest Agreements) Regulations (Cth);**~~

~~**“Wood Supply Agreement”** means an agreement in writing between State Forests of NSW and a person or company or organisation under which State Forests of NSW agrees to supply and the person or company or organisation agrees to take native hardwoods. It includes agreements commonly referred to as term agreements and wood supply agreements, of more than twelve months duration;~~

“World Heritage List” means the list kept under that title under Article 11 of the Convention Concerning the Protection of the World Cultural and Natural Heritage;

“World Heritage Nomination” means the submission by the Commonwealth of a nominated area to the UNESCO World Heritage Committee for assessment as a World Heritage area consistent with section 314 of the EPBC Act and the World Heritage Operational Guidelines for the Implementation of the World Heritage Convention;

“World Heritage Place” means a property on the World Heritage List;

~~**“World Heritage Values”** means features, formations, areas, and sites of outstanding universal value within the meaning of Article 2 of the *Convention Concerning the Protection of the World Cultural and Natural Heritage*, also known as the *World Heritage Convention* has the same meaning as in section 12(3) of the EPBC Act.~~

- 3 In this Agreement unless the contrary intention appears:
- (a) A reference to a clause or Attachment is a reference to a clause or Attachment to this Agreement and a reference to this Agreement includes a reference to an Attachment;

- (b) A reference to this Agreement or another instrument is a reference to this Agreement or that other instrument as amended or varied from time to time;
- (c) A reference to a statute or ordinance includes any consolidations, amendments, re-enactments or replacements thereof and also includes regulations and other instruments made under them;
- (d) A reference to a code or other instrument includes any consolidations or amendments thereof;
- (e) A word importing the singular includes the plural and vice versa, a word importing a gender includes each other gender and a reference to a person includes an individual, firm, body corporate, association (whether incorporated or not), government, governmental or semi-governmental body, local authority or agency;
- (f) A reference to an act, matter or thing includes the whole or any part of that act, matter or thing and a reference to a group of acts, matters, things or persons includes each act, matter, thing or person in that group;
- (g) Where any terms and conditions are added to an Attachment of this Agreement it is agreed that those terms and conditions will form part of this Agreement;
- (h) Headings are inserted for convenience and do not affect the interpretation of this Agreement.

Definition of the Regions

- 4 The area covered by this Agreement includes two regions: the Upper North East ~~Region~~ region (Map 1(A)) and the Lower North East ~~Region~~ region (Map 1(B)).

Duration of Agreement

- 5 This Agreement takes effect on 31 March 2000 ~~upon signing by both Parties~~ and, unless earlier terminated in accordance with clauses 112, 113, 114 or 115, will remain in force ~~for 20 years~~ until 26 August 2039, or until a later date pursuant to clause 6A and 6B.
- 6 The process for extending the Agreement for a further period ~~will be~~ was determined jointly by the Parties as part of the third five-yearly review.

6A Subject to clause 6B, upon the satisfactory completion of each five-yearly review in accordance with clause 8M, the Agreement will be extended for a further five years.

6B The extension of this Agreement under clause 6A will occur upon the satisfactory completion of the five-yearly review due to commence in 2024 and thereafter upon the satisfactory completion of each subsequent five-yearly review until this Agreement is terminated by the Parties or subsequent extensions of this Agreement are withdrawn in accordance with clause 14C.

Basis of Agreement – National Forest Policy Statement

- 7 The Parties confirm their commitment to the goals, objectives and implementation of the *National Forest Policy Statement (NFPS)* by:
- (a) ~~Developing and implementing~~ Implementing Ecologically Sustainable Forest Management (ESFM);
 - (b) Establishing and maintaining the Comprehensive, Adequate and Representative (CAR) Reserve System;
 - (c) ~~Facilitating the development of an~~ Supporting an internationally competitive wood production and wood products industry through facilitating efficient and sustainable wood production, and wood products industries, based on maximising value-adding opportunities and efficient use of wood resources; and
 - (d) Promoting the conservation and management of the private ~~forest estate~~ Forest Estate.

Changes to the Agreement

- 8 This Agreement may only be amended with the consent, in writing, of both Parties. Parties agree to work cooperatively to address any differences between them as to the interpretation or implementation of the Agreement.

Monitoring the Agreement

General monitoring

- 8A. The implementation of this Agreement is monitored through the five-yearly reviews and the annual meetings between the Parties in the periods between the five-yearly reviews. Further:
- (a) The Parties agree to maintain open communication on matters relating to the implementation of this Agreement, including raising and responding to issues at any time.
 - (b) The Parties agree that for efficiency and consistency with prior practices, the timing of monitoring and reporting of the North East and Southern RFAs will be aligned with the Eden RFA and will complement NSW and national forest reporting.
 - (c) The Parties agree that the assessment process, the consultation undertaken in early 2018 and the results of the monitoring of Sustainability Indicators in *A report on progress with implementation of the New South Wales Regional Forest Agreements: Second and third five-yearly reviews July 2004 – June 2014, November 2017* constitute the five-yearly review that was due in 2019.
 - (d) The next five-yearly review required by this Agreement will commence in 2024.

- (e) New South Wales agrees to develop and maintain a coordinated Monitoring, Evaluation and Reporting Plan, including the identification of research priorities, within the broader Forest Management Framework across relevant forest management tenures and to support RFA outcomes reporting for ESFM.

Annual meetings

8B. The Parties agree to hold annual officials-level, bi-lateral meetings in the years between each five-yearly review to monitor the implementation of the Agreement and discuss any matters or issues that arise.

8C. An online statement will be made publicly available on the outcomes of the meeting.

Five-yearly reviews

Five-yearly review

8D. A review of the performance of this Agreement is to commence during the last year of each five year period during the term of the Agreement (the five-yearly review) with the release of the Five-yearly Review Scoping Agreement.

8E. The purpose of the five-yearly review is to examine New South Wales' forest Management to demonstrate Ecologically Sustainable Forest Management, including to:

- (a) demonstrate adaptive Forest Management in accordance with the RFA;
- (b) demonstrate how the Parties have provided for the protection of Matters of National Environmental Significance, including identifying trends and the status of Matters of National Environmental, in accordance with the RFA;
- (c) demonstrate how relevant Statutory Conservation Planning Documents have been implemented as part of the Forest Management Framework;
- (d) demonstrate how social and economic benefits of forestry and other forest uses are being achieved;
- (e) evaluate current and future research priorities across the Forest Estate; and
- (f) assess the extent to which key findings and/or recommendations for preceding five-yearly reviews have been addressed.

8F. The Parties will prepare a Progress Report addressing the items listed at clause 8E including across key environmental, social and economic indicators (Sustainability Indicators). As such, the Progress Report will be a key source of information in the five-yearly reviews under this Agreement.

Conduct of five-yearly review

8G. Five-yearly reviews are to be conducted by an independent person or body jointly appointed by the Parties.

8H. In conducting the five-yearly review, the independent person or body will:

- (a) take into account public comments;
- (b) use and take into account the relevant Progress Report;

- (c) use and take into account the document titled ‘*Overview of the New South Wales Forest Management Framework*’, as updated from time to time;
 - (d) develop and submit to the Parties a report detailing the five-yearly review process and its findings and recommendations, within three months of commencement.
- 8I. In accordance with subsection 10(6) of the *Regional Forest Agreements Act 2002* (Cth), the Commonwealth Minister responsible for forestry will table the report provided under paragraph 8H (d) in each House of the Parliament within 15 sitting days of that House after the report is provided to the Minister.
- 8J. The Parties will consider the five-yearly review recommendations and publish a joint government response to the recommendations within six months of receiving the review report.
- 8K. The Parties will make a determination of satisfactory performance under this Agreement in the joint government response. If satisfactory performance is not determined, the Parties will include in the joint government response a list of remedial actions and when they will be delivered. The subsequent five-yearly review process will assess whether remedial actions have been delivered.
- 8L. The purpose of the five-yearly review process under this Agreement is not to re-negotiate the Agreement.

Satisfactory completion of 5 yearly review

- 8M. A five-yearly review will be satisfactorily completed upon the public release of the joint government response to the review report, which is to include identified remedial actions pursuant to clause 8K. The five-year extension pursuant to clauses 6A and 6B will then take effect, unless the joint government response identifies that there are outstanding remedial actions from a previous five-yearly review that have not been delivered to the satisfaction of both Parties, in which case the five-year extension will not take effect until a supplementary joint government response demonstrating the completion of the outstanding remedial actions has been released.

Requirement for an audit

- 8N. Either Party may initiate an audit, if in the opinion of the initiating Party, there has been, or is likely to be, an adverse finding or outcome relating to this Agreement, whether or not the outcome relates to non-compliance or likely non-compliance with the Agreement.
- 8O. Before an audit process commences, the initiating Party must notify and consult with the other Party on the following:
- (a) the initiating Party’s reason for initiating the audit or review;
 - (b) the scope and criteria for the audit, and
 - (c) the appointment of an independent auditor.

- 8P. An audit may include:

- (a) an examination of the operation of this Agreement over a particular period of time; or
- (b) preparation of an audit report which addresses the criteria specified by the initiating Party.

8Q An audit should be conducted in the most efficient and effective manner possible to address the opinion of and concerns identified by the initiating Party.

8R The Parties agree to cooperate fully in any audit.

8S The initiating Party may publish any report produced under clause 8P(b), provided the initiating Party, prior to publication:

- (a) notifies the other Party of the intent to publish the report;
- (b) provides the other Party with a copy of a draft of the final report; and
- (c) provides the other Party with 20 business days to respond to the draft of the final report.

8T The costs of an audit will be borne by the initiating Party.

Dispute Resolution

- 9 The Parties agree that if a dispute arises between the Parties regarding this Agreement it must be resolved expeditiously in accordance with the provisions of clauses 10 to 14.
- 10 When a dispute arises, a Party may serve a notice on the other specifying:
 - (a) the nature and substance of the matter or issue in dispute;
 - (b) that it is a dispute to be resolved in accordance with clauses 10 to 14.
- 11 If a notice is served under clause 10 the Parties must attempt to settle the dispute within 14 days. At the expiration of that 14 days and, if agreed, any additional period the Parties must appoint a mediator to conduct a mediation concerning the matter or issue in dispute.
- 12 If the dispute is not settled under clause 11 and the Parties fail to appoint a mediator, either of them may request the President of the Law Council of Australia, or the equivalent officer of such body as in future may have the functions of the Law Council of Australia, to nominate a mediator to conduct the mediation.
- 13 The costs of a mediator appointed under clauses 11 or 12 are to be shared equally between the Parties.
- 14 Each of the Parties agrees to use its best endeavours to resolve the dispute through mediation.

Withdrawal from extension process

- 14A. If there is no resolution or agreement on a dispute in accordance with clauses 9 to 14 (including the failure of mediation), either the Commonwealth Minister responsible for forestry (in consultation with the Commonwealth Minister responsible for the environment) or New South Wales Minister(s) responsible for the environment and/or forestry may send to the other Party and publish a written notice of its intention, unless the dispute is resolved, to withdraw from the extension process in clause 6A and 6B .
- 14B. Any notice under clause 14A above must specify the time period in which the other Party must address the dispute.
- 14C. If, at the end of the specified time period, the dispute has not been resolved, the Commonwealth Minister responsible for forestry (in consultation with the Commonwealth Minister for the environment) or the New South Wales Minister(s) responsible for the environment and/or forestry may write to the other Party's government giving notice confirming the effective date of withdrawal from the extension process in clause 6A and 6B.
- 14D. In the event either Party withdraws from the extension process in clause 6A and 6B, negotiation of any subsequent extension to this Agreement will only be considered following the satisfactory completion of the penultimate five-yearly review (that is, the five-yearly review prior to the final five years of the Agreement's duration).
- 14E. In the event the Parties subsequently extend this Agreement subject to clause 14D and pursuant to clause 8M, the extension process in clause 6A and 6B will not apply to the extended Agreement unless otherwise agreed by the Parties.

Notices

- 15 Any notice or other communication to be given or made pursuant to this Agreement shall be in writing and addressed as the case may be as follows:

THE STATE

~~Director General~~
~~Premier's Department~~
~~Governor Macquarie Tower~~
~~1 Farrer Place~~
The Secretary
Department of Premier and Cabinet
52 Martin Place
SYDNEY NSW 2000

THE COMMONWEALTH

~~The Secretary~~
~~Department of the Prime Minister and Cabinet~~
~~3-5 National Circuit~~
~~BARTON ACT 2600~~
Department of Agriculture and Water Resources

18 Marcus Clarke Street
CANBERRA ACT 2600

PART 2

- 16 This Part is not intended to create legally binding relations and provisions in Part 1 in so far as they relate to Part 2 are also not binding. Where there are references in this Part to obligations which are referred to in Part 3 and are intended to be legally binding, they are only included in Part 2 insofar as they provide context and for the sake of completeness so that the whole scheme which the Parties wish to implement is set out in this Part. The inclusion of references to these legally binding obligations in Part 2 does not derogate from the Parties intent that they be legally binding in Part 3.

FUNCTIONING OF THE AGREEMENT

Relationship to Previous Inter Government Forest Agreements

- 17 (a) ~~In relation to both the Upper North East and Lower North East regions, this Agreement replaces the *Deferred Forest Agreement*, signed by the Commonwealth and New South Wales Governments on 25 January 1996, and as subsequently amended. NOT USED~~
- (b) ~~New South Wales, in signing this Agreement, states that the area deferred from timber harvesting by the New South Wales Government Interim Forestry Assessment decision of 23 September 1996 (ie the Interim Deferred Forest Area), no longer applies in relation to the Upper North East and Lower North East regions.~~

Relationship to Statutory Obligations

- 18 This Agreement cannot impose on either Party or a third party any obligation that is inconsistent with Australia's international obligations, or a law of the Commonwealth or of New South Wales.
- 19 Neither Party will seek to use existing or future legislation to undermine or impede this Agreement.
- 20 ~~The Commonwealth, in signing the Agreement, confirms that its obligations under the *Australian Heritage Commission Act 1975* (C'wth) have been met. NOT USED~~
- 21 ~~Parties will manage their respective responsibilities with regard to the National Estate in accordance with the provisions of this Agreement as detailed in Attachment 4. NOT USED~~
- 22 ~~Parties acknowledge that the National Heritage Places Strategy may have implications for the cooperative management of the National Estate and agree to consult on those matters that may impact on the functioning of this Agreement in the development of the Strategy. The Parties note that when implemented, the Strategy may result in either Party seeking to amend those clauses of this Agreement relating to the Register of the National Estate. Any such amendment will be consistent with clauses 18 and 19 of this Agreement. NOT USED~~

- 23 ~~The Commonwealth confirms it has on or before the date of this Agreement entered into an agreement with the Australian Heritage Commission in which the Commission has agreed to perform and comply with all the agreements and confirmations which are specified in Attachment 4 as being agreements and confirmations on the part of the Commission. NOT USED~~
- 24 ~~The Commonwealth, in signing the Agreement, confirms that its obligations under the *Environment Protection (Impact of Proposals) Act 1974* (C'wth) have been met. The Commonwealth also confirms that, under the administrative procedures of the Act, any activities covered by the Agreement, including the five yearly reviews and minor amendments to the Agreement, will not trigger further environmental impact assessment. NOT USED~~
- 25 ~~The Commonwealth confirms that it has met its obligations in relation to this Agreement under the *Endangered Species Protection Act 1992* (C'wth) in so far as they were to be performed prior to the date of the commencement of this Agreement. NOT USED~~
- 26 The Commonwealth notes that its obligations under the EPBC Act to promote protection of Listed Species and Communities endangered species protection will involve ongoing cooperative work with New South Wales agencies concerning the Upper North East and Lower North East regions.

Matters of National Environmental Significance

- 26A New South Wales will use best endeavours to ensure that the Forest Management Framework provides for the protection of Matters of National Environmental Significance.
- 26B The Parties agree that research, monitoring, reporting, evaluation and the communication of findings are important to support decision making with regard to Matters of National Environmental Significance.
- 26C New South Wales will use best endeavours to continue to improve research, monitoring, reporting, evaluation and communication mechanisms as part of its adaptive Forest Management Framework in accordance with clause 46.
- 26D The Parties agree that the monitoring, audit, reporting and review processes set out in this Agreement provides an assurance that the Forest Management Framework takes into account the protection of Matters of National Environmental Significance.

Listed Species and Communities, including threatened flora and fauna

- 26E New South Wales will use best endeavours to ensure that the Forest Management Framework provides for the protection of Listed Species and Communities.
- 26F The Parties, recognising that priorities can change in light of new information, will continue to consult on the priorities for:
- (a) Listed Species and Communities, Forest Ecosystems, and Threatening

Processes (further information at Attachment 3);

- (b) the preparation of all Statutory Conservation Planning Documents relevant to this Agreement.
- (c) research on Listed Species and Communities, Forest Ecosystems, and Threatening Processes.

26G New South Wales will use best endeavours to ensure that any new or altered actions in the Forest Management Framework are developed and implemented over the term of the Agreement for Listed Species and Communities to:

- (a) provide for the maintenance of the relevant species;
- (b) have a sound scientific basis;
- (c) give consideration to relevant determinations made by the New South Wales Threatened Species Scientific Committee or Fisheries Scientific Committee;
- (d) be consistent with relevant Statutory Conservation Planning Documents; and
- (e) take note of public comment.

26H New South Wales will use best endeavours to ensure that the State's Statutory Conservation Planning Documents and Regulatory Instruments that include management actions, prescriptions or protections for Listed Species and Communities in accordance with the Forest Management Framework, will:

- (a) be maintained, implemented and updated on an as needs basis to provide ongoing protection for Listed Species and Communities;
- (b) be made publicly accessible.

World Heritage Places

~~27 Parties agree to actively investigate, and jointly participate in the further World Heritage assessment of the relevant Australia wide themes specified in Section 3.4.2 (Table 17) of the World Heritage Expert Panel report, including any potential contribution from the Upper North East and Lower North East regions. The Parties acknowledge that the World Heritage Values of a property included in the World Heritage List are protected by Part 3 of the EPBC Act, as the exemption to the application of Part 3 for Forestry Operations does not apply to a World Heritage Place pursuant to section 42 of the EPBC Act.~~

~~28 Parties recognise that existing World Heritage properties within the RFA regions, and any new areas nominated for World Heritage listing subject to clause 31 will be subject to the provisions of the *Environment Protection and Biodiversity Conservation Act 1999*. NOT USED~~

- 29 ~~The Parties agreed in 1997 to develop a World Heritage Nomination for the Greater Blue Mountains region in reference to the Eucalypt theme. The nomination was submitted in 1998 and is currently undergoing assessment. A section of the Lower North East RFA Region forms part of the nominated area. The Parties have agreed to develop funding and management arrangements for the nominated property.~~ NOT USED
- 30 ~~The Commonwealth agrees that it will give full consideration to the potential social and economic consequences of any World Heritage Nomination of places in the Upper North East and Lower North East regions and that any such nomination will only occur after the fullest consultation and with the agreement of the State. The Parties agree to participate in the assessment of any future World Heritage Places consistent with the Australian World Heritage Intergovernmental Agreement.~~
- 31 ~~The Parties agree that any World Heritage Nomination involving any part of the forest estate in the Upper North East and Lower North East regions will be from within the CAR Reserve System. The Parties agree that any World Heritage Nominations involving any part of the Forest Estate in the Upper North East and Lower North East regions will be from areas within the Dedicated Reserve elements of the CAR Reserve System.~~
- 32 ~~The Parties agree that before any World Heritage Nomination is made:~~ NOT USED
- ~~(a) all necessary management arrangements, including joint policy coordination arrangements will be agreed;~~
 - ~~(b) all related funding issues will be resolved to the satisfaction of both Parties; and~~
 - ~~(c) The Parties will develop an agreed management plan that is suitable for consideration for bilateral accreditation under section 46 of the *Environment Protection and Biodiversity Conservation Act 1999*.~~
- 33 ~~The Commonwealth undertakes to use its best endeavours to secure the enactment of legislation which amends the *Environmental Protection and Biodiversity Conservation Act 1999* (Cwlth) by inserting definitions of “forestry operations”, “RFA forestry operations” and “RFA or Regional Forest Agreement” identical to those contained in the *Regional Forest Agreements Bill* (Cwlth) and introduce such legislation into the Parliament of the Commonwealth by 30 June 2000.~~ NOT USED

National Heritage Places

- 33A. New South Wales will use best endeavours to ensure that the Forest Management Framework provides for the protection of National Heritage Values of National Heritage Places in accordance with National Heritage Management Principles.

Commonwealth Heritage Places

- 33B. New South Wales will use best endeavours to ensure that the Forest Management Framework provides for the protection of Commonwealth Heritage Values through the

management of Commonwealth Heritage Places in accordance with Commonwealth Heritage Management Principles.

Ramsar Wetlands

33C. The Parties acknowledge that the Forest Management Framework provides for the protection of the ecological character of Ramsar Wetlands, in accordance with Australia's obligations under the Ramsar Convention, by:

- (a) the application of Part 3 of the EPBC Act, as the exemption to the application of Part 3 of the EPBC Act for Forestry Operations does not apply to Ramsar Wetlands pursuant to section 42 of the EPBC Act;
- (b) management of Ramsar Wetlands, including having regard to Ramsar Wetland information sheets and Ramsar Wetland ecological character descriptions; and
- (c) management of the relevant threatened ecological communities listed in Schedule 2 of the *Biodiversity Conservation Act 2016* (NSW), and/or listed under the *Fisheries Management Act 1994* (NSW).

Export controls

34 Parties note that current Commonwealth export arrangements provide that, after 31 March 2000, exports of ~~hardwood~~ Woodchips and Unprocessed Wood from native forests ~~will only be permitted~~ can occur from areas covered by an RFA, without the need for a licence under the *Export Control Act* (1982) (Cth).

35 Parties note that no controls under the *Export Control Act 1982* (~~C'with~~Cth) or any other export control law within the meaning of the *Regional Forest Agreements Act 2002* (Cth) will apply to ~~hardwood~~ Woodchips ~~or~~ and Unprocessed Wood sourced from the Upper North East and Lower North East regions while this Agreement is in place.

Integrated Forestry Operations Approval applicable to the North East region

36 New South Wales confirms that relevant Regulatory Instruments, such as the ~~its Upper North East Region Forest Agreement and Lower North East Region Forest Agreement~~ (NSW, 5 March 1999) and any Integrated Forestry Operations Approvals, for all or part of the Upper North East and Lower North East regions are parts of the New South Wales Forest Management ~~System Framework~~ and are means by which New South Wales will implement obligations ~~and undertakings~~ arising from this Agreement.

37 ~~New South Wales undertakes to notify the Commonwealth within fourteen days of any amendment or termination of a Forest Agreement or amendment, suspension or revocation of any Integrated Forestry Operations Approval which applies to either of the Upper North East and Lower North East regions. Copies of any Forest Agreements or Integrated Forestry Operations Approvals will be provided to the Commonwealth within fourteen days.~~ NOT USED

Regional Forest Agreement Bill 1998 (C'wlth)

- 38 ~~If the *Regional Forest Agreements Bill 1998 (C'wlth)* is enacted and commences, New South Wales may seek amendment of this Agreement as a result of such enactment or commencement. NOT USED~~

Milestones

- 39 ~~This Agreement establishes milestones as given in Attachment 5 and Parties will report annually on their achievement during the first five years, using an appropriate public reporting mechanism. NOT USED~~

Five yearly review

- 40 ~~Within each five year period, a review of the performance of the Agreement will be undertaken. The purpose of the five yearly review is to provide an assessment of progress of the Agreement against the established milestones, and will include: NOT USED~~

~~(a) The extent to which milestones and obligations have been met, including management of the National Estate;~~

~~(b) The results of monitoring of Sustainability Indicators; and~~

~~(c) Invited public comment on the performance of the Agreement.~~

- 41 ~~While the review process will not open up the Agreement to re-negotiation, both Parties may agree to some minor modifications to incorporate the results of the review as per clause 8. NOT USED~~

- 42 ~~The outcomes of the review will be made public. The mechanism for the review will be determined by both Parties before the end of the five year period and the review will be completed within three months. NOT USED~~

- 43 ~~The Commonwealth will table in the Commonwealth Parliament the signed Regional Forest Agreement and, when completed, the annual reports detailing achievement of the milestones for the first four years of the Agreement and the first five yearly review on performance against milestones and commitments. NOT USED~~

ECOLOGICALLY SUSTAINABLE FOREST MANAGEMENT (ESFM)

- 44 The Parties agree that ESFM is an objective which requires a long term commitment to ~~continuous~~ continual improvement and that the key elements for achieving it are:

(a) The establishment and maintenance of a the CAR Reserve System (Attachment 1(A) and Attachment 1(B));

(b) ~~The development of internationally competitive forest products industries~~
Efficient and sustainable wood production and wood products industries

based on maximising value-adding opportunities and efficient use of wood resources; and

- (c) An integrated, complementary and strategic forest management systems Forest Management Framework capable of responding to new information, including climate change risks and adaptation responses.
- 45 ~~The Parties recognise that many of the existing New South Wales processes and regulations are designed to produce effective outcomes in terms of fauna, flora, soil and water conservation on State forests. These elements provide a sound basis for the further development of systems and processes to achieve ESFM. The Parties recognise that the NSW Forest Management Framework is designed to produce effective outcomes for fauna, flora, soil and water conservation, and heritage values on State forests and provides a sound basis for implementation and continual improvement of such to achieve ESFM.~~
- 46 ~~New South Wales confirms its commitment to the achievement of ESFM on Public and Private Land consistent with the principles of Ecologically Sustainable Forest Management at Attachment 14, and to the ongoing review and subsequent implementation of its legislation, policy, plans, Codes and Regional Prescriptions to ensure ESFM objectives can be achieved in a more efficient regulatory environment. New South Wales confirms its commitment to the ongoing implementation and achievement of ESFM on both Public Land and Private Land through the continued implementation and improvements to its Forest Management Framework and adaptive management in accordance with the ESFM principles in Attachment 14.~~

Monitoring and reporting on Ecologically Sustainable Forest Management

- 47 ~~New South Wales agrees that in providing for ESFM, its Forest Management System will be amended to implement the undertakings of this Agreement, including those specified in Attachments 6, 8 and 12 (Part D). The Parties recognise that:~~
- (a) the Forest Management Framework is enhanced by adaptive management and continuing mechanisms to monitor, report and review the sustainability of forest management policies and practices;
- (b) fostering stakeholder understanding of ESFM in NSW is important; and
- (c) a range of processes and instruments exist which provide for public participation and consultation, as outlined in the summary document titled ‘Overview of the New South Wales Forest Management Framework’.
- 48 ~~New South Wales undertakes to:~~
- (a) Maintain Forest Agreements covering both the Upper North East and Lower North East regions for the duration of this Agreement; Review and update the summary document titled ‘Overview of the New South Wales Forest Management Framework’, which describes the Forest Management

Framework at a given point in time, as a minimum for each Five-yearly Review period;

- (b) Maintain for the duration of this Agreement an Integrated Forestry Operations Approvals covering the Upper North East and Lower North East regions, consistent with Attachments 1A, 1B, 3-4, 8 and 12;
- (c) Complete and publish plans of management for areas dedicated under the *National Parks and Wildlife Act 1974* (NSW) by 1 January 2005; Use best endeavours to ensure that plans of management are developed and implemented for Dedicated Reserves under the *National Parks and Wildlife Act 1974* (NSW) and for flora reserves under the *Forestry Act 2012* (NSW) ensuring review and revision on a regular basis;
- (d) Complete and publish Regional ESFM Plans for State forests under the *Forestry Regulation 1999* (NSW) under the *Forestry Act 1916* (NSW) by 30 June 2000; Implement the Regional ESFM Plan applicable to the North East region (currently the *Forest Management Plan for the Coastal Forests of NSW* (FCNSW 2016))– or an equivalent instrument – ensuring review and revision on a regular basis;
- (e) Implement the Forest Management Zoning system for the Upper North East and Lower North East regions by 30 June 2000; Ensure that the Forest Management Zoning system for the North East region is maintained, implemented and reviewed on a regular basis;
- (f) Manage cultural values, both Aboriginal and non-Aboriginal, in the Upper North East region, in accordance with guidelines developed by New South Wales to meet the requirements in the *EPBC Act, National Parks and Wildlife Act 1974* (NSW) and the *Heritage Act 1977* (NSW), as amended from time to time; consistent with the guidelines in the *Protective Mechanisms for Cultural Heritage – Generic Version* and the Lower North East region consistent with the guidelines in the *Protective Mechanisms for Cultural Heritage – Lower North East* as outlined in clause 0, Attachment 4 and the principles in Attachment 10. The Commonwealth acknowledges that the Cultural Heritage Guidelines attached to both the *Upper North East Integrated Forestry Operations Approval (December 1999)* and the *Lower North East Integrated Operations Approval (December 1999)* are consistent with the above documents;
- (g) Implement the review and monitoring processes and develop the strategic and operational requirements of sustainable yield systems and processes using enhanced Forest Resource and Management Evaluation System (FRAMES) as described in Attachment 12 (Part E) to enable the review of sustainable yield by 1 December 2006 as described in Attachment 12 (Part B); Manage availability of timber resources for the State forest estate in accordance with Sustainable Yield estimates calculated using FRAMES or an equivalent, including to:
 - (i) take account of climate risks and adaptation responses;

- (ii) ensure that FRAMES or an equivalent for the North East region is maintained and continually improved and provide periodic reviews of wood product yields as documented in Attachment 12;
 - (iii) undertake and make publicly available an independent review of Sustainable Yield estimates for the North East region during each five-yearly review period;
- (h) Develop and implement environmental management systems in accordance with the principles outlined in Attachment 8 within five years. Maintain and implement a management system for public Forests that meets the criteria for an environmental management system meeting the requirements of ISO 14001 and demonstrates ESFM;
- (i) Identify and integrate relevant climate risks and adaptation responses into the monitoring, evaluation and reporting requirements in Regional ESFM Plans and plans of management under the *National Parks and Wildlife Act 1974* (NSW);
- (j) Ensure that there is a transparent, systematic and credible process for investigating alleged environmental incidents reported by members of the public in relation to Forestry Operations on Public and Private Land and that information about regulatory actions are made publicly available where appropriate; and
- (k) Establish and maintain a coordinated forum for stakeholder engagement.

Monitoring, Reporting and Consultative Mechanisms

Sustainability Indicators

48A Pursuant to clause 8F, the State will continue to publicly report on the results of monitoring of Sustainability Indicators every five years to align with and inform the five-yearly reviews required under this Agreement and reporting will be under the headings of the Montreal Process Criteria in Attachment 9.

49 New South Wales will report on the results of monitoring of the Sustainability Indicators which are described in the report '*Criteria, Indicators, Targets and Monitoring Processes of Ecologically Sustainable Forest Management for the Upper North East and Lower North East RFA regions*'. Reporting against the indicators will be consistent with the framework document *A Framework of Regional (Sub-National) Level Criteria and Indicators of Sustainable Forest Management in Australia* (Department of Primary Industries and Energy 1998) developed by the MIG. The Parties recognise that the document *Ecologically Sustainable Forest Management Criteria and Indicators for the NSW Forest Agreement regions* (EPA 2017) is consistent with *Australia's Sustainable Forest Management Framework of Criteria and Indicators 2008 – Policy Guidelines* (Commonwealth of Australia 2008) developed by the Montreal Implementation Group for Australia (MIG).

- 50 ~~Comprehensive Regional Assessments and the development of this Agreement have provided extensive opportunities for public participation and reporting. Parties recognise that the public reporting activities and on-going opportunities for public participation and consultation associated with existing New South Wales and Commonwealth processes and instruments will continue. A range of these processes and improvements are listed in Attachment 6. New South Wales agrees to review and revise its Sustainability Indicators to align with any relevant review of Sustainability Indicators at a national level.~~
- 51 ~~As required by the *Forestry and National Park Estate Act 1998* (NSW), New South Wales will report annually to Parliament on compliance with any Integrated Forestry Operations Approval for the Upper North East and Lower North East regions and the *New South Wales Upper North East Region Forest Agreement* and *Lower North East Region Forest Agreement*. New South Wales will also furnish a copy of the reports to the Commonwealth within fourteen days of their tabling.~~
NOT USED

Accreditation

- 52 ~~The Commonwealth accredits as providing for continuing improvement in ESFM New South Wales' Forest Management System (including its legislation, policies, Codes for the Upper North East and Lower North East regions, plans and management practices applying to both Public and Private land), as agreed to be amended in this Agreement, particularly those undertakings in clauses 48(a), (b), (d), (e), (g), (h) and 0. The System includes: NOT USED~~
- ~~• The New South Wales *Upper North East Region Forest Agreement* and the *Lower North East Region Forest Agreement*;~~
 - ~~• Integrated Forestry Operations Approvals for the Upper North East and Lower North East regions;~~
 - ~~• Regional ESFM Plans for the Upper North East and Lower North East regions;~~
 - ~~• New South Wales processes for forecasting Sustainable Yield from both the Upper North East region and the Lower North East region;~~
 - ~~• Codes of Practice and Eco Field Guide for Public Lands;~~
 - ~~• Codes of Practice for Private Lands;~~
 - ~~• The *Native Vegetation Conservation Act 1997* (NSW);~~
 - ~~• The SFNSW Native Forest Management System; and~~
 - ~~• The NPWS Environmental Management System.~~

Sustainability Indicators

- 53 ~~Parties agree that the current Forest Management System will be enhanced by implementing mechanisms to monitor and review the sustainability of forest management practices. To ensure this occurs, Parties agree that: NOT USED~~
- ~~(a) The Sustainability Indicators referred to in clause 0 are consistent with the Montreal Process Criteria in Attachment 9, and take into account the *Framework of Regional (Sub National) Level Criteria and Indicators of Sustainable Forest Management in Australia* developed by the MIG;~~
 - ~~(b) Both Parties agree that the indicators referred to in clause 0 are to be trialed and assessed during the first five year period to ensure they are practical, measurable, cost effective and capable of being implemented at the regional level;~~
 - ~~(c) Reporting on the indicators referred to in clause 0 will be under the headings of the Montreal Process Criteria as in Attachment 9; and~~
 - ~~(d) Both Parties agree to further develop, review, and if necessary revise Sustainability Indicators in time for the first five yearly review.~~

Private Land

54 The Parties reaffirm their commitments made in the *National Forest Policy Statement* (1992) to the conservation and management of the private forest estate Forest Estate. The Parties note that Forestry Operations on Private Land in New South Wales are undertaken in accordance with the Private Native Forestry Code of Practice. The Parties note that New South Wales has provisions under the *Native Vegetation Conservation Act 1997* Local Land Services Act 2013 (NSW) for native vegetation retention controls to regulate the clearance of native forest on Private Land.

54A New South Wales confirms that the CAR Reserve System is being maintained and implemented through this Agreement, including Attachment 2, and that conservation levels achieved will not subsequently be used as a basis for preventing timber harvesting in accordance with the Private Native Forestry Code of Practice applying to the North East region being carried out on Private Lands. Consistent with clause 18 this is not to be interpreted as preventing voluntary conservation measures and mechanisms to protect CAR Values on Private Land.

54B The Parties will use best endeavours to ensure any changes to the Regional Prescriptions applied to Private Land will not subsequently lead to a net deterioration in Environment and Heritage Values on Private Land.

54C The Parties recognise that Values Protected by Prescription on Private Land will be protected during Forestry Operations by adherence to Regulatory Instruments including the Private Native Forestry Code of Practice applying to the North East region.

- 55 ~~The Parties agree to encourage private forest owners to ensure that their management operations are recognise the Private Native Forestry Code of Practice, applying to Forestry Operations on Private Land in the North East region, which requires Forestry Operations to be consistent with ESFM practices.~~
- 56 CAR Values which are priorities for the CAR Reserve System and which occur on Private Land will be dealt with by the principles and mechanisms outlined in Attachments 1(A), 1(B) and 2. Parties agree the values listed at Attachment 2 can be managed consistently with the JANIS Reserve Criteria through a range of mechanisms, with the consent of the ~~land owner~~ Private Land Owner, as specified in Attachment 2. Priorities for protection of Forest Ecosystems ~~as at 2000~~ are given in Tables 1 and 2 of Attachment 2. ~~All conservation mechanisms for the establishment of the Private Land component of the CAR Reserve System will be voluntary.~~
- 55A The Parties recognise the importance to the CAR Reserve System of Environment and Heritage Values on Private Land and the State agrees to continue to support processes that will facilitate the voluntary participation by Private Land Owners to protect CAR Values on Private Land. All conservation mechanisms for the establishment of the Private Land component of the CAR Reserve System will be voluntary.
- 57 ~~New South Wales agrees to produce a Code of Practice for timber harvesting of native forest on Private Lands by the first five yearly review. NOT USED~~
- 58 ~~Parties recognise that a Code of Practice for Plantations on Private Land is to be completed by 31 December 2000. NOT USED~~
- 59 ~~New South Wales confirms that the CAR Reserve System has been established through this Agreement, including Attachment 2, and that conservation levels achieved in that reserve system will not subsequently be used as a basis for preventing timber harvesting being carried out on Private Lands. Consistent with clause 18 this is not to be interpreted as preventing voluntary conservation measures to protect CAR Values on Private Land. NOT USED~~

Threatened Flora and Fauna

- 60 ~~The Parties agree that the CAR Reserve System, actions under the New South Wales Biodiversity Strategy, *Threatened Species Conservation Act 1995* (NSW) and the *Endangered Species Protection Act 1992* (C'wth) (and, the equivalent parts of the *Environment Protection and Biodiversity Conservation Act 1999* (Cwth) when it commences), *Forestry and National Parks Estate Act 1998* (NSW) and the application of a range of management strategies, management plans and the Integrated Forestry Operations Approval will provide for the protection of rare or threatened flora and fauna species and ecological communities. NOT USED~~
- 61 ~~Where threatened species, ecological communities and threatening processes restricted to New South Wales are listed under both the *Threatened Species Conservation Act 1995* (NSW) and the *Endangered Species Protection Act 1992* (C'wth), any new or revised Recovery Plans or Threat Abatement Plans will be jointly prepared to meet the requirements of both Acts. Where Recovery Plans or~~

~~Threat Abatement Plans under the *Threatened Species Conservation Act 1995* (NSW) meet the requirement of the *Endangered Species Protection Act 1992* (C'wth), the Commonwealth will consider adopting them under Section 46 of the *Endangered Species Protection Act 1992* (C'wth). NOT USED~~

- 62 ~~The Parties agree that the management prescriptions or actions identified in jointly prepared and agreed Recovery Plans or Threat Abatement Plans will be implemented as a matter of priority, including through the Integrated Forestry Operations Approval on State forest. NOT USED~~
- 63 ~~Recovery Plans for items listed under both Acts and extending beyond New South Wales will be prepared jointly with New South Wales and other relevant governments to be considered for adoption under Section 46 of the *Endangered Species Protection Act 1992* (C'wth). NOT USED~~
- 64 ~~Parties will continue to consult on the priorities for listing threatened species, ecological communities and threatening processes, and the preparation of Recovery Plans, recognising that priorities can change in the light of new information. Currently agreed priorities and commitments for the next five years are outlined in Attachment 3. NOT USED~~

THE CAR RESERVE SYSTEM

- 65 ~~Parties agree that the primary function of the CAR Reserve System is to ensure the conservation and protection of Environment and Heritage Values. The Parties agree that the CAR Reserve System has been established and progressively added to for the purpose of ensuring the long-term conservation and protection of the values defined by the JANIS Reserve Criteria. The CAR Reserve System includes the land identified in Attachment 1.~~
- 65A ~~The Parties agree that the CAR Reserve System will continue to support the long-term conservation and protection of Environment and Heritage Values, including Listed Species and Communities.~~
- 66 Parties agree that the CAR Reserve System as identified on Map 1(A) and Map 1(B) and presented in Attachment 1(A), Attachment 1(B) and Attachment 2, and as amended from time to time, satisfies the JANIS Reserve Criteria. Each element of the CAR Reserve System, with the exception of Commonwealth owned or leased land, will be administered in accordance with New South Wales legislation.
- 66A ~~The Parties agree that the CAR Reserve System established in accordance with this Agreement (including as it has been progressively added to and as further defined in Attachment 1(A), Attachment 1(B) and Attachment 2), comprises:~~
- ~~(a) Dedicated Reserves; and~~
 - ~~(b) Informal Reserves; and~~
 - ~~(c) areas with CAR Values Protected by Prescription; and~~

- (d) Private Land with CAR Values protected under secure management arrangement by agreement with Private Land Owners.

Action to manage the CAR Reserve System on public land

67 New South Wales agrees to implement, manage and conserve the Upper North East region CAR Reserve System described in Attachment 1(A) and identified on Map 1(A), and the Lower North East region CAR Reserve System described in Attachment 1(B) and identified on Map 1(B), with the exception of Commonwealth owned or leased land.

67A The State will manage and conserve the Dedicated Reserve and Informal Reserve elements of the CAR Reserve System consistent with its obligations in relation to the relevant statutory principles and values of reservation set out in Part 4, Division 2 of the *National Parks and Wildlife Act 1974* (NSW), or obligations under the *Forestry Act 2012* (NSW).

68 The Commonwealth agrees to manage and conserve those parts of the CAR Reserve system on Commonwealth owned or leased lands consistent with the conditions outlined in Attachment 1(B).

69 Parties agree that through the acquisition of Private Land (by voluntary sale), transfer of lands of the Crown, or transfer of land from an existing reserve tenure to one of higher conservation protection status, enhancements to the CAR Reserve System could occur. Both Parties agree to use best endeavours that such that enhancements to the CAR Reserve System will not impede access to ~~the management of State forest lands or the meeting of the wood supply commitments in this Agreement (Clauses 79, 80 and 83).~~

70 In the incorporation into the CAR ~~reserve system~~ Reserve System of lands of the Crown over which a licence or occupational permit is held NSW will:

- confirm the presence of CAR Values needed for reservation;
- through consultation, take into consideration any existing interests in the land of the licensee or permit holder;
- ensure where practicable that suitable transition arrangements apply; and
- ensure that practical and legal access remains available where such access to adjacent private, ~~licensed~~ licensed or leased land currently crosses or falls within land to be added to the CAR ~~reserve system~~ Reserve System under this ~~agreement~~ Agreement.

71 ~~Parties agree that changes to the CAR Reserve System will only occur in accordance with this Agreement, will be made publicly available, and will not lead to deterioration in the representation or protection of identified CAR Values, except that minor changes to the levels of representation or protection of specific CAR values may occur. The Parties agree to ensure changes to the CAR Reserve System will:~~

- a) only occur in accordance with this Agreement;
- b) be made publicly available; and
- c) not lead to deterioration in the representation or protection of identified CAR Values to below levels established by this Agreement in 2000, noting that minor changes to the levels of representation or protection of specific CAR Values may occur as a result of actions that are in accordance with this Agreement.

71A New South Wales will:

- (a) discuss with and notify the Commonwealth of any proposed changes to the CAR Reserve System that will significantly impact Forestry Operations, wood supply to industry, or change the Sustainable Yield of the region by more than one per cent;
- (b) not make any changes to the CAR Reserve System that would reduce the total percentage for each Forest Ecosystem, non-forest ecosystem or Old Growth forest below the targets set in the JANIS Report, noting that minor changes may occur as a result of actions that are in accordance with this Agreement; and
- (c) use best endeavours to not reduce the Dedicated Reserve component of the CAR Reserve System to below the level of protection as at December 2017 as contained in Attachment 1(A) Clause 6 and Attachment 1(B) Clause 6 to this Agreement noting that minor changes may occur as a result of actions that are in accordance with this Agreement.

71B The State will maintain public records indicating the location, extent and purpose of any amendment to those elements of the CAR Reserve System in Informal Reserves or Values Protected by Prescription categories and the net impact that any amendments have on CAR Values.

Environment and Heritage Values

Protection of Environment and Heritage Values

72 Parties agree ~~that best endeavours will be used~~ to maintain the levels of protection of Environment and Heritage Values National Estate Values in a regional context; however, minor changes to the levels of protection of individual values may occur as a result of changes to the CAR Reserve System in State forest.

72A The Parties agree that the CAR Reserve System, established in accordance with this Agreement, and the application of the NSW Forest Management Framework, protects Environment and Heritage Values.

Climate change

72B The State agrees to manage its Forests in accordance with the NFPS objectives and policies as they relate to climate change, adaptation and carbon.

72C The Parties acknowledge:

- (a) climate change is driving more extreme weather events that will impact on Forest Management, including biodiversity and Listed Species and Communities, resource availability, and risk management for projected increases in frequency and magnitude of hazards including fire, floods, storms, sea level rise and heatwaves;
- (b) integrating climate change adaptation into Forest Management is required to build resilience and manage climate risks and meet the objectives of ESFM; and
- (c) the need to manage Forests to maintain or enhance the contribution of all elements of the Forest Estate to the effective management of carbon within the carbon cycle.

Environmental processes within forests

72D The State agrees to manage its Forests in accordance with the NFPS objectives and policies as they relate to water supply and catchment management and implement forest management practices that seek to:

- (a) ensure the availability of reliable, high-quality water supplies from forested land and to protect catchment values;
- (b) minimise soil compaction and soil disturbance to encourage healthy forest growth and minimise downstream impacts.

INDUSTRY AND REGIONAL DEVELOPMENT STABILITY

73 The Parties agree that State forest outside the CAR Reserve System is available for timber harvesting in accordance with this Agreement and the laws of New South Wales.

74 ~~The Parties will use best endeavours to ensure agree that any changes to the total area of State forest or areas excluded from timber harvesting or Regional Prescriptions applied to State forest will not lead to a net deterioration in the capacity to supply wood from the Upper North East Region region and the Lower North East Region region, in terms of the volumes as specified in this Agreement and in terms of species and quality.~~

75 (a) ~~The Parties acknowledge that the forest based industries in the Upper North East and Lower North East regions contribute to both the regional and State economies and are an essential component of many communities in the regions. The Parties intend that this Agreement will enhance opportunities for further growth and development of forest based industries in the Upper North East and Lower North East regions.~~

- (b) ~~The Agreement will provide long term stability for these industries through including long term certainty of timber supply. This stability will facilitate industry development through:~~

- ~~(i) New investment, plantation development, reforestation, downstream processing, value adding and jobs growth in forests based industries;~~
- ~~(ii) Further introduction of new technology, enhanced utilisation of regrowth timber for sawn products, thinning of regrowth forests and more efficient utilisation of residue wood;~~
- ~~(c) There will be significant economic opportunities in other forest based industries, such as:~~
 - ~~(i) tourism and recreation; and~~
 - ~~(ii) mineral exploration and Mining.~~
- ~~(d) Additional opportunities for enhancement of forest based industries are anticipated arising from the Long term Timber Supply Strategy (Attachment 12).~~

In recognition of the contribution of timber and forest-based industries to the New South Wales' economy, the Parties intend that this Agreement will support future growth and development of New South Wales' industries associated with forests and timber products specifically through:

- (a) certainty of resource access for the timber and forest-based industries;
- (b) encouraging increased production of Plantation-grown timber to supplement wood supply from native forests;
- (c) facilitating timber and forest-based industries growth and development, in areas such as:
 - skills retention and workforce development;
 - research, innovation and extension;
 - strategic marketing, communications and education;
 - essential and strategic infrastructure;
 - resource management and access; and
 - regulatory modernisation;
- (d) providing for other forest based industries, including:
 - security of access to the Mining industry by continuing to recognise defined land tenures which allow for Mineral Exploration and Mining subject to the requirements of State and Commonwealth legislation; and
 - facilitating economic opportunities for tourism and recreation.

76 As part of providing greater security of access to forest resources, the Commonwealth will not prevent enterprises obtaining, using or exporting the quantities of timber, Woodchips ~~or~~ and Unprocessed Wood products sourced from the Upper North East and Lower North East regions in accordance with this Agreement.

- 77 ~~The Parties note that the New South Wales *Upper North East Region Forest Agreement* and *Lower North East Region Forest Agreement* establish the sustainability strategy for timber supplies.~~ NOT USED
- 78 ~~NSW Agrees to implement the Long term Timber Supply Strategy and Sustainable Yield Systems and Processes as outlined in Attachment 12 of this Agreement. New South Wales will implement Sustainable Yield in accordance with Attachment 12.~~
- 78A NSW will ensure Sustainable Yield is calculated and managed consistent with the ESFM principles at Attachment 14.
- 79 ~~Under the Sustainable Wood Supply Strategy, NSW New South Wales agrees to make available to supply 129,000m³ per annum for 20 years timber and forest based industries, Forest Products at volumes no greater than Sustainable Yields for the in the Upper North East Region region and 140,000 m³ per annum in the Lower North East Region region, and as amended from time to time, and determined in accordance with Attachment 12. of High Quality Large Sawlogs and Large Veneer Logs. Annually, approximately 20,000 m³ of High Quality Large Sawlogs and Large Veneer Logs allocated in the Upper North East Region will be sourced from the Lower North East Region over the period of the Agreement.~~
- 80 ~~Harvesting of 109,000m³ per annum from the Upper North East Region and 160,000 m³ per annum from the Lower North East Region of High Quality Large Sawlogs and Large Veneer Logs will occur to supply Wood Supply Agreement holders. Contracted commitments and other arrangements associated with Wood Supply Agreements allow for the carrying forward of volumes under cut or over-cut in any one year. New South Wales agrees that the timber volumes made available under this Agreement will be reviewed using the processes described in clause 48 (g), and in accordance with the provisions of this Agreement. Any additional sustainable timber volumes identified in this way will be made available to industry provided this is consistent with this Agreement, including the provisions relating to Ecologically Sustainable Forest Management, and that there are no adverse environmental effects, including deleterious effects on CAR Values or Matters of National Environmental Significance.~~
- 81 ~~The volumes in clause 79 are subject to a FRAMES and wood supply review to be completed by 1 December 2006. The review will be an input to the determination of the annual volume of High Quality Large Sawlogs and Large Veneer Logs to be made available to industry for the balance of the term of this Agreement. Reviews will be conducted using enhanced FRAMES developed through Part E of Attachment 12 and be based on the Sustainable Wood Supply Strategy, the area available for harvesting in the *Upper North East Region Forest Agreement* (1999) and *Lower North East Region Forest Agreement* (1999) as defined through net harvestable area exclusions and the Integrated Forest Operations Approval (1999). The reviews will also consider the contribution to the Sustainable Wood Supply Strategy of any additions to the area available for harvesting resulting from the purchase of Private Land and development of new public hardwood Plantations (Part C, Attachment 12).~~ NOT USED

- 82 ~~Informed by the review in clause 81, NSW will consider additional supplementation of High Quality Large Sawlogs and Large Veneer Logs having regard to the long term Sustainable Yield after 2018. NOT USED~~
- 83 ~~Any changes in the contracted volumes specified in clause 79 resulting from the review process outlined in clause 81 will be incorporated into this Agreement through Clause 8 and will be advised to holders of Wood Supply Agreements prior to 1 December 2006. These volumes will then be available to industry until the end of 2018. NOT USED~~
- 84 ~~In addition to the timber in clause 79, NSW agrees to supply 2,846 m³ to mills in the Upper North East Region and 5,911m³ to mills in the Lower North East Region of High Quality Large Sawlogs under transitional arrangements in 2000. NOT USED~~
- 85 ~~High Quality Small Sawlogs will be supplied at levels greater than 1999 contracted volumes. In addition NSW will use their best endeavours to provide a greater proportion of the High Quality Small Sawlogs resource through Wood Supply Agreements to enhance security for processors. NOT USED~~
- 86 ~~Arrangements for pulp grade timber include an amount of approximately 30,000 tonnes per annum in the Upper North East Region and approximately 152,000 tonnes per annum in the Lower North East Region, being a quantity which reflects supply levels current at the date of this Agreement. In addition, existing supply arrangements for other Forest Products (including poles, piles, girders, High Quality Small Sawlogs, low quality timber and small veneer logs) from forest operations will be honoured. NOT USED~~
- 87 ~~The quantities referred to in clause 85 simply reflect supply arrangements existing at the date of this Agreement. Other quantities of Forest Products will be supplied as a result of the management and harvesting of forests to meet the volumes specified in the Wood Supply Agreements for High Quality Large Sawlogs and Large Veneer Logs (refer to clause 79). This will not result in a net increase in the High Quality Large Sawlog or Large Veneer Log volumes specified in clause 79. NOT USED~~
- 88 Wherever possible New South Wales will enhance silvicultural programs and reforestation works to improve the productive capacity of State forests.
- 89 ~~Both Parties are committed to the development and implementation of hardwood timber industry development initiatives through the Forest Industries Structural Adjustment Program. NOT USED~~
- 90 ~~Both Parties agree that this Agreement will promote the following objectives: NOT USED~~
- ~~(a) maximising opportunities for employment in the timber and forest industry and for any workers displaced as a result of the implementation of the CAR Reserve System; and~~

~~(b) development of an environmental management system, and MIG criteria and indicator monitoring program to a standard which would allow certification of the system under the ISO14000 series.~~

91 ~~Additional initiatives to promote industry and regional development across the Upper North East Region and the Lower North East Region are outlined in Attachment 11. NOT USED~~

INDIGENOUS ABORIGINAL CULTURE AND HERITAGE

92 New South Wales agrees to ~~develop~~ maintain, implement and regularly review guidelines and ~~a package of other measures that will be implemented~~ to ensure the appropriate management of Aboriginal heritage including the maintenance of traditional historic uses and values, and to facilitate ongoing ~~Aboriginal~~ involvement of Aboriginal people in the management of natural and cultural values of relevant forested land of the Upper North East and Lower North East regions. The principles to be applied ~~in the Upper North East are those in the *Protective Mechanisms for Cultural Heritage – Generic Version* and for the Lower North East region those in the *Protective Mechanisms for Cultural Heritage – Lower North East*~~ in addition to the principles at Attachment 4 and are at Attachment 10.

92A The Parties agree that the Forest Management Framework provides a framework for the protection of Aboriginal heritage values that aligns with the NSW legislative framework for Aboriginal cultural heritage management, including in relation to consultation and ongoing involvement with Aboriginal people and managing the impacts of forestry operations on Aboriginal cultural heritage values.

92B The Parties commit to ongoing Aboriginal involvement in forest management and as required by the Aboriginal Cultural Heritage Advisory Committee (or any successor) in relation to protection of significant sites and places.

93 This Agreement is not intended to influence either current or future Native Title claims in any way. The Parties acknowledge that if any implementation of this Agreement affects any native title rights and interests such implementation must be in accordance with the *Native Title Act 1993* (~~C'with Cth~~).

93A The Parties recognise that Aboriginal Land Councils in NSW can claim land vested in the Crown to compensate Aboriginal persons for historic dispossession of land and to support their social and economic development under the *Aboriginal Land Rights Act 1983* (NSW). Under section 36AA of the *Aboriginal Land Rights Act 1983* (NSW), Aboriginal Land Councils can also negotiate Aboriginal Land Agreements. The Parties agree that during the life of this Agreement its provisions do not restrict the rights of Aboriginal Land Councils to make land claims or have existing land claims determined over land the subject of this Agreement, or negotiate rights to use and enjoy such land as part of an Aboriginal Land Agreement under the *Aboriginal Land Rights Act 1983* (NSW).

93B In acknowledging the ongoing aspirations of Aboriginal persons to future ownership and/or roles in the management of Crown lands, the State agrees, so far as possible, not to transfer Public Land the subject of this Agreement to any other entity or authority unless:

- (a) if the land includes land for which a claim has been made under the *Aboriginal Land Rights Act 1983* (NSW), written consent for the transfer of the land has been given by:
- (i) the Local Aboriginal Land Council for the Local Aboriginal Land Council area (as defined in that Act) in which the land is located, and
 - (ii) where the claim is made by the New South Wales Aboriginal Land Council, the New South Wales Aboriginal Land Council, and
- (b) in any other case the State will, so far as possible, ensure that notice of its intent to transfer the land is given to the NSW Aboriginal Land Council, and to the Local Aboriginal Land Council within whose constituted area the land is situated.

93C The Parties recognise the *United Nations Declaration on the Rights of Indigenous Peoples*, including the right for the Aboriginal people of New South Wales to practise and revitalise their cultural traditions and customs. This includes the right to maintain, protect and develop their cultural traditions and customs.

PLANTATIONS

94 ~~The Parties recognise that export controls have been removed from Unprocessed Wood and Woodchips sourced from New South Wales plantations in accordance with the Export Control (Unprocessed Wood) Regulations (C'wth). The Parties note that export controls on the export of Woodchips and Unprocessed Wood sourced from New South Wales Plantations have been removed in accordance with the *Export Control Act 1982* (Cth).~~

94A The Parties encourage the establishment and use of Plantation forests on existing essentially cleared land to generate social and economic values.

OTHER FOREST USES

95 Parties agree that ~~forest~~ Forest uses other than timber production will be determined in accordance with New South Wales legislation with due regard for protection of Environment and Heritage Values. In some limited circumstances that do not relate to the substance of this Agreement (for example foreign investment approval, export controls for non-forest products and major infrastructure developments) Commonwealth legislative provisions may also apply.

Mineral Exploration and Mining Operations

96 Parties recognise that under the *National Parks and Wildlife Act 1974* (NSW), issuing of new Mineral Exploration and Mining titles is not permitted (except by Act of Parliament) in national parks or historic sites, nature reserves, state game reserves, karst conservation reserves, aboriginal areas and regional parks.

97 The Parties agree that Mining Operations are permitted within parts of the CAR Reserve System, to the extent permitted by relevant State and Commonwealth

~~legislation which are State forest or Crown Reserves in Attachment 1(A) and 1(B). In addition to any requirements for the protection of Matters of National Environmental Significance under the EPBC Act, I—a condition of Mining Operations in Informal Reserves, or in those parts of the CAR Reserve System described as ‘ and areas with Values Protected by Prescription ’ in Attachments 1(A) and 1(B), NSW the State agrees is that: CAR Values values, as identified in Attachments 1(A) and 1(B); that are compatible with those Mining Operations will be maintained; while, and for CAR Values values, as identified in Attachments 1(A) and 1 (B), not compatible with those Mining Operations will, conservation be provided for elsewhere. Where a Mining Operation is not compatible with that part of the CAR Reserve System described as Values Protected by Prescription in Attachment 1, NSW the State will use best endeavours to ensure that conservation of these values is provided for elsewhere.~~

- 98 New South Wales will ensure that any proposed Mining Operations will be subject to environmental impact assessment (including species impact statements where required) under the provisions of the *Environmental Planning and Assessment Act 1979* (NSW). Mining Operations will be subject to the *Mining Act 1992* (NSW), ~~and~~ the *Petroleum (Onshore) Act 1991* (NSW), the *Protection of the Environment Operations Act 1997* (NSW), and the EPBC Act. Mining will be in accordance with an approved Mining Operations Plan and Annual Environmental Management Reports. Rehabilitation of any sites disturbed by Mining Operations will be carried out in accordance with the provisions of the relevant statutes (including the *Environmental Planning and Assessment Act 1979* (NSW) and the *Mining Act 1992* (NSW))~~and it will aim to achieve world’s best practice.~~

COMPETITION PRINCIPLES

- 99 Parties recognise that under the Competition Principles Agreement, as amended from time to time, Governments aim to achieve more transparency and greater efficiency in Government owned business enterprises. The Commonwealth agrees that the day to day pricing and allocation arrangements for ~~wood~~ Forest Products from public ~~forests~~ Forests are matters for New South Wales. New South Wales confirms its commitment to the pricing and allocation principles set out in the *National Forest Policy Statement* and the application of competitive neutrality principles. ~~New South Wales confirms that legislation and policies relevant to the allocation and pricing of hardwood logs from State forests will be reviewed as part of the Competition Principles Agreement.~~

RESEARCH

- 100 ~~The results of the Comprehensive Regional Assessments of the forest values of the Upper North East and Lower North East regions indicated a number of areas requiring further research. New South Wales will establish a Research Liaison Committee to identify research priorities relating to forest management and publish a list of priorities by August 2000. The Parties agree that continuing research in a range of areas is vital to ensure that all aspects of Forest Management remain up to date with the latest information and technological developments. Parties have outlined themes for further research in Attachment 7.~~

101 ~~In developing priorities, the Research Liaison Committee will take account of priorities arising out of the Comprehensive Regional Assessment process for the Upper North East and Lower North East regions, particularly those outlined in the reports titled *Criteria, indicators, targets and monitoring processes of Ecologically Sustainable Forest Management for the Upper North East and Lower North East RFA Regions* and *Knowledge and Information Gaps for the Upper North East and Lower North East and Southern CRA/RFA regions*. The Parties agree to hold discussions on research themes and coordination as part of annual meetings pursuant clause 8B.~~

102 New South Wales will prepare ~~by the first~~ for each five-yearly review, a ~~Compendium~~ compendium of New South Wales Forest ~~Research~~ research that will provide a bibliography of research in progress as well as published and unpublished works.

103A The Parties agree to document relevant Forest research undertaken in each reporting period and to update research themes in each five-yearly Progress Report.

103 Parties agree to consult each other in the development of joint research projects that may affect the Agreement and note that the subject ~~areas~~ themes and priorities may change throughout the duration of the Agreement.

104 Parties agree to make publicly available, wherever possible, research reports relevant to this Agreement.

DATA

105 ~~Parties agree to lodge archival copies of Data within six months of signing this Agreement. The Parties recognise that the implementation and monitoring of this Agreement depends on appropriate mutual access to and availability of relevant information owned and held by each of them.~~

106 ~~The Parties agree to manage and provide access to Data data, including models used to develop and implement this Agreement, in accordance with the Data Agreement at Attachment 13 of this Agreement.~~

106A The Parties commit to a policy of open access to information and agree that all data held by each of them that is used for ongoing implementation and monitoring of this Agreement is published under the least restrictive AusGOAL endorsed licences (including Creative Commons) unless otherwise agreed, or where data is confidential or otherwise restricted.

PART 3

Nature of Obligations under this Part

107 It is the intention of the Parties that this Part is to create legally enforceable rights and obligations. It is also their intention that, in the event that any provision of this Part exceeds the power of either Party or is unenforceable for any other reason, that provision is to be read as not intending to create legally enforceable rights and obligations.

Forest Management

108 New South Wales will for the duration of the Agreement:

108.1 ~~In accordance with clause 99, under the Competition Principles Agreement review legislation and policies relevant to the allocation and pricing of hardwood logs from State forest;~~NOT USED

108.2 ~~In accordance with clause 51, and Report annually to the New South Wales Parliament on compliance with any Integrated Forestry Operations Approval applying to the Upper North East and Lower North East regions as required by the *Forestry and National Parks Estate Act 2012 1998* (NSW) report annually to Parliament on compliance with any Integrated Forestry Operations Approval for the Upper North East and Lower North East regions and the New South Wales *Upper North East Forest Region Agreement* and *Lower North East Region Forest Agreement*;~~

108.3 ~~In accordance with clauses 37 and 51 furnish to~~ Notify the Commonwealth within 14 days that:

- (a) a copy of the annual reports of compliance with the New South Wales *Upper North East Region Forest Agreement* and *Lower North East Region Forest Agreement* and Integrated Forestry Operations Approval for the Upper North East and Lower North East regions, required by section 21 of the *Forestry and National Parks Estate Act 1998* (NSW) is available on a relevant State government website;
- (b) a copy of any ~~Forest Agreement~~ and Integrated Forestry Operations Approvals for the Upper North East and Lower North East regions, and any amendments to ~~those that~~ documents is available on a relevant State government website; and
- (c) ~~notification of~~ there has been a termination, suspension or revocation of any ~~Forest Agreement or~~ Integrated Forestry Operations Approval applying to the Upper North East or Lower North East regions; or
- (d) there has been a termination of any Private Native Forestry Code of Practice applying to the North East region;

108.4 ~~In accordance with clause 48(a), maintain a Forest Agreement covering the Upper North East and Lower North East regions for the duration of this Agreement;~~

Discuss with and notify the Commonwealth on proposed changes of a significant nature to the Forest Management Framework;

108.5 ~~In accordance with clause 48(b), maintain~~ Implement and maintain an Integrated Forestry Operations Approval ~~covering applicable to the Upper North East and Lower North East regions for the duration of this Agreement;~~

108.6 ~~In accordance with clause 48(d), complete and publish~~ Implement and periodically review the Regional ESFM Plans containing the Ecologically Sustainable Forest Management strategy for State forests in the North East region, made under the Forestry Regulation 1999 2012 (NSW) under the Forestry Act 1916 2012 (NSW) by 30 June 2000;

108.7 ~~In accordance with clause 48(g) implement the review and monitoring processes and develop the strategic and operational requirements of sustainable yield systems and processes using enhanced Forest Resource and Management Evaluation System (FRAMES) as described in Attachment 12 (Part E) to enable the review of Sustainable Yield by 1 December 2006 as described in Attachment 12 (Part B)~~ Maintain a forest yield estimation system for State forest and periodically review the calculation of Sustainable Yield consistent with Attachment 12;

108.8 ~~In accordance with clause 48(h), develop~~ Maintain and implement environmental management systems in accordance with the principles outlined in Attachment 8 ~~within five years.~~

108.9 ~~In accordance with clause 0, produce a code of practice for timber harvesting of native forest on Private Lands by the first five yearly review; Maintain and implement a Private Native Forestry Code of Practice applying to the North East region;~~

108.10 ~~In accordance with clause 78 implement the Long term Timber Supply Strategy for the regions as at Attachment 12 of this Agreement; and~~ NOT USED

108.11 ~~In accordance with clauses 79–83 maintain contracted supply for High Quality Large Sawlogs and Large Veneer Logs.~~ NOT USED

109 The Commonwealth will:

109.1 ~~Not prevent enterprises obtaining, using or exporting the quantities of timber, Woodchips or~~ and Unprocessed Wood products sourced from the Upper North East and Lower North East regions in accordance with this Agreement;

109.2 ~~Maintain accreditation of New South Wales' Forest Management System for the Upper North East and Lower North East regions as agreed to be amended in this Agreement as set out in clause 52 providing any changes to the system are consistent with the provisions of this Agreement.~~ Recognise that the Forest Management Framework, as amended from time to time and as it applies to the North East region, demonstrates continual improvement, for the purposes of ESFM and relevant provisions of this Agreement.

Compensation

110 The Parties agree that:

110.1 If to protect the Environment and Heritage Values in native forests and in connection therewith the protection of:

- (a) CAR Values; or
- (b) National Estate Values; or
- (c) World Heritage Values; or
- (d) Wild Rivers

the Commonwealth takes any Action during the period of this Agreement which is inconsistent with any provision of this Agreement and a foreseeable and probable consequence of which is to prevent or substantially limit:

- (e) the use of land which is not included within the CAR Reserve System for Forestry Operations which, immediately before the announcement of the proposed Commonwealth Action, are being undertaken or were intended to be undertaken at any time or the use of land which is not included within the CAR Reserve System or of land within that system but not within a Dedicated Reserve in which mineral exploration and mining is prohibited pursuant to a statutory licence, permit or authority permitting those Mining Operations or Extractive Operations which was in force immediately prior to the announcement of the proposed Commonwealth Action; or,
- (f) the sale or commercial use of Forest Products sourced from land which is not included within the CAR Reserve System or the first sale or first commercial use of Mining Products or Extractive Materials sourced from land which is not included within the CAR Reserve System or land within that system but not within a Dedicated Reserve in which mineral exploration and mining is prohibited for a purpose for which, immediately prior to the announcement of the proposed Commonwealth Action, they had been intended to be sold or used commercially at any time; or,
- (g) the construction on land which is not included within the CAR Reserve System of roads being built or intended to be built, immediately before the announcement of the proposed Commonwealth Action, where those roads' primary purpose is for the transportation of Forest Products sourced from land which is not included within the CAR Reserve System,

the Commonwealth will pay compensation to the State in accordance with the remaining provisions of clauses 110.2 to 110.20.

110.2 Subject to:

- (a) clauses 110.3, 110.4, 110.5, 110.6, 110.8, 110.9, 110.10, 110.11 and 110.12 the compensation to be paid by the Commonwealth to the State in accordance with clause 110.1 in relation to the prevention by

Commonwealth Action of the use of land for Forestry Operations or prevention by Commonwealth Action of the sale or commercial use of Forest Products is the amount of the reasonable loss or damage sustained by reason of that prevention, calculated as at the time at which the prevention referred to in clause 110.1 occurred, by any person in any of the following classes of person:

- (i) the Owner of the land or of the Forest Products on the land;
 - (ii) any person who, prior to the announcement of the proposed Commonwealth Action but not in anticipation of that Action, entered into a contract with the Owner of the land or of the Forest Products on the land or with any person mentioned in sub-paragraph (iii) below for the carrying out of Forestry Operations on the land; and
 - (iii) any person who, prior to the announcement of the proposed Commonwealth Action but not in anticipation of that Action, entered into a contract with the Owner of the land or of the Forest Products on the land to purchase the Forest Products on the land.
- (b) clauses 110.3, 110.4, 110.5, 110.6, 110.7, 110.8, 110.10, 110.11 and 110.12 the compensation to be paid by the Commonwealth to the State in accordance with clause 110.1 in relation to the prevention by Commonwealth Action of the use of land for Mining Operations or Extractive Operations or the first sale or first commercial use of Mining Products or Extractive Materials is the amount of the reasonable loss or damage sustained by reason of that prevention, calculated as at the time at which the prevention referred to in clause 110.1 occurred, by any person carrying on Mining Operations or Extractive Operations on the land pursuant to a statutory licence, permit or authority permitting those operations which was in force immediately prior to the announcement of the proposed Commonwealth Action.
- (c) clauses 110.3, 110.6, 110.8, 110.9, 110.11 and 110.12 the compensation to be paid by the Commonwealth to the State in accordance with clause 110.1 in relation to the prevention by Commonwealth Action of construction of a road is the amount of reasonable loss or damage sustained by reason of that prevention, calculated as at the time at which the prevention referred to in clause 110.1 occurred, by any person who, immediately before the announcement of the proposed Commonwealth Action, was contracted to construct that road.

110.3 No amount of compensation is payable in the event of any loss or damage being sustained which would have been so sustained regardless of the Commonwealth Action. No compensation is payable hereunder in respect of any additional areas included pursuant to this Agreement in the CAR Reserve System.

110.4 The State warrants that no claim will be made in respect of areas where Forestry Operations or Mining Operations or Extractive Operations would not have been permitted by this Agreement and that any claims will be certified by it as being

or not being in respect of such areas and as having been assessed by the State in this regard.

110.5 The State warrants that no claim will be made in respect of Forest Products or Mining Products or Extractive Materials which would not have been available for sale or commercial use under this Agreement and that any claims will be certified by it as being or not being in respect of such Products and as having been assessed by the State in this regard.

110.6 The State undertakes to supply to the Commonwealth on request information, including as to areas protected by prescription, required by the Commonwealth for the purposes of considering claims under this clause.

110.7 To the extent that clause 110.2(b) relates to loss or damage in respect of an exploration licence or assessment lease, that clause is to be read as providing for compensation to be payable only:

- (a) in respect of the part of the area to which that licence or lease relates that is affected by the Commonwealth Action; and
- (b) up to the loss in market value of that licence or lease resulting from the prevention of the Mining Operations or Extractive Operations.

110.8 Any claim made by the State hereunder is to be notified in writing within six months after the loss or damage is sustained.

110.9 For the purposes of clauses 110.1(e) and (g), the intention to conduct Forestry Operations, or the intention to construct roads is to be established on the basis of contracts, documentation of management history or other records establishing clear intent and in existence immediately prior to the announcement of the proposed Commonwealth Action.

110.10 For the purposes of clause 110.1(f)(e), the purpose for which there was an intention to sell or use commercially is to be established on the basis of contracts, documentation of management history or other records establishing clear intent and in existence immediately prior to the announcement of the proposed Commonwealth Action.

110.11 No compensation is payable under clause 110.2 in relation to any loss or damage which the person who sustained the loss or damage might have avoided by taking reasonable steps in mitigation including by the making of alternative contractual arrangements which would have avoided or reduced that loss or damage.

110.12 Clause 110.2 does not apply so as to entitle the State to recover compensation more than once in respect of the same loss or damage.

110.13 The initial procedure in relation to a claim for compensation under this clause is as follows:

- (a) a person who claims to have sustained loss or damage for which compensation is payable may lodge an initiating claim with the State;

- (b) on receiving a claim, the State must make a corresponding claim for compensation to the Commonwealth;
- (c) the State is to make the claim for compensation by a notice in writing to the Commonwealth which indicates the amount claimed, for whom the claim is made, the area to which it relates and gives detailed particulars of the basis for the claim, and of the manner in which it has been calculated;
- (d) where there is a dispute concerning a claim for compensation, or on or before the expiry of 30 days after the receipt of the claim, the Commonwealth notifies the State that it does not accept the amount claimed, then either Party may serve a notice of dispute under clause 10;
- (e) in the event that the amount of compensation payable in response to a claim has not been agreed in the dispute resolution process for which clauses 10 to 14 provide, or the Commonwealth fails to pay the agreed amount of compensation to the State within 60 days of agreement (for reasons other than lack of the necessary appropriation), the Parties hereby refer the claim to arbitration;
- (f) an arbitration under this Agreement is to be conducted in accordance with the provisions of the *Commercial Arbitration Act 1984* (NSW) which are, to the extent permitted by the *Judiciary Act 1903* (C'wlth) and the Commonwealth constitution, incorporated by reference into this Agreement.

110.14 The procedure in relation to any arbitration required by reason of the provisions of clause 110.13 is as follows:

- (a) The Parties must meet to appoint an arbitrator within seven days of an unsuccessful mediation.
- (b) If the Parties are unable to agree on the appointment of an arbitrator, either of them may refer the matter to the President of the Law Council of Australia, or equivalent officer of such body as in future may have the functions of the Law Council of Australia, with a request that that person appoint an arbitrator.
- (c) At an arbitration under this clause:
 - (i) the Parties are entitled to representation by a legal practitioner qualified to practice in any State or Territory of Australia;
 - (ii) the arbitrator may order the Parties to discover any relevant documents prior to the hearing;
 - (iii) the arbitrator may order the Parties to exchange proofs of evidence of witnesses (whether expert or not) prior to the hearing;
 - (iv) the arbitrator may, in accordance with the *Commercial Arbitration Act 1984* (NSW), inform himself or herself, in relation to any matter in

such manner as the arbitrator thinks fit; provided that if the arbitrator takes advice from any person who is not a Party to this Agreement as to the matters in issue, the arbitrator must provide the Parties with an opportunity to:

- (1) make submissions on the matter in which the advice is to be taken;
- (2) make submissions on the identity of the person from whom the advice is to be taken;
- (3) make submission on the substance of any advice given before making any decision on the issue on which the advice is taken.

110.15 Unless the Commonwealth appeals the decision of the arbitrator under the *Commercial Arbitration Act 1984* (NSW), and subject to clause 110.18, the Commonwealth undertakes to pay the State the amount of any award made by an arbitrator under clause 110.14 as a debt due to the State, within 60 days of the award.

110.16 Except where the State is the person who sustained the relevant loss or damage, any payment of compensation made by the Commonwealth to the State in accordance with this clause will be paid to and received by the State as trustee for the person who sustained the relevant loss or damage.

110.17 Subject to clause 110.18(b), where the State receives monies as a trustee pursuant to clause 110.16, it will pay those monies to the person who sustained the relevant loss or damage within 30 days.

110.18 (a) Where the Commonwealth has agreed to pay compensation to the State under this clause, or an award of compensation has been made under clause 110.14 as a result of arbitration, and the Commonwealth claims that events have since taken place which have the result that the compensation so agreed or awarded no longer reflects the actual loss or damage that has been or will be sustained, the Commonwealth may by notice in writing to the State, decline to pay that compensation.

(b) If a notice under paragraph (a) is delivered after the State has received the compensation so agreed or awarded, but before the State has paid it to the person who sustained the relevant loss or damage, the State will not pay the compensation to that person.

(c) If a notice under paragraph (a) is delivered, the Parties will attempt to agree the amount of the compensation which the Commonwealth should pay, and

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(i) in default of agreement, will first seek to resolve the dispute by dispute resolution under clauses 10 to 14; and

(ii) in the event that the dispute is not so resolved, or the Commonwealth fails to pay the agreed amount of compensation to the State within 60 days of agreement (for reasons other than lack of the necessary

appropriation), hereby refer the claim for compensation to arbitration in accordance with the *Commercial Arbitration Act 1984* (NSW).

- (d) Subject to paragraph (e) of this clause, where an arbitration takes place in accordance with sub-paragraph (c)(ii), clauses 110.14 and 110.15 of this Agreement apply to that arbitration and to any amount awarded in that arbitration.
- (e) If, following the observance of paragraph (c) of this clause, it is determined by agreement or award that the Commonwealth should pay a reduced amount of compensation to the State, the State will within 30 days of that determination -
 - (i) repay to the Commonwealth the amount by which the compensation paid to it by the Commonwealth is reduced; and
 - (ii) pay the balance of the compensation to the person who sustained the relevant loss or damage.
- (f) If, following the observance of paragraph (c) of this clause, it is determined by agreement or award that the amount of compensation previously paid to the State is correct the State will within 30 days of that determination pay to the person who sustained the relevant loss or damage the amount of the compensation previously paid to it by the Commonwealth.

110.19 Where the State:

- (a) has received monies as a trustee pursuant to clause 110.16; and
- (b) has made all reasonable endeavours to pay the monies to the person who sustained the relevant loss or damage; and
- (c) but has been unable to do so within six months of receiving payment

the State shall repay to the Commonwealth at the expiry of that period the monies so received.

110.20 In this clause

- (a) "Action" means
 - (i) the commencement of legislation or subordinate legislation; and
 - (ii) administrative action which is taken pursuant to legislation or subordinate legislation, or otherwise than in accordance with such legislation.
- (b) "Owner" means
 - (i) in relation to land

- (1) the owner of any estate or interest in that land, including the Crown in right of the State; and
 - (2) any statutory corporation which has the power to carry on Forestry Operations or Mining Operations or Extractive Operations, as the case may be, on the land for profit.
- (ii) in relation to Forest Products or Mining Products or Extractive Materials, as the case may be, the owner of any interest in those products.

Employment and Industry Development Assistance

111 ~~The Commonwealth and State Governments are committed to the provision of assistance, by way of the NSW Forest Industry Structural Adjustment Package, to native forest businesses and workers directly affected by restructuring of the NSW forest industry in accordance with the outcomes of this Agreement. The Commonwealth commits \$60 million, effective upon the signing of all currently proposed RFAs, and the State Government \$60 million to the NSW FISAP to achieve the required level of restructuring and to assist in the creation of an ecologically sustainable, efficient and internationally competitive timber industry with a focus on value adding, investment growth, and job creation.~~ NOT USED

Termination

112 This Agreement may only be terminated by the Commonwealth:

- (a) where the dispute resolution procedures in clauses 10 to 14 have been observed and the State has been given a 90 day period of notice on:
 - (i) a failure by the State to comply with clause 67, being a failure to implement the CAR Reserve System described in Attachments 1(A) and 1 (B) and to manage and conserve the identified CAR Values; or
 - (ii) a failure to comply with clause 36, 48(a), and 48(b) being a failure to maintain a New South Wales Forest Agreement and an IFOA that reflects the outcomes of this Agreement throughout the life of this Agreement. The Commonwealth agrees not to terminate this Agreement because of a failure by New South Wales to maintain a Forest Agreement or Forest Agreements for the North East region. However, the Parties acknowledge that if the State does not maintain Forest Agreements covering the North East region, termination of this Agreement by the Commonwealth would be authorised by s 7 of the *Regional Forest Agreements Act 2002* (Cth); or
 - (iii) a failure to comply with clause 48(d), ~~being a failure to produce and publish by 30 June 2000 a Regional ESFM Plan;~~ or

- (iv) a failure to comply with clause 78 being to implement the ~~Long-term Timber Supply Strategy~~ and Sustainable Yield Systems and Processes described in Attachment 12; or
- (v) a failure to comply with clauses 48(h) and clause 57 being a failure to both develop and implement the environmental management systems in accordance with Attachment 8, and produce a Code of Practice for timber harvesting of native forest on Private Land.

other than a failure of a minor nature which is not one or part of a series of deliberate or reckless failures of a minor nature; and save that the above provisions do not apply if rectification is possible and has occurred before the end of the 90 day period; or

- (b) on a fundamental failure by the State to comply with the spirit of the Agreement after the observance of the dispute resolution procedures in clauses 10 to 14.

113 This Agreement may only be terminated by the State:

- (a) where the dispute resolution procedures in clauses 10 to 14 have been observed and the Commonwealth has been given a 90 day period of notice on:
 - (i) ~~a failure by the Commonwealth to comply with the terms of any agreement on native forest hardwood timber industry assistance made pursuant to clause 111; or~~
 - (ii) a failure by the Commonwealth to comply with clause 110, being a failure to pay compensation due under that clause;

save that the above provisions do not apply if rectification is possible and has occurred before the end of the 90 day period; or

- (b) on a fundamental failure by the Commonwealth to comply with the spirit of the Agreement after the observance of the dispute resolution procedures in clauses 10 to 14.

114 This Agreement may be terminated with the consent of the Commonwealth and the State.

Notice of intention to review before termination by consent

115 A consent under clause 114 is of no effect, unless:

115.1 it is given at least 12 months after a notice of intention to review the operation of this Agreement is published in the Commonwealth *Gazette* and a national newspaper and a newspaper circulating in New South Wales stating that a joint review is being undertaken by the Parties because they intend to terminate the Agreement by consent; ~~and~~

115.2 the Parties have conducted the joint review as in accordance with this clause; ~~-~~

- 115.3 The joint review must consider whether the operation of the Agreement has met the goals set out in Recitals A and B;:-
- 115.4 Within eight months after the notice of intention to review is published under this clause, and after considering any submissions to the joint review, the Parties must make a report of the review publicly available; and:-
- 115.5 If, under clause 8D and 8E ~~40~~ a five-yearly review is to be conducted during the 12 month period after a notice of intention to review is published under this clause, and the joint review is conducted under this clause, the Parties may agree that the review under clause 8D and 8E ~~40~~ need not be undertaken.

IN WITNESS WHEREOF this Agreement has been signed for and on behalf of the Parties as at the day and year first above written.

SIGNED by

the HONOURABLE JOHN WINSTON HOWARD MP, Prime Minister

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for and on behalf of the Commonwealth of Australia

in the presence of:

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SIGNED by

the HONOURABLE BOB CARR MP, Premier

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for and on behalf of the State of New South Wales

in the presence of:)

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)

ATTACHMENTS

- Attachment 1(A) **Comprehensive, Adequate and Representative (CAR) Reserve System – Upper North East Region.**
- Attachment 1(B) **Comprehensive, Adequate and Representative (CAR) Reserve System – Lower North East Region.**
- Attachment 2 **Private Land Conservation.**
- Attachment 3 **~~Threatened, Flora, Fauna and Ecological~~ Listed Species and Communities.**
- Attachment 4 **~~National Estate Values.~~ NOT USED**
- Attachment 5 **~~Milestones~~ NOT USED**
- Attachment 6 **~~Public Reporting and Consultative Mechanisms.~~ NOT USED**
- Attachment 7 **Research Priorities.**
- Attachment 8 **~~Continual Improvements~~ improvements to the NSW Forest Management Systems Framework.**
- Attachment 9 **Montreal Process Criteria for the Conservation and Sustainable Management of Temperate and Boreal Forests.**
- Attachment 10 **Managing Lands of Significance to ~~Indigenous~~ Aboriginal People**
- Attachment 11 **~~Employment and Industry Development Initiatives by the NSW Government for the Upper North East and Lower North East Regions.~~ NOT USED**
- Attachment 12 **~~Long term Timber Supply Strategy and Sustainable Yield Systems and Processes.~~**
- Attachment 13 **~~Data Agreement~~ NOT USED**
- Attachment 14 **Principles of Ecologically Sustainable Forest Management (ESFM).**

**COMPREHENSIVE, ADEQUATE AND REPRESENTATIVE (CAR)
RESERVE SYSTEM**

UPPER NORTH EAST REGION

- 1 Map 1(A) and this Attachment identify the CAR Reserve System on Public Land for the Upper North East region for the purpose of this Agreement, as amended from time to time.
- 2 The *National Forest Policy Statement* (NFPS) established that the CAR Reserve System will, in the first instance, be selected from Public Land. Provision is also made in the JANIS Reserve Criteria for inclusion of Private Land in the CAR Reserve System, with the agreement of landholders, where the Criteria cannot be met from Public Land.

PUBLIC LAND

- 3 In the Upper North East region, the CAR Reserve System on Public Land primarily comprises areas established for conservation purposes (eg National Parks and Nature Reserves) and areas reserved for conservation in State forest.

CAR RESERVE SYSTEM COMPONENTS AND PROTECTION MECHANISMS.

- 4 The CAR Reserve System on Public Land has the following three components:
 - *Dedicated Reserves.* This comprises reserves established through legislation for conservation purposes such as National Parks, Nature Reserves and Flora Reserves (Special Protection Zone, FMZ 1).
 - *Informal Reserves.* This comprises those parts of the Special Management Zone (FMZ 2) under the Forest Management Zoning system that are greater than 40ha, and wider than 200m wide, or are directly adjacent to Dedicated Reserves. It also includes those areas dedicated as ~~Crown Reserves~~ State Conservation Areas under the provisions of the ~~Crown Lands Act 1989~~ National Parks and Wildlife Act 1974 (NSW) and State Recreation Areas which are managed by the NSW National Parks and Wildlife Service. ~~Plans of Management for Crown Reserves will be prepared by 1 January 2005 as outlined in the New South Wales Upper North East Region Forest Agreement.~~
 - *Values ~~protected~~ Protected by Prescription.* These comprise those elements of habitat protected by Regional Prescriptions as detailed in the Integrated Forestry Operations Approval covering the Upper North East region and areas within the Harvesting Exclusions (FMZ 3A) and Special Prescription Zone (FMZ 3B) under the Forest Management Zoning system that are excluded from harvesting, due to the size or shape, do not meet the Informal Reserve category outlined above. They also include elements of the Special Management Zone (FMZ 2) that are less than 40ha and less than 200m wide. The Integrated Forestry Operations Approval complements the Dedicated and Informal Reserve

network and includes additional levels of protection for rare non-commercial forest types, Old Growth forest, rainforest and threatened species in all areas that have been identified to be primarily managed for sustainable production.

~~5 NSW will finalise boundaries of the CAR Reserves to enable its implementation within 6 months of signing this Agreement. Finalisation will include identifying suitable management boundaries. Wherever possible, these will follow easily identifiable features such as cadastre and roads and natural or ecological boundaries. Finalisation will also consider field verification of values being protected and appropriate boundaries mapped to protect the identified values.~~

6 As at December 2017, the ~~The~~ Dedicated Reserve component of the CAR Reserve System covers ~~506,200~~ 869,000 ha, the Informal Reserve component ~~93,800~~ 57,000 ha and the prescriptive component ~~118,300~~ 97,000 ha. Together the Dedicated Reserve and Informal Reserve components of the CAR Reserve System cover an area of approximately ~~600,000~~ 926,000 ha (about ~~46.1~~ 68% of the Public Land in the region or ~~15.4~~ 24% percent of the entire region).

6A Levels of protection for Forest Ecosystems and Old Growth forest achieved in the Dedicated Reserve, Informal Reserve and the Values Protected by Prescription components of the CAR Reserve System are shown in Tables 1 and 2. The tabulated percentage area of these values in prescription includes elements of the Special Management Zone (FMZ 2) that are less than 40ha and less than 200m wide, as well as areas of Old Growth forest (and Forest Ecosystems within these areas) that will be managed by the Integrated Forestry Operations Approval.

6B The IFOA provides for protection of environmental values in addition to those protected in FMZ 2, FMZ 3A, FMZ 3B, mapped areas under the IFOA, or other CAR Reserves and quantified in Tables 1 and 2. The protections under the IFOA are updated and modified from time to time as a result of the continual improvement process to improve the effectiveness and efficiency of these conditions.

Forest Management Zoning

~~7 New South Wales will, by 30 June 2000, produce a Regional ESFM Plan for the Upper North East region that includes Forest Management Zoning within State forests as described in the document *Forest Management Zoning in State Forests*, (SFNSW 1999). Of Within the Forest Management Zoning system, of particular significance for the conservation of Forest Ecosystems and Old Growth forest are the:~~

- *Special Protection Zone (FMZ 1)*. These areas are dedicated and managed to maximise the protection of natural and cultural values. Timber harvesting, removal of Forest Products and materials, grazing by domestic stock, gravel/hard rock quarrying and mineral and petroleum exploration are not generally permitted within this zone.
- *Special Management Zone (FMZ 2)*. These areas are established following public comment and are gazetted and managed for the protection of natural and cultural conservation values where it is not possible or practicable to include

them in the Special Protection Zone. Activities not permitted in this zone are similar to the Special Protection Zone except that mineral and petroleum exploration are permitted. Any mining proposal following from exploration will require standard environmental impact assessment and development approval processes.

- *Harvesting Exclusions Zone (FMZ 3A)*. These are areas where harvesting is excluded but other management and production activities preclude zoning as Special Protection Zone (FMZ 1) or Special Management Zone (FMZ 2). These may be:
 - i) Dedicated leasehold where lease conditions permit activities such as grazing and timber supply for lease fencing etc, and in some cases residency, or
 - ii) Areas identified as important by the Department of ~~Mineral Resources~~ Planning and Environment where there are current or imminent petroleum and Mineral Exploration ~~mineral exploration~~ and/ or Mining Operations~~mining activities~~, or
 - iii) Other areas which are excluded from harvesting (eg. Net Harvestable Area (NHA) exclusions) but size, boundaries or management practicabilities preclude designation as FMZ 1 or FMZ 2.
- *Special Prescription Zone (FMZ 3B)*. These areas are established for the protection and management of identified conservation values, whilst also allowing other management and production activities. These activities (which in some cases includes timber, Forest Product and materials extraction) are minimised in their design and implementation to maintain or enhance the values that the area is zoned to protect. A case by case assessment of these areas will be undertaken to determine which forestry activities can occur. The decision is dependent on the specific values involved.

8 ~~New South Wales agrees to establish all Dedicated Reserve and Informal Reserve components of the CAR Reserve System within six months of signing this Agreement.~~ NOT USED

~~Integrated Forestry Operations Approval~~

Environment and Heritage Values protected by prescription

9 ~~The Integrated Forestry Operations Approval covering the Upper North East region is the principal vehicle by which Environment and Heritage Values that are impracticable to include in reserves can be conserved. The JANIS Reserve Criteria provide for the management of such values through prescriptions. The Integrated Forestry Operations Approval takes account of the extent of reserved habitat, whether the prescriptions are operationally feasible, and the relative conservation status of each species. For Environment and Heritage Values that are not included in reserves, the JANIS Reserve Criteria provide for the management of such values through prescriptions. Within the General Management Zone of the Forest Management Zoning system (FMZ 4), Forestry Operations and other activities are~~

permitted. The principal vehicles by which Environment and Heritage Values will be managed within FMZ 4 are:

- The Integrated Forestry Operations Approval covering the Upper North East region will be the principal vehicle by which environment values are protected through prescription. The Integrated Forestry Operations Approval takes account of the extent of reserved habitat, and balances an operationally efficient timber industry with the need to protect native plants and animals, ecosystems, soils and water.
- Aboriginal and non-Aboriginal cultural heritage guidelines made in accordance with relevant legislation and amended from time to time, provide prescriptions for the management of heritage values that are impracticable to include in reserves in the North East region.

~~IDENTIFIED~~ IDENTIFIED CAR VALUES AND THEIR PROTECTION AFFORDED THROUGH THE RFA

10 Levels of protection for Forest Ecosystems and Old Growth forest achieved in the CAR Reserve System are shown in Tables 1 and 2 of this Attachment as follows:

- Dedicated Reserves; as described in Clause 4 of this Attachment,
- Informal Reserves; as described in Clause 4 of this Attachment,
- Values Protected by Prescription; includes the areas within the Harvesting Exclusions Zone (Zone 3A), the Special Prescription Zone (FMZ 3B), and those areas of the Special Management Zone (Zone 2) that, due to the size or shape, do not meet the Informal Reserve category outlined above and mapped areas under the IFOA.

It should be noted that the ~~Special Prescription Zone (Zone 3B)~~ and the IFOA affords additional protection over that included in the table.

Table 1. Percentage Representative conservation (percentage reservation status as at 2000 and December 2017) of Forest and Non-Forest Ecosystems in the CAR Reserve System in the Upper North East region based on vegetation modelling to establish the pre-1750 extent of Forest Ecosystems in the region^a

Forest Ecosystems ^b	Area		Percent Remaining as at 2000	Status as at 2000	Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at 2000				Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at December 2017 ^f			
	Pre 1750 (ha)	Current As at 2000 (ha)			Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total	Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total
2 Alpine Gum*	4165	1329	31.9	V	5.9	1.5	0.8	8.2	7	1	1	8
3 Baileys Stringybark	46720	34931	74.8	-	28.6	5.1	0.2	33.9	35	0	0	35
10 Black Sallee	6	6	100.0	R	100.0	0.0	0.0	100.0	100	0	0	100
12 Blue Mountain Ash	121	121	100.0	R	43.3	0.0	52.4	95.7	87	0	10	97
14 Brown Barrell	398	166	41.7	R	6.0	0.0	0.1	6.2	6	0	0	6
15 Brown Barrell-Gum*	2587	1004	38.8	R	6.1	0.0	0.1	6.2	6	0	0	6
16 Bull Oak	2	2	100.0	R	0.0	100.0	0.0	100.0	100	0	0	100
17 Candlebark*	10200	1961	19.2	R	0.8	0.1	0.0	0.9	2	0	0	2
19 Central Mid Elevation Sydney Blue Gum*	12586	6786	53.9	-	6.9	0.9	3.0	10.8	8	1	4	13
20 Clarence Lowland Needlebark Stringybark	12496	10817	86.6	-	26.6	21.9	6.9	55.4	40	11	6	57
21 Lowlands Grey Box*	61789	23913	38.7	V	0.3	0.1	0.2	0.6	1	0	0	1
22 Coast Cypress Pine*	158	82	51.9	R	41.2	0.0	0.0	41.2	44	0	0	44
23 Coast Range Bloodwood-Mahogany	18055	5919	32.8	-	9.0	4.5	0.3	13.8	13	2	0	14
24 Clarence Lowlands Spotted Gum*	343968	174787	50.8	-	2.5	1.6	1.4	5.5	4	1	1	6
25 Coast Range Spotted Gum-Blackbutt*	885	743	84.0	R	10.0	0.9	3.1	14.0	10	1	3	15
26 Coastal Flooded Gum	14910	9426	63.2	-	22.2	0.4	1.4	24.0	23	0	2	25
27 Coastal Sands Blackbutt	4518	3101	68.6	-	63.0	0.0	0.1	63.1	64	0	0	64
29 Corkwood-Crabapple and Mixed Stringybarks	7149	6093	85.2	-	30.4	5.3	12.4	48.1	39	4	2	51
30 Diehard Stringybark-New England Blackbutt*	2769	1062	38.4	R	4.0	0.3	0.1	4.3	4	0	0	5
31 Dorrig White Gum*	3851	3385	87.9	R	9.3	0.1	0.1	9.5	61	0	0	61
32 Dry Foothills Blackbutt-Turpentine	9370	7364	78.6	-	8.1	1.8	3.1	12.9	14	2	4	20

Forest Ecosystemsb	Area		Percent Remaining as at 2000	Status c as at 2000	Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at 2000				Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at December 2017 ^f			
	Pre 1750 (ha)	Current As at 2000 (ha)			Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total	Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total
33 Dry Foothills Spotted Gum	97714	90829	93.0	-	13.4	4.1	10.6	28.1	<u>22</u>	<u>5</u>	<u>9</u>	<u>36</u>
34 Dry Grassy Blackbutt-Tallowwood	9880	6052	61.3	-	9.8	0.4	3.4	13.6	<u>11</u>	<u>1</u>	<u>3</u>	<u>15</u>
35 Dry Grassy Stringybark	87820	69987	79.7	-	23.1	2.3	4.6	30.1	<u>35</u>	<u>2</u>	<u>3</u>	<u>40</u>
36 Dry Grassy Tallowwood-Grey Gum*	9726	5564	57.2	-	3.9	0.4	1.4	5.7	<u>5</u>	<u>1</u>	<u>1</u>	<u>7</u>
37 Dry Heathy Blackbutt-Bloodwood	75580	46630	61.7	-	8.4	6.6	2.6	17.6	<u>15</u>	<u>2</u>	<u>3</u>	<u>19</u>
38 Dry Heathy New England Blackbutt	4580	4276	93.4	-	38.9	5.9	16.5	61.4	<u>44</u>	<u>2</u>	<u>17</u>	<u>62</u>
39 Dry Heathy New England Stringybarks	1178	1178	100.0	-	99.5	0.0	0.0	99.5	<u>100</u>	<u>0</u>	<u>0</u>	<u>100</u>
40 Dry Heathy Sandstone Blackbutt	20939	19036	90.9	-	25.2	5.9	3.0	34.1	<u>30</u>	<u>3</u>	<u>3</u>	<u>36</u>
41 Dry Open New England Blackbutt	219262	121339	55.3	-	13.6	1.5	3.0	18.0	<u>17</u>	<u>1</u>	<u>3</u>	<u>21</u>
42 Dry Redgum-Bloodwood-Apple	245	243	99.2	R	89.5	0.0	0.2	89.7	<u>96</u>	<u>0</u>	<u>0</u>	<u>97</u>
43 Dry Silvertop Stringybark-Apple	15059	13041	86.6	-	31.7	0.1	0.2	32.0	<u>60</u>	<u>0</u>	<u>0</u>	<u>61</u>
44 Dry open Redgum-Broad Leaved Apple	11330	10484	92.5	-	46.9	0.5	1.0	48.4	<u>69</u>	<u>0</u>	<u>0</u>	<u>69</u>
45 Dunns White Gum*	1453	975	67.1	R	34.9	1.3	4.2	40.3	<u>37</u>	<u>2</u>	<u>4</u>	<u>43</u>
46 Eastern Red Gums	2967	3002	100.0	V	38.2	19.4	7.0	64.5	<u>39</u>	<u>19</u>	<u>8</u>	<u>66</u>
47 Escarpment Redgum*	55897	28206	50.5	-	8.1	0.8	4.1	12.9	<u>10</u>	<u>1</u>	<u>3</u>	<u>14</u>
48 Escarpment Scribbly Gum-Apple	5871	5488	93.5	-	14.7	13.6	16.8	45.1	<u>34</u>	<u>12</u>	<u>16</u>	<u>62</u>
50 Wet Bangalow-Brushbox*	16154	10098	62.5	V	19.2	0.5	0.7	20.4	<u>21</u>	<u>0</u>	<u>1</u>	<u>22</u>
52 Foothill Grey Gum-Ironbark-Spotted Gum	59393	46753	78.7	-	11.4	4.1	3.0	18.5	<u>14</u>	<u>3</u>	<u>3</u>	<u>20</u>
53 Gorge Grey Box	12259	11147	90.9	-	47.5	0.3	1.9	49.7	<u>67</u>	<u>0</u>	<u>0</u>	<u>67</u>
54 Grey Box-Red Gum-Grey Ironbark	38416	20438	53.2	-	5.4	0.2	0.6	6.2	<u>7</u>	<u>0</u>	<u>1</u>	<u>8</u>
55 Foothills Grey Gum-Spotted Gum	10634	8685	81.7	-	5.9	3.7	4.5	14.1	<u>9</u>	<u>2</u>	<u>5</u>	<u>17</u>
56 Granite Mallee	1951	1887	96.7	-	74.8	4.1	0.0	78.8	<u>81</u>	<u>0</u>	<u>0</u>	<u>81</u>
57 Highland Granite Stringybarks	2708	2483	91.7	-	83.8	0.0	0.0	83.8	<u>84</u>	<u>0</u>	<u>0</u>	<u>84</u>
58 Gorge Grey Gum	6218	5532	89.0	-	46.2	2.0	0.8	49.0	<u>59</u>	<u>2</u>	<u>0</u>	<u>60</u>

Forest Ecosystemsb	Area		Percent Remaining as at 2000	Status c as at 2000	Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at 2000				Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at December 2017 ^f			
	Pre 1750 (ha)	Current As at 2000 (ha)			Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total	Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total
59 Gorge Ironbark-Grey Gum	74798	63226	84.5	-	16.7	1.6	10.5	28.8	<u>22</u>	<u>2</u>	<u>9</u>	<u>33</u>
60 Grassy New England Blackbutt-Tallowood-Blue Gum	46952	40245	85.7	-	19.1	3.7	11.1	33.8	<u>30</u>	<u>3</u>	<u>9</u>	<u>41</u>
61 Grey Box-Ironbark*	146	131	89.7	R	20.3	1.4	0.1	21.7	<u>21</u>	<u>4</u>	<u>0</u>	<u>25</u>
62 Grey Box-Northern Grey Gum*	1625	509	31.3	R	0.4	1.7	1.1	3.2	<u>1</u>	<u>2</u>	<u>1</u>	<u>4</u>
63 Grey Gum-Stringybark	14033	12810	91.3	-	30.4	1.4	3.5	35.3	<u>52</u>	<u>1</u>	<u>1</u>	<u>55</u>
65 Heathy Scribbly Gum	10544	7758	73.6	-	31.3	5.8	2.8	39.9	<u>39</u>	<u>2</u>	<u>3</u>	<u>44</u>
67 High Elevation Ferny Blackbutt	12235	10462	85.5	-	14.6	2.5	5.6	22.6	<u>21</u>	<u>2</u>	<u>6</u>	<u>29</u>
68 High Elevation Messmate-Brown Barrell*	1932	329	17.0	R	4.7	0.0	0.1	4.8	<u>5</u>	<u>0</u>	<u>0</u>	<u>5</u>
69 High Elevation Moist Open Tallowood-Blue Gum	4003	3533	88.3	-	15.3	6.9	12.3	34.5	<u>30</u>	<u>2</u>	<u>7</u>	<u>38</u>
70 High Elevation Open Spotted Gum	61596	50005	81.2	-	8.8	2.1	7.3	18.2	<u>16</u>	<u>3</u>	<u>5</u>	<u>24</u>
71 Ironbark*	24667	7713	31.3	-	4.1	0.1	0.5	4.7	<u>6</u>	<u>0</u>	<u>0</u>	<u>7</u>
72 Low Relief Coastal Blackbutt*	1574	859	54.6	R	9.1	0.6	0.6	10.4	<u>26</u>	<u>0</u>	<u>1</u>	<u>26</u>
73 Lowland Red Gum*	141011	57016	40.4	-	3.5	2.6	1.2	7.3	<u>6</u>	<u>1</u>	<u>1</u>	<u>8</u>
74 Lowlands Scribbly Gum*	6783	3496	51.5	V	26.4	1.0	2.3	29.7	<u>29</u>	<u>1</u>	<u>2</u>	<u>31</u>
75 Lowlands Spotted Gum-Box	37104	19737	53.2	-	7.7	0.8	0.3	8.8	<u>8</u>	<u>1</u>	<u>1</u>	<u>10</u>
76 Coastal Mallee	2493	1412	56.6	V	48.3	0.0	0.0	48.3	<u>48</u>	<u>0</u>	<u>0</u>	<u>48</u>
78 Mann River Wet New England Blackbutt	5139	5132	99.9	-	88.4	0.2	0.9	89.5	<u>92</u>	<u>0</u>	<u>0</u>	<u>92</u>
79 Manna Gum-Stringybark*	95	90	94.7	R	55.8	0.0	0.0	55.8	<u>63</u>	<u>0</u>	<u>0</u>	<u>63</u>
80 Manna Gum*	5476	1287	23.5	R	3.4	0.0	1.8	5.2	<u>4</u>	<u>0</u>	<u>1</u>	<u>5</u>
81 Messmate*	17001	6309	37.1	V	5.6	1.2	0.5	7.3	<u>7</u>	<u>0</u>	<u>0</u>	<u>8</u>
83 Mid Elevation Wet Blackbutt	1333	1180	88.5	-	45.2	8.5	5.9	59.5	<u>47</u>	<u>4</u>	<u>17</u>	<u>68</u>
84 Mid North Coast Wet Brushbox-Tallowood-Blue Gum	12743	10378	81.4	-	21.0	6.7	6.5	34.1	<u>25</u>	<u>6</u>	<u>7</u>	<u>39</u>
85 Mixed Moist Hardwood*	818	346	42.3	R	14.9	0.9	1.2	16.9	<u>15</u>	<u>1</u>	<u>1</u>	<u>17</u>
86 Mixed New England Stringybarks	3320	3002	90.4	-	17.9	2.9	14.9	35.6	<u>22</u>	<u>3</u>	<u>14</u>	<u>40</u>
87 Mixed Tableland Stringybark-Gum Open Forest*	13471	4694	34.9	-	2.6	1.1	0.4	4.1	<u>5</u>	<u>0</u>	<u>0</u>	<u>6</u>

Forest Ecosystemsb	Area		Percent Remaining as at 2000	Status c as at 2000	Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at 2000				Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at December 2017 ^f			
	Pre 1750 (ha)	Current As at 2000 (ha)			Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total	Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total
88 Moist Escarpment New England Blackbutt	10354	10275	99.2	-	70.4	4.6	3.3	78.3	<u>76</u>	<u>3</u>	<u>3</u>	<u>82</u>
89 Moist Foothills Spotted Gum	37545	35657	95.0	-	17.2	4.4	13.5	35.0	<u>24</u>	<u>5</u>	<u>11</u>	<u>41</u>
90 Moist Messmate-Gum	30214	25159	83.3	-	30.7	4.2	6.4	41.3	<u>39</u>	<u>2</u>	<u>3</u>	<u>44</u>
91 Moist Open Escarpment White Mahogany	1966	1814	92.3	-	13.1	9.2	10.0	32.3	<u>50</u>	<u>3</u>	<u>3</u>	<u>56</u>
92 Moist Shrubby Stringybark-Gum	5868	4139	70.5	-	18.9	2.5	7.2	28.6	<u>23</u>	<u>2</u>	<u>5</u>	<u>30</u>
93 Montane Stringybark-Gum*	61335	28687	46.8	-	4.3	0.5	1.2	6.0	<u>7</u>	<u>0</u>	<u>1</u>	<u>8</u>
95 Northern Moist Blackbutt	10897	9101	83.5	-	37.3	0.9	0.9	39.1	<u>47</u>	<u>0</u>	<u>0</u>	<u>47</u>
97 Needlebark Stringybark-Large Fruited Blackbutt	10595	9966	94.1	-	25.8	18.2	3.5	47.6	<u>36</u>	<u>8</u>	<u>4</u>	<u>48</u>
98 New England Peppermint	4372	3590	82.1	-	21.3	8.3	37.6	67.1	<u>33</u>	<u>4</u>	<u>28</u>	<u>66</u>
99 New England Stringybark-Blakelys Red Gum	14496	10786	74.4	-	20.5	0.0	0.4	20.8	<u>37</u>	<u>0</u>	<u>0</u>	<u>37</u>
100 Northern Grassy Sydney Blue Gum*	11251	9245	82.2	V	27.9	5.2	9.7	42.8	<u>34</u>	<u>2</u>	<u>9</u>	<u>46</u>
101 Northern Open Grassy Blackbutt	30488	21590	70.8	-	14.0	2.6	1.3	17.9	<u>17</u>	<u>2</u>	<u>1</u>	<u>20</u>
102 Northern Ranges Dry Tallowwood	100595	57107	56.8	-	6.7	0.4	2.8	9.9	<u>9</u>	<u>0</u>	<u>3</u>	<u>12</u>
103 Northern Wet Brushbox	25433	16379	64.4	-	18.0	1.8	3.6	23.3	<u>20</u>	<u>2</u>	<u>3</u>	<u>26</u>
104 Northern Wet Tallowwood-Blue Gum	29607	25764	87.0	-	33.8	3.4	4.0	41.2	<u>35</u>	<u>3</u>	<u>5</u>	<u>44</u>
105 Nymboida Tallowwood-Turpentine	3005	2645	88.0	-	54.1	1.6	8.1	63.8	<u>54</u>	<u>3</u>	<u>9</u>	<u>66</u>
106 Open Coastal Brushbox	9549	6533	68.4	-	11.1	2.2	8.5	21.7	<u>14</u>	<u>3</u>	<u>9</u>	<u>26</u>
109 Open Shrubby Brushbox-Tallowwood	23572	17472	74.1	-	13.7	2.7	8.0	24.4	<u>17</u>	<u>2</u>	<u>8</u>	<u>27</u>
110 Open Silvertop Stringybark-Blue Gum	3681	3130	85.0	-	44.3	3.7	3.2	51.2	<u>52</u>	<u>3</u>	<u>3</u>	<u>57</u>
111 Open Silvertop Stringybark-Tallowwood	4876	4525	92.8	-	16.7	7.4	16.0	40.1	<u>24</u>	<u>7</u>	<u>13</u>	<u>45</u>
112 Paperbark*	NA	28577	NA	V	NA	NA	NA	NA	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>
113 Peppermint	11200	6478	57.8	-	22.1	0.8	2.4	25.3	<u>23</u>	<u>1</u>	<u>2</u>	<u>26</u>

Forest Ecosystemsb	Area		Percent Remaining as at 2000	Status c as at 2000	Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at 2000				Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at December 2017 ^f			
	Pre 1750 (ha)	Current As at 2000 (ha)			Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total	Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total
114 Peppermint-Mountain/Manna Gum*	42796	12829	30.0	V	3.5	0.0	0.0	3.5	4	0	0	4
115 Red Bloodwood	239	217	90.8	R	13.2	37.3	31.5	82.0	14	35	35	84
116 Red Gum-Stringybark*	58064	27128	46.7	-	0.5	0.4	0.2	1.1	1	0	0	1
117 Red Mahogany	1363	1273	93.4	-	85.1	0.1	0.1	85.4	88	0	0	88
118 Richmond Range Spotted Gum	48691	22511	46.2	-	4.8	0.3	0.5	5.6	5	0	0	6
119 Richmond Range Spotted Gum-Box*	41836	24814	59.3	-	5.0	0.8	0.6	6.3	5	1	1	7
120 River Oak*	4771	3221	67.5	V	4.0	0.3	1.7	6.0	9	0	1	10
122 Rough-barked Apples	3764	1683	44.7	V	20.5	9.2	6.4	36.2	25	4	6	36
123 Roundleaved Gum*	40718	17975	44.2	-	11.1	1.0	1.3	13.4	14	1	1	16
124 Roundleaved Gum-Turpentine	30	30	100.0	R	0.0	0.0	69.5	69.5	0	0	70	70
126 Sandstone Spotted Gum-Blackbutt*	8872	4808	54.2	-	5.4	3.2	3.1	11.7	9	1	3	12
127 Sherwood Needlebark Stringybark	11497	9098	79.1	-	6.9	4.2	0.5	11.6	11	0	0	12
128 Silverleaved Ironbark	2328	1988	85.4	-	0.1	0.0	2.9	3.0	0.1	0	3	3
129 Smoothbarked Apple	273	270	98.9	R	93.0	3.3	0.0	96.3	95	3	0	98
131 Snow Gum	304	288	94.7	R	77.0	0.0	2.7	79.7	79	0	1	81
132 Snow Gum -Mountain/Manna Gum*	97976	21305	21.8	V	0.9	0.3	0.4	1.6	1	0	0	2
133 Snow Gum-Black Sallee	2	2	100.0	R	100.0	0.0	0.0	100.0	100	0	0	100
135 South Coast Tallowwood-Blue Gum	6754	5338	79.0	-	14.3	2.7	6.3	23.4	17	4	8	29
138 Steel Box/Craven Grey Box*	634	427	67.4	R	23.6	0.9	1.5	26.0	24	0	3	27
139 Stringybark-Apple	57502	34813	60.5	-	6.5	0.1	2.1	8.7	13	0	1	14
140 Stringybark-Mallee	2196	2194	99.9	-	98.6	0.1	0.0	98.6	99	0	0	99
142 Swamp Mahogany*	695	578	83.2	R	25.7	12.3	1.4	39.5	40	1	1	41
143 Swamp Oak*	11165	2883	25.8	R	7.6	0.2	0.5	8.3	9	0	0	9
145 Sydney Peppermint-Stringybark*	267	255	95.5	R	9.4	0.3	0.0	9.7	12	0	0	13
146 Tallowwood	9191	8430	91.7	-	52.3	0.9	2.5	55.6	70	0	1	71
147 Turpentine	6784	2943	43.4	-	15.2	0.6	0.6	16.4	18	0	0	18
148 Very Wet New England Blackbutt-Tallowwood	1499	1498	99.9	-	89.0	1.1	0.1	90.2	91	0	1	92

Forest Ecosystemsb	Area		Percent Remaining as at 2000	Status c as at 2000	Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at 2000				Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at December 2017 ^f			
	Pre 1750 (ha)	Current As at 2000 (ha)			Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total	Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total
149 Mallee-Peppermint mosaic*	2721	1618	59.5	-	11.4	0.4	1.3	13.0	<u>14</u>	<u>0</u>	<u>2</u>	<u>16</u>
150 Washpool Brushbox-Tallowwood	5683	5683	100.0	-	83.5	4.3	3.5	91.3	<u>87</u>	<u>3</u>	<u>3</u>	<u>93</u>
152 Wet Bloodwood-Tallowwood	53783	33357	62.0	-	9.6	0.5	2.2	12.3	<u>12</u>	<u>0</u>	<u>2</u>	<u>14</u>
153 Wet Coastal Tallowwood-Brushbox	12436	6581	52.9	-	0.7	0.6	1.6	2.9	<u>4</u>	<u>1</u>	<u>2</u>	<u>6</u>
154 Wet Flooded Gum-Tallowwood*	24207	9317	38.5	-	2.2	0.7	1.1	3.9	<u>6</u>	<u>0</u>	<u>1</u>	<u>7</u>
155 Wet Foothills Blackbutt-Turpentine	8219	7437	90.5	-	16.0	4.6	4.9	25.6	<u>22</u>	<u>5</u>	<u>9</u>	<u>36</u>
157 Wet Shrubby Brushbox-Tallowwood	6265	4891	78.1	-	22.2	5.9	13.5	41.6	<u>30</u>	<u>4</u>	<u>11</u>	<u>45</u>
158 Wet Spotted Gum-Tallowwood	2539	2538	100.0	-	24.7	3.5	5.4	33.6	<u>25</u>	<u>4</u>	<u>7</u>	<u>36</u>
162 Whitetopped Box	4	4	100.0	R	0.0	23.0	77.0	100.0	<u>100</u>	<u>0</u>	<u>0</u>	<u>100</u>
163 Yellow Box-Blakely's Red Gum*	39525	7245	18.3	V	0.5	0.4	0.1	1.0	<u>1</u>	<u>0</u>	<u>0</u>	<u>1</u>
168 Rainforest*	NA	159211	NA	E	NA	NA	NA	NA	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>
174 Orange Gum-Tumbledown Gum-Apple	27288	15435	56.6	-	0.0	0.0	0.6	0.7	<u>0</u>	<u>0</u>	<u>1</u>	<u>1</u>
175 Orange Gum-New England Blackbutt-Tumbledown Gum*	39537	19304	48.8	-	2.3	0.3	0.1	2.7	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
176 Orange Gum-Ironbark*	82312	34295	41.7	-	0.5	0.6	0.1	1.1	<u>1</u>	<u>0</u>	<u>0</u>	<u>1</u>
177 Outcrop Orange Gum-New England Blackbutt*	26428	7945	30.1	-	1.1	2.4	0.3	3.8	<u>3</u>	<u>0</u>	<u>0</u>	<u>4</u>
178 Outcrop Black Cypress-Tumbledown Gum	1642	1034	63.0	-	0.0	0.1	0.2	0.3	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
179 Yellow Box-Broad-leaved Stringybark*	11549	3859	33.4	V	0.0	0.7	6.1	6.8	<u>1</u>	<u>0</u>	<u>6</u>	<u>7</u>
180 Western New England Blackbutt	14754	12415	84.2	-	0.0	21.9	0.3	22.2	<u>22</u>	<u>0</u>	<u>0</u>	<u>23</u>
181 Stringybark-Gum	34306	30258	88.2	-	0.0	53.3	0.1	53.4	<u>54</u>	<u>0</u>	<u>0</u>	<u>54</u>
182 Apple-Black Cypress	2350	1994	84.9	-	0.0	9.3	0.0	9.3	<u>9</u>	<u>0</u>	<u>0</u>	<u>9</u>
183 Red Gum-Apple*	1569	592	37.7	R	0.0	0.1	0.0	0.1	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
184 Tumbledown Gum-Ironbark	13841	11070	80.0	-	0.0	27.2	0.4	27.6	<u>32</u>	<u>0</u>	<u>0</u>	<u>32</u>

Forest Ecosystems ^b	Area		Percent Remaining as at 2000	Status ^c as at 2000	Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at 2000				Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at December 2017 ^f			
	Pre 1750 (ha)	Current As at 2000 (ha)			Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total	Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total
185 Orange Gum-Black Cypress	5585	3510	62.9	-	0.0	15.9	9.3	25.2	<u>15</u>	<u>0</u>	<u>10</u>	<u>25</u>
186 Open Tumbledown Gum-Black Cypress-Orange Gum*	25417	10593	41.7	-	1.7	0.4	0.3	2.4	<u>2</u>	<u>0</u>	<u>0</u>	<u>3</u>
189 Silverleaved Ironbark-Cypress	40819	23285	57.0	-	0.2	0.2	0.0	0.5	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
190 Yellow Box-Grey Box-Red Gum*	60630	21273	35.1	V	0.5	0.5	0.1	1.0	<u>1</u>	<u>0</u>	<u>0</u>	<u>1</u>
194 Round-leaved Gum wet heath	8627	5997	69.5	-	0.0	26.0	2.3	28.3	<u>26</u>	<u>0</u>	<u>3</u>	<u>28</u>
195 Apple-Manna Gum woodland*	35674	16214	45.5	-	2.9	0.1	0.0	3.0	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
196 Broad-leaved Stringybark-Apple Box*	53457	19948	37.3	V	2.3	1.4	3.1	6.8	<u>4</u>	<u>0</u>	<u>3</u>	<u>7</u>
197 Broad-leaved Stringybark*	4409	1643	37.3	V	1.6	0.3	0.1	2.0	<u>2</u>	<u>0</u>	<u>0</u>	<u>2</u>
198 Silvertop Stringybark*	4527	1200	26.5	V	0.1	0.1	0.2	0.3	<u>0.1</u> [^]	<u>0.1</u> [^]	<u>0.2</u> [^]	<u>0.3</u> [^]
200 Broad-leaved Stringybark-Ribbon Gum*	2022	650	32.2	R	0.0	0.0	0.0	0.0	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>

Non-Forest Ecosystems ^b	Area		Percent Remaining as at 2000	Status ^c as at 2000	Percent of Non-Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at 2000				Percent of Non-Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at December 2017			
	Pre 1750 (ha)	Current As at 2000 (ha)			Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total	Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total
5 Banksia	7561.0	2046	27.1	R	6.5	0.3	0.0	6.8	<u>10</u>	<u>0</u>	<u>24</u>	<u>34</u>
18 Casuarina Woodland	NA	43	NA	R	NA	NA	NA	NA	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>
64 Heath	NA	9805	NA	V	NA	NA	NA	NA	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>
66 Herbfield and Fjaeldmark	NA	68	NA	R	NA	NA	NA	NA	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>
77 Mangrove	NA	734	NA	R	NA	NA	NA	NA	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>
96 Natural Grassland	NA	370	NA	R	NA	NA	NA	NA	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>
121 Rock	NA	18162	NA	-	NA	NA	NA	NA	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>
125 Saltbush	17.0	16	94.1	R	55.8	0.0	0.0	55.8	<u>65</u>	<u>0</u>	<u>0</u>	<u>65</u>
141 Swamp	NA	24118	NA	E	NA	NA	NA	NA	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>
169 Scrub	NA	5447	NA	V	NA	NA	NA	NA	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>
199 Riparian Shrubland	5508.0	1252	22.7	V	0.0	0.0	0.0	0.0	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>

NOTES ACCOMPANYING TABLE 1

- a. The figures shown in this table are based on modelled information mapped at a scale of 1:25 000 derived during the pre-1750 analysis of vegetation types in the Upper North East and Lower North East regions, and are therefore only approximate. Those ecosystems with 'NA' listed under Pre-1750 (ha) were not modelled to determine their pre-1750 extent (refer to CRA project report NA35/EH).
 - b. Forest Ecosystems are as described in the document *Forest Ecosystem Classification and Mapping for the Upper and Lower North East CRA Regions* CRA Unit, Northern Zone National Parks and Wildlife Service. (Project NA35/EH January 1999)
 - c. The status is based on: Rare (R) which has a total current area below 1000 hectares and a target of 100% of its current distribution. Endangered (E) which has < 10% remaining and a target of 100% of its current distribution. Vulnerable (V) which has between 10-30% remaining and a target of 60% of its current distribution. Some values were given their rare, endangered or vulnerable status due to other factors such as range of distribution, patch size and expert opinion on vulnerability. All remaining Forest Ecosystems have a target of 15% of their pre-1750 distribution.
 - d. Informal Reserve includes Special Management Zones that are > 40ha and > 200m wide, or that are adjacent to Dedicated Reserves.
 - e. Tabulated prescriptions include those elements of the Special Management Zone that, due to the size of shape, do not meet the Informal Reserve category outline above, and the Harvesting Exclusions Zone.
 - f. Source: compiled by ABARES from RFA data, including data from CRA reports, IFOAs, NPWS and FCNSW
- * These Forest Ecosystems have been identified as priorities for protection on Private Land (see Attachment 2).

NA Pre-1750 distribution was not able to be predicted.

^ The figure supplied by ABARES has been amended by DPI to address inconsistencies resulting from changes in spatial analysis systems and processes over time.

Table 2. Representative Conservation of Candidate Old Growth forest in the CAR Reserve System as at 2000 and 2018 in the Upper North East region^a

Forest Ecosystem	Area of Forest Ecosystem (ha) as at 2000	Percent of Forest Ecosystem as Candidate Old Growth ^b as at 2000	Area Candidate Old Growth (ha) as at 2000	Percent of Candidate Old Growth forest in the CAR Reserve System as at 2000				Percent of Old Growth forest in the CAR Reserve System as at December 2017 ^c			
				Dedicated Reserve	Informal Reserve ^e	Prescription ^d	Total	Dedicated Reserve	Informal Reserve ^e	Prescription ^d	Total
2 OG Alpine Gum	1329	18.9	251	44.7	17.2	5.1	67.0	54	13	4	70
3 OG Baileys Stringybark	34931	62.2	21733	58.1	1.3	0.4	59.8	68	0	0	68
10 OG Black Sallee	6	66.7	4	100.0	0.0	0.0	100.0	100	0	0	100
12 OG Blue Mountain Ash	121	87.6	106	48.7	0.0	50.5	99.1	92	0	7	99
14 OG Brown Barrell	166	18.1	30	50.0	0.0	0.0	50.0	57	0	0	57
15 OG Brown Barrell-Gum	1004	14.0	141	42.8	0.0	1.1	43.9	43 [^]	1	1	44 [^]
17 OG Candlebark	1961	25.4	498	7.0	0.3	0.1	7.3	26	0	0	26
19 OG Central Mid Elevation Sydney Blue Gum	6786	16.7	1131	40.3	4.3	17.9	62.5	48	4	20	72
20 OG Clarence Lowland Needlebark Stringybark	10817	54.1	5847	41.4	36.4	3.3	81.1	59	21	3	82
21 OG Lowlands Grey Box	23913	11.1	2642	1.8	0.1	1.8	3.8	10	0	2	12
23 OG Coast Range Bloodwood-Mahogany	5919	33.0	1951	47.6	21.8	1.7	71.1	61	9	2	72
24 OG Clarence Lowlands Spotted Gum	174787	18.8	32921	18.2	8.9	12.2	39.3	27	5	11	42
25 OG Coast Range Spotted Gum-Blackbutt	743	14.4	107	17.1	4.7	21.5	43.2	18	7	22	47
26 OG Coastal Flooded Gum	9426	22.4	2108	78.2	2.0	5.0	85.2	79	2	5	86
27 OG Coastal Sands Blackbutt	3101	72.2	2240	96.8	0.0	0.3	97.0	97	0	0	97
29 OG Corkwood-Crabapple and Mixed Stringybarks	6093	47.5	2891	49.0	8.0	22.3	79.2	61	6	17	84
30 OG Diehard Stringybark-New England Blackbutt	1062	14.2	151	38.2	2.7	0.2	41.0	49	0	0	49
31 OG Dorrigo White Gum	3385	82.8	2802	11.8	0.0	0.1	11.8	79	0	0	79
32 OG Dry Foothills Blackbutt-Turpentine	7364	14.2	1043	31.7	10.6	13.3	55.6	52	11	14	77
33 OG Dry Foothills Spotted Gum	90829	44.0	39933	22.9	7.6	23.3	53.8	39	9	19	67

Forest Ecosystem	Area of Forest Ecosystem (ha) as at 2000	Percent of Forest Ecosystem as Candidate Old Growth ^b as at 2000	Area Candidate Old Growth (ha) as at 2000	Percent of Candidate Old Growth forest in the CAR Reserve System as at 2000				Percent of Old Growth forest in the CAR Reserve System as at December 2017 ^c			
				Dedicated Reserve	Informal Reserve ^e	Prescription ^d	Total	Dedicated Reserve	Informal Reserve ^e	Prescription ^d	Total
34 OG Dry Grassy Blackbutt-Tallowwood	6052	19.0	1148	41.2	0.9	24.2	66.3	47	1	23	71
35 OG Dry Grassy Stringybark	69987	58.5	40951	42.9	2.7	7.3	52.8	64	2	5	72
36 OG Dry Grassy Tallowwood-Grey Gum	5564	10.3	572	41.9	0.9	18.9	61.6	46	9	12	66
37 OG Dry Heathy Blackbutt-Bloodwood	46630	31.4	14649	24.3	20.8	9.7	54.9	41	7	10	58
38 OG Dry Heathy New England Blackbutt	4276	64.6	2762	53.7	3.3	21.5	78.5	58	1	20	80
39 OG Dry Heathy New England Stringybarks	1178	93.3	1099	99.8	0.0	0.0	99.8	100	0	0	100
40 OG Dry Heathy Sandstone Blackbutt	19036	41.4	7877	49.7	7.0	6.4	63.1	55	5	7	67
41 OG Dry Open New England Blackbutt	121339	43.1	52268	43.2	3.2	10.5	56.8	53	3	9	65
42 OG Dry Redgum-Bloodwood-Apple	243	91.0	221	92.0	0.0	0.3	92.2	100	0	0	100
43 OG Dry Silvertop Stringybark-Apple	13041	75.9	9893	42.6	0.0	0.2	42.8	81	0	0	81
44 OG Dry open Redgum-Broad Leaved Apple	10484	79.9	8373	54.5	0.2	0.7	55.5	83	0	0	83
45 OG Dunns White Gum	975	11.1	108	75.5	4.9	1.7	82.2	79	1	2	81
46 OG Eastern Red Gums	3002	47.8	1436	34.9	33.5	8.2	76.5	36	33	9	78
47 OG Escarpment Redgum	28206	23.3	6571	26.6	2.7	25.9	55.2	35	3	20	58
48 OG Escarpment Scribbly Gum-Apple	5488	58.4	3205	24.8	15.7	12.4	52.9	56	15	13	83
50 OG Wet Bangalow-Brushbox	10098	34.2	3452	61.9	0.8	2.2	64.9	66	1	1	68
52 OG Foothill Grey Gum-Ironbark-Spotted Gum	46753	26.9	12588	37.4	9.0	9.6	56.0	40	8	11	59
53 OG Gorge Grey Box	11147	74.7	8325	57.2	0.4	1.6	59.2	83	0	0	84
54 OG Grey Box-Red Gum-Grey Ironbark	20438	23.7	4836	23.1	1.2	2.9	27.2	30	1	3	34
55 OG Foothills Grey Gum-Spotted Gum	8685	17.2	1495	21.0	14.3	22.8	58.1	30	10	25	65
56 OG Granite Mallee	1887	75.1	1417	90.8	1.3	0.0	92.1	98	1	0	99

Forest Ecosystem	Area of Forest Ecosystem (ha) as at 2000	Percent of Forest Ecosystem as Candidate Old Growth ^b as at 2000	Area Candidate Old Growth (ha) as at 2000	Percent of Candidate Old Growth forest in the CAR Reserve System as at 2000				Percent of Old Growth forest in the CAR Reserve System as at December 2017 ^e			
				Dedicated Reserve	Informal Reserve ^c	Prescription ^d	Total	Dedicated Reserve	Informal Reserve ^c	Prescription ^d	Total
57 OG Highland Granite Stringybarks	2483	72.3	1795	98.6	0.0	0.0	98.7	99	0	0	99
58 OG Gorge Grey Gum	5532	75.9	4198	60.1	2.2	0.8	63.2	78	2	0	80
59 OG Gorge Ironbark-Grey Gum	63226	43.0	27179	40.2	3.0	20.9	64.2	50	3	17	70
60 OG Grassy New England Blackbutt-Tallowwood-Blue Gum	40245	47.7	19176	37.0	6.5	23.2	66.7	57	5	17	79
61 OG Grey Box-Ironbark	131	32.1	42	50.0	2.4	0.0	52.4	52	2	0	55
62 OG Grey Box-Northern Grey Gum	509	2.6	13	10.5	60.0	5.5	76.0	15	62	15	92
63 OG Grey Gum-Stringybark	12810	71.9	9212	43.8	1.8	4.3	49.9	73	2	2	77
65 OG Heathy Scribbly Gum	7758	41.0	3179	71.2	11.3	0.7	83.2	81	4	1	86
67 OG High Elevation Ferny Blackbutt	10462	19.0	1990	38.2	14.7	28.3	81.1	46	10	27	82
68 OG High Elevation Messmate-Brown Barrell	329	32.8	108	80.2	0.0	0.9	81.0	80	0	1	81
69 OG High Elevation Moist Open Tallowwood-Blue Gum	3533	42.8	1513	31.6	15.3	26.8	73.8	67	4	10	81
70 OG High Elevation Open Spotted Gum	50005	31.2	15622	22.0	4.6	21.2	47.8	43	6	14	63
71 OG Ironbark	7713	6.1	472	15.8	1.4	21.2	38.4	17	1	21	38
72 OG Low Relief Coastal Blackbutt	859	4.3	37	51.4	13.3	11.0	75.7	68	0	3	70
73 OG Lowland Red Gum	57016	15.2	8679	26.2	10.1	8.3	44.7	33	6	8	47
74 OG Lowlands Scribbly Gum	3496	39.9	1396	83.2	3.2	0.9	87.3	84	2	0	87
75 OG Lowlands Spotted Gum-Box	19737	6.5	1288	19.2	10.7	3.8	33.7	23	9	5	37
76 OG Coastal Mallee	1412	18.5	261	93.2	0.0	0.0	93.2	93	0	0	93
78 OG Mann River Wet New England Blackbutt	5132	83.4	4280	93.2	0.2	1.1	94.6	95	0	0	95
79 OG Manna Gum-Stringybark	90	70.0	63	77.5	0.0	0.0	77.5	87	11	0	98
80 OG Manna Gum	1287	12.7	164	43.8	0.0	21.9	65.7	54	0	18	72
81 OG Messmate	6309	28.1	1775	40.2	10.0	3.8	54.0	51	1	3	56
83 OG Mid Elevation Wet Blackbutt	1180	18.8	222	36.3	34.3	18.9	89.6	42	13	35	90

Forest Ecosystem	Area of Forest Ecosystem (ha) as at 2000	Percent of Forest Ecosystem as Candidate Old Growth ^b as at 2000	Area Candidate Old Growth (ha) as at 2000	Percent of Candidate Old Growth forest in the CAR Reserve System as at 2000				Percent of Old Growth forest in the CAR Reserve System as at December 2017 ^c			
				Dedicated Reserve	Informal Reserve ^e	Prescription ^d	Total	Dedicated Reserve	Informal Reserve ^e	Prescription ^d	Total
84 OG Mid North Coast Wet Brushbox-Tallowwood-Blue Gum	10378	30.4	3152	47.6	22.6	16.4	86.6	58	17	14	89
85 OG Mixed Moist Hardwood	346	17.9	62	64.3	10.3	9.6	84.3	65	10	6	81
86 OG Mixed New England Stringybarks	3002	36.5	1096	37.2	6.5	26.5	70.1	38	6	26	71
87 OG Mixed Tableland Stringybark-Gum Open Forest	4694	21.4	1005	11.5	8.7	3.1	23.2	34	2	5	40
88 OG Moist Escarpment New England Blackbutt	10275	72.5	7451	85.6	1.4	3.4	90.4	93	1	3	96
89 OG Moist Foothills Spotted Gum	35657	39.6	14111	27.9	8.9	28.8	65.5	42	11	22	75
90 OG Moist Messmate-Gum	25159	42.2	10627	59.9	7.5	11.7	79.0	75	5	7	86
91 OG Moist Open Escarpment White Mahogany	1814	44.5	807	16.3	21.4	22.8	60.5	74	7	5	86
92 OG Moist Shrubby Stringybark-Gum	4139	31.8	1314	59.6	4.2	17.9	81.7	73	3	12	88
93 OG Montane Stringybark-Gum	28687	25.1	7190	20.5	1.8	8.2	30.4	26	5	7	38
95 OG Northern Moist Blackbutt	9101	17.4	1585	56.6	2.3	1.1	60.0	59	1	1	62
97 OG Needlebark Stringybark-Large Fruited Blackbutt	9966	53.8	5360	45.5	20.9	6.0	72.4	56	10	7	73
98 OG New England Peppermint	3590	40.6	1459	30.8	18.1	44.5	93.4	62	10	23	95
99 OG New England Stringybark-Blakelys Red Gum	10786	61.7	6653	37.1	0.0	0.3	37.4	71	0	0	71
100 OG Northern Grassy Sydney Blue Gum	9245	35.3	3263	45.3	7.0	21.0	73.2	62	3	17	83
101 OG Northern Open Grassy Blackbutt	21590	22.3	4816	42.5	7.4	5.0	54.9	48	6	6	59
102 OG Northern Ranges Dry Tallowwood	57107	19.8	11286	21.5	2.9	17.3	41.7	27	3	16	45
103 OG Northern Wet Brushbox	16379	28.9	4740	53.0	7.0	13.3	73.3	59	7	11	77
104 OG Northern Wet Tallowwood-Blue Gum	25764	37.9	9766	67.1	6.4	6.8	80.3	69	6	7	82
105 OG Nymboida Tallowwood-Turpentine	2645	48.5	1284	78.9	2.1	16.0	97.1	79	4	15	98
106 OG Open Coastal Brushbox	6533	28.5	1860	33.6	7.3	27.7	68.6	38	12	28	78

Forest Ecosystem	Area of Forest Ecosystem (ha) as at 2000	Percent of Forest Ecosystem as Candidate Old Growth ^b as at 2000	Area Candidate Old Growth (ha) as at 2000	Percent of Candidate Old Growth forest in the CAR Reserve System as at 2000				Percent of Old Growth forest in the CAR Reserve System as at December 2017 ^e			
				Dedicated Reserve	Informal Reserve ^c	Prescription ^d	Total	Dedicated Reserve	Informal Reserve ^c	Prescription ^d	Total
109 OG Open Shrubby Brushbox-Tallowwood	17472	40.1	7011	32.8	6.8	20.9	60.5	39	6	20	65
110 OG Open Silvertop Stringybark-Blue Gum	3130	60.2	1885	67.1	2.7	5.4	75.2	79	2	4	85
111 OG Open Silvertop Stringybark-Tallowwood	4525	47.4	2144	32.6	13.7	28.1	74.3	46	14	21	81
113 OG Peppermint	6478	41.6	2693	66.0	1.3	3.7	71.0	69	1	3	72
114 OG Peppermint-Mountain/Manna Gum	12829	24.3	3112	27.4	0.0	0.5	27.9	30	3	0	33
115 OG Red Bloodwood	217	6.9	15	93.3	0.0	0.0	93.3	93	0	0	93
116 OG Red Gum-Stringybark	27128	9.6	2616	8.3	1.0	4.1	13.4	10	0	5	15
117 OG Red Mahogany	1273	51.0	649	94.5	0.3	0.0	94.8	97	0	0	98
118 OG Richmond Range Spotted Gum	22511	8.9	2011	8.6	6.9	6.5	22.0	11	7	7	24
119 OG Richmond Range Spotted Gum-Box	24814	14.9	3694	20.9	7.9	4.4	33.3	22	6	7	35
122 OG Rough-barked Apples	1683	53.5	900	59.0	21.3	15.0	95.3	72	8	14	94
123 OG Roundleaved Gum	17975	38.6	6929	52.2	3.8	5.1	61.1	61	5	5	71
124 OG Roundleaved Gum-Turpentine	30	23.3	7	0.0	0.0	68.0	68.0	0	0	86	86
126 OG Sandstone Spotted Gum-Blackbutt	4808	28.7	1378	15.4	19.2	16.9	51.4	32	4	17	53
127 OG Sherwood Needlebark Stringybark	9098	41.1	3736	17.9	0.9	1.2	20.1	28	0	1	29
128 OG Silverleaved Ironbark	1988	49.2	978	0.2	0.0	4.5	4.7	0	0	5	5
129 OG Smoothbarked Apple	270	75.2	203	93.5	4.4	0.0	97.9	95	4	0	99
131 OG Snow Gum	288	45.5	131	89.3	0.0	0.7	89.9	89	1	2	91
132 OG Snow Gum - Mountain/Manna Gum	21305	8.7	1860	34.7	6.3	19.9	60.9	41	0	22	62
135 OG South Coast Tallowwood-Blue Gum	5338	24.0	1283	56.6	10.0	18.1	84.7	59	11	18	88
138 OG Steel Box/Craven Grey Box	427	3.8	16	0.0	0.0	31.3	31.3	6	0	31	38
139 OG Stringybark-Apple	34813	36.3	12652	14.3	0.5	7.0	21.8	38	1	5	43

Forest Ecosystem	Area of Forest Ecosystem (ha) as at 2000	Percent of Forest Ecosystem as Candidate Old Growth ^b as at 2000	Area Candidate Old Growth (ha) as at 2000	Percent of Candidate Old Growth forest in the CAR Reserve System as at 2000				Percent of Old Growth forest in the CAR Reserve System as at December 2017 ^c			
				Dedicated Reserve	Informal Reserve ^e	Prescription ^d	Total	Dedicated Reserve	Informal Reserve ^e	Prescription ^d	Total
140 OG Stringybark-Mallee	2194	84.0	1842	99.1	0.1	0.0	99.1	99	0	0	99
142 OG Swamp Mahogany	578	17.3	100	87.8	0.0	0.0	87.8	85	0	0	85
145 OG Sydney Peppermint-Stringybark	255	47.1	120	18.1	0.0	0.0	18.1	21	0	1	22
146 OG Tallowwood	8430	62.6	5278	56.6	1.2	3.6	61.4	85	0	1	87
147 OG Turpentine	2943	11.5	338	51.7	5.2	5.0	62.0	58	0	6	64
148 OG Very Wet New England Blackbutt-Tallowwood	1498	82.8	1240	93.8	0.3	0.1	94.2	96	0	0	96
149 OG Mallee-Peppermint mosaic	1618	44.1	714	37.2	0.0	0.9	38.1	44	3	2	49
150 OG Washpool Brushbox-Tallowwood	5683	88.8	5047	89.3	0.4	3.5	93.1	93	0	3	96
152 OG Wet Bloodwood-Tallowwood	33357	13.2	4400	32.9	4.8	18.0	55.7	41	2	13	56
153 OG Wet Coastal Tallowwood-Brushbox	6581	2.8	187	10.7	3.6	48.4	62.7	12	-1	52	64
154 OG Wet Flooded Gum-Tallowwood	9317	7.2	675	28.6	13.3	10.6	52.5	40	4	11	56
155 OG Wet Foothills Blackbutt-Turpentine	7437	16.1	1196	32.1	23.2	20.2	75.5	43	18	25	86
157 OG Wet Shrubby Brushbox-Tallowwood	4891	47.8	2339	43.5	13.7	25.5	82.7	63	6	18	86
158 OG Wet Spotted Gum-Tallowwood	2538	31.5	800	76.0	10.8	10.9	97.7	76	11	11	98
162 OG Whitetopped Box	4	100.0	4	0.0	23.0	77.0	100.0	100	0	0	100
163 OG Yellow Box-Blakely's Red Gum	7245	10.1	728	26.2	3.6	3.7	33.4	43	0	6	50
174 OG Orange Gum-Tumbledown Gum-Apple	15435	10.8	1663	0.6	0.3	9.5	10.4	1	0	10	11
175 OG Orange Gum-New England Blackbutt-Tumbledown Gum	19304	8.5	1645	42.5	0.2	1.2	43.9	45	4	3	52
176 OG Orange Gum-Ironbark	34295	6.7	2306	14.8	1.3	2.7	18.7	18	0	4	22
177 OG Outcrop Orange Gum-New England Blackbutt	7945	21.5	1706	15.0	34.1	4.5	53.6	49	0	5	55

Forest Ecosystem	Area of Forest Ecosystem (ha) as at 2000	Percent of Forest Ecosystem as Candidate Old Growth ^b as at 2000	Area Candidate Old Growth (ha) as at 2000	Percent of Candidate Old Growth forest in the CAR Reserve System as at 2000				Percent of Old Growth forest in the CAR Reserve System as at December 2017 ^c			
				Dedicated Reserve	Informal Reserve ^e	Prescription ^d	Total	Dedicated Reserve	Informal Reserve ^e	Prescription ^d	Total
178 OG Outcrop Black Cypress-Tumbledown Gum	1034	10.6	110	0.0	1.7	2.5	4.2	0	0	4	4
179 OG Yellow Box-Broad-leaved Stringybark	3859	22.6	873	0.0	1.9	79.8	81.6	3	0	80	83
180 OG Western New England Blackbutt	12415	63.3	7857	0.0	40.1	0.6	40.7	41	0	1	41
181 OG Stringybark-Gum	30258	80.7	24412	0.0	73.5	0.2	73.7	74	0	0	74
182 OG Apple-Black Cypress	1994	35.3	703	0.0	31.0	0.0	31.0	30	0	0	30
183 OG Red Gum-Apple	592	3.0	18	0.0	0.0	0.0	0.0	6	0	0	6
184 OG Tumbledown Gum-Ironbark	11070	73.1	8089	0.0	45.3	0.7	46.0	48	0	1	49
185 OG Orange Gum-Black Cypress	3510	68.9	2419	0.0	34.4	21.2	55.7	33	0	22	55
186 OG Open Tumbledown Gum-Black Cypress-Orange Gum	10593	8.9	939	36.1	2.5	6.6	45.3	39	0	10	49
189 OG Silverleaved Ironbark-Cypress	23285	29.0	6741	1.0	0.2	0.0	1.1	2	0	0	2
190 OG Yellow Box-Grey Box-Red Gum	21273	7.8	1662	13.0	0.9	2.5	16.4	14	0	3	18
194 OG Round-leaved Gum wet heath	5997	50.2	3011	0.0	68.1	6.5	74.6	68	0	7	75
195 OG Apple-Manna Gum woodland	16214	9.9	1599	49.5	0.0	0.0	49.5	50	3	6	58
196 OG Broad-leaved Stringybark-Apple Box	19948	21.7	4326	22.7	10.6	37.5	70.7	34	0	38	72
197 OG Broad-leaved Stringybark	1643	9.3	153	40.9	2.0	1.3	44.2	45	0	5	50
198 OG Silvertop Stringybark	1200	3.5	42	15.5	0.0	16.7	32.2	26	0	7	33
200 OG Broad-leaved Stringybark-Ribbon Gum	650	13.4	87	0.0	0.3	0.0	0.3	5	0	0	5

NOTES ACCOMPANYING TABLE 2

a. The figures shown in this table are based on modelled information mapped at a scale of 1:25 000 derived during the pre-1750 analysis of vegetation types in the Upper North East and Lower North East regions, and are therefore only approximate.

- b. Old growth Forest Ecosystems are referred to as Candidate old growth because time constraints and availability of data sets did not allow for the full assessment of values characteristic of old growth forests (eg. some structural, compositional and functional characteristics and aesthetic values). Candidate old growth forest was identified primarily by aerial photographic interpretation, and information on disturbance from logging and fire. Further information is available in the report *Old-Growth Forest Related Projects – UNE / LNE CRA Regions*. National Parks and Wildlife Service (Part of Project NA28/EHFebruary 1999).
- C. Informal Reserve includes Special Management Zones that are > 40ha and > 200m wide, or that are adjacent to Dedicated Reserves.
- d. Tabulated prescriptions include those elements of the Special Management Zone that, due to the size or shape, do not meet the Informal Reserve Category outlined above, and the Harvesting Exclusions Zone.
- e. Source: compiled by ABARES from RFA data, including data from CRA reports, IFOAs, NPWS and FCNSW

^ The figure supplied by ABARES has been amended by DPI to address inconsistencies resulting from changes in spatial analysis systems and processes over time.

Wilderness

11 59% of Wilderness, as defined in the JANIS Reserve Criteria (ie National Wilderness Inventory (Lesslie and Maslen 1995) minimum rating 12 in patches greater than 8000ha), in the Upper North East region is protected within Dedicated Reserves under this Agreement. Of the Wilderness outside Dedicated Reserves, two thirds (66%) is on freehold or leasehold land. Informal Reserves provide a level of additional protection for Wilderness.

Additional Protection for Forest Ecosystems

12 Forestry Operations are prohibited from rare non-commercial Forest Ecosystems by the The Integrated Forestry Operations Approval for applicable to the Upper North East Region region provides additional protection for Rare non-commercial Forest Types as in Research Note No. 17 Forest Types in New South Wales (Forestry Commission of New South Wales, Sydney 1989). These Forest Types Ecosystems include:

- 33 Mangrove
- 42 Blackbutt – Sydney peppermint - Smooth-barked apple
- 64 Grey gum - Stringybark
- 66 Grey Ironbark-Stringybark
- 82 Grey box
- 94 Forest type 94 (not named)
- 107 Banksia
- 115 Sydney peppermint – Stringybark
- 136 Snow gum - Black sallee
- 162 White Ash
- 164 Eurabbie
- 211 River oak
- 213 Bull oak
- 214 Wattle
- 225 Mallee
- 30 Swamp mahogany
- 31 Paperbark
- 32 Swamp Oak
- 52 Round-leaved gum
- 63 Woollybutt
- 98 Dorrigo white gum
- 105 Smoothbarked-apple
- 119 Scribbly gum – Bloodwood
- 129 Rough-barked apple
- 130 Red bloodwood
- 131 Peppermint - Mountain / Manna gum

12A Forestry Operations are prohibited from Threatened Ecological Communities (TECs) by the Integrated Forestry Operations Approval applicable to the Upper North East region.

Rainforest Protection

13 ~~The Integrated Forest Operations Approval for the Upper North East Region provides additional protection for rainforest as defined in the IFOA including any area of land within 20m of the boundaries of warm temperate rainforest.~~ Forestry Operations are prohibited from all rainforest, including a 20m buffer around any areas identified as RN 17 forest types 10 to 15, by the Integrated Forestry Operations Approval applicable to the North East Region.

Old Growth forest

13B Forestry Operations are prohibited from all Old Growth forest in the Upper North East region by the Integrated Forestry Operations Approval.

Management of CAR Values

14 Management plans ~~identified in Section 2.3 of the New South Wales *Upper North East Region Forest Agreement*~~ for Dedicated Reserve and Informal Reserve elements of the CAR Reserve System will clearly identify the CAR Values and the actions being taken in each reserve to appropriately manage and conserve those values.

15 As an integral component of managing CAR values New South Wales agrees to implement systematic and target fauna and flora surveys in Dedicated Reserves and Informal Reserves to complement surveys ~~earries~~ carried out under the IFOAs. The extent of survey work undertaken will be subject to available funding.

Protections on Public Land subject to Plantation authorisation

16 For Plantations on Public Land, the Plantations and Reafforestation (Code) Regulation 2001 (NSW), contains standards for the protection of soil and water, Biodiversity, and places, objects or items of heritage significance.

ATTACHMENT 1 (B)
(clauses 2, 44, 48, 56, 65, 66, 66A, 71A, 97, 112, Attachment 8)

**COMPREHENSIVE, ADEQUATE AND REPRESENTATIVE (CAR)
RESERVE SYSTEM**

LOWER NORTH EAST REGION

- 1 Map 1(B) and this Attachment identify the CAR Reserve System on Public Land for the Lower North East region for the purpose of this Agreement, as amended from time to time.
- 2 The *National Forest Policy Statement* (NFPS) established that the CAR Reserve System will, in the first instance, be selected from Public Land. Provision is also made in the JANIS Reserve Criteria for inclusion of Private Land in the CAR Reserve System, with the agreement of landholders, where the Criteria cannot be met from Public Land.

PUBLIC LAND

- 3 In the Lower North East region, the CAR Reserve System on Public Land primarily comprises areas established for conservation purposes (eg National Parks and Nature Reserves) and areas reserved for conservation in State forest.

CAR RESERVE SYSTEM COMPONENTS AND PROTECTION MECHANISMS

- 4 The CAR Reserve System on Public Land has the following three components:
 - *Dedicated Reserves*. This comprises reserves established through legislation for conservation purposes such as National Parks, Nature Reserves and Flora Reserves (Special Protection Zone, FMZ 1).
 - *Informal Reserves*. This comprises those parts of the Special Management Zone (FMZ 2) under the Forest Management Zoning system that are greater than 40ha, and more than 200m wide, or are directly adjacent to Dedicated Reserves. It also includes those areas dedicated as ~~Crown Reserves~~ State Conservation Areas under the provisions of the ~~Crown Lands Act 1989~~ National Parks and Wildlife Act 1974 (NSW) and State Recreation Areas which are managed by the NSW National Parks and Wildlife Service. ~~Plans of Management for Crown Reserves will be prepared by 1 January 2005 as outlined in the New South Wales Lower North East Region Forest Agreement. It also includes Commonwealth Defence lands managed in accordance with Clauses 7—10 of this attachment.~~
 - *Values ~~protected~~ Protected by Prescription*. These comprise those elements of habitat protected by Regional Prescriptions as detailed in the Integrated Forestry Operations Approval covering the Lower North East region and areas within the Harvesting Exclusions (FMZ 3A) and Special Prescription Zone (FMZ 3B) under the Forest Management Zoning system that ~~will be~~ are excluded from harvesting. They also include elements of the Special Management Zone (FMZ 2) that, due to the size or shape, do not meet the Informal Reserve category

outlined above. The Integrated Forestry Operations Approval complements the Dedicated and Informal Reserve network and includes additional levels of protection for rare non-commercial forest types, Old Growth forest, rainforest and threatened species in all areas that have been identified to be primarily managed for sustainable production.

- 5 ~~NSW will finalise boundaries of the CAR Reserves to enable its implementation within six month of signing this Agreement. Finalisation will include identifying suitable management boundaries. Wherever possible, these will follow easily identifiable features such as cadastre and roads and natural or ecological boundaries. Finalisation will also consider field verification of values being protected and appropriate boundaries mapped to protect the identified values.~~ NOT USED
- 6 ~~As at December 2017, the~~ The Dedicated Reserve component of the CAR Reserve System covers 1,169,400 1,385,000 ha, the Informal Reserve component 148,700 80,000 ha and the prescriptive component 104,300 94,000 ha. Together the Dedicated Reserve and Informal Reserve components of the CAR Reserve System cover an area of approximately 1,318,100 1,465,000 ha (about 63.1 72% of the Public Land in the region or 22.7 25% percent of the entire region).
- 6A Levels of protection for Forest Ecosystems and Old Growth forest achieved in the Dedicated Reserve, Informal Reserve and the Values Protected by Prescription components of the CAR Reserve System are shown in Tables 1 and 2. The tabulated percentage area of these values in prescription includes elements of the Special Management Zone (FMZ 2) that are less than 40ha and less than 200m wide, as well as areas of Old Growth forest (and Forest Ecosystems within these areas) that will be managed by the Integrated Forestry Operations Approval.
- 6B The IFOA provides for protection of environmental values in addition to those protected in FMZ 2, FMZ 3A, FMZ 3B, mapped areas under the IFOA, or other CAR Reserves and quantified in Tables 1 and 2. The protections under the IFOA are updated and modified from time to time as a result of the continual improvement process to improve the effectiveness and efficiency of these conditions.

Commonwealth Land

- 7 Informal Reserves on Commonwealth land total 6,200 hectares and are identified on Map 1(B).
- 8 The Commonwealth agrees to manage those areas of Commonwealth owned land identified in the Singleton Army Training Area as CAR Informal Reserves for the protection of identified CAR ~~values~~ Values, on the following conditions:
- Condition 1. That the reserve boundaries encompass only those areas that actually contain the CAR Values.
 - Condition 2. That the reserves do not exclude Defence activities that would not compromise the long-term survival of the CAR Values.
 - Condition 3. That the establishment of the reserves are based on the development of Defence management arrangements (ie Defence

Environmental Management Plans) rather than any modification to existing tenures which may be detrimental to Defence's usage of the training areas.

- Condition 4. That Defence is the sole approving agency for the Defence Environmental Management Plans that prescribe the management regime for the reserves. Defence will consult with relevant experts, State and Commonwealth agencies on the appropriateness of the management regimes.
- Condition 5. Defence will make environmental management plans for the Singleton Army Training Area available to State and Local authorities and will cooperate with those authorities to make changes if they are required to protect CAR Values.
- Condition 6. Defence will be provided advance notification of any proposed changes to reserve boundaries on Defence land and will be given 40 days to provide a submission on the feasibility of changes with respect to Defence use of the area.
- Condition 7. The reserve boundaries will delineate the actual CAR Values. Defence will establish operational and environmental management buffer zones around the reserves based on particular land use activities that may occur adjacent to the reserves. The buffer zones will be identified in the Defence Environmental Management Plans. The buffer zones will be designed to permit appropriate levels of wildlife and conservation connectivity between isolated stands of the CAR identified forest areas.
- ~~Condition 1. That the reserve does not exclude Defence activities that would not compromise the maintenance of the CAR values. Necessary Unexploded Ordnance management will not be impeded by any Informal Reserve declaration or this agreement.~~
- ~~Condition 2. That the establishment of the reserve is based on existing Defence management arrangements as prescribed in the Singleton Area Environmental Management Plan (1998) rather than any modification of existing tenures which may be detrimental to Defence's usage of the training areas.~~
- ~~Condition 3. That Defence is the sole approving agency for the Defence Environmental Management Plans that prescribe the management regime for the reserve. Defence will however consult with relevant State and Commonwealth agencies on the appropriateness of the management regimes.~~
- ~~Condition 4. Consultation on management by Defence of Defence activities in the training areas will be achieved in the consultation process with the State and Local authorities and~~

~~other stakeholders in the review of the Environmental Management Plan for the Singleton Army Training Area.~~

- ~~• Condition 5. Public comment on changes to the reserve boundary will occur except in circumstances proscribed by national defence protocols.~~
- ~~• Condition 6. The reserve boundary will delineate the actual CAR values. Defence will establish all operational and environmental management buffer zones around the reserve based on particular land use activities that may occur adjacent to the reserves. The buffers will be identified in the Defence Environmental Management Plans.~~

8A The Parties recognise that the 1998 Singleton Environmental Management Plan has been superseded by an Environmental Management System (EMS).

The EMS documents the biodiversity values of each site and prescribes management actions to ensure Defence activities do not adversely affect these values. As part of this, the Department works closely with state and local agencies to develop and implement components of the EMS, such as bushfire management, threatened species monitoring, catchment management, feral animal control and native fauna management.

8B The Department of Defence will continue to manage the environmental values of the Singleton Army Training Area in general alignment with the seven conditions at point 8 above.

- 9 The Department of Defence will identify this CAR Informal Reserve on Commonwealth land on operational and planning maps as part of the EMS.
- 10 ~~The CAR Informal Reserves on Commonwealth land will be included in future Environmental Management Plans prepared for the area.~~ NOT USED

Forest Management Zoning

11 ~~New South Wales will, by 30 June 2000, produce a Regional ESFM Plan for the Lower North East region that includes Forest Management Zoning within State forests as described in the document *Forest Management Zoning in State Forests*, (SFNSW 1999). Of Within the Forest Management Zoning system, of particular significance for the conservation of Forest Ecosystems and Old Growth forest are the:~~

- ~~• *Special Protection Zone (FMZ 1).* These areas are dedicated and managed to maximise the protection of natural and cultural values. Timber harvesting, removal of Forest Products and materials, grazing by domestic stock, gravel/hard rock quarrying and mineral and petroleum exploration are not generally permitted within this zone.~~
- ~~• *Special Management Zone (FMZ 2).* These areas are established following public comment and are gazetted and managed for the protection of natural and~~

cultural conservation values where it is not possible or practicable to include them in the Special Protection Zone. Activities not permitted in this zone are similar to the Special Protection Zone except that mineral and petroleum exploration are permitted. Any mining proposal following from exploration will require standard environmental impact assessment and development approval processes.

- *Harvesting Exclusions Zone (FMZ 3A)*. These are areas where harvesting is excluded but other management and production activities preclude zoning as Special Protection Zone or Special Management Zone. These may be:
 - i) Dedicated leasehold where lease conditions permit activities such as grazing and timber supply for lease fencing etc, and in some cases residency, or
 - ii) Areas identified as important by the Department of Mineral Resources Planning and Environment where there are current or imminent petroleum and Mineral Exploration ~~mineral exploration~~ and/ or Mining Operations~~mining activities~~, or
 - iii) Other areas which are excluded from harvesting (eg. Net Harvestable Area (NHA) exclusions) but size, boundaries or management practicabilities preclude designation as FMZ 1 or FMZ 2.
- *Special Prescription Zone (FMZ 3B)*. These areas are established for the protection and management of identified values whilst also allowing other management and production activities. These activities (which in some cases includes timber, Forest Product and materials extraction) are minimised in their design and implementation to maintain or enhance the values that the area is zoned to protect. A case by case assessment of these areas will be undertaken to determine which forestry activities can occur. The decision is dependent on the specific values involved.

12 ~~New South Wales agrees to establish all Dedicated Reserve and Informal Reserve components of the CAR Reserve System within six months of signing this Agreement.~~ NOT USED

~~Integrated Forestry Operations Approval~~

Environment and Heritage Values protected by prescription

13 ~~The Integrated Forestry Operations Approval covering the Lower North East region is the principal vehicle by which Environment and Heritage Values that are impracticable to include in reserves can be conserved. The JANIS Reserve Criteria provide for the management of such values through prescriptions. The Integrated Forestry Operations Approval takes account of the extent of reserved habitat, whether the prescriptions are operationally feasible, and the relative conservation status of each species. For Environment and Heritage Values that are not included in reserves, the JANIS Reserve Criteria provide for the management of such values through prescriptions. Within the General Management Zone of the Forest Management Zoning system (FMZ 4), Forestry Operations and other activities are~~

permitted. The principal vehicles by which Environment and Heritage Values will be managed within FMZ 4 are:

- The Integrated Forestry Operations Approval covering the Lower North East region will be the principal vehicle by which environment values are protected through prescription. The Integrated Forestry Operations Approval takes account of the extent of reserved habitat, and balances an operationally efficient timber industry with the need to protect native plants and animals, ecosystems, soils and water.
- 14 Aboriginal and non-Aboriginal cultural heritage guidelines made in accordance with relevant legislation and amended from time to time, provide prescriptions for the management of heritage values that are impracticable to include in reserves in the Lower North East region.

~~INDENTIFIED~~ IDENTIFIED CAR VALUES AND THEIR PROTECTION AFFORDED THROUGH THE RFA

- 15 Levels of protection for Forest Ecosystems and Old Growth forest achieved in the CAR Reserve System are shown in Tables 1 and 2 of this Attachment as follows:
- Dedicated Reserves; as described in Clause 4 of this Attachment,
 - Informal Reserves; as described in Clause 4 of this Attachment,
 - Values Protected by Prescription; includes the areas within the Harvesting Exclusions Zone (Zone 3A), ~~and~~ those areas of the Special Management Zone (Zone 2) that, due to the size or shape, do not meet the Informal Reserve category outlined above, and mapped areas under the IFOA.

It should be noted that ~~the Special Prescription Zone (Zone 3B) and~~ the IFOA affords additional protection over that included in the table.

Table 1. Percentage Representative conservation (percentage reservation status as at 2000 and December 2017) of Forest and Non-Forest Ecosystems in the CAR Reserve System in the Lower North East region based on vegetation modelling to establish the pre-1750 extent of Forest Ecosystems in the region^a

Forest Ecosystems ^b	Area		Percent Remaining as at 2000	Status ^c as at 2000	Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at 2000				Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System ^f			
	Pre 1750 (ha)	Current As at 2000 (ha)			Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total	Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total
2 Alpine Gum*	15021	3971	26.4	V	7.7	3.1	0.5	11.3	<u>11</u>	<u>0</u>	<u>1</u>	<u>12</u>
3 Baileys Stringybark*	301	285	94.7	R	71.1	0.0	0.0	71.1	<u>77</u>	<u>0</u>	<u>0</u>	<u>77</u>
6 Barrington Dry Shrubby New England Blackbutt-Blue Gum	3667	3227	88.0	-	37.7	3.4	2.7	43.7	<u>39</u>	<u>4</u>	<u>3</u>	<u>46</u>
7 Barrington Moist Blue Gum-White Mahogany*	46597	32659	70.1	-	5.6	3.6	3.4	12.6	<u>19</u>	<u>4</u>	<u>3</u>	<u>26</u>
8 Barrington Wet New England Blackbutt-Blue Gum*	68504	45911	67.0	-	10.7	1.7	1.7	14.1	<u>13</u>	<u>2</u>	<u>3</u>	<u>17</u>
10 Black Sallee	2	2	100.0	R	50.0	0.0	0.0	50.0	<u>50</u>	<u>0</u>	<u>0</u>	<u>50</u>
11 Blackbutt-Sydney Peppermint-Smoothbarked Apple*	3560	1382	38.8	-	7.0	5.0	0.0	12.0	<u>12</u>	<u>0</u>	<u>0</u>	<u>12</u>
12 Blue Mountain Ash	1	1	100.0	R	100.0	0.0	0.0	100.0	<u>100</u>	<u>0</u>	<u>0</u>	<u>100</u>
13 Blue-leaved Stringybark	25	25	100.0	R	97.1	0.0	0.0	97.1	<u>100</u>	<u>0</u>	<u>0</u>	<u>100</u>
14 Brown Barrell*	1557	814	52.3	R	25.0	0.0	1.2	26.2	<u>26</u>	<u>0</u>	<u>1</u>	<u>27</u>
15 Brown Barrell-Gum	15290	8711	57.0	-	11.6	8.3	1.6	21.5	<u>21</u>	<u>0</u>	<u>2</u>	<u>23</u>
16 Bull Oak	5	5	100.0	R	100.0	0.0	0.0	100.0	<u>100</u>	<u>0</u>	<u>0</u>	<u>100</u>
17 Candlebark*	243	20	8.2	E	0.0	0.8	0.0	0.8	<u>1</u>	<u>0</u>	<u>0</u>	<u>1</u>
19 Central Mid Elevation Sydney Blue Gum*	92222	40971	44.4	-	5.1	1.1	2.1	8.3	<u>8</u>	<u>1</u>	<u>2</u>	<u>10</u>
20 Clarence Lowland Needlebark Stringybark	81	81	100.0	R	99.8	0.0	0.0	99.8	<u>99.8</u> [^]	<u>0</u>	<u>0</u>	<u>99.8</u> [^]
21 Lowlands Grey Box*	5917	1219	20.6	V	10.8	0.2	0.0	11.0	<u>12</u>	<u>0</u>	<u>0</u>	<u>12</u>
22 Coast Cypress Pine	34	34	100.0	R	88.5	0.0	0.0	88.5	<u>94</u>	<u>0</u>	<u>0</u>	<u>94</u>
23 Coast Range Bloodwood-Mahogany	636	564	88.7	R	82.7	0.0	0.1	82.8	<u>83</u>	<u>0</u>	<u>0</u>	<u>83</u>
25 Coast Range Spotted Gum-Blackbutt	25	25	100.0	R	100.0	0.0	0.0	100.0	<u>100</u>	<u>0</u>	<u>0</u>	<u>100</u>
26 Coastal Flooded Gum*	15166	8753	57.7	-	9.1	0.7	2.3	12.1	<u>9</u>	<u>2</u>	<u>3</u>	<u>14</u>
27 Coastal Sands Blackbutt	27026	17312	64.1	-	29.7	0.2	0.0	29.9	<u>35</u>	<u>0</u>	<u>0</u>	<u>35</u>
28 Cool Moist Messmate*	14324	6467	45.2	-	9.4	1.2	1.2	11.7	<u>10</u>	<u>2</u>	<u>1</u>	<u>13</u>

Forest Ecosystems ^b	Area		Percent Remaining as at 2000	Status ^c as at 2000	Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at 2000				Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System ^f			
	Pre 1750 (ha)	Current As at 2000 (ha)			Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total	Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total
29 Corkwood-Crabapple and Mixed Stringybarks	2891	2293	79.3	-	34.6	1.1	7.8	43.5	50	1	2	52
30 Diehard Stringybark-New England Blackbutt	51716	43510	84.1	-	42.0	7.1	2.6	51.6	53	1	3	57
31 Dorrigo White Gum*	6449	1123	17.4	V	0.9	0.1	1.0	1.9	1	0	1	2
32 Dry Foothills Blackbutt-Turpentine*	48456	33592	69.3	-	8.7	1.0	2.4	12.0	10	1	4	14
33 Dry Foothills Spotted Gum*	32880	17688	53.8	-	8.7	0.3	0.3	9.3	10	0	0	10
34 Dry Grassy Blackbutt-Tallowwood*	134865	59390	44.0	-	5.4	0.2	0.4	6.0	6	0	1	7
35 Dry Grassy Stringybark	133894	97614	72.9	-	16.5	2.0	1.9	20.4	24	2	2	27
36 Dry Grassy Tallowwood-Grey Gum	264265	178516	67.6	-	12.1	1.9	1.6	15.6	14	1	2	17
37 Dry Heathy Blackbutt-Bloodwood	4939	2889	58.5	-	27.4	0.9	1.2	29.6	28	1	1	31
38 Dry Heathy New England Blackbutt	550	528	96.0	R	58.7	6.7	5.0	70.4	66	0	4	71
39 Dry Heathy New England Stringybarks	15	15	100.0	R	100.0	0.0	0.0	100.0	100	0	0	100
41 Dry Open New England Blackbutt*	115751	32932	28.5	V	4.1	0.3	1.7	6.1	6	0	1	8
42 Dry Redgum-Bloodwood-Apple	107232	69509	64.8	-	15.4	1.1	0.4	16.9	19	1	1	20
43 Dry Silvertop Stringybark-Apple	19265	14918	77.4	-	27.5	1.9	1.3	30.8	40	1	1	42
44 Dry open Redgum-Broad Leaved Apple	2404	2291	95.3	-	47.6	1.3	0.0	48.9	61	0	0	61
46 Eastern Red Gums	38	38	100.0	R	59.3	0.0	0.0	59.3	95	0	0	95
47 Escarpment Redgum*	74953	20498	27.4	V	2.2	0.5	0.5	3.2	3	0	0	4
48 Escarpment Scribbly Gum-Apple*	27471	7574	27.6	V	6.8	0.2	0.2	7.2	11	0	0	11
49 Escarpment Tallowwood-Bloodwood	57865	49918	86.3	-	26.3	4.3	2.6	33.1	30	3	3	37
50 Wet Bangalow-Brushbox	5677	3614	63.7	-	23.4	1.5	2.6	27.5	24	1	3	29
51 Eurabbie	277	276	99.6	R	85.9	1.7	0.0	87.6	91	0	0	92
53 Gorge Grey Box	6995	6034	86.3	-	41.1	0.7	1.1	42.9	56	0	1	57
54 Grey Box-Red Gum-Grey Ironbark*	91248	19838	21.7	V	8.4	1.3	0.3	10.0	9	0	0	9
55 Foothills Grey Gum-Spotted Gum	3065	2438	79.5	-	14.1	2.4	4.9	21.4	30	0	2	32
56 Granite Mallee*	7173	4025	56.1	-	12.0	1.2	1.1	14.4	16	1	1	19
57 Highland Granite Stringybarks*	2481	924	37.2	R	8.6	0.0	1.3	9.9	9	0	1	10
58 Gorge Grey Gum*	51	51	100.0	R	57.3	5.9	0.0	63.1	71	0	0	71
60 Grassy New England Blackbutt-Tallowwood-Blue Gum	40573	33586	82.8	-	32.0	2.9	2.6	37.5	38	3	2	43
63 Grey Gum-Stringybark	23099	16056	69.5	-	22.5	2.8	1.1	26.4	70	0	1	71
65 Heathy Scribbly Gum	31362	23471	74.8	-	28.1	6.3	1.9	36.3	33	3	2	37

Forest Ecosystems ^b	Area		Percent Remaining as at 2000	Status ^c as at 2000	Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at 2000				Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System ^f			
	Pre 1750 (ha)	Current As at 2000 (ha)			Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total	Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total
67 High Elevation Ferny Blackbutt	34934	30899	88.5	-	39.8	3.4	3.4	46.6	<u>42</u>	<u>3</u>	<u>5</u>	<u>49</u>
68 High Elevation Messmate-Brown Barrell	19641	15974	81.3	-	7.0	15.3	4.0	26.4	<u>22</u>	<u>1</u>	<u>6</u>	<u>28</u>
69 High Elevation Moist Open Tallowwood-Blue Gum	30029	27141	90.4	-	34.3	4.3	3.1	41.7	<u>41</u>	<u>3</u>	<u>4</u>	<u>48</u>
70 High Elevation Open Spotted Gum*	21	12	57.1	R	0.4	0.0	2.3	2.7	<u>5</u>	<u>0</u>	<u>0</u>	<u>5</u>
71 Ironbark	209443	89985	43.0	-	13.4	1.6	1.7	16.7	<u>17</u>	<u>1</u>	<u>2</u>	<u>19</u>
72 Low Relief Coastal Blackbutt*	23365	10894	46.6	-	5.0	0.3	0.5	5.9	<u>7</u>	<u>0</u>	<u>1</u>	<u>8</u>
73 Lowland Red Gum*	574	366	63.8	R	20.5	3.9	10.1	34.6	<u>23</u>	<u>4</u>	<u>12</u>	<u>39</u>
74 Lowlands Scribbly Gum	11527	9724	84.4	-	58.8	0.7	0.4	59.9	<u>61</u>	<u>1</u>	<u>0</u>	<u>62</u>
76 Coastal Mallee	963	801	83.2	R	75.0	0.6	0.0	75.6	<u>77</u>	<u>0</u>	<u>0</u>	<u>77</u>
79 Manna Gum-Stringybark*	1180	632	53.6	R	6.9	0.1	0.5	7.5	<u>8</u>	<u>0</u>	<u>0</u>	<u>9</u>
80 Manna Gum*	13123	3852	29.4	V	5.1	0.6	1.7	7.4	<u>7</u>	<u>1</u>	<u>1</u>	<u>9</u>
81 Messmate*	60985	20291	33.3	-	4.5	0.5	0.7	5.6	<u>6</u>	<u>1</u>	<u>1</u>	<u>7</u>
82 Messmate-Mountain Gum Forest*	19288	8537	44.3	-	12.2	0.3	0.9	13.5	<u>14</u>	<u>0</u>	<u>1</u>	<u>15</u>
83 Mid Elevation Wet Blackbutt	7883	6981	88.6	-	37.7	14.7	4.2	56.6	<u>47</u>	<u>10</u>	<u>4</u>	<u>61</u>
84 Mid North Coast Wet Brushbox-Tallowwood-Blue Gum	43303	31917	73.7	-	26.8	6.6	3.5	36.9	<u>33</u>	<u>3</u>	<u>5</u>	<u>40</u>
85 Mixed Moist Hardwood	232	232	100.0	R	7.8	0.7	9.2	17.8	<u>8</u>	<u>3</u>	<u>10</u>	<u>21</u>
87 Mixed Tableland Stringybark-Gum OpenForest*	20293	7897	38.9	-	7.7	0.9	1.4	10.0	<u>10</u>	<u>1</u>	<u>1</u>	<u>12</u>
88 Moist Escarpment New England Blackbutt	23267	22579	97.0	-	59.1	10.9	4.7	74.6	<u>69</u>	<u>3</u>	<u>6</u>	<u>78</u>
89 Moist Foothills Spotted Gum*	12467	7929	63.6	-	12.4	0.5	1.4	14.3	<u>18</u>	<u>0</u>	<u>1</u>	<u>19</u>
90 Moist Messmate-Gum*	113	78	69.0	R	1.7	0.9	2.1	4.7	<u>2</u>	<u>1</u>	<u>3</u>	<u>5</u>
91 Moist Open Escarpment White Mahogany	42669	38495	90.2	-	37.7	2.8	2.3	42.8	<u>44</u>	<u>2</u>	<u>3</u>	<u>49</u>
92 Moist Shrubby Stringybark-Gum*	805	423	52.6	R	17.9	1.0	1.3	20.3	<u>21</u>	<u>0</u>	<u>0</u>	<u>21</u>
93 Montane Stringybark-Gum*	11191	2567	22.9	V	2.4	0.0	1.7	4.1	<u>5</u>	<u>0</u>	<u>0</u>	<u>5</u>
94 Mountain Gum-Brown Barrell	3210	3196	99.6	-	91.2	3.2	0.0	94.4	<u>95</u>	<u>0</u>	<u>0</u>	<u>95</u>
97 Needlebark Stringybark-Large Fruited Blackbutt*	556	502	90.3	R	47.1	0.2	0.2	47.6	<u>47</u> [^]	<u>0</u>	<u>1</u>	<u>48</u> [^]
98 New England Peppermint	814	656	80.6	R	73.2	0.0	0.0	73.2	<u>73</u> [^]	<u>0</u>	<u>0</u>	<u>73</u> [^]
99 New England Stringybark-Blakelys Red Gum*	116133	28245	24.3	V	5.4	0.3	0.3	6.0	<u>9</u>	<u>0</u>	<u>0</u>	<u>9</u>

Forest Ecosystems ^b	Area		Percent Remaining as at 2000	Status ^c as at 2000	Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at 2000				Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System ^f			
	Pre 1750 (ha)	Current As at 2000 (ha)			Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total	Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total
105 Nymboidea Tallowwood-Turpentine*	310	248	80.0	R	5.8	10.9	33.4	50.1	39	6	6	52
106 Open Coastal Brushbox	103225	64878	62.9	-	12.0	3.7	4.0	19.7	14	3	5	22
107 Open Messmate-New England Blackbutt	14929	12151	81.4	-	33.3	2.8	1.0	37.1	35	2	2	38
108 Open Ribbon Gum	34467	24537	71.2	-	16.1	3.8	7.4	27.2	21	2	8	31
109 Open Shrubby Brushbox-Tallowwood	5033	2887	57.4	-	17.7	0.3	1.3	19.2	18	0	2	21
110 Open Silvertop Stringybark-Blue Gum	68155	53990	79.2	-	17.4	4.2	3.1	24.7	23	3	4	29
111 Open Silvertop Stringybark-Tallowwood	2116	1889	89.3	-	36.5	2.5	3.9	42.8	47	1	1	48
112 Paperbark*	NA	12866	NA	V	NA	NA	NA	NA	NA	NA	NA	NA
113 Peppermint*	51650	13115	25.4	V	7.2	0.3	0.4	7.8	8	0	0	9
114 Peppermint-Mountain/Manna Gum*	29728	5736	19.3	V	4.2	0.2	0.6	5.0	5	0	0	5
115 Red Bloodwood	5	5	100.0	R	86.4	0.0	0.0	86.4	86 [^]	0	0	86 [^]
116 Red Gum-Stringybark*	38169	12238	32.1	V	0.0	0.0	0.0	0.0	0	0	0	0
117 Red Mahogany*	65	65	100.0	R	3.1	0.0	0.0	3.1	11	0	0	11
120 River Oak*	1566	922	58.9	R	26.5	0.2	2.4	29.2	38	0	0	39
122 Rough-barked Apples*	13990	2636	18.8	V	6.7	0.0	0.1	6.8	7	0	0	7
123 Roundleaved Gum*	1544	172	11.1	R	0.3	0.0	0.8	1.1	1	0	0	1
124 Roundleaved Gum-Turpentine*	59	59	100.0	R	57.6	0.0	0.0	57.6	22	0	0	22
129 Smoothbarked Apple	25437	18751	73.7	-	10.3	2.2	4.1	16.7	18	5	3	26
130 Smoothbarked Apple-Sydney Peppermint-Stringybark	16521	9517	57.6	-	9.4	0.1	12.9	22.4	25	0	1	26
131 Snow Gum	6526	4433	67.9	-	46.2	3.7	1.8	51.8	50	0	2	52
132 Snow Gum -Mountain/Manna Gum*	83882	23120	27.6	V	5.8	3.4	0.7	9.9	9	0	1	10
133 Snow Gum-Black Sallee	16	16	100.0	R	95.3	0.0	2.8	98.0	100	0	0	100
134 South Coast Shrubby Grey Gum*	357935	151030	42.2	-	5.0	0.3	0.4	5.7	6	0	0	7
135 South Coast Tallowwood-Blue Gum*	106137	71217	67.1	-	10.3	1.2	2.6	14.1	13	2	2	17
137 Southern Wet Sydney Blue Gum	57235	41695	72.9	-	13.4	1.9	4.6	19.8	17	2	5	24
138 Steel Box/Craven Grey Box	133	125	94.0	R	27.9	0.0	24.8	52.7	88	0	0	88

Forest Ecosystems ^b	Area		Percent Remaining as at 2000	Status ^c as at 2000	Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at 2000				Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System ^f			
	Pre 1750 (ha)	Current As at 2000 (ha)			Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total	Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total
139 Stringybark-Apple*	208921	81300	38.9	-	9.1	0.5	0.7	10.3	15	0	0	15
140 Stringybark-Mallee	671	665	99.1	R	94.2	0.0	0.4	94.7	94	0	0	94
142 Swamp Mahogany*	4645	2177	46.9	-	8.3	1.6	4.9	14.7	13	2	2	17
143 Swamp Oak*	21477	4868	22.7	V	5.8	0.4	0.4	6.6	9	0	0	9
145 Sydney Peppermint-Stringybark	13866	13778	99.4	-	78.5	5.2	0.6	84.3	79	5	1	85
146 Tallowwood*	875	746	85.3	R	38.4	0.9	0.2	39.5	50	0	0	50
147 Turpentine	239	235	98.3	R	15.1	0.4	6.6	22.0	31	0	5	37
148 Very Wet New England Blackbutt-Tallowwood	3218	2867	89.1	-	70.0	4.9	2.3	77.3	71	5	3	78
149 Mallee-Peppermint mosaic*	6208	3621	58.3	-	10.8	1.0	2.2	13.9	16	1	1	18
153 Wet Coastal Tallowwood-Brushbox*	15901	10245	64.4	-	3.7	0.7	1.0	5.3	5	0	2	8
154 Wet Flooded Gum-Tallowwood*	9393	6161	65.6	-	7.4	0.8	2.9	11.1	10	1	4	15
155 Wet Foothills Blackbutt-Turpentine	54288	50264	92.6	-	18.9	6.6	3.8	29.3	25	4	6	35
156 Wet New England Blackbutt-Silvertop Stringybark	18005	15604	86.7	-	32.3	3.1	2.2	37.6	34	3	4	42
157 Wet Shrubby Brushbox-Tallowwood	35601	30589	85.9	-	34.0	7.0	6.2	47.2	38	6	7	51
162 Whitetopped Box*	1743	967	55.5	R	18.8	0.8	5.1	24.7	31	0	2	33
163 Yellow Box-Blakely's Red Gum*	28088	2696	9.6	E	0.1	0.0	0.0	0.1	0	0	0	0
168 Rainforest*	NA	256326	NA	R	NA	NA	NA	NA	NA	NA	NA	NA
174 Orange Gum-Tumbledown Gum-Apple*	33343	10169	30.5	V	0.4	0.3	0.0	0.7	1	0	0	1
175 Orange Gum-New England Blackbutt-Tumbledown Gum*	64031	23572	36.8	V	0.3	0.6	0.0	0.9	1	0	0	1
176 Orange Gum-Ironbark*	34097	6636	19.5	V	0.0	0.0	0.0	0.0	0	0	0	0
177 Outcrop Orange Gum-New England Blackbutt*	15949	3170	19.9	V	0.5	0.1	0.0	0.5	1	0	0	1
178 Outcrop Black Cypress-Tumbledown Gum*	1492	659	44.2	R	0.0	0.0	0.0	0.0	0	0	0	0
179 Yellow Box-Broad-leaved Stringybark*	1026	273	26.6	R	1.0	0.0	0.0	1.0	1	0	0	1
182 Apple-Black Cypress*	46374	14635	31.6	V	0.2	0.0	0.0	0.2	0.2^	0	0	0.2^
183 Red Gum-Apple	8088	4065	50.3	-	27.5	0.4	0.9	28.8	28	0	1	29
184 Tumbledown Gum-Ironbark*	527	160	30.4	R	0.0	0.0	0.0	0.0	0	0	0	0

Forest Ecosystems ^b	Area		Percent Remaining as at 2000	Status ^c as at 2000	Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at 2000				Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System ^f			
	Pre 1750 (ha)	Current As at 2000 (ha)			Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total	Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total
186 Open Tumbledown Gum-Black Cypress-Orange Gum*	43246	7959	18.4	V	0.2	0.1	0.0	0.3	0.2 [^]	0.1 [^]	0	0.3 [^]
189 Silverleaved Ironbark-Cypress*	6649	2007	30.2	V	0.0	0.0	0.0	0.0	0	0	0	0
190 Yellow Box-Grey Box-Red Gum*	35934	7724	21.5	V	0.6	0.0	0.0	0.6	1	0	0	1
195 Apple-Manna Gum woodland*	36588	6638	18.1	V	0.3	0.1	0.0	0.4	0.3 [^]	0.1 [^]	0	0.4 [^]
196 Broad-leaved Stringybark-Apple Box*	55280	10442	18.9	V	0.3	0.1	0.0	0.4	0.3 [^]	0.1 [^]	0	0.4 [^]
197 Broad-leaved Stringybark*	8827	1346	15.3	V	0.5	0.0	0.0	0.5	1	0	0	1
198 Silvertop Stringybark*	5634	1501	26.6	V	1.2	0.4	0.0	1.6	2	0	0	2
200 Broad-leaved Stringybark-Ribbon Gum*	25	7	28.0	R	4.0	0.0	0.0	4.0	4	0	0	4
202 Peppermint-Apple-Turpentine	37165	36556	98.4	-	68.3	10.6	1.4	80.3	76	4	1	82
203 Grey Gum-Stringybark-Apple	38398	37492	97.6	-	80.7	3.2	0.1	84.0	83	1	0	85
204 Grey Gum - Scribbly Gum	18966	18871	99.5	-	94.9	1.2	0.0	96.2	95	1	0	96
205 Peppermint-Silvertop Ash-Stringybark	1346	1309	97.3	-	75.5	0.0	0.0	75.5	77	0	0	77
206 Apple-Grey Gum-Turpentine	30010	28264	94.2	-	39.9	7.2	4.4	51.5	47	1	5	53
207 Hunter Spotted Gum-Ironbark*	67295	25740	38.3	-	2.0	3.7	0.7	6.4	5	0	0	5
208 Hunter Roughbarked Apple- Red Gum*	66023	8876	13.4	V	1.0	0.9	0.1	2.0	1	0	0	1
209 Yellow Bloodwood-Stringybark	54429	52329	96.1	-	62.7	3.5	1.4	67.6	64	3	2	68
210 Yellow Bloodwood-Ironbark	32597	29520	90.6	-	51.9	5.9	0.3	58.1	58	2	0	60
211 Apple-Turpentine	22208	21680	97.6	-	55.3	26.0	0.0	81.3	79	3	0	82
212 Yellow Bloodwood-Narrowleaved Apple	59334	57711	97.3	-	64.9	11.3	0.1	76.2	76	1	0	77
213 Stringybark-Scribbly Gum Woodland	9288	9196	99.0	-	96.3	0.7	0.0	97.0	96	1	0	97
214 Brown Bloodwood-Dwyers Redgum	2051	1862	90.8	-	56.5	0.0	0.0	56.5	57	0	0	57
215 Brown Bloodwood-Ironbark	12308	11650	94.7	-	90.2	0.5	0.0	90.7	90	0	0	91
216 Sandstone Ironbark	14298	12427	86.9	-	61.6	0.0	0.0	61.6	62	0	0	62
217 Grey Gum-Stringybark (Hunter)	31103	30921	99.4	-	96.6	0.1	0.0	96.7	97 [^]	0 [^]	0 [^]	97 [^]
218 Ironbark-Stringybark	17677	15843	89.6	-	35.4	0.0	0.0	35.4	35	0	0	35
219 Brown Bloodwood	15182	8905	58.7	-	27.7	0.0	0.0	27.7	28	0	0	28

Forest Ecosystems ^b	Area		Percent Remaining as at 2000	Status ^c as at 2000	Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at 2000				Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System ^f			
	Pre 1750 (ha)	Current As at 2000 (ha)			Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total	Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total
220 Yellow Bloodwood-Stringybark-Narrowleaved Apple	40270	39881	99.0	-	70.1	12.4	0.0	82.5	<u>82</u>	<u>1</u>	<u>0</u>	<u>83</u>
221 Apple-Red Bloodwood-Peppermint-Turpentine	26788	23923	89.3	-	59.3	6.3	1.2	66.8	<u>64</u>	<u>3</u>	<u>1</u>	<u>68</u>
222 Stringybark-Mallee Woodland	7107	7084	99.7	-	96.1	0.5	0.0	96.6	<u>96</u>	<u>0</u>	<u>0</u>	<u>97</u>
223 Dwarf Apple Forest	20932	20238	96.7	-	57.1	26.4	0.1	83.5	<u>83</u>	<u>2</u>	<u>0</u>	<u>84</u>
224 Coastal Apple-Stringybark-Scribbly Gum*	2370	1070	45.2	-	0.0	1.8	0.2	1.9	<u>2</u>	<u>0</u>	<u>0</u>	<u>2</u>
225 Wyong Apple-Scribbly Gum*	5905	3768	63.8	-	0.0	1.0	0.7	1.6	<u>2</u>	<u>0</u>	<u>1</u>	<u>3</u>
226 Mahogany-Banksia Heath	13310	9830	73.9	-	45.5	3.1	0.1	48.7	<u>51</u>	<u>0</u>	<u>0</u>	<u>51</u>
227 Turpentine-Myrtle	15805	15745	99.6	-	72.6	3.2	1.0	76.8	<u>73</u>	<u>3</u>	<u>2</u>	<u>78</u>
228 Turpentine-Oak-Myrtle	15234	13833	90.8	-	55.2	2.3	1.7	59.2	<u>55</u>	<u>2</u>	<u>2</u>	<u>59</u>
229 Roughbarked Apple-Forest Oak	40244	33615	83.5	-	49.0	4.9	0.2	54.1	<u>52</u>	<u>3</u>	<u>0</u>	<u>55</u>
230 Watagan Blackbutt-Blue Gum	17059	13664	80.1	-	11.2	3.4	3.5	18.1	<u>24</u>	<u>4</u>	<u>4</u>	<u>33</u>
231 Watagan Blue Gum	17524	16218	92.6	-	14.8	11.9	4.3	30.9	<u>26</u>	<u>13</u>	<u>3</u>	<u>43</u>
232 Watagan Spotted Gum-Ironbark-White Mahogany*	9232	8609	93.3	-	3.7	4.5	4.0	12.2	<u>30</u>	<u>5</u>	<u>1</u>	<u>35</u>
233 Roundleaved Gum - Turpentine	10605	8565	80.8	-	21.7	4.4	1.2	27.3	21.7 [^]	4.4 [^]	1.2 [^]	27.3 [^]
234 Grey Gum - Grey Myrtle	36947	35600	96.4	-	53.9	6.1	2.1	62.0	<u>55</u>	<u>7</u>	<u>2</u>	<u>64</u>
235 Wet Roundleaved Gum Forest	2710	2637	97.3	-	80.2	1.0	0.3	81.5	<u>81</u>	<u>0</u>	<u>0</u>	<u>82</u>
236 Bangalay-Blue Gum	16055	14197	88.4	-	27.2	27.2	0.0	54.4	<u>48</u>	<u>6</u>	<u>0</u>	<u>54</u>
237 Wollemi Manna Gum	2285	2260	98.9	-	94.1	0.5	0.0	94.6	<u>94</u>	<u>1</u>	<u>0</u>	<u>95</u>
238 Tablelands Grey Gum-Scribbly Gum	218	210	96.3	R	96.3	0.0	0.0	96.3	<u>96</u>	<u>0</u>	<u>0</u>	<u>96</u>
239 Wollemi Roughbarked Apple	13174	6021	45.7	-	15.9	3.9	0.0	19.9	<u>21</u>	<u>0</u>	<u>0</u>	<u>21</u>
240 Roughbarked Apple-Redgum*	331	316	95.5	R	29.6	4.0	0.0	33.6	<u>35</u>	<u>2</u>	<u>0</u>	<u>38</u>
241 Ironbark-Redgum*	13378	2550	19.1	V	1.6	0.0	0.0	1.6	<u>2</u>	<u>0</u>	<u>0</u>	<u>2</u>
242 Hunter Grey Box	16739	12040	71.9	-	31.6	1.8	0.0	33.4	<u>33</u>	<u>0</u>	<u>0</u>	<u>33</u>
243 Grey Gum-Mugga Ironbark	3559	2988	84.0	-	57.1	0.0	0.0	57.1	<u>58</u>	<u>0</u>	<u>0</u>	<u>58</u>
244 White Box-Grey Gum	2419	1818	75.2	-	36.1	5.2	3.6	44.9	<u>38</u>	<u>0</u>	<u>4</u>	<u>41</u>
245 Grey Box	5832	1024	17.6	V	10.4	0.0	0.0	10.4	<u>10</u>	<u>0</u>	<u>0</u>	<u>10</u>
246 Scribbly Gum-Redgum Woodland	8259	3141	38.0	-	20.0	0.0	0.0	20.0	<u>21</u>	<u>0</u>	<u>0</u>	<u>21</u>
247 Coastal Bastard Mahogany Forest*	32848	18002	54.8	-	7.1	3.2	0.6	10.9	<u>14</u>	<u>0</u>	<u>0</u>	<u>14</u>
248 Apple-Forest Oak	12254	7508	61.3	-	17.8	1.3	0.2	19.2	<u>21</u>	<u>1</u>	<u>0</u>	<u>21</u>
249 White Box-Ironbark-Red Gum*	156637	26170	16.7	V	2.3	0.2	0.0	2.5	<u>2</u>	<u>0</u>	<u>0</u>	<u>2</u>

Forest Ecosystems ^b	Area		Percent Remaining as at 2000	Status ^c as at 2000	Percent of Forest Ecosystem (pre-1750) extant in the CAR Reserve System as at 2000				Percent of Forest Ecosystem (pre-1750) extant in the CAR Reserve System ^f			
	Pre 1750 (ha)	Current As at 2000 (ha)			Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total	Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total
250 Banksia Heath-Scribbly Gum-Apple*	21544	10795	50.1	-	0.3	1.5	0.3	2.1	4	0	0	4

Non-Forest Ecosystems ^b	Area		Percent Remaining as at 2000	Status ^c as at 2000	Percent of Non-Forest Ecosystem (pre-1750) extant in the CAR Reserve System as at 2000				Percent of Non-Forest Ecosystem (pre-1750) extant in the CAR Reserve System as at December 2017 ^f			
	Pre 1750 (ha)	Current As at 2000 (ha)			Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total	Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total
5 Banksia*	8786	4196	47.8	V	16.0	0.0	0.0	16.1	22	0	0	22
18 Casuarina Woodland*	NA	362	NA	R	NA	NA	NA	NA	NA	NA	NA	NA
64 Heath*	NA	14286	NA	R	NA	NA	NA	NA	NA	NA	NA	NA
66 Herbfield and Fjaeldmark	NA	2	NA	R	NA	NA	NA	NA	NA	NA	NA	NA
77 Mangrove*	NA	1001	NA	R	NA	NA	NA	NA	NA	NA	NA	NA
96 Natural Grassland	NA	138	NA	R	NA	NA	NA	NA	NA	NA	NA	NA
121 Rock	NA	6576	NA	-	NA	NA	NA	NA	NA	NA	NA	NA
125 Saltbush*	187	200	107.0	R	0.0	0.5	0.1	0.5	0	0	0	0
141 Swamp	NA	9130	NA	R	NA	NA	NA	NA	NA	NA	NA	NA
169 Scrub	NA	3073	NA	V	NA	NA	NA	NA	NA	NA	NA	NA
199 Riparian Shrubland*	6978	1172	16.8	V	0.1	0.1	0.0	0.2	0	0	0	0

NOTES ACCOMPANYING TABLE 1

- The figures shown in this table are based on modelled information mapped at a scale of 1:25 000 derived during the pre-1750 analysis of vegetation types in the Upper North East and Lower North East regions, and are therefore only approximate. Those ecosystems with 'NA' listed under Pre-1750 (ha) were not modelled to determine their pre-1750 extent (refer to CRA project report NA35/EH).
- Forest Ecosystems are as described in the documents *Forest Ecosystem Classification and Mapping for the Upper and Lower North East CRA Regions* CRA Unit, Northern Zone National Parks and Wildlife Service. (Project NA35/EH January 1999), and *Forest Ecosystem Classification and Mapping for the Hunter Sub-Region in the Lower North East Comprehensive Regional Assessment*. Project Numbers NL 10/EH & NL 02/EH (March 1999).
- The status is based on: Rare (R) which has a total current area below 1000 hectares and a target of 100% of its current distribution. Endangered (E) which has < 10% remaining and a target of 100% of its current distribution. Vulnerable (V) which has between 10-30% remaining and a target of 60% of its current distribution. Some values were given their rare, endangered or vulnerable status due to other factors such as range of distribution, patch size and expert opinion on vulnerability. All remaining Forest Ecosystems have a target of 15% of their pre-1750 distribution.
- Informal Reserve includes Special Management Zones that are > 40ha and > 200m wide, or that are adjacent to Dedicated Reserves.
- Tabulated prescriptions include those elements of the Special Management Zone that, due to size or shape, do not meet the Informal Reserve Category outlined above, and the Harvesting Exclusions Zone.

f. Source: compiled by ABARES from RFA data, including data from CRA reports, IFOAs, NPWS and FCNSW.

* These Forest Ecosystems have been identified as priorities for protection on Private Land (see Attachment 2).

NA Pre-1750 distribution was not able to be predicted.

^ The figure supplied by ABARES has been amended by DPI to address inconsistencies resulting from changes in spatial analysis systems and processes over time.

Table 2. Representative Conservation of Candidate Old Growth forest in the CAR Reserve System as at 2000 and December 2017 in the Lower North East region^a

Forest Ecosystem	Area of Forest Ecosystem (ha) as at 2000	Percent of Forest Ecosystem as Old Growth ^b as at 2000	Area Old Growth (ha) as at 2000	Percent of Candidate Old Growth forest in the CAR Reserve System				Percent of Old Growth forest in the CAR Reserve System as at December 2017 ^e			
				Dedicated Reserve	Informal Reserve ^c	Prescription ^d	Total	Dedicated Reserve	Informal Reserve ^c	Prescription ^d	Total
2 OG Alpine Gum	3971	23.5	932	60.1	9.5	2.7	72.3	76	0	2	78
3 OG Baileys Stringybark	285	43.5	124	70.8	0.0	0.0	70.8	100	0	0	100
6 OG Barrington Dry Shrubby New England Blackbutt-Blue Gum	3227	52.0	1676	51.4	6.4	4.7	62.4	82	6	6	94
7 OG Barrington Moist Blue Gum-White Mahogany	32659	7.9	2582	24.4	6.5	14.4	45.3	62	2	17	81
8 OG Barrington Wet New England Blackbutt-Blue Gum	45911	18.8	8636	39.9	7.7	5.0	52.6	65	9	12	86
10 OG Black Sallee	2	32.0	1	100.0	0.0	0.0	100.0	100	0	0	100
11 OG Blackbutt-Sydney Peppermint-Smoothbarked Apple	1382	24.9	344	59.9	40.1	0.0	100.0	93	0	0	93
13 OG Blue-leaved Stringybark	25	95.7	24	97.0	0.0	0.0	97.0	100	0	0	100
14 OG Brown Barrell	814	17.8	145	57.5	0.0	10.4	68.0	85	0	2	86
15 OG Brown Barrell-Gum	8711	20.4	1775	50.9	4.9	7.2	63.0	78	1	4	82
17 OG Candlebark	20	6.4	1	0.0	0.0	0.0	0.0	100	0	0	100
19 OG Central Mid Elevation Sydney Blue Gum	40971	14.1	5775	37.3	7.2	9.8	54.3	73	4	7	84
20 OG Clarence Lowland Needlebark Stringybark	81	18.6	15	100.0	0.0	0.0	100.0	100	0	0	100
21 OG Lowlands Grey Box	1219	60.7	740	62.2	0.1	0.0	62.3	73	0	0	73
23 OG Coast Range Bloodwood-Mahogany	564	21.4	121	95.6	0.0	0.6	96.2	97	0	0	97
25 OG Coast Range Spotted Gum-Blackbutt	25	27.8	7	100.0	0.0	0.0	100.0	NA	NA	NA	NA
26 OG Coastal Flooded Gum	8753	7.0	610	31.7	11.1	4.6	47.5	63	5	1	70
27 OG Coastal Sands Blackbutt	17312	45.0	7781	73.6	0.2	0.0	73.9	99	0	0	99
28 OG Cool Moist Messmate	6467	13.9	901	63.0	5.3	7.7	75.9	67	6	3	76
29 OG Corkwood-Crabapple and Mixed Stringybarks	2293	38.0	872	62.8	1.1	7.7	71.6	85	1	2	88
30 OG Diehard Stringybark-New England Blackbutt	43510	56.8	24726	63.0	9.8	4.0	76.8	88	1	3	91
31 OG Dorrigo White Gum	1123	18.0	202	20.8	1.5	13.4	35.8	27	0	34	60
32 OG Dry Foothills Blackbutt-Turpentine	33592	16.3	5481	33.3	5.1	10.3	48.7	55	7	7	69
33 OG Dry Foothills Spotted Gum	17688	30.2	5334	21.1	1.2	1.6	23.9	61	0	4	65

Forest Ecosystem	Area of Forest Ecosystem (ha) as at 2000	Percent of Forest Ecosystem as Old Growth ^b as at 2000	Area Old Growth (ha) as at 2000	Percent of Candidate Old Growth forest in the CAR Reserve System				Percent of Old Growth forest in the CAR Reserve System as at December 2017 ^c			
				Dedicated Reserve	Informal Reserve ^c	Prescription ^d	Total	Dedicated Reserve	Informal Reserve ^c	Prescription ^d	Total
34 OG Dry Grassy Blackbutt-Tallowwood	59390	9.3	5504	31.6	2.1	4.9	38.5	57	0	1	58
35 OG Dry Grassy Stringybark	97614	46.6	45446	37.3	3.0	3.2	43.5	67	4	3	74
36 OG Dry Grassy Tallowwood-Grey Gum	178516	19.1	34124	37.2	11.8	5.9	54.9	59	5	4	68
37 OG Dry Heathy Blackbutt-Bloodwood	2889	39.6	1144	67.3	3.5	2.3	73.1	89	4	1	94
38 OG Dry Heathy New England Blackbutt	528	52.8	279	86.5	3.5	8.5	98.6	86	0	7	93
39 OG Dry Heathy New England Stringybarks	15	31.2	5	100.0	0.0	0.0	100.0	NA	NA	NA	NA
41 OG Dry Open New England Blackbutt	32932	38.8	12786	25.9	1.4	13.5	40.9	62	3	8	73
42 OG Dry Redgum-Bloodwood-Apple	69509	38.8	26960	48.3	1.9	0.9	51.1	67	2	2	71
43 OG Dry Silvertop Stringybark-Apple	14918	63.7	9497	47.0	2.2	0.6	49.8	69	2	1	72
44 OG Dry open Redgum-Broad Leaved Apple	2291	90.0	2061	52.0	1.3	0.0	53.4	65	0	0	65
46 OG Eastern Red Gums	38	29.3	11	10.4	0.0	0.0	10.4	100	0	0	100
47 OG Escarpment Redgum	20498	27.2	5582	15.9	4.0	3.7	23.6	65	6	9	80
48 OG Escarpment Scribbly Gum-Apple	7574	41.9	3174	51.7	1.0	0.0	52.7	79	0	0	80
49 OG Escarpment Tallowwood-Bloodwood	49918	44.1	21998	47.6	9.4	4.8	61.7	69	6	6	81
50 OG Wet Bangalow-Brushbox	3614	43.1	1557	44.2	1.9	2.0	48.0	86	3	2	90
51 OG Eurabbie	276	76.9	212	87.5	1.4	0.0	88.9	93	0	0	93
53 OG Gorge Grey Box	6034	85.5	5156	51.8	0.8	0.7	53.3	72	0	1	73
54 OG Grey Box-Red Gum-Grey Ironbark	19838	39.5	7837	85.2	0.3	0.4	85.9	93	0	0	93
55 OG Foothills Grey Gum-Spotted Gum	2438	28.6	698	13.0	10.0	21.0	44.0	47	0	18	65
56 OG Granite Mallee	4025	39.4	1586	30.4	2.5	3.1	36.1	67	4	2	72
57 OG Highland Granite Stringybarks	924	41.5	383	43.2	0.2	8.1	51.5	72	0	8	81
58 OG Gorge Grey Gum	51	95.3	49	56.1	6.2	0.0	62.3	65	0	0	65
60 OG Grassy New England Blackbutt-Tallowwood-Blue Gum	33586	46.8	15722	58.6	5.4	4.1	68.1	73	3	3	79
63 OG Grey Gum-Stringybark	16056	67.1	10768	43.7	5.2	1.1	50.0	73	0	2	75
65 OG Heathy Scribbly Gum	23471	38.2	8960	78.4	16.0	3.4	97.8	91	4	2	98
67 OG High Elevation Ferny Blackbutt	30899	37.0	11441	63.6	5.0	5.3	73.9	84	2	3	89
68 OG High Elevation Messmate-Brown Barrell	15974	9.6	1538	25.1	32.7	23.1	80.8	75	1	9	85

Forest Ecosystem	Area of Forest Ecosystem (ha) as at 2000	Percent of Forest Ecosystem as Old Growth ^b as at 2000	Area Old Growth (ha) as at 2000	Percent of Candidate Old Growth forest in the CAR Reserve System				Percent of Old Growth forest in the CAR Reserve System as at December 2017 ^c			
				Dedicated Reserve	Informal Reserve ^c	Prescription ^d	Total	Dedicated Reserve	Informal Reserve ^c	Prescription ^d	Total
69 OG High Elevation Moist Open Tallowwood-Blue Gum	27141	43.1	11698	58.8	5.4	3.0	67.2	80	3	3	86
70 OG High Elevation Open Spotted Gum	12	15.0	2	0.0	0.0	0.0	0.0	0	0	0	0
71 OG Ironbark	89985	33.2	29876	71.6	5.6	1.4	78.6	94	1	3	98
72 OG Low Relief Coastal Blackbutt	10894	5.8	633	16.8	5.7	2.9	25.4	28	4	2	33
73 OG Lowland Red Gum	366	33.4	122	44.5	16.2	21.6	82.3	53	9	32	94
74 OG Lowlands Scribbly Gum	9724	50.2	4881	96.5	0.5	0.5	97.5	97	1	0	98
76 OG Coastal Mallee	801	15.1	121	89.1	0.0	0.0	89.1	100	0	0	100
79 OG Manna Gum-Stringybark	632	20.8	131	51.1	0.0	2.6	53.8	84	3	0	86
80 OG Manna Gum	3852	14.5	557	42.6	4.8	14.9	62.3	70	5	4	79
81 OG Messmate	20291	9.4	1912	52.3	2.6	9.1	63.9	63	5	3	71
82 OG Messmate-Mountain Gum Forest	8537	16.6	1416	84.4	0.6	3.8	88.7	78	1	3	82
83 OG Mid Elevation Wet Blackbutt	6981	29.5	2058	54.3	24.8	7.6	86.7	72	15	5	92
84 OG Mid North Coast Wet Brushbox-Tallowwood-Blue Gum	31917	30.9	9850	53.7	11.2	6.8	71.7	79	5	4	88
85 OG Mixed Moist Hardwood	232	0.0	0	0.0	0.0	0.0	0.0	NA	NA	NA	NA
87 OG Mixed Tableland Stringybark-Gum OpenForest	7897	16.0	1259	54.7	6.6	8.2	69.5	71	8	2	81
88 OG Moist Escarpment New England Blackbutt	22579	57.4	12954	72.6	9.9	6.4	88.8	85	3	5	93
89 OG Moist Foothills Spotted Gum	7929	8.3	657	13.9	6.4	21.2	41.5	42	0	16	58
90 OG Moist Messmate-Gum	78	35.6	28	6.8	3.6	1.3	11.7	40	0	40	80
91 OG Moist Open Escarpment White Mahogany	38495	49.4	19026	60.9	3.2	3.2	67.2	79	3	3	85
92 OG Moist Shrubby Stringybark-Gum	423	24.1	102	46.4	6.2	3.8	56.3	81	1	1	83
93 OG Montane Stringybark-Gum	2567	18.7	480	37.0	0.0	27.3	64.3	84	0	0	84
94 OG Mountain Gum-Brown Barrell	3196	36.3	1159	97.6	0.0	0.0	97.6	100	0	0	100
97 OG Needlebark Stringybark-Large Fruited Blackbutt	502	18.5	93	53.7	0.5	0.0	54.1	73	0	0	73
98 OG New England Peppermint	656	81.3	533	97.3	0.0	0.0	97.3	97	0	0	97
99 OG New England Stringybark-Blakelys Red Gum	28245	44.2	12469	41.8	0.9	0.7	43.5	71	0	0	71
105 OG Nymboida Tallowwood-Turpentine	248	25.4	63	7.0	13.2	54.0	74.2	61	11	0	72
106 OG Open Coastal Brushbox	64878	34.3	22254	23.8	8.9	6.0	38.7	61	8	7	75

Forest Ecosystem	Area of Forest Ecosystem (ha) as at 2000	Percent of Forest Ecosystem as Old Growth ^b as at 2000	Area Old Growth (ha) as at 2000	Percent of Candidate Old Growth forest in the CAR Reserve System				Percent of Old Growth forest in the CAR Reserve System as at December 2017 ^c			
				Dedicated Reserve	Informal Reserve ^c	Prescription ^d	Total	Dedicated Reserve	Informal Reserve ^c	Prescription ^d	Total
107 OG Open Messmate-New England Blackbutt	12151	27.2	3302	80.2	7.7	2.8	90.7	<u>93</u>	<u>4</u>	<u>1</u>	<u>98</u>
108 OG Open Ribbon Gum	24537	36.6	8987	41.4	8.3	20.9	70.6	<u>68</u>	<u>2</u>	<u>15</u>	<u>86</u>
109 OG Open Shrubby Brushbox-Tallowwood	2887	32.7	944	43.6	1.2	1.1	45.9	<u>82</u>	<u>1</u>	<u>4</u>	<u>86</u>
110 OG Open Silvertop Stringybark-Blue Gum	53990	23.7	12786	49.8	8.3	8.1	66.2	<u>71</u>	<u>8</u>	<u>6</u>	<u>85</u>
111 OG Open Silvertop Stringybark-Tallowwood	1889	38.5	727	61.0	4.5	1.5	67.0	<u>89</u>	<u>1</u>	<u>0</u>	<u>90</u>
113 OG Peppermint	13115	40.5	5311	49.7	0.8	2.9	53.3	<u>83</u>	<u>1</u>	<u>1</u>	<u>85</u>
114 OG Peppermint-Mountain/Manna Gum	5736	35.8	2054	49.6	0.1	5.3	55.0	<u>91</u>	<u>0</u>	<u>0</u>	<u>91</u>
115 OG Red Bloodwood	5	87.2	4	95.4	0.0	0.0	95.4	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>
116 OG Red Gum-Stringybark	12238	32.1	3923	0.1	0.2	0.0	0.3	<u>25</u>	<u>0</u>	<u>0</u>	<u>25</u>
122 OG Rough-barked Apples	2636	34.0	896	49.1	0.0	0.1	49.3	<u>93</u>	<u>0</u>	<u>0</u>	<u>93</u>
123 OG Roundleaved Gum	172	17.3	30	10.1	0.0	21.7	31.8	<u>43</u>	<u>0</u>	<u>14</u>	<u>57</u>
124 OG Roundleaved Gum-Turpentine	59	85.9	51	51.7	0.0	0.0	51.7	<u>100</u>	<u>0</u>	<u>0</u>	<u>100</u>
129 OG Smoothbarked Apple	18751	7.5	1412	81.3	1.4	12.6	95.3	<u>80</u>	<u>1</u>	<u>15</u>	<u>96</u>
130 OG Smoothbarked Apple-Sydney Peppermint-Stringybark	9517	21.1	2009	4.1	0.0	33.9	38.1	<u>59</u>	<u>0</u>	<u>8</u>	<u>67</u>
131 OG Snow Gum	4433	45.9	2035	91.7	1.6	2.2	95.5	<u>97</u>	<u>0</u>	<u>1</u>	<u>97</u>
132 OG Snow Gum -Mountain/Manna Gum	23120	29.0	6698	46.1	1.2	1.1	48.4	<u>94</u>	<u>0</u>	<u>2</u>	<u>96</u>
133 OG Snow Gum-Black Sallee	16	56.5	9	100.0	0.0	0.0	100.0	<u>100</u>	<u>0</u>	<u>0</u>	<u>100</u>
134 OG South Coast Shrubby Grey Gum	151030	7.5	11329	18.6	7.8	5.8	32.2	<u>61</u>	<u>1</u>	<u>2</u>	<u>65</u>
135 OG South Coast Tallowwood-Blue Gum	71217	14.6	10374	30.6	7.9	7.6	46.0	<u>67</u>	<u>5</u>	<u>5</u>	<u>77</u>
137 OG Southern Wet Sydney Blue Gum	41695	15.9	6613	44.6	6.1	13.2	63.9	<u>65</u>	<u>4</u>	<u>11</u>	<u>80</u>
138 OG Steel Box/Craven Grey Box	125	16.3	20	0.0	0.0	42.8	42.8	<u>100</u>	<u>0</u>	<u>0</u>	<u>100</u>
139 OG Stringybark-Apple	81300	49.1	39882	40.9	1.2	1.6	43.7	<u>74</u>	<u>1</u>	<u>2</u>	<u>76</u>
140 OG Stringybark-Mallee	665	30.2	201	92.3	0.0	1.3	93.5	<u>98</u>	<u>0</u>	<u>0</u>	<u>98</u>
142 OG Swamp Mahogany	2177	13.1	285	42.8	4.0	3.7	50.5	<u>90</u>	<u>5</u>	<u>1</u>	<u>95</u>
145 OG Sydney Peppermint-Stringybark	13778	67.0	9225	92.4	0.7	0.0	93.2	<u>97</u>	<u>1</u>	<u>0</u>	<u>99</u>
146 OG Tallowwood	746	79.3	591	50.4	1.3	0.3	52.1	<u>64</u>	<u>0</u>	<u>0</u>	<u>64</u>
147 OG Turpentine	235	21.5	51	42.0	0.0	0.0	42.0	<u>100</u>	<u>0</u>	<u>0</u>	<u>100</u>

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				Dedicated Reserve	Informal Reserve ^c	Prescription ^d	Total	Dedicated Reserve	Informal Reserve ^c	Prescription ^d	Total
148 OG Very Wet New England Blackbutt-Tallowwood	2867	55.7	1596	84.4	6.9	3.5	94.7	90	5	2	97
149 OG Mallee-Peppermint mosaic	3621	33.6	1216	35.4	1.8	7.3	44.4	63	3	1	66
153 OG Wet Coastal Tallowwood-Brushbox	10245	5.2	529	26.8	1.8	9.0	37.7	40	2	2	44
154 OG Wet Flooded Gum-Tallowwood	6161	4.1	252	33.8	2.9	8.1	44.9	47	1	5	54
155 OG Wet Foothills Blackbutt-Turpentine	50264	16.5	8282	42.0	11.8	9.7	63.5	72	4	5	80
156 OG Wet New England Blackbutt-Silvertop Stringybark	15604	28.4	4437	72.3	7.9	1.3	81.5	89	2	3	94
157 OG Wet Shrubby Brushbox-Tallowwood	30589	43.2	13214	45.7	8.4	4.5	58.6	78	5	5	88
162 OG Whitetopped Box	967	27.0	261	75.0	1.7	3.8	80.4	93	2	2	96
163 OG Yellow Box-Blakely's Red Gum	2696	20.2	543	1.2	0.0	0.0	1.2	60	0	0	60
174 OG Orange Gum-Tumbledown Gum-Apple	10169	46.7	4753	2.4	1.8	0.0	4.1	2.4 [^]	1.8 [^]	0.0 [^]	4.1 [^]
175 OG Orange Gum-New England Blackbutt-Tumbledown Gum	23572	38.1	8983	1.3	4.3	0.0	5.5	43	0	0	43
176 OG Orange Gum-Ironbark	6636	18.5	1230	0.1	0.0	0.0	0.1	50	0	0	50
177 OG Outcrop Orange Gum-New England Blackbutt	3170	26.1	828	4.5	0.0	0.0	4.5	71	0	0	71
178 OG Outcrop Black Cypress-Tumbledown Gum	659	39.1	257	0.0	0.0	0.0	0.0	0	0	0	0
179 OG Yellow Box-Broad-leaved Stringybark	273	36.9	101	6.2	0.0	0.0	6.2	NA	NA	NA	NA
182 OG Apple-Black Cypress	14635	25.2	3690	1.1	0.1	0.0	1.2	39	0	0	39
183 OG Red Gum-Apple	4065	43.8	1778	84.9	0.1	0.1	85.1	99	0	0	99
184 OG Tumbledown Gum-Ironbark	160	25.3	40	0.0	0.0	0.0	0.0	NA	NA	NA	NA
186 OG Open Tumbledown Gum-Black Cypress-Orange Gum	7959	26.0	2069	1.5	0.7	0.0	2.2	45	0	0	45
189 OG Silverleaved Ironbark-Cypress	2007	28.2	565	0.0	0.0	0.0	0.0	0	0	0	0
190 OG Yellow Box-Grey Box-Red Gum	7724	21.4	1653	11.0	0.0	0.0	11.0	98	0	0	98
195 OG Apple-Manna Gum woodland	6638	31.4	2086	2.8	1.7	0.0	4.4	48	0	0	48
196 OG Broad-leaved Stringybark-Apple Box	10442	27.0	2819	3.1	0.6	0.0	3.7	56	0	0	56
197 OG Broad-leaved Stringybark	1346	23.9	322	4.7	0.0	0.0	4.7	58	0	0	58
198 OG Silvertop Stringybark	1501	26.5	397	9.2	0.0	0.0	9.2	86	0	0	86
200 OG Broad-leaved Stringybark-Ribbon Gum	7	30.3	2	47.2	0.0	0.0	47.2	NA	NA	NA	NA
202 OG Peppermint-Apple-Turpentine	36556	64.7	23654	90.5	8.5	0.3	99.3	99	0	0	99

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				Dedicated Reserve	Informal Reserve ^c	Prescription ^d	Total	Dedicated Reserve	Informal Reserve ^c	Prescription ^d	Total
203 OG Grey Gum-Stringybark-Apple	37492	73.4	27511	97.4	1.5	0.0	99.0	100	0	0	100
204 OG Grey Gum - Scribbly Gum	18871	82.6	15587	99.8	0.1	0.0	99.8	100	0	0	100
205 OG Peppermint-Silvertop Ash-Stringybark	1309	67.3	881	100.0	0.0	0.0	100.0	100	0	0	100
206 OG Apple-Grey Gum-Turpentine	28264	42.6	12030	84.1	12.9	1.1	98.0	96	0	2	98
207 OG Hunter Spotted Gum-Ironbark	25740	0.1	32	11.3	38.0	45.6	94.9	97	0	0	97
208 OG Hunter Roughbarked Apple- Red Gum	8876	7.4	655	77.9	20.4	0.0	98.3	92	1	0	93
209 OG Yellow Bloodwood-Stringybark	52329	55.6	29118	96.6	1.5	0.3	98.4	99	0	0	99
210 OG Yellow Bloodwood-Ironbark	29520	49.9	14733	90.9	8.8	0.2	99.9	98	1	0	99
211 OG Apple-Turpentine	21680	69.1	14990	69.3	30.6	0.0	100.0	98	2	0	100
212 OG Yellow Bloodwood-Narrowleaved Apple	57711	65.1	37582	85.7	14.1	0.0	99.8	99	1	0	100
213 OG Stringybark-Scribbly Gum Woodland	9196	85.0	7814	99.9	0.0	0.0	99.9	100	0	0	100
214 OG Brown Bloodwood-Dwyers Redgum	1862	67.7	1261	79.4	0.0	0.0	79.4	99	0	0	99
215 OG Brown Bloodwood-Ironbark	11650	83.3	9705	99.5	0.0	0.0	99.5	100	0	0	100
216 OG Sandstone Ironbark	12427	60.8	7560	99.9	0.0	0.0	99.9	100 [^]	0	0	100 [^]
217 OG Grey Gum-Stringybark	30921	85.0	26277	99.2	0.0	0.0	99.2	100	0	0	100
218 OG Ironbark-Stringybark	15843	65.5	10373	50.4	0.0	0.0	50.4	99	0	0	99
219 OG Brown Bloodwood	8905	50.8	4521	78.7	0.0	0.0	78.7	97	0	0	97
220 OG Yellow Bloodwood-Stringybark-Narrowleaved Apple	39881	65.6	26154	84.9	15.1	0.0	100.0	99	1	0	100
221 OG Apple-Red Bloodwood-Peppermint-Turpentine	23923	59.2	14168	93.5	5.6	0.6	99.7	98	1	0	99
222 OG Stringybark-Mallee Woodland	7084	83.9	5940	99.9	0.0	0.0	99.9	100	0	0	100
223 OG Dwarf Apple Forest	20238	72.1	14583	66.6	31.3	0.0	97.9	99	1	0	100
225 OG Wyong Apple-Scribbly Gum	3768	0.7	27	0.0	0.0	100.0	100.0	0	0	100	100
226 OG Mahogany-Banksia Heath	9830	54.0	5312	97.9	2.0	0.1	100.0	99	0	0	99
227 OG Turpentine-Myrtle	15745	64.3	10115	97.8	0.7	0.5	99.1	98	0	1	100
228 OG Turpentine-Oak-Myrtle	13833	62.6	8658	82.3	0.1	0.6	83.0	98	0	1	99
229 OG Roughbarked Apple-Forest Oak	33615	52.5	17641	94.2	3.2	0.0	97.4	99	0	0	99
230 OG Watagan Blackbutt-Blue Gum	13664	4.4	605	44.0	12.3	23.4	79.7	56	12	20	87

Forest Ecosystem	Area of Forest Ecosystem (ha) as at 2000	Percent of Forest Ecosystem as Old Growth ^b as at 2000	Area Old Growth (ha) as at 2000	Percent of Candidate Old Growth forest in the CAR Reserve System				Percent of Old Growth forest in the CAR Reserve System as at December 2017 ^c			
				Dedicated Reserve	Informal Reserve ^c	Prescription ^d	Total	Dedicated Reserve	Informal Reserve ^c	Prescription ^d	Total
231 OG Watagan Blue Gum	16218	3.2	524	51.7	16.7	23.4	91.7	66	8	22	96
232 OG Watagan Spotted Gum-Ironbark-White Mahogany	8609	2.4	202	36.9	4.0	43.7	84.6	79	0	11	90
233 OG Roundleaved Gum - Turpentine	8565	22.4	1922	96.2	2.2	0.9	99.3	96 [^]	2	1	99 [^]
234 OG Grey Gum - Grey Myrtle	35600	47.8	17002	96.9	0.5	0.9	98.3	97 [^]	1	2	99
235 OG Wet Roundleaved Gum Forest	2637	73.0	1924	97.9	1.2	0.4	99.4	99	0	0	99
236 OG Bangalay-Blue Gum	14197	49.0	6961	53.2	45.7	0.0	98.9	94	5	0	99
237 OG Wollemi Manna Gum	2260	83.1	1878	100.0	0.0	0.0	100.0	100	0	0	100
238 OG Tablelands Grey Gum-Scribbly Gum	210	92.4	194	100.0	0.0	0.0	100.0	100	0	0	100
239 OG Wollemi Roughbarked Apple	6021	34.4	2073	79.0	20.7	0.0	99.7	97	0	0	97
240 OG Roughbarked Apple-Redgum	316	28.3	89	89.9	10.1	0.0	100.0	95	5	0	100
241 OG Ironbark-Redgum	2550	31.0	789	21.9	0.0	0.0	21.9	95	0	0	95
242 OG Hunter Grey Box	12040	48.6	5853	74.1	0.7	0.0	74.8	99	0	0	99
243 OG Grey Gum-Mugga Ironbark	2988	57.4	1716	99.9	0.0	0.0	99.9	100 [^]	0	0	100 [^]
244 OG White Box-Grey Gum	1818	34.5	627	83.5	1.2	0.0	84.6	98	0	0	98
245 OG Grey Box	1024	50.3	515	100.0	0.0	0.0	100.0	100 [^]	0	0	100 [^]
246 OG Scribbly Gum-Redgum Woodland	3141	44.3	1393	100.0	0.0	0.0	100.0	100 [^]	0	0	100 [^]
247 OG Coastal Bastard Mahogany Forest	18002	14.9	2677	70.2	27.1	2.7	100.0	97	0	1	98
248 OG Apple-Forest Oak	7508	24.8	1863	96.5	2.6	0.6	99.7	97	0	1	98
249 OG White Box-Ironbark-Red Gum	26170	19.0	4971	44.3	0.4	0.0	44.7	97	0	0	97
250 OG Banksia Heath-Scribbly Gum-Apple	10795	0.9	94	20.1	63.0	15.0	98.1	84	0	13	97

NOTES ACCOMPANYING TABLE 2

- The figures shown in this table are based on modelled information mapped at a scale of 1:25 000 derived during the pre-1750 analysis of vegetation types in the Upper North East and Lower North East regions, and are therefore only approximate.
- Old growth Forest Ecosystems are referred to as Candidate old growth because time constraints and availability of data sets did not allow for the full assessment of values characteristic of old growth forests (eg. some structural, compositional and functional characteristics and aesthetic values). Candidate old growth forest was identified primarily by aerial photographic interpretation, and information on disturbance from logging and fire. Further information is available in the report *Old-Growth Forest Related Projects – UNE / LNE CRA Regions*. National Parks and Wildlife Service (Part of Project NA28/EHFebruary 1999).
- Informal Reserve includes Special Management Zones that are > 40ha and > 200m wide, or that are adjacent to Dedicated Reserves.

d. Tabulated prescriptions include those elements of the Special Management Zone that, due to the size or shape, do not meet the Informal Reserve Category outlined above, and the Harvesting Exclusions Zone.

e. Source: compiled by ABARES from RFA data, including data from CRA reports, IFOAs, NPWS and FCNSW

^ The figure supplied by ABARES has been amended by DPI to address inconsistencies resulting from changes in spatial analysis systems and processes over time.

Wilderness

16 84% of Wilderness, as defined in the JANIS Reserve Criteria (ie National Wilderness Inventory (Lesslie and Maslen 1995) minimum rating 12 in patches greater than 8000ha), in the Lower North East region is protected within Dedicated Reserves under this Agreement. Of the Wilderness outside ~~formal reserve~~ Dedicated Reserves, 60% is on freehold or leasehold land. Informal Reserves provide a level of additional protection for Wilderness.

Additional Protection for Forest Ecosystems

17 Forestry Operations are prohibited from rare non-commercial Forest Ecosystems by the The Integrated Forestry Operations Approval for applicable to the Lower North East region ~~Region provides additional protection for Rare non-commercial Forest Types as in Research Note No. 17 Forest Types in New South Wales (Forestry Commission of New South Wales, Sydney 1989).~~ These Forest Types Ecosystems include:

30	Swamp mahogany
31	Paperbark
32	Swamp Oak
51	Dunn's white gum
52	Round-leaved gum
63	Woollybutt
98	Dorrigo white gum
101	Blue mountain ash
105	Smoothbarked-apple
119	Scribbly gum – Bloodwood
129	Rough-barked apple
130	Red bloodwood
131	Peppermint - Mountain / Manna gum

17A Forestry Operations are prohibited from Threatened Ecological Communities (TECs) by the Integrated Forestry Operations Approval applicable to the Lower North East region.

Rainforest Protection

18 Forestry Operations are prohibited from all rainforest, including a 20m buffer around any areas identified as RN 17 forest types 10 to 15, by the Integrated Forestry Operations Approval applicable to the North East Region. ~~The Integrated Forestry Operations Approval for the Lower North East Region provides additional protection for rainforest as defined in the IFOA including any area of land within 20m of the boundaries of warm temperate rainforest.~~

Old Growth forest

18B Forestry Operations are prohibited from all Old Growth forest in the Lower North East region by the Integrated Forestry Operations Approval.

Management of CAR Values

19 Management plans ~~identified in Section 2.3 of the New South Wales Lower North East Region Forest Agreement~~ for Dedicated Reserve and Informal Reserve elements of the CAR Reserve System will clearly identify the CAR Values and the actions being taken in each reserve to appropriately manage and conserve those values.

20 As an integral component of managing CAR values New South Wales agrees to implement systematic and target fauna and flora surveys in ~~dedicated~~ Dedicated Reserves and Informal Reserves to complement surveys ~~carries~~ carried out under the IFOAs. The extent of survey work undertaken will be subject to available funding.

Protections on Public Land subject to Plantation authorisation

21 For Plantations on Public Land, the Plantations and Reafforestation (Code) Regulation 2001 (NSW), contains standards for the protection of soil and water, Biodiversity, and places, objects or items of heritage significance.

ATTACHMENT 2
(clauses 54A, 56, ~~58~~, 66, 66A and Attachments 1(A) and 1(B))

PRIVATE LAND CONSERVATION

- 1 Both Parties agree that CAR Values on Private Land are complementary to the CAR Reserve System identified on Public Land.
- 2 Both Parties agree that in complementing the CAR Reserve System on Public Land, conservation on Private Land can only be voluntary.
- 2A Both Parties recognise that for Private Land to be included in the CAR Reserve System, the conservation mechanism applied must be legally binding and in-perpetuity.
- 3 Both Parties agree that the following objectives should apply to the voluntary ~~protection~~ conservation of CAR Values on Private Land:
 - to seek to maximise protection of agreed CAR Values;
 - that the processes are clearly understood by the community;
 - that real partnerships are developed;
 - that the outcomes will provide benefits for all parties; and
 - that actions must be strategic and integrated.
- 4 Both Parties agree that the most important elements in any mechanism designed to achieve conservation management on private forested land in the Upper North East and Lower North East regions are:
 - effectiveness of the outcomes;
 - ownership of the process;
 - simplicity of the process;
 - clarity of roles of the participants;
 - certainty of the outcomes;
 - flexibility in the approaches adopted; and
 - equity between participants.
- 5 Both Parties agree that a range of conservation mechanisms are applicable to Private Land. These may include mechanisms which are legally binding and in-perpetuity, or non-legally binding and/or fixed term, such as:
 - voluntary options under the Conservation Partners Program

- ~~Voluntary Conservation Agreements;~~
 - landholder initiated agreements;
 - noncontractual voluntary agreements;
 - fee for service;
 - voluntary acquisition;
 - fixed term common law contract;
 - in perpetuity common law contract;
 - community grants;
 - property management plans;
 - voluntary land and water management plans; and
 - other mechanisms that may be developed to suit individual landholders or situations.
- 6 Both Parties agree that capacity building within the private landholder estate to support individual and community decision making are prerequisites to the voluntary processes outlined above.
- 7 Consistent with clause 58, priority Forest Ecosystems for voluntary conservation on Private Land have been listed and prioritised for the Upper North East ~~Region~~ region in Table 1 and the Lower North East ~~Region~~ region in Table 2.
- 8 ~~NSW will establish Regional Vegetation Committees in the Upper North East and Lower North East regions and provide them with funding to provide for the conservation of Forest Ecosystems that are rare or non-existent on Public Lands. The areas of priority Forest Ecosystems and Non-Forest Ecosystems in the CAR Reserve System on Private Land as at June 2016 are provided in Table 3 and Table 4.~~

Table 1 Private Land priorities for the Upper North East CAR Reserve System

Priority for voluntary protection of Forest Ecosystems <u>on Private Land</u>		
<i>Forests</i>		
2 Alpine Gum	73 Lowland Red Gum	143 Swamp Oak
15 Brown Barrell-Gum	74 Lowlands Scribbly Gum	145 Sydney Peppermint-Stringybark
17 Candlebark	79 Manna Gum-Stringybark	149 Mallee-Peppermint mosaic
19 Central Mid Elevation Sydney Blue Gum	80 Manna Gum	154 Wet Flooded Gum-Tallowwood
21 Lowlands Grey Box	81 Messmate	163 Yellow Box-Blakely's Red Gum
22 Coast Cypress Pine	85 Mixed Moist Hardwood	168 Rainforest
24 Clarence Lowlands Spotted Gum	87 Mixed Tableland Stringybark-Gum OpenForest	175 Orange Gum-New England Blackbutt-Tumbledown Gum
25 Coast Range Spotted Gum-Blackbutt	93 Montane Stringybark-Gum	176 Orange Gum-Ironbark
30 Diehard Stringybark-New England Blackbutt	100 Northern Grassy Sydney Blue Gum	177 Outcrop Orange Gum-New England Blackbutt

31 Dorrigo White Gum	112 Paperbark	179 Yellow Box-Broad-leaved Stringybark
36 Dry Grassy Tallowwood-Grey Gum	114 Peppermint-Mountain/Manna Gum	183 Red Gum-Apple
45 Dunns White Gum	116 Red Gum-Stringybark	186 Open Tumbledown Gum-Black Cypress-Orange Gum
47 Escarpment Redgum	119 Richmond Range Spotted Gum-Box	190 Yellow Box-Grey Box-Red Gum
50 Wet Bangalow-Brushbox	120 River Oak	195 Apple-Manna Gum woodland
61 Grey Box-Ironbark	123 Roundleaved Gum	196 Broad-leaved Stringybark-Apple Box
62 Grey Box-Northern Grey Gum	126 Sandstone Spotted Gum-Blackbutt	197 Broad-leaved Stringybark
68 High Elevation Messmate-Brown Barrell	132 Snow Gum -Mountain/Manna Gum	198 Silvertop Stringybark
71 Ironbark	138 Steel Box/Craven Grey Box	200 Broad-leaved Stringybark-Ribbon Gum
72 Low Relief Coastal Blackbutt	142 Swamp Mahogany	

<i>Non-Forest</i>		
5 Banksia	77 Mangrove	199 Riparian Shrubland
18 Casuarina Woodland	96 Natural Grassland	
66 Herbfield and Fjaeldmark	141 Swamp	

Notes Accompanying Table 1

- The Forest Ecosystems listed and prioritised for the Upper North East ~~Region-region~~ in Table 1 have been identified as priorities for voluntary conservation on Private Land, based on the following criteria:
 - Identification by expert panels convened during the UNE and LNE CRA as Forest Ecosystems of concern on Private Land;
 - Ecosystems with 100% target set and not met, that have extant occurrences on Private Land;
 - Ecosystems with 60% target set and not met, that are ranked as highly vulnerable (CRA expert panel vulnerability rankings 1 and 2, based on key threatening processes) or are more than 50% cleared, and have more than 50% of their occurrence on Private Land;
 - Ecosystems with 15% target set and not met, that are ranked as highly vulnerable or are more than 50% cleared, and have more than 50% of their occurrence on Private Land.
- It should be noted that these are priorities only for protection by voluntary conservation mechanisms.

Table 1A Upper North East RFA Forest Ecosystems

<u>Forest Ecosystems</u>	<u>Total Ecosystem Area (hectares)</u>	<u>Area in CAR Reserve System on Private Land (hectares)</u>	<u>Proportion in CAR Reserve System on Private Lands as at 30 June 2016 (%)</u>
2 Alpine Gum	1,329	20	2
15 Brown Barrell-Gum	1,004	14	1
17 Candlebark	1,961	30	2
19 Central Mid Elevation Sydney Blue Gum	6,786	46	1
21 Lowlands Grey Box	23,913	252	1
22 Coast Cypress Pine	82	0	0
24 Clarence Lowlands Spotted Gum	174,787	1,435	1
25 Coast Range Spotted Gum-Blackbutt	743	38	5
30 Diehard Stringybark-New England Blackbutt	1062	1	0.1
31 Dorrigo White Gum	3385	0	0
36 Dry Grassy Tallowwood-Grey Gum	5564	56	1
45 Dunns White Gum	975	2	0.2
47 Escarpment Redgum	28,206	96	0.3
50 Wet Bangalow-Brushbox	10,098	123	1
61 Grey Box-Ironbark	131	0	0
62 Grey Box-Northern Grey Gum	509	0	0
68 High Elevation Messmate-Brown Barrell	329	0	0
71 Ironbark	7,713	51	1
72 Low Relief Coastal Blackbutt	859	0	0
73 Lowland Red Gum	57,016	711	1
74 Lowlands Scribbly Gum	3,496	74	2

<u>Forest Ecosystems</u>	<u>Total Ecosystem Area (hectares)</u>	<u>Area in CAR Reserve System on Private Land (hectares)</u>	<u>Proportion in CAR Reserve System on Private Lands as at 30 June 2016 (%)</u>
79 Manna Gum-Stringybark	90	1	1
80 Manna Gum	1,287	7	1
81 Messmate	6,309	244	4
85 Mixed Moist Hardwood	346	1	0.3
87 Mixed Tableland Stringybark-Gum OpenForest	4,694	79	2
93 Montane Stringybark-Gum	28,687	379	1
100 Northern Grassy Sydney Blue Gum	9,245	8	0.1
112 Paperbark	28,577	701	2
114 Peppermint-Mountain/Manna Gum	12,829	292	2
116 Red Gum-Stringybark	27,128	27	0.1
119 Richmond Range Spotted Gum-Box	24,814	50	0.2
120 River Oak	3,221	2	0.1
123 Roundleaved Gum	17,975	167	1
126 Sandstone Spotted Gum-Blackbutt	4,808	66	1
132 Snow Gum - Mountain/Manna Gum	21,305	86	0.4
138 Steel Box/Craven Grey Box	427	2	0.5
142 Swamp Mahogany	578	42	7
143 Swamp Oak	2,883	27	1
145 Sydney Peppermint-Stringybark	255	1	0.4
149 Mallee-Peppermint mosaic	1,618	32	2
154 Wet Flooded Gum-Tallowwood	9,317	166	2
163 Yellow Box-Blakely's Red Gum	7,245	57	1
168 Rainforest	159,211	748	0.5
175 Orange Gum-New England Blackbutt-Tumbledown Gum	19,304	464	2
176 Orange Gum-Ironbark	34,295	57	0.2
177 Outcrop Orange Gum-New England Blackbutt	7,945	58	1
179 Yellow Box-Broad-leaved Stringybark	3,859	6	0.2
183 Red Gum-Apple	592	0	0
186 Open Tumbledown Gum-Black Cypress-Orange Gum	10,593	122	1
190 Yellow Box-Grey Box-Red Gum	21,273	42	0.2
195 Apple-Manna Gum woodland	16,214	645	4
196 Broad-leaved Stringybark-Apple Box	19,948	369	2
197 Broad-leaved Stringybark	1,643	21	1
198 Silvertop Stringybark	1,200	13	1
200 Broad-leaved Stringybark-Ribbon Gum	650	0	0
<u>NON-FOREST ECOSYSTEMS</u>			
5 Banksia	N/A	N/A	N/A
18 Casuarina Woodland	43	0	0
66 Herbfield and Fjaeldmark	N/A	N/A	N/A
77 Mangrove	734	0	0
96 Natural Grassland	N/A	N/A	N/A
141 Swamp	N/A	N/A	N/A
199 Riparian Shrubland	N/A	N/A	N/A

Table 2 Private Land priorities for the Lower North East CAR Reserve System

Priority for voluntary protection of Forest Ecosystems		
<i>Forests</i>		
2 Alpine Gum	87 Mixed Tableland Stringybark-Gum Open Forest	168 Rainforest
3 Baileys Stringybark	89 Moist Foothills Spotted Gum	174 Orange Gum-Tumbledown Gum-Apple
7 Barrington Moist Blue Gum-White Mahogany	90 Moist Messmate-Gum	175 Orange Gum-New England Blackbutt-Tumbledown Gum
8 Barrington Wet New England Blackbutt-Blue Gum	92 Moist Shrubby Stringybark-Gum	176 Orange Gum-Ironbark
11 Blackbutt-Sydney Peppermint-Smoothbarked Apple	93 Montane Stringybark-Gum	178 Outcrop Black Cypress-Tumbledown Gum
14 Brown Barrell	97 Needlebark Stringybark-Large Fruited Blackbutt	177 Outcrop Orange Gum-New England Blackbutt
17 Candlebark	99 New England Stringybark-Blakelys Red Gum	179 Yellow Box-Broad-leaved Stringybark
19 Central Mid Elevation Sydney Blue Gum	105 Nymboidea Tallowwood-Turpentine	182 Apple-Black Cypress
21 Lowlands Grey Box	112 Paperbark	184 Tumbledown Gum-Ironbark
26 Coastal Flooded Gum	113 Peppermint	186 Open Tumbledown Gum-Black Cypress-Orange Gum
28 Cool Moist Messmate	114 Peppermint-Mountain/Manna Gum	189 Silverleaved Ironbark-Cypress
31 Dorrigio White Gum	116 Red Gum-Stringybark	190 Yellow Box-Grey Box-Red Gum
32 Dry Foothills Blackbutt-Turpentine	117 Red Mahogany	195 Apple-Manna Gum woodland
33 Dry Foothills Spotted Gum	120 River Oak	196 Broad-leaved Stringybark-Apple Box
34 Dry Grassy Blackbutt-Tallowwood	122 Rough-barked Apples	197 Broad-leaved Stringybark
41 Dry Open New England Blackbutt	123 Roundleaved Gum	198 Silvertop Stringybark
47 Escarpment Redgum	124 Roundleaved Gum-Turpentine	200 Broad-leaved Stringybark-Ribbon Gum
48 Escarpment Scribbly Gum-Apple	132 Snow Gum -Mountain/Manna Gum	207 Hunter Spotted Gum-Ironbark
54 Grey Box-Red Gum-Grey Ironbark	134 South Coast Shrubby Grey Gum	208 Hunter Roughbarked Apple- Red Gum
56 Granite Mallee	135 South Coast Tallowwood-Blue Gum	224 Coastal Apple-Stringybark-Scribbly Gum
57 Highland Granite Stringybarks	139 Stringybark-Apple	225 Wyong Apple-Scribbly Gum
58 Gorge Grey Gum	142 Swamp Mahogany	232 Watagan Spotted Gum-Ironbark-White Mahogany
70 High Elevation Open Spotted Gum	143 Swamp Oak	240 Roughbarked Apple-Redgum
72 Low Relief Coastal Blackbutt	146 Tallowwood	241 Ironbark-Redgum
73 Lowland Red Gum	149 Mallee-Peppermint mosaic	247 Coastal Bastard Mahogany Forest
79 Manna Gum-Stringybark	153 Wet Coastal Tallowwood-Brushbox	249 White Box-Ironbark-Red Gum
80 Manna Gum	154 Wet Flooded Gum-Tallowwood	250 Banksia Heath-Scribbly Gum-Apple
81 Messmate	162 Whitetopped Box	
82 Messmate-Mountain Gum Forest	163 Yellow Box-Blakely's Red Gum	

<i>Non-Forest</i>		
5 Banksia	64 Heath	125 Saltbush
18 Casuarina Woodland	77 Mangrove	199 Riparian Shrubland

Notes Accompanying Table 2

- The Forest Ecosystems listed and prioritised for the Lower North East ~~Region~~ region in Table 2 have been identified as priorities for voluntary conservation on Private Land, based on the following criteria:
 - Identification by expert panels convened during the UNE and LNE CRA as forest ecosystems of concern on Private Land;
 - Ecosystems with 100% target set and not met, that have extant occurrences on Private Land;
 - Ecosystems with 60% target set and not met, that are ranked as highly vulnerable (CRA expert panel vulnerability rankings 1 and 2, based on key threatening processes) or are more than 50% cleared, and have more than 50% of their occurrence on Private Land;

- Ecosystems with 15% target set and not met, that are ranked as highly vulnerable or are more than 50% cleared, and have more than 50% of their occurrence on Private Land.
2. It should be noted that these are priorities only for protection by voluntary conservation mechanisms.

Table 2A Lower North East RFA Forest Ecosystems

<u>Forest Ecosystems</u>	<u>Total Ecosystem Area (hectares)</u>	<u>Area in CAR Reserve on Private Land (hectares)</u>	<u>Proportion in CAR reserves on Private Lands as at 30 June 2016 (%)</u>
2 Alpine Gum	3,971	8	0.2
3 Baileys Stringybark	285	0	0
7 Barrington Moist Blue Gum-White Mahogany	32,659	121	0.4
8 Barrington Wet New England Blackbutt-Blue Gum	45,911	210	0.5
11 Blackbutt-Sydney Peppermint-Smoothbarked Apple	1,382	17	1
14 Brown Barrell	814	0	0
17 Candlebark	20	0	0
19 Central Mid Elevation Sydney Blue Gum	40,971	232	1
21 Lowlands Grey Box	1,219	0	0
26 Coastal Flooded Gum	8,753	58	1
28 Cool Moist Messmate	6,467	28	0.4
31 Dorriggo White Gum	1,123	16	1
32 Dry Foothills Blackbutt-Turpentine	33,592	125	0.4
33 Dry Foothills Spotted Gum	17,688	99	1
34 Dry Grassy Blackbutt-Tallowwood	59,390	302	1
41 Dry Open New England Blackbutt	32,932	202	1
47 Escarpment Redgum	20,498	103	1
48 Escarpment Scribbly Gum-Apple	7,574	23	0.3
54 Grey Box-Red Gum-Grey Ironbark	19,838	111	1
56 Granite Mallee	4,025	30	1
57 Highland Granite Stringybarks	924	11	1
58 Gorge Grey Gum	51	0	0
70 High Elevation Open Spotted Gum	12	0	0
72 Low Relief Coastal Blackbutt	10,894	5	0
73 Lowland Red Gum	366	0	0
79 Manna Gum-Stringybark	632	1	0.2
80 Manna Gum	3,852	9	0.2
81 Messmate	20,291	159	1
82 Messmate-Mountain Gum Forest	8,537	24	0.3
87 Mixed Tableland Stringybark-Gum Open Forest	7,897	65	1
89 Moist Foothills Spotted Gum	7,929	81	1
90 Moist Messmate-Gum	78	2	3
92 Moist Shrubby Stringybark-Gum	423	5	1
93 Montane Stringybark-Gum	2,567	2	0.1
97 Needlebark Stringybark-Large Fruited Blackbutt	502	3	1
99 New England Stringybark-Blakelys Red Gum	28,245	58	0.2
105 Nymboida Tallowwood-Turpentine	248	0	0
112 Paperbark	12,866	18	0.1
113 Peppermint	13,115	45	0.3
114 Peppermint-Mountain/Manna Gum	5,736	43	1
116 Red Gum-Stringybark	12,238	11	0.1
117 Red Mahogany	65	0	0

<u>Forest Ecosystems</u>	<u>Total Ecosystem Area (hectares)</u>	<u>Area in CAR Reserve on Private Land (hectares)</u>	<u>Proportion in CAR reserves on Private Lands as at 30 June 2016 (%)</u>
120 River Oak	922	0	0
122 Rough-barked Apples	2,636	36	1
123 Roundleaved Gum	172	2	1
124 Roundleaved Gum-Turpentine	8,624	4	0
132 Snow Gum - Mountain/Manna Gum	23,120	69	0.3
134 South Coast Shrubby Grey Gum	151,030	1,035	1
135 South Coast Tallowwood-Blue Gum	71,217	457	1
139 Stringybark-Apple	81,300	434	1
142 Swamp Mahogany	2,177	12	1
143 Swamp Oak	4,868	13	0.3
146 Tallowwood	746	8	1
149 Mallee-Peppermint mosaic	3,621	35	1
153 Wet Coastal Tallowwood-Brushbox	10,245	51	0.5
154 Wet Flooded Gum-Tallowwood	6,161	18	0.3
162 Whitetopped Box	967	24	2
163 Yellow Box-Blakely's Red Gum	2,696	10	0.4
168 Rainforest	256,326	778	0.3
174 Orange Gum - Tumbledown Gum - Apple	10,169	14	0.1
175 Orange Gum - New England Blackbutt - Tumbledown Gum	23,572	112	0.5
176 Orange Gum - Ironbark	6,636	7	0.1
178 Outcrop Black Cypress - Tumbledown Gum	659	0	0
177 Outcrop Orange Gum - New England Blackbutt	3,170	19	1
179 Yellow Box - Broad-leaved Stringybark	273	0	0
182 Apple - Black Cypress	14,635	164	1
184 Tumbledown Gum - Ironbark	160	0	0
186 Open Tumbledown Gum - Black Cypress - Orange Gum	7,959	51	1
189 Silverleaved Ironbark - Cypress	2,007	0	0
190 Yellow Box - Grey Box - Red Gum	7,724	4	0.1
195 Apple - Manna Gum woodland	6,638	14	0.2
196 Broad-leaved Stringybark - Apple Box	10,442	54	1
197 Broad-leaved Stringybark	1,346	6	0.4
198 Silvertop Stringybark	1,501	6	0.4
200 Broad-leaved Stringybark - Ribbon Gum	7	0	0
207 Hunter Spotted Gum-Ironbark	25,740	227	1
208 Hunter Roughbarked Apple-Red Gum	8,876	61	1
224 Coastal Apple-Stringybark-Scribbly Gum	1,070	0	0
225 Wyong Apple-Scribbly Gum	3,768	1	0
232 Watagan Spotted Gum-Ironbark-White Mahogany	8,609	55	1
240 Roughbarked Apple-Redgum	316	0	0
241 Ironbark-Redgum	2,550	0	0
247 Coastal Bastard Mahogany Forest	18,002	38	0.2
249 White Box-Ironbark-Red Gum	26,170	15	0.1

<u>Forest Ecosystems</u>	<u>Total Ecosystem Area (hectares)</u>	<u>Area in CAR Reserve on Private Land (hectares)</u>	<u>Proportion in CAR reserves on Private Lands as at 30 June 2016 (%)</u>
250 Banksia Heath-Scribbly Gum-Apple	10,795	9	0.1

NON-FOREST ECOSYSTEMS

5 Banksia	4,196	18	0.4
18 Casuarina Woodland (Now listed under Forest System in latest ABARES data)	362	0	0
64 Heath	14,286	36	0.3
77 Mangrove (Now listed under Forest System in latest ABARES data)	1,001	0	0
125 Saltbush	200	0	0
199 Riparian Shrubland	1,172	6	1

Rainforest Protection

- 9 Rainforest is protected from Forestry Operations in accordance with the Private Native Forestry Code of Practice.

Old Growth forest

- 10 Old Growth forest is protected from Forestry Operations in accordance with the Private Native Forestry Code of Practice.

Additional Protection for Forest Ecosystems

- 11 Under the Private Native Forestry Code of Practice, Forestry Operations in and adjacent to specified landscape features must comply with requirements to protect these features. This includes requirements to protect threatened ecological communities, endangered populations, vulnerable ecological communities, wetlands, heathland, rocky outcrops and steep slopes.
- 12 The Private Native Forestry Code of Practice contains standards for the protection of threatened ecological communities and threatened species.

Protections on Private Land subject to Plantation authorisation

- 13 For Plantations on Private Land, the Plantations and Reafforestation (Code) Regulation 2001 (NSW), contains standards for the protection of soil and water, biodiversity, and places, objects or items of heritage significance.

**THREATENED FLORA, FAUNA AND ECOLOGICAL LISTED SPECIES
AND COMMUNITIES**

- 1 Both Parties recognise the range of mechanisms to conserve the habitat of ~~endangered and vulnerable flora and fauna~~ Listed Species and Communities in both the Upper North East and Lower North East regions. These include: (i) protection within the CAR Reserve System; (ii) protection of key habitat components using the Integrated Forestry Operations Approval; (iii) protection of key habitats such as rainforest, heaths, swamps and other wet communities, rocky outcrops and ~~rare~~ threatened ecological communities; and (iv) ~~the development of Recovery Plans for species, populations and communities listed under the *Threatened Species Conservation Act 1995* (NSW) and the *Endangered Species Protection Act 1992* (C'wth)~~ Biodiversity Conservation Programs for species and communities listed under the *Biodiversity Conservation Act 2016* (NSW) and the development, maintenance and implementation of relevant Statutory Conservation Planning Documents under the *Fisheries Management Act 1994* (NSW) and for species, populations and communities listed under the EPBC Act. Key species are protected by a combination of reservation and prescription.
- 2 ~~Current priorities~~ Priorities at the signing of the North East RFA for developing Recovery Plans for threatened forest dependent fauna and flora for the next first five years of this Agreement are provided in Table 1. Parties note that the list at Table 1 is indicative only ~~and timeframes are dependent upon funding~~. These priorities may change and new priorities may arise in response to additional information, funding etc.
- 3 Where Statutory Conservation Planning Documents ~~Recovery Plans~~ under the ~~*Threatened Species Conservation Act 1995*~~ *Biodiversity Conservation Act 2016* (NSW) ~~or the *Fisheries Management Act 1994* (NSW)~~ meet the requirements of the EPBC Act ~~*Endangered Species Protection Act 1992* (C'wth)~~, the Commonwealth will consider adopting them under ~~Section 46 of the *EPBC Act*~~ *Endangered Species Protection Act 1992*.

Threatening Processes

- 4 ~~Threat Abatement Plans under the *Endangered Species Protection Act 1992* (C'wth) for Predation by the Feral Cat, Predation by the European Red Fox (*Vulpes vulpes*), Competition and Land Degradation by the European Rabbit, and Competition and Land Degradation by the Feral Goat, have been finalised and approved by the Minister. A priority for a Threat Abatement Plan under the Act is Dieback caused by the root rot fungus (*Phytophthora cinnamoni*). A Threat Abatement Plan under the *Threatened Species Conservation Act 1995* (NSW) for Predation by the European Red Fox is due for completion in July 2000.~~ Threatening Processes are those listed as a key threatening process under the *Biodiversity Conservation Act 2016* (NSW), *Fisheries Management Act 1994* (NSW) and the EPBC Act in recognition that the process adversely affects or may threaten the survival, abundance or evolutionary development of a native species or ecological community. Threatening Processes are managed under the Biodiversity

Conservation Program or with Threat Abatement Plans under the EPBC Act or other coordinated programs across land tenure. Some Threatening Processes affecting forests are mitigated by the settings in the Integrated Forestry Operations Approval applicable to the Upper North East and Lower North East regions.

Table 1: Priority species for preparation of Recovery Plans (as at 2000 and showing June 2018 status over next five years).

Scientific name	Common Name	NSW Status	National Status	NSW Management Stream under the Biodiversity Conservation Program ¹	Current status of national recovery plans and conservation advice	Completion Date
<i>Acacia baueri baueri</i>	<u>Tiny wattle</u>	-	Vulnerable Delisted	N/A	N/A	National Plan by July 2005
<i>Acacia bynoeana</i>	<u>Bynoe wattle</u>	<u>Endangered</u>	Vulnerable	<u>Data deficient</u>	<u>Conservation Advice made 2013</u>	National Plan by July 2005
<i>Acacia courtii</i>	<u>Northern brother wattle</u>	<u>Vulnerable</u>	Vulnerable	<u>Site-managed</u>	<u>National Plan adopted in 2010 and in force; Conservation Advice made 2008</u>	National Plan by July 2005
<i>Acacia macnuttiana</i>	<u>McNutt's wattle</u>	Endangered <u>Vulnerable</u>	Vulnerable	<u>Keep watch</u>	<u>Conservation Advice made 2008</u>	NPWS Plan by January 2005, National Plan by July 2005
<i>Acacia pubifolia</i>	<u>Velvet wattle</u>	<u>Endangered</u>	Vulnerable	<u>Site-managed</u>	<u>Conservation Advice made 2008</u>	NPWS Plan by January 2005, National Plan by July 2005
<i>Acacia pycnostachya</i>	<u>Bolivia wattle</u>	<u>Vulnerable</u>	Vulnerable	<u>Site-managed</u>	<u>Conservation Advice made 2014</u>	National Plan by July 2005
<i>Acacia ruppii</i>	<u>Rupp's wattle</u>	<u>Endangered</u>	<u>Endangered</u>	<u>Site-managed</u>	<u>National recovery plan adopted in 2010 and in force</u>	NPWS Plan by January 2005, National Plan by July 2003
<i>Acronychia littoralis</i>	Scented Acronychia	<u>Endangered</u>	<u>Endangered</u>	<u>Site-managed</u>	<u>Conservation Advice made 2008</u>	NPWS Plan by January 2005, National Plan by July 2003
<i>Allocasuarina defungens</i>	<u>Dwarf heath casuarina</u>	<u>Endangered</u>	<u>Endangered</u>	<u>Site-managed</u>	<u>Conservation Advice made 2008</u>	NPWS Plan by January 2005, National Plan by July 2003
<i>Allocasuarina simulans</i>	<u>Nabiac casuarina</u>	<u>Vulnerable</u>	Vulnerable	<u>Site-managed</u>	<u>Conservation Advice made 2008</u>	National Plan by July 2005
<i>Almaleea cambagei</i>	<u>Torrington pea</u>	<u>Endangered</u>	Vulnerable	<u>Data deficient</u>	<u>Conservation Advice made 2008</u>	NPWS Plan by January 2005, National Plan by July 2005
<i>Amyema scandens</i>		<u>Endangered</u>	<u>Endangered</u>	<u>Site-managed</u>	<u>Conservation Advice made 2008</u>	NPWS Plan by January 2005, National Plan by July 2003

Scientific name	Common Name	NSW Status	National Status	NSW Management Stream under the Biodiversity Conservation Program¹	Current status of national recovery plans and conservation advice	Completion Date
<i>Angophora robur</i>	<u>Sandstone roughbarked apple</u>	<u>Vulnerable</u>	Vulnerable	<u>Keep watch</u>	<u>National recovery plan adopted in 2010 and in force; Conservation Advice made 2008</u>	<u>National Plan by July 2005</u>
<i>Arthraxon hispidus</i>	<u>Hairy-joint grass</u>	<u>Vulnerable</u>	Vulnerable	<u>Keep watch</u>	<u>Conservation Advice made 2008</u>	<u>National Plan by July 2005</u>
<i>Asperula asthenes</i>	<u>Trailing woodruff</u>	<u>Vulnerable</u>	Vulnerable	<u>Site-managed</u>	<u>Conservation Advice made 2008</u>	<u>National Plan by July 2005</u>
<i>Austromyrtus fragrantissima</i>	Sweet Myrtle; Small-leaved Myrtle	Endangered	Endangered	<u>Site-managed</u>	<u>National recovery plan adopted in 2010</u>	<u>NPWS Plan by January 2005, National Plan by July 2003</u>
<i>Baloghia marmorata</i>	<u>Marbled balogia</u>	<u>Vulnerable</u>	Vulnerable	<u>Site-managed</u>	<u>Conservation Advice made 2008</u>	<u>National Plan by July 2005</u>
<i>Bertya ingramii</i>	<u>Narrow-leaved bertya</u>	Endangered	Endangered	<u>Data deficient</u>	<u>National recovery plan adopted in 2010; Conservation Advice made 2008</u>	<u>NPWS Plan by January 2005, National Plan by July 2003</u>
<i>Boronia granitica</i>	<u>Granite boronia</u>	Endangered	Endangered	<u>Keep watch</u>	<u>National recovery plan adopted in 2004 and in force; Conservation Advice made 2016</u>	<u>NPWS Plan by January 2005, National Plan by July 2003</u>
<i>Bosistoa selwynii</i>	<u>Three-leaved bosistoa</u>	<u>Vulnerable</u>	Vulnerable	<u>Partnership</u>	<u>Conservation Advice made 2008</u>	<u>National Plan by July 2005</u>
<i>Bosistoa transversa</i> (now included in <i>Bosistoa selwynii</i>)		-	Vulnerable			<u>National Plan by July 2005</u>
<i>Bothriochloa biloba</i>		-	Vulnerable <u>Delisted</u>	<u>N/A</u>	<u>N/A</u>	<u>National Plan by July 2005</u>
<i>Bulbophyllum globuliforme</i>	<u>Miniature moss-orchid</u>	<u>Vulnerable</u>	Vulnerable	<u>Keep watch</u>	<u>Conservation Advice made 2008</u>	<u>National Plan by July 2005</u>

Scientific name	Common Name	NSW Status	National Status	NSW Management Stream under the Biodiversity Conservation Program¹	Current status of national recovery plans and conservation advice	Completion Date
<i>Burhinus grallarius</i>	Bush Stone-curlew	Endangered	Not listed under the EPBC Act	Landscape	-	NPWS Plan by January 2005
<i>Cadellia pentastylis</i>	Ooline	<u>Vulnerable</u>	Vulnerable	Keep watch	Conservation Advice made 2008	National Plan by July 2005
<i>Callitris oblonga</i>	Pigmy Cypress-pine	<u>Endangered</u>	Vulnerable	Site-managed	National recovery plan adopted in 2010 and in force; Conservation Advice made 2008	National Plan by July 2005
<i>Caretta caretta</i>	Loggerhead Turtle	<u>Endangered</u>	Endangered	Landscape	National recovery plan made in 2017 and in force	National Plan by July 2003
<i>Chelonia mydas</i>	Green Turtle	<u>Vulnerable</u>	Vulnerable	Landscape	National recovery plan made in 2017 and in force	National Plan by July 2005
<i>Clematis fawcettii</i>	Northern Clematis	<u>Vulnerable</u>	Vulnerable	Keep watch	Conservation Advice made 2008	National Plan by July 2005
<i>Corchorus cunninghamii</i>	<u>Native jute</u>	Endangered	Endangered	Site-managed	Conservation Advice made 2014	NPWS Plan by January 2005, National Plan by July 2003
<i>Corokia whiteana</i>	<u>Corokia</u>	<u>Vulnerable</u>	Vulnerable	Keep watch	Conservation Advice made 2008	National Plan by July 2005
<i>Cryptocarya foetida</i>	Stinking Cryptocarya	<u>Vulnerable</u>	Vulnerable	Site-managed	Conservation Advice made 2008	National Plan by July 2005
<i>Cyclopsitta diophthalma coxeni</i>	Coxen's Double-eyed Fig Parrot	<u>Critically Endangered</u>	Endangered	Landscape	National recovery plan adopted in 2003 and in force; Conservation Advice made 2016	NPWS Plan by January 2005, National Plan by July 2003
<i>Cynanchum elegans</i>	White-flowered Wax Plant	Endangered	Endangered	Keep watch	Conservation Advice made 2008	NPWS Plan by January 2005, National Plan by July 2003
<i>Dasyornis brachypterus</i>	Eastern Bristlebird	<u>Endangered</u>	Endangered	Site-managed	National recovery plan adopted in 2014 and in force	National Plan by July 2003

Scientific name	Common Name	NSW Status	National Status	NSW Management Stream under the Biodiversity Conservation Program¹	Current status of national recovery plans and conservation advice	Completion Date
<i>Dasyurus viverrinus</i>	Eastern Quoll	Endangered	<u>Endangered</u>	<u>Data deficient</u>	<u>Conservation Advice made 2015</u>	<u>NPWS Plan by January 2005</u>
<i>Davidsonia pruriens</i> var. <i>jerseyana</i>	<u>Davidson's Plum</u>	Endangered	Endangered, listed under the EPBC Act as <i>Davidsonia jerseyana</i>	<u>Site-managed</u>	<u>Conservation Advice made 2015</u>	<u>NPWS Plan by January 2005, National Plan by July 2003</u>
<i>Davidsonia</i> sp. A Mullumbimby-Currumbin Ck	Davidson's Plum	Endangered	Endangered, listed under the EPBC Act as <i>Davidsonia johnsonii</i>	<u>Site-managed</u>	<u>National recovery plan adopted in 2006 and in force; Conservation Advice made 2016</u>	<u>NPWS Plan by January 2005, National Plan by July 2003</u>
<i>Dermochelys coriacea</i>	<u>Leathery Leatherback Turtle</u>	<u>Vulnerable</u>	Vulnerable <u>Endangered</u>	<u>Landscape</u>	<u>National recovery plan made in 2017 and in force; Conservation Advice made 2008</u>	<u>National Plan by July 2005</u>
<i>Desmodium acanthocladum</i>	<u>Thorny Pea</u>	<u>Vulnerable</u>	Vulnerable	<u>Site-managed</u>	<u>Conservation Advice made 2008</u>	<u>National Plan by July 2005</u>
<i>Dichanthium setosum</i>	<u>Bluestem</u>	<u>Vulnerable</u>	Vulnerable	<u>Data deficient</u>	<u>Conservation Advice made 2008</u>	<u>National Plan by July 2005</u>
<i>Dichelachne parva</i>		-	Vulnerable <u>Delisted</u>	<u>N/A</u>	<u>N/A</u>	<u>National Plan by July 2005</u>
<i>Digitaria porrecta</i>	<u>Finger panic grass</u>	Endangered	Endangered <u>Delisted</u>	<u>Data deficient</u>	=	<u>NPWS Plan by January 2005, National Plan by July 2003</u>
<i>Diomedea exulans</i>	Wandering Albatross	<u>Endangered</u>	Vulnerable	<u>Landscape</u>	<u>National recovery plan made in 2011 and in force</u>	<u>National Plan by July 2005</u>
<i>Diospyros mabacea</i>	Red-fruited Ebony; Silky Persimmon	Endangered	Endangered	<u>Site-managed</u>	<u>National recovery plan adopted 2010 and in force</u>	<u>NPWS Plan by January 2005, National Plan by July 2003</u>

Scientific name	Common Name	NSW Status	National Status	NSW Management Stream under the Biodiversity Conservation Program¹	Current status of national recovery plans and conservation advice	Completion Date
<i>Diploglottis campbellii</i>	Small-leaved Tamarind	Endangered	Endangered	<u>Site-managed</u>	<u>National recovery plan adopted 2010 and in force</u>	<u>NPWS Plan by January 2005, National Plan by July 2003</u>
<i>Diuris pedunculata</i>	<u>Small Snake Orchid</u>	Endangered	Endangered	<u>Data deficient</u>	<u>Conservation Advice made 2014</u>	<u>NPWS Plan by January 2005, National Plan by July 2003</u>
<i>Diuris venosa</i>	<u>Veined Doubletail</u>	<u>Vulnerable</u>	Vulnerable	<u>Site-managed</u>	<u>Conservation Advice made 2008</u>	<u>National Plan by July 2005</u>
<i>Elaeocarpus sp. Rocky Creek</i>	<u>Minyon quandong</u>	Endangered	Endangered, listed under the EPBC Act as <i>Elaeocarpus sedenarius</i>	<u>Site-managed</u>	<u>National recovery plan adopted in 2004 and in force; Conservation Advice made 2016</u>	<u>NPWS Plan by January 2005, National Plan by July 2003</u>
<i>Elaeocarpus williamsianus</i>	Hairy Quandong	Endangered	Endangered	<u>Site-managed</u>	<u>National recovery plan adopted in 2010 and in force; Conservation Advice 2008</u>	<u>NPWS Plan by January 2005, National Plan by July 2003</u>
<i>Emydura signata</i> <i>Myuchelys georgesi</i>	Bellinger River <u>Emydura Snapping Turtle</u>	<u>Critically Endangered</u>	<u>Vulnerable Critically Endangered, listed as Wollumbinia georgesi in the EPBC Act</u>	<u>Site-managed</u>	<u>Conservation Advice made 2016</u>	<u>National Plan by July 2005</u>
<i>Endiandra floydii</i>	<u>Crystal Creek walnut</u>	Endangered	Endangered	<u>Site-managed</u>	<u>National recovery plan adopted in 2010 and in force</u>	<u>NPWS Plan by January 2005, National Plan by July 2003</u>
<i>Endiandra hayesii</i>	<u>Rusty rose walnut</u>	<u>Endangered</u>	Vulnerable	<u>Site-managed</u>	<u>National recovery plan adopted in 2010 and in force; Conservation Advice made 2008</u>	<u>National Plan by July 2005</u>
<i>Eriocaulon australasicum</i>	<u>Austral pipewort</u>	<u>Endangered</u>	<u>Vulnerable Endangered</u>	<u>Partnership</u>	<u>National recovery plan adopted in 2010 and in force</u>	<u>National Plan by July 2005</u>

Scientific name	Common Name	NSW Status	National Status	NSW Management Stream under the Biodiversity Conservation Program¹	Current status of national recovery plans and conservation advice	Completion Date
<i>Eriostemon ericifolius</i>		-	Vulnerable, listed under the EPBC Act as <i>Philotheca ericifolia</i>	N/A	Conservation Advice made 2008	National Plan by July 2005
<i>Erythranthera pumila</i>	Feldmark grass	Vulnerable	Vulnerable, listed under the EPBC Act as <i>Rytidosperma pumilum</i>	Site-managed	National recovery plan adopted in 2007 and in force; Conservation Advice made 2016	National Plan by July 2005
<i>Erythrorichis radiatus</i>	Red Goshawk	Critically Endangered	Vulnerable	Landscape	National recovery plan adopted in 2012 and in force; Conservation Advice made 2015	NPWS Plan by January 2005, National Plan by July 2005
<i>Eubalaena australis</i>	Southern Right Whale	-	Endangered		National Plan by July 2003	National Plan by July 2003
<i>Eucalyptus caleyi ovoidenii</i>	Ovenden's ironbark	Vulnerable	Vulnerable	Keep watch	Conservation Advice made 2008	National Plan by July 2005
<i>Eucalyptus camfieldii</i>	Camfield's Stringybark	Vulnerable	Vulnerable	Site-managed	Conservation Advice made 2008	National Plan by July 2005
<i>Eucalyptus glaucina</i>	Blue Gum var. Slaty Red Gum	Vulnerable	Vulnerable	Site-managed	Conservation Advice made 2008	National Plan by July 2005
<i>Eucalyptus infera</i>		-	Vulnerable	N/A	Conservation Advice made 2008	National Plan by July 2005
<i>Eucalyptus mckieana</i>	McKie's Stringybark	Vulnerable	Vulnerable	Keep watch	Conservation Advice made 2008	National Plan by July 2005
<i>Eucalyptus nicholii</i>	Narrow Leaved Black Peppermint	Vulnerable	Vulnerable	Site-managed	Conservation Advice made 2008	National Plan by July 2005

Scientific name	Common Name	NSW Status	National Status	<u>NSW Management Stream under the Biodiversity Conservation Program¹</u>	<u>Current status of national recovery plans and conservation advice</u>	<u>Completion Date</u>
<i>Eucalyptus pachycalyx</i>	Shiny-barked Gum	Endangered	Endangered, listed under the EPBC Act as <i>Eucalyptus pachycalyx</i> subsp. <i>banyabba</i>	<u>Site-managed</u>	<u>National recovery plan adopted in 2010 and in force</u>	<u>NPWS Plan by January 2005, National Plan by July 2003</u>
<i>Eucalyptus parramattensis decadens</i>	<u>Earp's Gum</u>	<u>Vulnerable</u>	Vulnerable, listed under the EPBC Act as <i>Eucalyptus parramattensis</i> subsp. <i>decadens</i>	<u>Keep watch</u>	<u>Conservation Advice made 2014</u>	<u>National Plan by July 2005</u>
<i>Eucalyptus pumila</i>	Polkolbin Mallee	<u>Vulnerable</u>	Vulnerable	<u>Site-managed</u>	<u>Conservation Advice made 2008</u>	<u>National Plan by July 2005</u>
<i>Eucalyptus scoparia</i>	Wallangarra White Gum	<u>Endangered</u>	Vulnerable	<u>Site-managed</u>	<u>Conservation Advice made 2008</u>	<u>National Plan by July 2005</u>
<i>Eucalyptus tetrapleura</i>	Square-fruited Ironbark	<u>Vulnerable</u>	Vulnerable	<u>Keep watch</u>	<u>National recovery plan adopted in 2010 and in force; Conservation Advice made 2008</u>	<u>National Plan by July 2005</u>
<i>Euphrasia bella</i>	<u>Lamington eyebright</u>	<u>Vulnerable</u>	Vulnerable	<u>Site-managed</u>	<u>National recovery plan adopted in 2010 and in force; Conservation Advice made 2008</u>	<u>National Plan by July 2005</u>
<i>Euphrasia collina</i> subsp. <i>muelleri</i>	<u>Purple eyebright</u>	Endangered	Endangered	<u>Data deficient</u>	<u>National recovery plan adopted in 2006 and in force; Conservation Advice made 2016</u>	<u>NPWS Plan by January 2005, National Plan by July 2003</u>

Scientific name	Common Name	NSW Status	National Status	NSW Management Stream under the Biodiversity Conservation Program¹	Current status of national recovery plans and conservation advice	Completion Date
<i>Floydia praealta</i>	<u>Ball nut</u>	<u>Vulnerable</u>	Vulnerable	<u>Site-managed</u>	<u>Conservation Advice made 2008</u>	<u>National Plan by July 2005</u>
<i>Fontainea australis</i>	<u>Southern fontainea</u>	<u>Vulnerable</u>	Vulnerable	<u>Site-managed</u>	<u>National recovery plan adopted in 2010 and in force; Conservation Advice made 2008</u>	<u>National Plan by July 2005</u>
<i>Fontainea oraria</i>	Coastal Fontainea	<u>Critically Endangered</u>	Endangered	<u>Site-managed</u>	<u>National recovery plan adopted in 2010 and in force</u>	<u>NPWS Plan by January 2005, National Plan by July 2003</u>
<i>Gentiana wissmannii</i>	<u>New England gentian</u>	<u>Vulnerable</u>	Vulnerable	<u>Site-managed</u>	<u>National recovery plan adopted in 2010 and in force; Conservation Advice made 2008</u>	<u>National Plan by July 2005</u>
<i>Gingidia montana</i>	<u>Mountain angelica</u>	Endangered	Endangered	<u>Keep watch</u>	<u>National recovery plan adopted in 2010 and in force; Conservation Advice made 2008</u>	<u>NPWS Plan by January 2005, National Plan by July 2003</u>
<i>Grevillea beadleana</i>	<u>Beadle's grevillea</u>	Endangered	Endangered	<u>Keep watch</u>	<u>Conservation Advice made 2015</u>	<u>NPWS Plan by January 2005, National Plan by July 2003</u>
<i>Grevillea guthrieana</i>	<u>Guthrie's grevillea</u>	Endangered	Endangered	<u>Keep watch</u>	<u>Conservation Advice made 2014</u>	<u>NPWS Plan by January 2005, National Plan by July 2003</u>
<i>Grevillea masonii</i>	<u>Mason's grevillea</u>	Endangered	Endangered	<u>Site-managed</u>	<u>National recovery plan adopted in 2010 and in force</u>	<u>NPWS Plan by January 2005, National Plan by July 2003</u>
<i>Grevillea mollis</i>	<u>Soft grevillea</u>	Endangered	Endangered	<u>Site-managed</u>	<u>National recovery plan adopted in 2010 and in force; Conservation Advice made 2008</u>	<u>NPWS Plan by January 2005, National Plan by July 2003</u>

Scientific name	Common Name	NSW Status	National Status	NSW Management Stream under the Biodiversity Conservation Program¹	Current status of national recovery plans and conservation advice	Completion Date
<i>Grevillea obtusiflora</i>	<u>Grey grevillea</u>	Endangered	Endangered	<u>Site-managed</u>	<u>National recovery plan adopted in 2004 and in force; Conservation Advice made 2016</u>	<u>NPWS Plan by January 2005, National Plan by July 2003</u>
<i>Grevillea shiressii</i>	<u>Blue grevillea</u>	<u>Vulnerable</u>	Vulnerable	<u>Site-managed</u>	<u>Conservation Advice made 2008</u>	<u>National Plan by July 2005</u>
<i>Hakea pulvinifera</i>	<u>Lake Keepit hakea</u>	Endangered	Endangered	<u>Site-managed</u>	<u>National recovery plan adopted in 2001 and in force; Conservation Advice made 2016</u>	<u>NPWS Plan by January 2005, National Plan by July 2003</u>
<i>Hakea sp. B Kowmung River</i>	<u>Kowmung hakea</u>	Endangered	Endangered, listed under the EPBC Act as <i>Hakea dohertyi</i>	<u>Site-managed</u>	<u>Conservation Advice made 2008</u>	<u>NPWS Plan by January 2005, National Plan by July 2003</u>
<i>Haloragis exalata velutina</i>	<u>Tall velvet sea-berry</u>	<u>Vulnerable</u>	Vulnerable, listed under the EPBC Act as <i>Haloragis exalata</i> subsp. <i>velutina</i>	<u>Keep watch</u>	<u>Conservation Advice made 2008</u>	<u>National Plan by July 2005</u>
<i>Hicksbeachia pinnatifolia</i>	<u>Red bopple nut</u>	<u>Vulnerable</u>	Vulnerable	<u>Keep watch</u>	<u>Conservation Advice made 2008</u>	<u>National Plan by July 2005</u>
<i>Homoranthus darwinioides</i>		<u>Vulnerable</u>	Vulnerable	<u>Keep watch</u>	<u>Conservation Advice made 2008</u>	<u>National Plan by July 2005</u>
<i>Hoplocephalus bungaroides</i>	Broad Headed Snake	<u>Endangered</u>	Vulnerable	<u>Site-managed</u>	<u>Conservation Advice made 2014</u>	<u>National Plan by July 2005</u>
<i>Hydrocharis dubia</i>		-	Vulnerable <u>Delisted</u>	<u>N/A</u>	<u>N/A</u>	<u>National Plan by July 2005</u>

Scientific name	Common Name	NSW Status	National Status	NSW Management Stream under the Biodiversity Conservation Program¹	Current status of national recovery plans and conservation advice	Completion Date
<i>Isoglossa eranthemoides</i>	<u>Isoglossa</u>	Endangered	Endangered	<u>Site-managed</u>	<u>National recovery plan adopted in 2010 and in force</u>	<u>NPWS Plan by January 2005, National Plan by July 2003</u>
<i>Kennedia retrorsa</i>	<u>Crimson coral pea</u>	<u>Vulnerable</u>	Vulnerable	<u>Site-managed</u>	<u>Conservation Advice made 2008</u>	<u>National Plan by July 2005</u>
<i>Kunzea rupestris</i>	<u>Rocky kunzea</u>	<u>Vulnerable</u>	Vulnerable	<u>Site-managed</u>	<u>Conservation Advice made 2008</u>	<u>National Plan by July 2005</u>
<i>Lasiopetalum longistamineum</i>		<u>Vulnerable</u>	Vulnerable	<u>Site-managed</u>	<u>Conservation Advice made 2008</u>	<u>National Plan by July 2005</u>
<i>Lathamus discolor</i>	Swift Parrot	<u>Endangered</u>	<u>Vulnerable Critically Endangered</u>	<u>Landscape</u>	<u>National recovery plan adopted in 2012 and in force; Conservation Advice made 2016</u>	<u>National Plan by July 2005</u>
<i>Lepidium hyssopifolium</i>	<u>Bassalt peppercress</u>	<u>Endangered</u>	Endangered	<u>Site-managed</u>	<u>National recovery plan adopted in 2010 and in force</u>	<u>National Plan by July 2003</u>
<i>Leucopogon confertus</i>	<u>Torrington beard-heath</u>	Endangered	Endangered	<u>Data deficient</u>	<u>Conservation Advice made 2008</u>	<u>NPWS Plan by January 2005, National Plan by July 2003</u>
<i>Litoria aurea</i>	Green and Golden Bell Frog	Endangered	Vulnerable	<u>Site-managed</u>	<u>Conservation Advice made 2014</u>	<u>NPWS Plan by January 2005, National Plan by July 2005</u>
<i>Litoria booroolongensis</i>	Booroolong Frog	Endangered	<u>Endangered</u>	<u>Site-managed</u>	<u>National recovery plan adopted in 2012 and in force; Conservation Advice made 2007</u>	<u>NPWS Plan by January 2005</u>
<i>Litoria castanea</i>	Yellow Spotted Bell Frog	<u>Critically Endangered</u>	<u>Endangered</u>	<u>Site managed</u>	<u>National recovery plan adopted in 2004 and in force; Conservation Advice made 2017</u>	<u>NPWS Plan by January 2005</u>

Scientific name	Common Name	NSW Status	National Status	NSW Management Stream under the Biodiversity Conservation Program ¹	Current status of national recovery plans and conservation advice	Completion Date
<i>Litoria piperata</i>	Peppered Frog	Vulnerable <u>Critically Endangered</u>	<u>Vulnerable</u>	<u>Data deficient</u>	<u>National recovery plan adopted in 2004 and in force;</u> <u>Conservation Advice made 2017</u>	<u>NPWS Plan by January 2005</u>
<i>Macadamia tetraphylla</i>	<u>Rough leaved Queensland nut</u>	<u>Vulnerable</u>	<u>Vulnerable</u>	<u>Site-managed</u>	<u>National recovery plan adopted in 2009 and in force;</u> <u>Conservation Advice made 2008</u>	<u>National Plan by July 2005</u>
<i>Macrozamia occidua</i>			Vulnerable <u>Delisted</u>	<u>N/A</u>	<u>Conservation Advice made 2008, no longer in force</u>	<u>National Plan by July 2005</u>
<i>Melichrus hirsutus</i>	<u>Hairy melichrus</u>	<u>Endangered</u>	<u>Endangered, listed under the EPBC Act as <i>Melichrus sp.</i> Newfoundland State Forest (P.Gilmour 7852)</u>	<u>Site-managed</u>	<u>National recovery plan adopted in 2010 and in force</u>	<u>NPWS Plan by January 2005,</u> <u>National Plan by July 2003</u>
<i>Mixophyes balbus</i>	Stuttering Frog	Vulnerable <u>Endangered</u>	<u>Vulnerable</u>	<u>Landscape</u>	<u>National recovery plan adopted in 2012 and in force</u>	<u>NPWS Plan by January 2005</u>
<i>Mixophyes fleayi</i>	Fleay's Frog	Vulnerable <u>Endangered</u>	<u>Endangered</u>	<u>Site-managed</u>	<u>National recovery plan adopted in 2003 and in force;</u> <u>Conservation Advice made 2017</u>	<u>NPWS Plan by January 2005</u>
<i>Mixophyes iteratus</i>	Giant Barred Frog	<u>Endangered</u>	<u>Endangered</u>	<u>Site-managed</u>	<u>National recovery plan adopted in 2003 and in force;</u> <u>Conservation Advice made 2017</u>	<u>NPWS Plan by January 2005</u>

Scientific name	Common Name	NSW Status	National Status	NSW Management Stream under the Biodiversity Conservation Program ¹	Current status of national recovery plans and conservation advice	Completion Date
<u>Vulnerable</u>	<u>Silver sword lily</u>	<u>Vulnerable</u>	Vulnerable	<u>Data deficient</u>	<u>National recovery plan adopted in 2010 and in force; Conservation Advice made 2008</u>	<u>National Plan by July 2005</u>
<i>Ochrosia moorei</i>	<u>Southern ochrosia</u>	Endangered	Endangered	<u>Site-managed</u>	<u>National recovery plan adopted in 2010 and in force; Conservation Advice made 2008</u>	<u>NPWS Plan by January 2005, National Plan by July 2003</u>
<i>Olearia cordata</i>		<u>Vulnerable</u>	Vulnerable	<u>Site-managed</u>	<u>Conservation Advice made 2008</u>	<u>National Plan by July 2005</u>
<i>Olearia flocktoniae</i>	<u>Dorrigo daisy bush</u>	Endangered	Endangered	<u>Site-managed</u>	<u>National recovery plan adopted in 2010 and in force</u>	<u>NPWS Plan by January 2005, National Plan by July 2003</u>
<i>Owenia cepiodora</i>	<u>Bog onion</u>	<u>Vulnerable</u>	Vulnerable	<u>Site-managed</u>	<u>National recovery plan adopted in 2010 and in force; Conservation Advice made 2008</u>	<u>National Plan by July 2005</u>
<i>Parsonsia dorrigoensis</i>	<u>Milky silkpod</u>	Vulnerable	Endangered	<u>Keep watch</u>	<u>National recovery plan adopted in 2010 and in force; Conservation Advice made 2008</u>	<u>NPWS Plan by January 2005, National Plan by July 2003</u>
<i>Persoonia acerosa</i>	<u>Neede geebung</u>	<u>Vulnerable</u>	Vulnerable	<u>Keep watch</u>	<u>Conservation Advice made 2008</u>	<u>National Plan by July 2005</u>
<i>Petalura gigantea</i>	Giant Dragonfly	Endangered	<u>Not listed</u>	<u>Landscape</u>	=	<u>NPWS Plan by January 2005</u>
<i>Petrogale penicillata</i>	Brush-tailed Rock Wallaby	<u>Endangered</u>	Vulnerable	<u>Iconic</u>	<u>National recovery plan adopted in 2012 and in force</u>	<u>National Plan by July 2005</u>
<i>Phaius australis</i>	<u>Lesser swamp-orchid</u>	Endangered	Endangered	<u>Site-managed</u>	<u>Conservation advice made 2014</u>	<u>NPWS Plan by January 2005, National Plan by July 2003</u>
<i>Phaius tankervilleae</i>	Swamp Lily; Swamp Orchid	Endangered <u>Delisted</u>	Endangered <u>Delisted</u>	<u>N/A</u>	<u>N/A</u>	<u>NPWS Plan by January 2005, National Plan by July 2003</u>

Scientific name	Common Name	NSW Status	National Status	NSW Management Stream under the Biodiversity Conservation Program ¹	Current status of national recovery plans and conservation advice	Completion Date
<i>Phebalium elatius beckleri</i>		-	Endangered		<u>National Plan by July 2003</u>	<u>National Plan by July 2003</u>
<i>Pimelea venosa</i>	<u>Bolivia Holl pimelea</u>	Endangered	Endangered	<u>Data deficient</u>	<u>Conservation Advice made 2008</u>	<u>NPWS Plan by January 2005, National Plan by July 2003</u>
<i>Plectranthus nitidus</i>	<u>Nightcap plectranthus</u>	Endangered	Endangered	<u>Keep watch</u>	<u>National recovery plan adopted in 2010 and in force; Conservation Advice made 2008</u>	<u>NPWS Plan by January 2005, National Plan by July 2003</u>
<i>Poephila cincta</i>	<u>Southern Black-throated Finch</u>	Endangered	Vulnerable <u>Endangered, listed as <i>Poephila cincta</i> subsp. <i>cincta</i></u>	<u>Partnership</u>	<u>National recovery plan adopted in 2008 and in force; Conservation Advice made 2005</u>	<u>NPWS Plan by January 2005, National Plan by July 2005</u>
<i>Pomaderris brunnea</i>	<u>Rufous pomaderris</u>	<u>Vulnerable</u>	Vulnerable	<u>Site-managed</u>	<u>National recovery plan adopted in 2011 and in force</u>	<u>National Plan by July 2005</u>
<i>Prostanthera askania</i>	<u>Tranquility mint-bush</u>	Endangered	Endangered	<u>Site-managed</u>	<u>National recovery plan adopted in 2007 and in force</u>	<u>NPWS Plan by January 2005 National Plan by July 2003</u>
<i>Prostanthera cineolifera</i>	<u>Singleton-mint-bush</u>	<u>Vulnerable</u>	Vulnerable	<u>Data deficient</u>	<u>Conservation Advice made 2008</u>	<u>National Plan by July 2005</u>
<i>Prostanthera densa</i>	<u>Villous mint-bush</u>	<u>Vulnerable</u>	Vulnerable	<u>Site-managed</u>	<u>Conservation Advice made 2008</u>	<u>National Plan by July 2005</u>
<i>Prostanthera sp. Somersby (syn. P. junonensis)</i>	<u>Somersby mint-bush</u>	Endangered	Endangered, <u>listed under the EPBC Act as <i>Prostanthera junonis</i></u>	<u>Site-managed</u>	<u>National recovery plan adopted in 2001 and in force; Conservation Advice made 2016</u>	<u>NPWS Plan by January 2005, National Plan by July 2003</u>
<i>Pseudomys oralis</i>	Hastings River Mouse	Endangered	Endangered	<u>Keep watch</u>	<u>National recovery plan adopted in 2008 and in force</u>	<u>NPWS Plan by January 2005, National Plan by July 2003</u>

Scientific name	Common Name	NSW Status	National Status	NSW Management Stream under the Biodiversity Conservation Program¹	Current status of national recovery plans and conservation advice	Completion Date
<i>Psittaculirostris diophthalma coxeni</i>	<u>Coxen's Fig-Parrot</u>	<u>Critically Endangered</u>	Endangered, listed under the EPBC Act as <i>Cyclopsitta diophthalma coxeni</i>	<u>Data deficient</u>	<u>National recovery plan adopted in 2003 and in force; Conservation Advice made 2016</u>	<u>National Plan by July 2003</u>
<i>Pterodroma leucoptera leucoptera</i>	Gould's Petrel	<u>Vulnerable</u>	Endangered	<u>Site-managed</u>	<u>National recovery plan adopted in 2008 and in force</u>	<u>National Plan by July 2003</u>
<i>Pultenaea campbellii</i>		-	Vulnerable <u>Delisted</u>	<u>N/A</u>	<u>N/A</u>	<u>National Plan by July 2005</u>
<i>Pultenaea stuartiana</i>		-	Vulnerable <u>Delisted</u>	<u>N/A</u>	<u>N/A</u>	<u>National Plan by July 2005</u>
<i>Quassia sp. Mooney Creek</i>	<u>Moonee quassia</u>	Endangered	Endangered, listed under the EPBC Act as <i>Samadera sp. Mooney Creek (J.King s.n. Nov. 1949)</i>	<u>Site managed</u>	<u>National recovery plan adopted in 2010 and in force</u>	<u>NPWS Plan by January 2005, National Plan by July 2003</u>
<i>Randia moorei</i>	<u>Spiny gardenia</u>	Endangered	Endangered	<u>Site-managed</u>	<u>National recovery plan adopted in 2010 and in force</u>	<u>NPWS Plan by January 2005, National Plan by July 2003</u>
<i>Rapanea sp. A Richmond River</i>	=	Endangered	Endangered, listed under the EPBC Act as <i>Myrsine richmondensis</i>	<u>Site-managed</u>	<u>Conservation Advice made 2015</u>	<u>NPWS Plan by January 2005, National Plan by July 2003</u>
<i>Rutidosia heterogama</i>	<u>Heath wrinklewort</u>	<u>Vulnerable</u>	Vulnerable	<u>Keep watch</u>	<u>Conservation Advice made 2008</u>	<u>National Plan by July 2005</u>

Scientific name	Common Name	NSW Status	National Status	NSW Management Stream under the Biodiversity Conservation Program¹	Current status of national recovery plans and conservation advice	Completion Date
<i>Sarcochilus fitzgeraldii</i>	<u>Ravine orchid</u>	<u>Vulnerable</u>	Vulnerable	<u>Keep watch</u>	<u>Conservation Advice made 2008</u>	<u>National Plan by July 2005</u>
<i>Sophora fraseri</i>	<u>Brush sophora</u>	<u>Vulnerable</u>	Vulnerable	<u>Site-managed</u>	<u>Conservation Advice made 2008</u>	<u>National Plan by July 2005</u>
<i>Sterna albifrons</i>	Little Tern	<u>Endangered</u>	<u>Endangered Migratory</u>	<u>Site-managed</u>	<u>Listing Advice made 2002</u>	<u>National Plan by July 2003</u>
<i>Symplocos baeuerlenii</i>	<u>Small-leaved hazelwood</u>	<u>Vulnerable</u>	Vulnerable	<u>Site-managed</u>	<u>National recovery plan adopted in 2010 and in force; Conservation Advice made 2008</u>	<u>National Plan by July 2005</u>
<i>Syzygium hodgkinsoniae</i>	Red Lilly-Pilly; Smooth bark Rose Apple	<u>Vulnerable</u>	Vulnerable	<u>Site-managed</u>	<u>Conservation Advice made 2008</u>	<u>National Plan by July 2005</u>
<i>Syzygium moorei</i>	Coolamon Robby; Rose-Apple	<u>Vulnerable</u>	Vulnerable	<u>Landscape</u>	<u>National recovery plan adopted in 2010 and in force; Conservation Advice made 2008</u>	<u>National Plan by July 2005</u>
<i>Syzygium paniculatum</i>	<u>Magenta Lilly Pilly; Creek Satin Ash</u>	<u>Endangered</u>	Vulnerable	<u>Site-managed</u>	<u>National recovery plan adopted in 2012 and in force</u>	<u>National Plan by July 2005</u>
<i>Tasmannia glaucifolia</i>	<u>Fragrant pepperbush</u>	<u>Vulnerable</u>	Vulnerable	<u>Site-managed</u>	<u>Conservation Advice made 2008</u>	<u>National Plan by July 2005</u>
<i>Tasmannia purpurascens</i>	<u>Purple or road-leaved pepperbush</u>	<u>Vulnerable</u>	Vulnerable <u>Delisted</u>	<u>Keep watch</u>	=	<u>National Plan by July 2005</u>
<i>Tetradlea glandulosa</i>	<u>Glandular pink-bell</u>	<u>Vulnerable</u>	Vulnerable <u>Delisted</u>	<u>Site-managed</u>	=	<u>National Plan by July 2005</u>
<i>Tetradlea juncea</i>	<u>Black-eyed Susan</u>	<u>Vulnerable</u>	Vulnerable	<u>Site-managed</u>	<u>Conservation Advice made 2008</u>	<u>National Plan by July 2005</u>

Scientific name	Common Name	NSW Status	National Status	NSW Management Stream under the Biodiversity Conservation Program ¹	Current status of national recovery plans and conservation advice	Completion Date
<i>Thersites mitchellae</i>	Northern Tree Snail Mitchell's Rainforest Snail	Endangered	Critically Endangered	Landscape	National recovery plan adopted in 2002 and in force; Conservation Advice made 2016	NPWS Plan by January 2005
<i>Thesium australe</i>	Austral toad-flax	Vulnerable	Vulnerable	Keep watch	Conservation Advice made 2013	National Plan by July 2005
<i>Tinospora tinosporoides</i>	Arrow-head vine	Vulnerable	Vulnerable Delisted	Site-managed	-	National Plan by July 2005
<i>Turnix melanogaster</i>	Black-breasted Button-Quail	Critically Endangered	Vulnerable	Partnership	National recovery plan adopted in 2009 and in force; Conservation Advice made 2015	NPWS Plan by January 2005, National Plan by July 2005
<i>Turnix melanogaster</i>	Black-breasted Button-Quail	-	Vulnerable			National Plan by July 2005
<i>Tylophora woollsi</i>	Cryptic forest twiner	Endangered	Endangered	Site managed	National recovery plan adopted in 2010 and in force; Conservation Advice made 2008	NPWS Plan by January 2005, National Plan by July 2003
<i>Uromyrtus australis</i>	Peach myrtle	Endangered	Endangered	Site-managed	National recovery plan adopted in 2010 and in force	NPWS Plan by January 2005, National Plan by July 2003
<i>Velleia perfoliata</i>		Vulnerable	Vulnerable	Site-managed	Conservation Advice made 2008	National Plan by July 2005
<i>Xanthomyza</i> <i>Anthochaera phrygia</i>	Regent Honeyeater	Critically Endangered	Critically Endangered	Site-managed	National recovery plan adopted in 2016 and in force; Conservation Advice made 2015	NPWS Plan by January 2005, National Plan by July 2003
<i>Xerothamnella parvifolia</i>	-	Endangered	Vulnerable	Site-managed	Conservation Advice made 2008	NPWS Plan by January 2005, National Plan by July 2005

Scientific name	Common Name	NSW Status	National Status	<u>NSW Management Stream under the Biodiversity Conservation Program¹</u>	<u>Current status of national recovery plans and conservation advice</u>	<u>Completion Date</u>
<i>Zieria lasiocaulis</i>	<u>Willi willi zieria</u>	Endangered	Endangered	<u>Site-managed</u>	<u>National recovery plan adopted in 2004 and in force; Conservation Advice made 2016</u>	<u>NPWS Plan by January 2005, National Plan by July 2003</u>

Table notes:

(1) Site-managed: species can be successfully secured in the wild by carrying out targeted management actions at specific sites

Landscape: generally distributed across large areas and subject to threats at landscape scale

Iconic: species which the community places a high value on and has particular expectations for conservation

Data deficient: there is insufficient knowledge available on the ecology, distribution and/or management requirements to enable a site-managed species project

Partnership: has less than 10% of its population/distribution occurring within NSW

Keep Watch: lower priority for investment in management

NATIONAL ESTATE VALUES

Protection and Management of National Estate Values

1. Parties endorse the findings of the Commonwealth/NSW joint studies of the National Estate in the Upper North East and Lower North East regions (the Joint Study) and agree that National Estate Values exist as documented in publicly available plots of GIS coverages and the following published documents:

Upper North East

- (a) *Identification, Assessment and Protection of National Estate — Part A Natural Values, Upper North East Region*, Environment Australia (1998) (This is the report for two projects: ‘JANIS and Natural National Estate Conservation Requirements for the Upper North East CRA Region’ and ‘Extensive Natural National Estate Values — Upper North East CRA’);
- (b) *Places of Geoheritage Significance in NSW CRA Forest Regions*, Osborne, R.A.L., Docker, B. and Salem, L. (1998);
- (c) *Identification of Places of Natural History Significance in NSW CRA Forest Regions: 2. Sites of Potential National Estate Value*, Denny, M. (1998);
- (d) *Community Heritage Values Identification and Assessment Project for the Upper and Lower North East Regions*, Volumes 1-3, Context Pty Ltd (1998);
- (e) *Thematic Forest History and Heritage Assessment (Non Indigenous) Upper North East and Lower North East Regions*, Bickford, A. and Brayshaw, H. (1998);
- (f) *Assessment of Places of Aesthetic Significance within the Forested Areas of NSW CRA Regions (Statewide), Stage 2. Upper North East Region*, Hibbard, A. (1998).

Lower North East

- (a) *Identification, Assessment and Protection of National Estate — Part A Natural Values, Lower North East Region*, Environment Australia (1998) (This reports on the two projects: ‘JANIS and Natural National Estate Conservation Requirements for the Lower North East CRA Region’ and ‘Extensive Natural National Estate Values — Lower North East CRA’);
- (b) *Places of Geoheritage Significance in NSW CRA Forest Regions*, Osborne, R.A.L., Docker, B. and Salem, L. (1998);

- ~~(c) Identification of Places of Natural History Significance in NSW CRA Forest Regions: 2. Sites of Potential National Estate Value, Denny, M. (1998);~~
- ~~(d) Community Heritage Values Identification and Assessment Project for the Upper and Lower North East Regions, Volumes 1-3, Context Pty Ltd (1998);~~
- ~~(e) Thematic Forest History and Heritage Assessment (Non-Indigenous) Upper North East and Lower North East Regions, Bickford, A. and Brayshaw, H. (1998);~~
- ~~(f) Assessment of Places of Aesthetic Significance within the Forested Areas of NSW CRA Regions (Statewide), Stage 2. Lower North East Region, Hibbard, A. (1998);~~
- ~~2. Parties recognise that the extensive and systematic information and regional framework provided by the Joint Study and this Agreement provide a unique regional context for National Estate Values in the Upper North East and Lower North East regions.~~
- ~~3. Parties agree that many of the National Estate Values are adequately reserved in the CAR Reserve System (including its Dedicated Reserve, Informal Reserve and prescription elements). The State will protect in a regional context the full range of National Estate Values on Public Land, through the application of the Forest Management System in accordance with this Agreement, and the implementation of the improvements agreed in Attachment 8.~~
- ~~4. Parties agree that National Estate Values will be managed on the basis of the following principles:~~
- ~~• Integrated regional management is the basis for effective conservation of National Estate Values;~~
 - ~~• Protection decisions should be based on the extensiveness of each value within the region, taking into account its abundance, spatial and temporal distribution, spatial characteristics, variation and condition;~~
 - ~~• Protection decisions should not be based on individual expressions of the value in isolation;~~
 - ~~• Protection decisions should consider the sensitivity of each National Estate Value to various types of disturbance, with sensitive natural values having adequate representation in the CAR Reserve System;~~
 - ~~• Management in all Public Land tenures should address National Estate Values and make provision for their maintenance in management plans;~~
 - ~~• Protection of National Estate Values is achieved by the CAR Reserve System and other legislated protection mechanisms and within State forests through statutory management plans and by active management; and~~

- ~~It is productive, effective and necessary to work with the community to manage heritage values.~~
5. ~~Parties agree that the management of cultural values, both Aboriginal and non-Aboriginal, in the Upper North East region, be undertaken consistent with the guidelines in the *Protective Mechanisms for Cultural Heritage—Generic Version* and in the Lower North East region consistent with the guidelines in the *Protective Mechanisms for Cultural Heritage—Lower North East*. The above guidelines are based on the principles of *The Burra Charter (The Australia ICOMOS Charter for Places of Cultural Significance)* which provides the framework for the protection of cultural heritage sites and places. The Commonwealth acknowledges that the Cultural Heritage Guidelines attached to the IFOA 1999 are consistent with the above guidelines.~~
 6. ~~Parties agree to maintain the databases of the values identified in the Joint Study and cooperate in relation to access to the Data.~~
 7. ~~Parties agree that the sensitivity or resilience of each National Estate Value, and the appropriate approach to the management of each value is indicated in Tables 1 and 2 and subject to Attachment 8.~~

Existing listings

8. ~~Parties note that the Australian Heritage Commission (the Commission) has agreed to update the Statements of Significance and condition and description statements for all existing listings to incorporate the results of the Joint Study. Both Parties note that existing National Estate places will remain in the Register of the National Estate where the results of the Joint Study confirm the presence of National Estate Values.~~

Listings arising from the Joint Study

9. ~~Parties note that new listings recommended to the Commission will include National Estate Values protected by reservation, reserve management prescription, site exclusion, consultation processes or other measures appropriate to the value, or which are robust and not affected by harvesting or other off reserve management regimes or activity.~~
10. ~~Parties note that the Commission will work in cooperation with New South Wales in delineating places for National Estate listing. The identification of these areas will be based on the following principles:~~
 - ~~New listings in Dedicated Reserves and Informal Reserves, the boundaries of which are unlikely to change, should be distinct places and may be based on any National Estate Values;~~
 - ~~Listing of other National Estate places outside the CAR Reserve System will be based on robust values and those values that are protected by forest management prescription. Areas of contiguous values will be listed as a single National Estate place; and~~

- ~~Boundaries for listing National Estate places will be based on identified values and will follow the boundaries of Dedicated Reserves, Informal Reserves, natural topographic features, management boundaries and/or roads as appropriate.~~
- ~~11. For places arising from the Joint Study, only places identified by the above principles will be listed in the Register of the National Estate.~~
 - ~~12. Parties note that the identification and assessment of National Estate Values for the CRAs have been completed with the exception of Indigenous heritage. Parties note that the Commission will continue to consult with New South Wales and Indigenous communities in an effort to finalise the identification and assessment of Indigenous heritage places and values.~~
 - ~~13. Parties note that in the Upper North East and Lower North East regions some National Estate Values were dealt with adequately through the assessment of other values. These values are well represented in the CAR Reserve System through the conservation of other National Estate Values or of CAR Values. These values include vegetation succession (A.2), and vegetation communities characteristic of their class (D.1). Some values, being localised, are covered by protection mechanisms agreed in the RFA. See Tables 1 and 2 for further details. Other National Estate Values were considered by experts not to be present in the region or were not above threshold for consideration as National Estate in any known sites in the region.~~

Future Listings

- ~~14. Parties note that the Commission does not intend to undertake any further regional studies of forests in the Upper North East and Lower North East regions.~~
- ~~15. Parties note that the Commission confirms that, based on the Joint Study, there is no evidence to identify additional extensive National Estate Values in the forested areas of the Upper North East and Lower North East regions and that it therefore does not anticipate listing additional large places in the region.~~
- ~~16. Parties note that the Commission will refer future nominations to them. The Parties agree to work cooperatively and in a timely fashion in considering whether such nominations will be recommended to the Commission for listing. Both Parties are to compare the nominations with the existing agreed Upper North East and Lower North East regions National Estate database, and to consider any new research or information provided.~~
- ~~17. Parties will jointly agree on any future recommendations to the Commission for listing. Parties note that the Commission will work cooperatively with New South Wales on the detail of any consequent listings that may arise.~~
- ~~18. Parties agree that all National Estate Values will be considered in forest management decisions and note that the advice of the Commission will be sought in relation to proposed actions by the Commonwealth which are outside the scope of this Agreement and which might adversely affect National Estate Values in the Upper North East and Lower North East regions. This includes any proposed actions that may affect National Estate Values in areas outside the CAR Reserve~~

~~System and which have not been listed on the Register of the National Estate. Parties note that the Commission has agreed to take into account the undertakings in this Agreement in providing its advice, and will provide such advice in a regional context.~~

- ~~19. Parties note that the Commission may delegate preparation of section 30 advice with respect to National Estate in the Upper North East and Lower North East regions to an appropriate official in a New South Wales Agency. This delegation would be limited to the Upper North East and Lower North East regions, and those operations that affect those aspects of the forest estate documented in the CRA.~~

Table 1. UPPER NORTH EAST REGION—Protection of National Estate Values on Public Land

Category 1: Values that are adequately protected at a regional level in the Dedicated Reserve or Informal Reserve components of the CAR Reserve System established under this Agreement.

National Estate Values	Sensitivity ^a and resilience ^b to forestry activities covered by the RFA	Percentage of value on Public Land in reserves			Existing and/or off reserve protection mechanisms	Additional agreed actions under the North East RFA
		Dedicated Reserve	Informal Reserve	Total		
Wilderness (A.2, B.1)^c	High sensitivity to unnatural disturbance. Low resilience to forestry activities.	64	-	64	<i>Wilderness Act 1977.</i>	NPWS Environmental Management System.
Old Growth Forest and Rare Old Growth Forest (A.2 & B.1)^c	High sensitivity to logging, grazing, unnatural fire and other forestry activities. Low resilience to forestry activities. A2 Old Growth B1 (Rare) Old Growth— See Table 2 in Attachment 1(A) and 1(B)	48	13	61	<i>Threatened Species Conservation Act 1995, Environmental Planning and Assessment Act 1979; National Parks and Wildlife Act 1974, Endangered Species Protection Act 1992; Native Vegetation Conservation Act 1997; Integrated Forestry Operations Approvals, Forest Management Zoning; and Management Plans.</i>	Regional ESFM Plan; Native Forest Management System; NPWS Environmental Management System.
Natural Landscapes (A.2 & B.1)	High sensitivity to logging, grazing, unnatural fire and other forestry activities. Low resilience to forestry activities.	56	9	65	<i>Heritage Act 1977, Wilderness Act 1977.</i>	Regional ESFM Plan; Native Forest Management System; NPWS Environmental Management System.

National Estate Values	Sensitivity ^a and resilience ^b to forestry activities covered by the RFA	Percentage of value on Public Land in reserves			Existing and/or off reserve protection mechanisms	Additional agreed actions under the North East RFA
		Dedicated Reserve	Informal Reserve	Total		
Undisturbed Catchments (A2 & B1)	High sensitivity to logging, grazing, unnatural fire and other forestry activities. Low resilience to forestry activities.	90	±	9±	<i>Heritage Act 1977, Wilderness Act 1977.</i>	Regional ESFM Plan; Section 2.6 (Wild Rivers) of the New South Wales <i>Upper North East Region Forest Agreement</i> and <i>Lower North East Region Forest Agreement</i> ; Native Forest Management System; NPWS Environmental Management System.

NOTES ACCOMPANYING TABLE 1

^aSensitivity—to disturbance, relates to extent of loss or diminution in a value due to the effects of disturbance.

^bResilience—relates to the extent of likely recovery of a diminished value, and to the time and management effort required to achieve this recovery.

^cJANIS values for which there were specific numerical targets.

^dCriteria in plain type face are values which were assessed indirectly as part of the assessment of the criteria in bold type face.

Category 2: Values that are adequately protected at a regional level through the Dedicated Reserve, Informal Reserve or Consolidated Prescription^e components of the CAR Reserve System established under this Agreement and existing off reserve protection mechanisms

National Estate Values	Sensitivity ^a and resilience ^b to forestry activities covered by the RFA	Percentage of value on Public Land in reserves				Existing off reserve protection mechanisms	Additional agreed actions under the North East RFA
		Dedicated Reserve	Informal Reserve	Consolidated Prescription ^e Reserve	Total		
Flora and Fauna Refugia (A.1 & A.2) Significant Wetlands (D.1) ^d	High sensitivity to logging, grazing, unnatural fire and other forestry activities. Low resilience to forestry activities.	64	6	4	74	<i>Threatened Species Conservation Act 1995;</i> <i>Environmental Planning and Assessment Act 1979;</i> <i>National Parks and Wildlife Act 1974;</i> <i>Endangered Species Protection Act 1995;</i> Integrated Forestry Operations Approvals, Forest Management Zoning, and Management Plans	Regional ESFM Plan; Native Forest Management System; NPWS Environmental Management System; NSW Biodiversity Strategy.
Rare Vegetation Communities (A.2, B.1, D.1)^c	High sensitivity to logging, grazing, unnatural fire and other forestry activities. Low resilience to forestry activities.	75	6	1	82	<i>Threatened Species Conservation Act 1995;</i> <i>Environmental Planning and Assessment Act 1979;</i> <i>National Parks and Wildlife Act 1974;</i> <i>Endangered Species Protection Act 1992;</i> <i>Native Vegetation Conservation Act 1997;</i> Integrated Forestry Operations Approvals, Forest Management Zoning, and Management Plans.	Regional ESFM Plan; Native Forest Management System; NPWS Environmental Management System.

National Estate Values	Sensitivity ^a and resilience ^b to forestry activities covered by the RFA	Percentage of value on Public Land in reserves				Existing off reserve protection mechanisms	Additional agreed actions under the North East RFA
		Dedicated Reserve	Informal Reserve	Consolidated Prescription ^e Reserve	Total		
Centres of Endemism – Flora and Fauna (A.1)	Value is dependent on individual species response. Species sensitive to logging, grazing, and unnatural fire are at particular risk.	65	8	3	76	<i>Threatened Species Conservation Act 1995;</i> <i>Environmental Planning and Assessment Act 1979;</i> <i>National Parks and Wildlife Act 1974;</i> <i>Endangered Species Protection Act 1992;</i> Integrated Forestry Operations Approvals, Forest Management Zoning, and Management Plans.	Regional ESFM Plan; Native Forest Management System; NPWS Environmental Management System; NSW Biodiversity Strategy.
Primitive and Relictual Species (A.1)	High sensitivity to logging, grazing, unnatural fire and other forestry activities. Low resilience to forestry activities.	70	5	2	77	<i>Threatened Species Conservation Act 1995;</i> <i>Environmental Planning and Assessment Act 1979;</i> <i>National Parks and Wildlife Act 1974;</i> <i>Endangered Species Protection Act 1992;</i> Integrated Forestry Operations Approvals, Forest Management Zoning, and Management Plans.	Regional ESFM Plan; Native Forest Management System; NPWS Environmental Management System; NSW Biodiversity Strategy.

National Estate Values	Sensitivity ^a and resilience ^b to forestry activities covered by the RFA	Percentage of value on Public Land in reserves				Existing off reserve protection mechanisms	Additional agreed actions under the North East RFA
		Dedicated Reserve	Informal Reserve	Consolidated Prescription ^c Reserve	Total		
Species with Disjunct Ranges (A.1)	Sensitivity and resilience varies depending on the species and habitat required. Species sensitive to logging, grazing, and unnatural fire are at particular risk.	Fauna: 68 Flora: 80	3 8	2 1	73 89	<i>Threatened Species Conservation Act 1995;</i> <i>Environmental Planning and Assessment Act 1979;</i> <i>National Parks and Wildlife Act 1974;</i> <i>Endangered Species Protection Act 1992;</i> Integrated Forestry Operations Approvals, Forest Management Zoning, and Management Plans.	Regional ESFM Plan; Native Forest Management System; NPWS Environmental Management System; NSW Biodiversity Strategy.
Vegetation Community Richness (A3)	High sensitivity to logging, grazing, unnatural fire and other forestry activities. Medium resilience to forestry activities.	45	3	7	55	<i>Environmental Planning and Assessment Act 1979;</i> Integrated Forestry Operations Approvals, Forest Management Zoning, and Management Plans.	Regional ESFM Plan; Native Forest Management System; NPWS Environmental Management System; NSW Biodiversity Strategy.
Rare, Uncommon or Threatened Species	Sensitivity and resilience varies depending on the species and habitat required. Species sensitive to logging, grazing, and unnatural fire are at particular risk.	Fauna: 65 Flora: 58	5 13	4 2	74 73	<i>Threatened Species Conservation Act 1995;</i> <i>Environmental Planning and Assessment Act 1979;</i> <i>National Parks and Wildlife Act 1974;</i> <i>Endangered Species Protection Act 1992;</i> Integrated Forestry Operations Approvals, Forest Management Zoning, and Management Plans.	Regional ESFM Plan; Native Forest Management System; NPWS Environmental Management System; NSW Biodiversity Strategy.

National Estate Values	Sensitivity ^a and resilience ^b to forestry activities covered by the RFA	Percentage of value on Public Land in reserves				Existing off reserve protection mechanisms	Additional agreed actions under the North East RFA
		Dedicated Reserve	Informal Reserve	Consolidated Prescription ^e Reserve	Total		
Important Habitat (A.2) Migratory Species	Sensitivity and resilience varies depending on the species and habitat required. Species sensitive to logging, grazing and unnatural fire are at particular risk.	45	4	7	56	<i>Threatened Species Conservation Act 1995;</i> <i>Environmental Planning and Assessment Act 1979;</i> <i>National Parks and Wildlife Act 1974;</i> <i>Endangered Species Protection Act 1992;</i> Integrated Forestry Operations Approvals, Forest Management Zoning; and Management Plans. RAMSAR, CAMBA and JAMBA convention and agreements on migratory and wetland species.	Regional ESFM Plan; Native Forest Management System; NPWS Environmental Management System; NSW Biodiversity Strategy.
Remnant Vegetation (A.2)	High sensitivity to logging, grazing, fire and other forestry activities. Low resilience to forestry activities.	38	9	3	50	<i>Threatened Species Conservation Act 1995;</i> <i>Environmental Planning and Assessment Act 1979;</i> <i>National Parks and Wildlife Act 1974;</i> <i>Endangered Species Protection Act 1992;</i> <i>Native Vegetation Conservation Act 1997;</i> <i>Protection of the Environment Operations Act 1997;</i> Integrated Forestry Operations Approvals, Forest Management Zoning, and Management Plans.	Regional ESFM Plan; Native Forest Management System; NPWS Environmental Management System.

National Estate Values	Sensitivity ^a and resilience ^b to forestry activities covered by the RFA	Percentage of value on Public Land in reserves				Existing off reserve protection mechanisms	Additional agreed actions under the North East RFA
		Dedicated Reserve	Informal Reserve	Consolidated Prescription ^c Reserve	Total		
Habitat Richness (A.3)	Sensitivity and resilience varies depending on the habitat. Habitat types sensitive to logging, grazing, and unnatural fire are at particular risk.	60	5	5	70	<i>Environmental Planning and Assessment Act 1979;</i> <i>Integrated Forestry Operations Approvals, Forest Management Zoning, and Management Plans.</i>	Regional ESFM Plan; Native Forest Management System; NPWS Environmental Management System; NSW Biodiversity Strategy.
Species Richness (A.3)	High sensitivity to logging, grazing, unnatural fire and other forestry activities. Medium resilience to forestry activities.	Fauna: 62 Flora: 66	5 7	4 3	71 76	<i>Environmental Planning and Assessment Act 1979;</i> <i>Integrated Forestry Operations Approvals, Forest Management Zoning, and Management Plans.</i>	Regional ESFM Plan; Native Forest Management System; NPWS Environmental Management System; NSW Biodiversity Strategy.
Species at the Limits of their Distribution Range (A.1)	Value is dependent on individual species response. Species sensitive to logging, grazing, and unnatural fire are at particular risk.	Fauna: 83 Flora: 69	2 3	0 2	85 74	<i>Threatened Species Conservation Act 1995;</i> <i>Environmental Planning and Assessment Act 1979;</i> <i>National Parks and Wildlife Act 1974;</i> <i>Endangered Species Protection Act 1992;</i> <i>Integrated Forestry Operations Approvals, Forest Management Zoning, and Management Plans.</i>	Regional ESFM Plan; Native Forest Management System; NPWS Environmental Management System; NSW Biodiversity Strategy.

National Estate Values	Sensitivity ^a and resilience ^b to forestry activities covered by the RFA	Percentage of value on Public Land in reserves				Existing off reserve protection mechanisms	Additional agreed actions under the North East RFA
		Dedicated Reserve	Informal Reserve	Consolidated Prescription ^c Reserve	Total		
Historic Values (A.3, A.4, B.2, C.2, D.2, F.1, & H.1)	Sensitive to moderately sensitive dependent on the integrity of the site and extant fabric.	43	0	0	43	<i>Heritage Act 1977;</i> <i>National Parks and Wildlife Act 1974;</i> <i>Environmental Planning and Assessment Act 1979;</i> Protective Mechanisms for Cultural Heritage—Generic Version; Forest Management Zones, Codes of Practice, and Forest Management Plans; Cultural Heritage Guidelines attached to the Integrated Forestry Operations Approvals.	Regional ESFM Plan; Native Forest Management System; Joint NPWS/SFNSW Regional Recreation and Tourism Plans; NPWS Environmental Management System.
Social / Community Heritage Value (G.1)	Sensitive to moderately sensitive dependent on nature of association.	63	1	1	65	<i>Heritage Act 1977;</i> <i>National Parks and Wildlife Act 1974;</i> Protective Mechanisms for Cultural Heritage—Generic Version; Forest Management Zones, Codes of Practice, and Forest Management Plans; Cultural Heritage Guidelines attached to the Integrated Forestry Operations Approvals.	Regional ESFM Plan; Joint NPWS/SFNSW Regional Recreation and Tourism; NPWS Environmental Management System.

National Estate Values	Sensitivity ^a and resilience ^b to forestry activities covered by the RFA	Percentage of value on Public Land in reserves				Existing off reserve protection mechanisms	Additional agreed actions under the North East RFA
		Dedicated Reserve	Informal Reserve	Consolidated Prescription ^c Reserve	Total		
Acesthetic Value (E.1)	Moderately sensitive dependent on the nature of the aesthetic experience and the type of feature.	90	1	0	91	<i>Heritage Act 1977;</i> <i>National Parks and Wildlife Act 1974;</i> Protective Mechanisms for Cultural Heritage—Generic Version; Forest Management Zones, Codes of Practice, and Forest Management Plans; Cultural Heritage Guidelines attached to the Integrated Forestry Operations Approvals.	Regional ESFM Plan; Native Forest Management System; Joint NPWS/SFNSW Regional Recreation and Tourism Plans; NPWS Environmental Management System.
Research, Type Localities, Teaching and Benchmark Sites (C.1)	Sensitivity and resilience varies depending on the species and habitat required. Sites sensitive to logging, grazing, and unnatural fire are at particular risk.	69	0	0	69	<i>Threatened Species Conservation Act 1995;</i> <i>Crown Lands Act 1989;</i> <i>Heritage Act 1977;</i> <i>Soil Conservation Act 1938;</i> <i>Environmental Planning and Assessment Act 1979;</i> <i>Native Vegetation Conservation Act 1997;</i> <i>Protection of the Environment Operations Act 1997;</i> <i>Clean Water Act 1970.</i>	Regional ESFM Plan; Native Forest Management System; NPWS Environmental Management System;

National Estate Values	Sensitivity ^a and resilience ^b to forestry activities covered by the RFA	Percentage of value on Public Land in reserves				Existing off reserve protection mechanisms	Additional agreed actions under the North East RFA
		Dedicated Reserve	Informal Reserve	Consolidated Prescription ^c Reserve	Total		
Geoconservation Values (A1, A2, A.3, B.1, C.1, C.2, D.1, H.1)	Values are generally not sensitive to most forest uses; however some surface values are sensitive to soil disturbance and fire.	75	2	0	77	<i>Crown Lands Act (1989); Heritage Act 1977; Soil Conservation Act 1938; Environmental Planning and Assessment Act 1979; Native Vegetation Conservation Act 1997; Protection of the Environment Operations Act 1997; Clean Water Act 1970.</i>	Regional ESFM Plan.

NOTES ACCOMPANYING TABLE 1

^aSensitivity – to disturbance, relates to extent of loss or diminution in a value due to the effects of disturbance.

^bResilience – relates to the extent of likely recovery of a diminished value, and to the time and management effort required to achieve this recovery.

^cJANIS values for which there were specific numerical targets.

^dCriteria in plain type face are values which were assessed indirectly as part of the assessment of the criteria in bold type face.

^eZone 3A (Harvesting Exclusions) in *Forest Management Zoning In State Forests*. These areas are designed to comply with JANIS “Values Protected By Prescription” but to the fullest extent possible they will be managed to meet the requirement of JANIS Informal Reserves. These areas are of high mineral prospectivity, or dedicated leasehold where leasehold grazing may occur.

Table 2. LOWER NORTH EAST REGION – Protection of National Estate Values on Public Land

Category 1: Values that are adequately protected at a regional level in the Dedicated Reserve or Informal Reserve components of the CAR Reserve System established under this Agreement.

National Estate Values	Sensitivity ^a and resilience ^b to forestry activities covered by the RFA	Percentage of value on Public Land in reserves			Existing and/or off reserve protection mechanisms	Additional agreed actions under the North East RFA
		Dedicated Reserve	Informal Reserve	Total		
Wilderness (A.2, B.1)^c	High sensitivity to unnatural disturbance. Low resilience to forestry activities.	88	-	88	<i>Wilderness Act 1977.</i>	NPWS Environmental Management System.
Old Growth Forest and Rare Old Growth Forest (A.2 & B.1)^c	High sensitivity to logging, grazing, unnatural fire and other forestry activities. Low resilience to forestry activities. A2 Old Growth B1 (Rare) Old Growth – See Table 2 in Attachment 1	80	7	87	<i>Threatened Species Conservation Act 1995, Environmental Planning and Assessment Act 1979, National Parks and Wildlife Act 1974, Endangered Species Protection Act 1992, Native Vegetation Conservation Act 1997, Integrated Forestry Operations Approvals, Forest Management Zoning, and Management Plans.</i>	Regional ESFM Plan; Native Forest Management System; NPWS Environmental Management System.
Natural Landscapes (A.2 & B.1)	High sensitivity to logging, grazing, unnatural fire and other forestry activities. Low resilience to forestry activities.	71	6	77	<i>Heritage Act 1977, Wilderness Act 1977.</i>	Regional ESFM Plan; Native Forest Management System; NPWS Environmental Management System.
Undisturbed Catchments (A2 & B1)	High sensitivity to logging, grazing, unnatural fire and other forestry activities. Low resilience to forestry activities.	77	7	84	<i>Heritage Act 1977, Wilderness Act 1977.</i>	Regional ESFM Plan; Section 2.6 (Wild Rivers) of the New South Wales Upper North East and Lower North East Region Forest Agreements; Native Forest Management System; NPWS Environmental Management System.

NOTES ACCOMPANYING TABLE 2

^a Sensitivity to disturbance, relates to extent of loss or diminution in a value due to the effects of disturbance.

^b Resilience relates to the extent of likely recovery of a diminished value, and to the time and management effort required to achieve this recovery.

^c JANIS values for which there were specific numerical targets.

^d Criteria in plain type face are values which were assessed indirectly as part of the assessment of the criteria in bold type face.

Category 2: Values that are adequately protected at a regional level through the Dedicated Reserve, Informal Reserve or Consolidated Prescription^e components of the CAR Reserve System established under this Agreement and existing off reserve protection mechanisms

National Estate Values	Sensitivity ^a and resilience ^b to forestry activities covered by the RFA	Percentage of value on Public Land in reserves			Existing off reserve protection mechanisms	Additional agreed actions under the North East RFA
		Dedicated Reserve	Informal Reserve	Total		
Flora and Fauna Refugia (A.1 & A.2) Significant Wetlands (D.1) ^d	High sensitivity to logging, grazing, unnatural fire and other forestry activities. Low resilience to forestry activities.	70	10	80	<i>Threatened Species Conservation Act 1995;</i> <i>Environmental Planning and Assessment Act 1979;</i> <i>National Parks and Wildlife Act 1974;</i> <i>Endangered Species Protection Act 1995;</i> Integrated Forestry Operations Approvals, Forest Management Zoning, and Management Plans	Regional ESFM Plan; Native Forest Management System; NPWS Environmental Management System; NSW Biodiversity Strategy.
Rare Vegetation Communities (A.2, B.1, D.1)^e	High sensitivity to logging, grazing, unnatural fire and other forestry activities. Low resilience to forestry activities.	75	10	85	<i>Threatened Species Conservation Act 1995;</i> <i>Environmental Planning and Assessment Act 1979;</i> <i>National Parks and Wildlife Act 1974;</i> <i>Endangered Species Protection Act 1992;</i> <i>Native Vegetation Conservation Act 1997;</i> Integrated Forestry Operations Approvals, Forest Management Zoning, and Management Plans.	Regional ESFM Plan; Native Forest Management System; NPWS Environmental Management System.

National Estate Values	Sensitivity ^a and resilience ^b to forestry activities covered by the RFA	Percentage of value on Public Land in reserves			Existing off reserve protection mechanisms	Additional agreed actions under the North East RFA
		Dedicated Reserve	Informal Reserve	Total		
Centres of Endemism – Flora and Fauna (A.1)	Value is dependent on individual species response. Species sensitive to logging, grazing, and unnatural fire are at particular risk.	57	10	67	<i>Threatened Species Conservation Act 1995;</i> <i>Environmental Planning and Assessment Act 1979;</i> <i>National Parks and Wildlife Act 1974;</i> <i>Endangered Species Protection Act 1992;</i> Integrated Forestry Operations Approvals, Forest Management Zoning, and Management Plans.	Regional ESFM Plan; Native Forest Management System; NPWS Environmental Management System; NSW Biodiversity Strategy.
Primitive and Relictual Species (A.1)	High sensitivity to logging, grazing, unnatural fire and other forestry activities. Low resilience to forestry activities.	54	8	62	<i>Threatened Species Conservation Act 1995;</i> <i>Environmental Planning and Assessment Act 1979;</i> <i>National Parks and Wildlife Act 1974;</i> <i>Endangered Species Protection Act 1992;</i> Integrated Forestry Operations Approvals, Forest Management Zoning, and Management Plans.	Regional ESFM Plan; Native Forest Management System; NPWS Environmental Management System; NSW Biodiversity Strategy.

National Estate Values	Sensitivity ^a and resilience ^b to forestry activities covered by the RFA	Percentage of value on Public Land in reserves			Existing off reserve protection mechanisms	Additional agreed actions under the North East RFA
		Dedicated Reserve	Informal Reserve	Total		
Species with Disjunct Ranges (A.1)	Sensitivity and resilience varies depending on the species and habitat required. Species sensitive to logging, grazing, and unnatural fire are at particular risk.	Fauna: 52 Flora: 73	11 8	63 81	<i>Threatened Species Conservation Act 1995;</i> <i>Environmental Planning and Assessment Act 1979;</i> <i>National Parks and Wildlife Act 1974;</i> <i>Endangered Species Protection Act 1992;</i> Integrated Forestry Operations Approvals, Forest Management Zoning, and Management Plans.	Regional ESFM Plan; Native Forest Management System; NPWS Environmental Management System; NSW Biodiversity Strategy.

National Estate Values	Sensitivity ^a and resilience ^b to forestry activities covered by the RFA	Percentage of value on Public Land in reserves			Existing off reserve protection mechanisms	Additional agreed actions under the North East RFA
		Dedicated Reserve	Informal Reserve	Total		
Vegetation Community Richness (A3)	High sensitivity to logging, grazing, unnatural fire and other forestry activities. Medium resilience to forestry activities.	58	2	60	<i>Environmental Planning and Assessment Act 1979;</i> <i>Integrated Forestry Operations Approvals, Forest Management Zoning, and Management Plans.</i>	Regional ESFM Plan; Native Forest Management System; NPWS Environmental Management System; NSW Biodiversity Strategy.
Rare, Uncommon or Threatened Species	Sensitivity and resilience varies depending on the species and habitat required. Species sensitive to logging, grazing, and unnatural fire are at particular risk.	Fauna: 59 Flora: 80	8 10	67 90	<i>Threatened Species Conservation Act 1995;</i> <i>Environmental Planning and Assessment Act 1979;</i> <i>National Parks and Wildlife Act 1974;</i> <i>Endangered Species Protection Act 1992;</i> <i>Integrated Forestry Operations Approvals, Forest Management Zoning, and Management Plans.</i>	Regional ESFM Plan; Native Forest Management System; NPWS Environmental Management System; NSW Biodiversity Strategy.

National Estate Values	Sensitivity ^a and resilience ^b to forestry activities covered by the RFA	Percentage of value on Public Land in reserves			Existing off reserve protection mechanisms	Additional agreed actions under the North East RFA
		Dedicated Reserve	Informal Reserve	Total		
Important Habitat (A.2) Migratory Species	Sensitivity and resilience varies depending on the species and habitat required. Species sensitive to logging, grazing and unnatural fire are at particular risk.	63	6	69	<i>Threatened Species Conservation Act 1995;</i> <i>Environmental Planning and Assessment Act 1979;</i> <i>National Parks and Wildlife Act 1974;</i> <i>Endangered Species Protection Act 1992;</i> Integrated Forestry Operations Approvals, Forest Management Zoning; and Management Plans. RAMSAR, CAMBA and JAMBA convention and agreements on migratory and wetland species.	Regional ESFM Plan; Native Forest Management System; NPWS Environmental Management System; NSW Biodiversity Strategy.

National Estate Values	Sensitivity ^a and resilience ^b to forestry activities covered by the RFA	Percentage of value on Public Land in reserves			Existing off reserve protection mechanisms	Additional agreed actions under the North East RFA
		Dedicated Reserve	Informal Reserve	Total		
Remnant Vegetation (A.2)	High sensitivity to logging, grazing, fire and other forestry activities. Low resilience to forestry activities.	71	9	80	<i>Threatened Species Conservation Act 1995;</i> <i>Environmental Planning and Assessment Act 1979;</i> <i>National Parks and Wildlife Act 1974;</i> <i>Endangered Species Protection Act 1992;</i> <i>Native Vegetation Conservation Act 1997;</i> <i>Protection of the Environment Operations Act 1997;</i> Integrated Forestry Operations Approvals, Forest Management Zoning, and Management Plans.	Regional ESFM Plan; Native Forest Management System; NPWS Environmental Management System.
Habitat Richness (A.3)	Sensitivity and resilience varies depending on the habitat. Habitat types sensitive to logging, grazing, and unnatural fire are at particular risk.	59	4	63	<i>Environmental Planning and Assessment Act 1979;</i> Integrated Forestry Operations Approvals, Forest Management Zoning, and Management Plans.	Regional ESFM Plan; Native Forest Management System; NPWS Environmental Management System; NSW Biodiversity Strategy.
Species Richness (A.3)	High sensitivity to logging, grazing, unnatural fire and other forestry activities. Medium resilience to forestry activities.	Fauna: 54 Flora: 62	8 9	62 71	<i>Environmental Planning and Assessment Act 1979;</i> Integrated Forestry Operations Approvals, Forest Management Zoning, and Management Plans.	Regional ESFM Plan; Native Forest Management System; NPWS Environmental Management System; NSW Biodiversity Strategy.

National Estate Values	Sensitivity ^a and resilience ^b to forestry activities covered by the RFA	Percentage of value on Public Land in reserves			Existing off reserve protection mechanisms	Additional agreed actions under the North East RFA
		Dedicated Reserve	Informal Reserve	Total		
Species at the Limits of their Distribution Range (A.1)	Value is dependent on individual species response. Species sensitive to logging, grazing, and unnatural fire are at particular risk.	Fauna: 52 Flora: 65	11 10	63 75	<i>Threatened Species Conservation Act 1995;</i> <i>Environmental Planning and Assessment Act 1979;</i> <i>National Parks and Wildlife Act 1974;</i> <i>Endangered Species Protection Act 1992;</i> Integrated Forestry Operations Approvals, Forest Management Zoning, and Management Plans.	Regional ESFM Plan; Native Forest Management System; NPWS Environmental Management System; NSW Biodiversity Strategy.
Historic Values (A.3, A.4, B.2, C.2, D.2, F.1, & H 1)	Sensitive to moderately sensitive dependent on the integrity of the site and extant fabric.	100	0	100	<i>Heritage Act 1977;</i> <i>National Parks and Wildlife Act 1974;</i> <i>Environmental Planning and Assessment Act 1979;</i> Forest Management Zones, Codes of Practice, and Forest Management Plans; Protective Mechanisms for Cultural Heritage—Lower North East; Cultural Heritage Guidelines attached to the Integrated Forestry Operations Approvals.	Regional ESFM Plan; Native Forest Management System; Joint NPWS/SFNSW Regional Recreation and Tourism Plans; NPWS Environmental Management System.

National Estate Values	Sensitivity ^a and resilience ^b to forestry activities covered by the RFA	Percentage of value on Public Land in reserves			Existing off reserve protection mechanisms	Additional agreed actions under the North East RFA
		Dedicated Reserve	Informal Reserve	Total		
Social / Community Heritage Value (G.1)	Sensitive to moderately sensitive dependent on nature of association.	53	9	62	<i>Heritage Act 1977;</i> <i>National Parks and Wildlife Act 1974;</i> Forest Management Zones, Codes of Practice, and Forest Management Plans; Protective Mechanisms for Cultural Heritage – Lower North East; Cultural Heritage Guidelines attached to the Integrated Forestry Operations Approvals.	Regional ESFM Plan; Joint NPWS/SFNSW Regional Recreation and Tourism Plans; NPWS Environmental Management System.
Aesthetic Value (E.1)	Moderately sensitive dependent on the nature of the aesthetic experience and the type of feature.	99	0	99	<i>Heritage Act 1977;</i> <i>National Parks and Wildlife Act 1974;</i> Forest Management Zones, Codes of Practice, and Forest Management Plans; Protective Mechanisms for Cultural Heritage – Lower North East; Cultural Heritage Guidelines attached to the Integrated Forestry Operations Approvals.	Regional ESFM Plan; Native Forest Management System; Joint NPWS/SFNSW Regional Recreation and Tourism Plans; NPWS Environmental Management System.

National Estate Values	Sensitivity ^a and resilience ^b to forestry activities covered by the RFA	Percentage of value on Public Land in reserves			Existing off reserve protection mechanisms	Additional agreed actions under the North East RFA
		Dedicated Reserve	Informal Reserve	Total		
Research, Type Localities, Teaching and Benchmark Sites (C.1)	Sensitivity and resilience varies depending on the species and habitat required. Sites sensitive to logging, grazing, and unnatural fire are at particular risk.	55	1	56	<i>Threatened Species Conservation Act 1995;</i> <i>Crown Lands Act 1989;</i> <i>Heritage Act 1977;</i> <i>Soil Conservation Act 1938;</i> <i>Environmental Planning and Assessment Act 1979;</i> <i>Native Vegetation Conservation Act 1997;</i> <i>Protection of the Environment Operations Act 1997;</i> <i>Clean Water Act 1970.</i>	Regional ESFM Plan; Native Forest Management System; NPWS Environmental Management System.
Geoconservation Values (A1, A2, A.3, B.1, C.1, C.2, D.1, H.1)	Values are generally not sensitive to most forest uses; however some surface values are sensitive to soil disturbance and fire.	58	2	60	<i>Crown Lands Act (1989);</i> <i>Heritage Act 1977;</i> <i>Soil Conservation Act 1938;</i> <i>Environmental Planning and Assessment Act 1979;</i> <i>Native Vegetation Conservation Act 1997;</i> <i>Protection of the Environment Operations Act 1997;</i> <i>Clean Water Act 1970.</i>	Regional ESFM Plan.

NOTES ACCOMPANYING TABLE 2

^aSensitivity – to disturbance, relates to extent of loss or diminution in a value due to the effects of disturbance.

^bResilience – relates to the extent of likely recovery of a diminished value, and to the time and management effort required to achieve this recovery.

^eJANIS values for which there were specific numerical targets.

^dCriteria in plain type face are values which were assessed indirectly as part of the assessment of the criteria in bold type face.

^e*Zone 3A (Harvesting Exclusions) in Forest Management Zoning In State Forests.* These areas are designed to comply with JANIS “Values Protected By Prescription” but to the fullest extent possible they will be managed to meet the requirement of JANIS Informal Reserves. These areas are of high mineral prospectivity, or dedicated leasehold where leasehold grazing may occur.

ATTACHMENT 5 NOT USED
(clause 39)

MILESTONES

Clause	Action	Timeline
6	The Parties to determine the process for extending the Agreement for a further period.	As part of the third five-yearly review
33	Commonwealth to use its best endeavours to secure the enactment of legislation which amends <i>the Environmental Protection and Biodiversity Conservation Act 1999</i> (Cwlth)	By 30 June 2000
39	Parties to report annually on the achievement of milestones in this Agreement.	Annually for the first five years
42	The Parties to determine the mechanism for the five-year review.	Before the end of the five-year review period
42	Commonwealth will table the signed RFA in the Commonwealth Parliament.	Following Signature
42	Commonwealth will table in the Commonwealth Parliament the annual reports of achievement of milestones for the first four years.	Annually
42	Commonwealth will table in the Commonwealth Parliament the first five-yearly review on performance against milestones and commitments.	Following first five-yearly review
48(e)	New South Wales to complete and publish plans of management for areas dedicated under the <i>National Parks and Wildlife Act 1974</i> (NSW).	By 1 January 2005
48(d)	New South Wales to complete and publish Regional ESFM Plans for State forests.	By 30 June 2000
48(e)	New South Wales to implement the Forest Management Zoning system for the Upper North East and Lower North East regions.	By 30 June 2000
48(g)	New South Wales to implement the review and monitoring processes and develop the strategic and operational requirements of sustainable yield systems and processes to enable a review of Sustainable Yield.	By 1 December 2006.
48(h)	New South Wales to develop and implement environmental management systems.	Within five years of signing

Clause	Action	Timeline
51	NSW to report on compliance of the <i>Integrated Forestry Operations Approval for the Upper North East Region</i> and the <i>Integrated Forestry Operations Approval Lower North East Region</i> and furnish the Commonwealth with a copy of these reports.	Annually
53(d)	Both Parties to further develop, review, and if necessary revise Sustainability Indicators.	In time for the first five yearly review
0	New South Wales to produce a code of practice for Timber Harvesting of native forest on Private Lands.	By the first five-yearly review
57	NSW to complete Code of Practice for Plantations on Private Land.	31 December 2000
81	NSW to review FRAMES and Wood supply.	By 1 December 2006
82	Changes in contracted volumes following review to be incorporated in this Agreement and Wood Supply Agreement holders to be advised.	By 1 December 2006
100	New South Wales to establish a Research Liaison Committee and publish a list of research priorities.	By August 2000
102	New South Wales to prepare a Compendium of New South Wales Forest Research.	By the first five-yearly review
105	New South Wales and the Commonwealth to lodge archival copies of Data.	Within six months of signing
Att 1A & Att 1B Point 4	NSW to prepare Plans of Management for Crown Reserves.	By 1 January 2005
Att 1A Point 5	NSW will finalise boundaries of CAR reserve to enable implementation.	Within six months of signing
Att 1A Point 8 & Att 1B Point 12	New South Wales to establish all Dedicated Reserve and Informal Reserve components of the CAR Reserve System.	Within six months of signing
Att 3 point 4	NSW will complete the Threat Abatement Plan for the European Red Fox.	By July 2000
Att 2 Table 1	New South Wales to develop Recovery Plans for species listed in Table 1 of Attachment 2.	Within five years of signing
Att 6 1(p)	New South Wales to publish a State of Parks report.	By April 2001

Clause	Action	Timeline
Att 6 2(b)	NSW will publish of Eco Field Guides for the Upper North East Region and the Lower North East Region.	By 30 June 2000
Att 6 2(e)	New South Wales to publish the <i>Native Forest Silviculture Manual</i> (SFNSW).	By 31 December 2000
Att 6 2(d)	New South Wales to document and publish a description of the NSW Forest Management System covering Public and Private Lands.	In time for the first five yearly review
Att 6 2(e)	New South Wales to publish a description of the methods and results of calculating Sustainable Yield on Public Land.	By 1 December 2006
Att 6 2(e)	New South Wales to publish independent audits of Sustainable Yield as outlined in Attachment 12.	For the second and subsequent five yearly reviews
Att 6 2(f)	New South Wales to table in each House of Parliament an annual report on the New South Wales <i>Upper North East Region Forest Agreement</i> and <i>Lower North East Region Forest Agreement</i> in accordance with the <i>Forestry and National Park Estate Act 1998</i> (NSW) which will include an ESFM report and the outcomes of compliance with any Integrated Forestry Operations Approval for the regions.	Annually
Att 8 1(a)	NSW NPWS will develop and Environmental Management System for lands dedicated under the NPWS Act 1974.	By April 2004
Att 8 1(b)	SFNSW develop a native Forest Management System as an Environmental Management System.	By April 2001
Att 8 1(l)	New South Wales to incorporate codes of practice that address in an integrated fashion bush and other fires within Regional ESFM Plans and plans of management for areas dedicated under the <i>National Parks and Wildlife Act 1974</i> (NSW).	By the first five yearly review
Att 8 1(m)	New South Wales to incorporate within the Regional ESFM Plans and Plans of Management under the NPWS Act 1974 integrated feral animal and weed control programs.	By the first five-year review.
Att 8 1(n)	New South Wales to establishing a process, including public reporting, for regular audits of compliance and reviews of Codes of Practice, Eco Field Guides and/ Regional Prescriptions.	By December 2002

Clause	Action	Timeline
Att 8 1(n)	New South Wales to undertake audits as described above.	By the first and subsequent five-yearly reviews of the Agreement
Att 8 1(o)	NSW will establish demonstration areas in both the Upper North East Region and the Lower North East Region for illustrating silvicultural practices and the suite of silvicultural regimes practiced.	By April 2001
Att 8 1(q)	NSW will develop a model to predict recruitment and maintenance of habitat trees over time.	By the end of 2010.
Att 8	NSW will publish the <i>Native Forest Silviculture Manual</i> (SFNSW).	By 31 December 2000
Att 12 Part B 15	SFNSW will complete the enhancement of FRAMES, commission and publish an independent review of the enhanced system and review the timber and annual volume to be harvested from 2007–2018.	By 1 December 2006.
Att 12 Part C 19	Subject to availability of suitable land NSW will purchase Private Lands and/ or timber rights to supply High Quality Large Sawlogs and Large Veneer Logs.	By the end 2004
Att 12 Part C 19	Subject to availability of suitable land NSW will establish at least 10,000ha of hardwood Plantations.	By the end 2004
Att 12 Part D 21 Dot 5	Use best endeavours to undertake an inventory of private forests to determine the basis of yield of wood products.	Within five years of signature.
Att 12 Part E 22 Dot 4	Report on the annual production of all timber products.	Annually
Att 12 Part E 22 Dot 6	Monitor FRAMES through comparison of Actual versus predicted volumes.	Annually
Att 12 Part E 23	NSW will undertake independent audits of the progress of the Sustainable Wood Supply Strategy.	To be completed in time for the 2 nd and 3 rd five-yearly reviews.

The milestones in this Attachment should be read in conjunction with the relevant clauses in the Agreement.

PUBLIC REPORTING AND CONSULTATIVE MECHANISMS

Existing Commitments

~~1 The following processes currently include public reporting and consultative mechanisms relevant to forest management in both the Upper North East and Lower North East regions:~~

- ~~(a) preparation and amendment of Forest Agreements under the *Forestry and National Park Estate Act 1998* (NSW);~~
- ~~(b) preparation and amendment of Regional ESFM Plans under the *Forestry Regulation 1999* (NSW) under the *Forestry Act 1916* (NSW);~~
- ~~(c) preparation and amendment of plans of management under the *National Parks and Wildlife Act 1974* (NSW);~~
- ~~(d) preparation and amendment of Integrated Forestry Operations Approvals under the *Forestry and National Park Estate Act 1998* (NSW);~~
- ~~(e) preparation and review of Codes of Practice;~~
- ~~(f) preparation, amendment and review of District Bushfire Management Committee plan of operations and Bush Fire Risk Management Plans (*Rural Fires Act 1997* (NSW));~~
- ~~(g) activities associated with the implementation of the *Threatened Species Conservation Act 1995* (NSW);~~
- ~~(h) public exhibition of identified wilderness and areas proposed for declaration under the *Wilderness Act 1987* (NSW);~~
- ~~(i) nomination, preparation and possible contraventions of Recovery Plans and Threat Abatement Plans prepared under the *Endangered Species Protection Act 1992* (C'wth);~~
- ~~(j) listing of places on the Register of the National Estate under the *Australian Heritage Commission Act 1975* (C'wth);~~
- ~~(k) publication of State of the Environment reports including reporting against performance measures, Sustainability Indicators, audits, public participation, research and reviews;~~
- ~~(l) consultation with the Aboriginal community in relation to Aboriginal cultural heritage information;~~
- ~~(m) catchment management committees~~

- ~~(n) production of annual ESFM Reports on progress for meeting targets in Regional ESFM Plans and reporting on criteria, indicators and targets for the Upper North East and Lower North East regions in accordance with the New South Wales *Upper North East* and *Lower North East Region Forest Agreement*.~~
- ~~(o) production of annual Environmental and Social Values Report at a statewide level on the progress and performance of State Forests of NSW in accordance with the New South Wales *Upper North East Region Forest Agreement* and *Lower North East Region Forest Agreement*.~~
- ~~(p) publishing a New South Wales State of Parks report by April 2001.~~
- ~~(q) production of an annual report for the New South Wales *Upper North East Region Forest Agreement* and *Lower North East Region Forest Agreement* with respect to Ecologically Sustainable Forest Management in the region, and compliance with any Integrated Forestry Operations Approval for the region. As required by the *Forestry and National Park Estate Act 1998* (NSW).~~

Additional reporting and consultative mechanisms

~~2 Additional reporting and consultative mechanisms to be implemented by the State include:~~

- ~~(a) development of public participation mechanisms through the introduction of new partnerships (for example, the International Model Forest Network);~~
- ~~(b) Publish Eco Field Guides for the Upper North East and Lower North East regions by 30 June 2000;~~
- ~~(c) Document the basis for silvicultural practices and publish the native *Forest Silviculture Manual* (SFNSW) by the 31 December 2000.~~
- ~~(d) documenting and publishing a description of the New South Wales Forest Management System covering Public and Private Lands in time for the first five-yearly review.~~
- ~~(e) publishing by 1 December 2006 a description of the methods and results of calculating Sustainable Yield on Public Land, and publishing in time for subsequent five yearly reviews independent audits of Sustainable Yield, as outlined in Attachment 12.~~
- ~~(f) from 1999 the New South Wales government will table in each House of Parliament an annual report on its *Upper North East Region Forest Agreement* and *Lower North East Region Forest Agreement* which will include an ESFM report and the outcomes of compliance with any Integrated Forestry Operations Approval for the region.~~

RESEARCH PRIORITIES

- 3 The Parties agree to hold annual discussions on research themes, coordination and potential future directions.
- 4 New South Wales will prepare for each five-yearly review, a compendium of New South Wales Forest research that will provide a bibliography of research in progress, as well as published and unpublished works.
- 5 Research priorities for this Agreement will be updated in each five-yearly Progress Report and discussed at annual meetings.
- 6 The Parties agree to include a summary of forest related research in each five-yearly Progress Report and include an update on current research themes.
- 7 Current research themes include:
 - Forest ecology and sustainability, including flora, fauna, soil and water conservation;
 - Forest health and biosecurity;
 - Forest Products innovation and value adding;
 - Forest resource assessment and security;
 - Forest carbon, bioenergy and biofuels;
 - Climate change impacts and adaptive management;
 - Effectiveness of management prescriptions;
 - Socio-economic values of forest based industries;
 - Cultural values and cultural use;
 - Fire ecology;
 - Long-term water quality and quantity impacts associated with forestry operations; and
 - Matters of National Environmental Significance.
- ~~1—The major priority of future research in New South Wales will be an understanding of environmental impacts and the development of appropriate mechanisms to monitor and continually improve the sustainability of forest management practices. Accordingly, statewide research will continue on the following themes:~~

- ~~(a) silviculture;~~
- ~~(b) flora and fauna conservation;~~
- ~~(c) soil and water conservation;~~
- ~~(d) fire ecology;~~
- ~~(e) stem defect and wood quality in regrowth forests;~~
- ~~(f) climate change;~~
- ~~(g) biological inventory;~~
- ~~(h) value added end use;~~
- ~~(i) Sustainability Indicators;~~
- ~~(j) indigenous and non-indigenous heritage.~~

ATTACHMENT 8
(clauses 48, 108.8, 112, ~~Attachment 4 and Attachment 12~~)

CONTINUAL IMPROVEMENTS TO OF THE NEW SOUTH WALES'
FOREST MANAGEMENT SYSTEMS FRAMEWORK

- 1 New South Wales will ~~further~~ implement, adapt and improve its Forest Management ~~Framework System~~ across forest management agencies and land tenures by:
- (a) NSW National Parks and Wildlife Service ~~developing~~ maintaining an ~~Environmental Management System~~ environmental management system (EMS) or equivalent management system demonstrating ESFM by April 2004, for lands dedicated under the *National Park and Wildlife Act 1974* (NSW) consistent with the following broad principles:
- an appropriate environmental policy should be in place;
 - the environmental aspects arising from the organisation's past, existing or planned activities, products or services should be identified to determine the environmental impacts of significance;
 - relevant legislative and regulatory arrangements should be identified;
 - priorities should be identified and appropriate environmental objectives and targets set;
 - a structure and program(s) to implement the policy and achieve objectives and targets should be established;
 - planning, monitoring, corrective action, auditing and review activities should be facilitated to ensure both that the policy is complied with and that the ~~environmental management system~~ EMS or equivalent management system remains appropriate;
 - the system should be capable of adapting to changing circumstances.
- (b) ~~State Forests of NSW developing, by April 2001 a Native Forest Management System as an EMS, to a standard which would allow certification of the system under the ISO 14000 series. Forestry Corporation of NSW maintaining a Forestry Corporation of NSW Hardwood Forest Management System as an EMS and maintaining EMS certification under ISO14001 or a demonstrated equivalent environmental management system.~~
- (c) ~~Implementing the New South Wales Biodiversity Strategy, taking into account the issues raised during its public consultation phase or any subsequent biodiversity strategy which compliments ESFM.~~
- (d) ~~Establishing Regional Vegetation Management Plans~~ Implementing a native vegetation regulatory map and regulatory framework under the *Local Land*

Services Act 2013 (NSW) which together are coordinated with other management plans documents, and which allow for specific activities to occur under Codes of Practice that comply with Regulatory Instruments.

- (e) Improving the coordination and effective use of resources allocated to research for ESFM in New South Wales.
- (f) Providing ongoing formal public participation processes to raise awareness and understanding of ESFM and how it can be achieved in New South Wales forests.
- (g) ~~Developing and implementing an~~ Implementing information management systems to facilitate the sharing of data for the use by all agencies, including local government, involved in the management of forested land.
- (h) Improving the cooperation and coordination between NSW Government agencies so as to achieve integrated management for conservation, wood production, and other values in Forests on both Public Land and Private Land both public and private forests.
- ~~(h)A~~ Developing and implementing a community awareness program to build understanding of ESFM and clearly relate these to management requirements for conservation and to the Regulatory Instruments governing activities in both public and private forests.
- (i) Improving administrative arrangements to ensure Ecologically Sustainable Forest Management on private forests including providing technical advice, extension services and research including assistance in the estimation of Sustainable Yield.
- (j) Maintaining and enhancing competency based training for field staff and ~~forest operators~~ staff or contractors undertaking Forestry Operations in flora and fauna identification and management, heritage management, soil and water protection, silvicultural training, inventory and management information systems, and Aboriginal cultural awareness and Aboriginal site identification. and product segregation.
- (k) ~~Developing Regional ESFM Plans consistent with the New South Wales Upper North East Region Forest Agreement and Lower North East Region Forest Agreement,~~ Maintaining a Regional ESFM Plan or equivalent instrument which includes the ESFM strategy for the Upper North East and Lower North East regions consistent with any applicable Integrated Forestry Operation Approval applicable to the Upper North East and Lower North East regions, and statutory requirements, and including:
 - Specification and description of the range of values and processes to be managed, including objectives and targets of management;
 - Descriptions of and links to Regulatory Instruments, standard operating procedures and guides or manuals Codes of Practice, Eco Field Guides and the Native Forest Silviculture Manual (SFNSW);

- Determination of Sustainable Yield of wood values;
 - Ongoing arrangements for monitoring activities specified in the plan and reporting against plan objectives and targets;
 - Processes for regular reviews of the plans involving public consultation.
- (l) ~~Incorporating by the first five yearly review within Regional ESFM Plans and plans of management under the *National Parks and Wildlife Act 1974* (NSW), provisions that address in an integrated fashion bush and other fires to ensure ecologically sustainable management of the forest estate. These plans will be consistent with the NSW Biodiversity Strategy and any Bush Fire Risk Management Plans. Integrating bush fire management, including hazard reduction burning activities, across tenure via co-ordinated Bush Fire Management Plans under the *Rural Fires Act 1997* (NSW).~~
- (m) ~~Incorporating by the first five yearly review within Regional ESFM Plans and plans of management under the *National Parks and Wildlife Act 1974* (NSW), integrated feral animal and weed control programs. Integrating pest animal and weed control activities across tenure via Regional Strategic Pest Animal Management Plans and Regional Strategic Weed Management Plans, which have been developed to support regional implementation of the *Biosecurity Act 2015* (NSW) and NSW Biosecurity Strategy.~~
- (n) ~~Establishing a process, including public reporting, for regular audits of compliance and reviews of Codes of Practice, Eco Field Guides and/ Regional Prescriptions by December 2002 and undertake audits at first and subsequent five yearly reviews of the Agreement. This process is to be included in any environmental management system, including the SFNSW Native Forest Management System. Maintaining an Integrated Forestry Operations Approval under the *Forestry Act 2012* (NSW) applicable to the Southern region, noting that the Integrated Forestry Operations Approval will include the following:~~
- terms under which Forestry Operations may legally occur;
 - conservation for environment values to levels of achievement consistent with Attachments 1(A), 1(B) and 3;
 - measures for biodiversity conservation, soil and water protection and threatened fish protection;
 - linkages to prescribed fire management arrangements; and
 - measures for the recording and collection of data to inform adaptive management and continual improvement of the Integrated Forestry Operations Approval.
- (o) ~~Establishing by April 2001 demonstration areas in both the Upper North East and Lower North East regions for illustrating silvicultural practices and the suite of silvicultural regimes referred to in the *Upper North East Region Forest*~~

~~Agreement and Lower North East Region Forest Agreement for use in field supervisor training and public education. NOT USED~~

- (p) ~~Continuing to develop a suite of computational tools to help manage NSW forests at operational scales for a range of values including wood yield, growth stage, water quality and quantity, natural and cultural heritage and wildlife habitat. NOT USED~~
 - (q) ~~Developing by the end of 2010, a model to predict recruitment and maintenance of habitat trees over time. NOT USED~~
 - (r) ~~Determining the range of silvicultural prescriptions that can be appropriately applied to each strata or forest type based on review, field based sampling and principles of sustainability. These prescriptions will be used to inform FRAMES. NOT USED~~
 - (s) ~~The *Native Forest Silviculture Manual* (SFNSW) to be published by 31 December 2000 will outline the scientific basis for site specific silvicultural regimes and the silvicultural decisions and guidelines to where such regimes are to be applied. Parties note that a peer review process will form part of the public consultation process as identified in Attachment 6. NOT USED~~
- 2 The Parties note that procedures for reviewing Integrated Forestry Operations Approvals are set out in the *Forestry and National Park Estate Act 2012 1998* (NSW).
 - 3 The Parties note that the terms of an Integrated Forestry Operations Approval will have primacy over other elements of the SFNSW Native Forestry Corporation of NSW Hardwood Forest Management System. The Parties recognise that the SFNSW Native Forestry Corporation of NSW Hardwood Forest Management System (including Codes of Practice, Eco Field Guides, the Regional ESFM Plan, the order of works plan, the plan of operations, and harvesting plans), will be the mechanism for implementing the terms of the Integrated Forestry Operations Approval on State forest.
 - 4 ~~Additional improvements to the NSW FRAMES System are also outlined in Attachment 12. NOT USED~~

**MONTREAL PROCESS CRITERIA FOR THE CONSERVATION AND
SUSTAINABLE MANAGEMENT OF TEMPERATE AND BOREAL
FORESTS**

- Criterion 1: Conservation of biological diversity
- Ecosystem diversity
 - Species diversity
 - Genetic diversity
- Criterion 2: Maintenance of productive capacity of forest ecosystems
- Criterion 3: Maintenance of ecosystem health and vitality
- Criterion 4: Conservation and maintenance of soil and water resources
- Criterion 5: Maintenance of forest contribution to global carbon cycles
- Criterion 6: Maintenance and enhancement of long term multiple socio-economic benefits to meet the needs of societies
- Production and consumption
 - Recreation and tourism
 - Investment in the forest sector
 - Cultural, social and spiritual needs and values
 - Employment and community needs
- Criterion 7: Legal, institutional and economic framework for forest conservation and sustainable management

A framework for development of these criteria and indicators is described in the document, *A Framework of Regional (Sub-National) Level Criteria and Indicators of Sustainable Forest Management in Australia*, (Department of Primary Industries and Energy 1998) *Australia's Sustainable Forest Management Framework of Criteria and Indicators 2008-Policy Guidelines* (Commonwealth of Australia, 2008).

**MANAGING LANDS OF SIGNIFICANCE TO INDIGENOUS ABORIGINAL
PEOPLE**

1 New South Wales agrees to continue to manage CAR Reserve System and State forest on Public Land lands with significance to Indigenous Aboriginal people according to the following principles:

- ~~It is recognised by both the Commonwealth and State Government that the sum of the cultural heritage of the Aboriginal people of New South Wales is not confined to archaeological sites and artefacts but may include natural values such as flora, fauna and landforms.~~
- It is appreciated by both Parties that the Aboriginal people of NSW have a spiritual, social, cultural and economic relationship with their traditional lands and waters, sky, ceremonial and viewing corridors and songlines, including natural values such as flora, fauna and landforms.
- The Parties recognise that the cultural heritage of the Aboriginal peoples of NSW is a living cultural heritage, and intrinsic to their well-being.
- The Parties recognise that the cultural heritage of the Aboriginal peoples of NSW comprises both intangible elements (such as beliefs, knowledge and practices) and tangible elements (such as objects, landforms, and ancestral remains).
- ~~The Parties recognise ~~are aware of~~ the aspirations Aboriginal people have in regards to ownership and/or management of traditional of lands, and the rights of Aboriginal Land Councils under the *Aboriginal Land Rights Act 1983* (NSW) for certain Crown lands to be returned to Aboriginal peoples and are committed to a working relationship with Aboriginal communities for co-operative management of Government managed lands as agreed which may include lands managed by NSW National Parks and Wildlife Service and State Forests of NSW.~~
- Both Parties appreciate that the *Native Title Act 1993* (Cth) provides opportunities for Aboriginal people to make application to the Federal Court for their native title rights to be determined and to negotiate Indigenous Land Use Agreements with the NSW Government for the management of public lands in their native title area.
- The Parties recognise the rights Aboriginal people have in regards to management of traditional lands, and are committed to a working relationship with Aboriginal communities for co-operative design of relevant strategies and policies and co-operative management of Government managed lands as agreed, which may include lands managed by NSW National Parks and Wildlife Service and the Forestry Corporation of NSW.

- An integral part of this commitment to co-operative management is the transmission of culture to provide opportunity increase in opportunities for local Aboriginal people to gain valuable land management access training and subsequent to gain employment, where possible, to ensure that Aboriginal people can continue to strategically manage effectively participate in the management of their traditional country, where that country includes Forests on Public Land.
- The New South Wales Government has provided for Aboriginal people to own lands reserved under the *National Parks and Wildlife Act 1974* (NSW) that are of cultural significance to them through the *National Parks and Wildlife Amendment (Aboriginal Ownership) Act 1996* (NSW). Both Parties ~~appreciate~~ acknowledge that there are National Parks and reserves within the Upper North East and Lower North East regions that may meet the terms of the ~~Act~~ *National Parks and Wildlife Act 1974* (NSW), and actively advocate the assessment of the Upper North East and Lower North East regions for this purpose.
- Both Parties support initiatives between Government agencies (both State and Local) and Aboriginal communities, that will both strategically manage and preserve New South Wales' rich cultural heritage, and ensure that ~~all development~~ the maintenance and enhancement of the CAR reserve Reserve System appropriately considers Indigenous Aboriginal interests and values.
- The Parties will, with Aboriginal stakeholders, identify funding opportunities to support Aboriginal participation in forest management, in particular any Forest Estate areas identified as of special significance to Aboriginal people in the North East region, for example Working on Country and Indigenous Protected Area programs.
- Aboriginal parties will be invited to participate in any new partnership arrangement evolved out of this Agreement for the management of the CAR Reserves System.
- The Parties recognise that ~~Aboriginal people may~~ Traditional Owners under the Native Title Act 1993 (Cth) have the opportunity to obtain or maintain right to access to and use certain Government managed lands for the purposes of cultural practice recreational, as well as traditional values and uses, and ceremonial purposes, and that opportunities may exist for the commercial development of areas of cultural/economic significance. This includes access to Forest Products.
- The NSW Government recognises that opportunities exist for Aboriginal people in the commercial development of areas of economic significance or for commercial use of Forest Products, and agrees to respond to requests from the Aboriginal community to develop these opportunities, for example through existing training and mentoring programs.

2 The Parties agree to use best endeavours to meet and exceed government Aboriginal employment and procurement targets in the North East RFA region, particularly in relation to public Forests and cultural heritage management.

EMPLOYMENT AND INDUSTRY DEVELOPMENT INITIATIVES
BY THE NSW GOVERNMENT FOR
THE UPPER NORTH EAST AND LOWER NORTH EAST REGIONS

1. — Plantation Expansion

~~Under this initiative an additional 10,000 hectares of eucalypt Plantations for long-term sawlog production on suitable available land will be established by SFNSW. Benefits, including providing a long term resource for the timber industry, contribution to a reduction in Greenhouse emissions and provision of a possible additional resource in the form of tradeable carbon offsets are expected. This proposal would also contribute to meeting the National Plantations 2020 policy to significantly increase the area of plantation in New South Wales. The initiative involves purchase of suitable properties for plantation establishment and joint venture schemes as well as funding for plantation maintenance. Additional employment would be available in plantation establishment and maintenance, site preparation and land management.~~

~~*Funding Commitment:* \$6 Million per annum until the year 2004 to establish about 10,000 hectares for long term sawlog production.~~

~~*Predicted employment benefit:* At least 25 new (mostly seasonal) jobs.~~

2. — North Coast Thinnings Program

~~The NSW Government's Interim Forestry Assessment decision (23 September 1996) provided for tenders to be called for the purchase of quantities of Forest Products produced from silvicultural thinning operations in the hardwood Plantations and regrowth forests of the north coast of New South Wales.~~

~~The program's objective is to maximise the recovery of timber suitable for solid wood uses, including the production of sawlogs, poles and other timber products, to ensure that the highest value is obtained from the timber resource.~~

~~These thinning operations will have the additional benefits of improving forest productivity, assisting regeneration, creating new employment opportunities in rural communities on the north coast and increasing the economic viability of the Forestry Operations.~~

~~The timing of the program's implementation is subject to suitable market conditions prevailing.~~

3. — Log Haulage Assistance

~~The addition of traditional log producing areas to the Conservation Reserve System will in some cases require the transport of timber from areas outside some sawmills' traditional economic haulage zone. Log haulage assistance is being provided to~~

~~established millers during a transition period of 5 years to assist them to adjust their businesses to new supply patterns. This initiative is designed to limit any sudden increase in transport costs to millers from increased log haulage distances required to continue appropriate supply levels.~~

~~*Funding Commitments:* NSW has allocated up to \$1 million per annum over a five-year period.~~

~~4. Private Forest Management Unit~~

~~Within twelve months of signing this Agreement a private forest management unit will be established within State Forests to enhance the level of sustainability of commercial private forest management. The unit would be responsive to government policy commitments under the National Forest Policy Statement and the National Greenhouse Strategy.~~

~~The private forest management unit within Native Forests Division will provide policy and planning advice to private forest owners in the following areas:~~

- ~~• Management — Advice on planning, Forest Practices, education, Commercial Viability, Visual management, Water Quality, Biodiversity Conservation, Financial;~~
- ~~• Special Services — Timber Harvesting, Marketing, Training, Harvest Planning, Inventory;~~
- ~~• Tree Growth — Advice on pruning, thinning, pest control, Shelterbelts, Native Forest and Plantation; and~~
- ~~• Tree Establishment.~~

~~*Funding Commitment:* \$1,900,000 over five years, after which time it is expected the Unit would be self funding.~~

~~*Predicted employment benefit:* Establishment of the Private Forest Unit will employ five persons for SFNSW.~~

~~5. Management of National Park Additions~~

~~NSW recognises a priority commitment to on-going and long term management of the new park additions. The positions outlined below reflect the on-going intensive visitor management needs of the reserves (around 5 million visits per annum), the ecologically sustainable forest management commitments arising from the RFA, and the long term works and infrastructure needed for the new reserve areas.~~

~~NSW has committed to capital investment of \$15 million for 3 years for basic access, upgraded visitor facilities, boundary fencing, plant and equipment, and infrastructure improvements, e.g. works depots and safety works. NSW has made a further commitment to staff resources of \$8 million for the 1999—2000 financial year and \$10 million recurrent for subsequent years. This funding will employ approximately~~

90 positions for the first year, increasing to approximately 105 in subsequent years. The positions comprise field officers, senior field officers, rangers, park planners, fire, pest and neighbour relations officers across seven existing National Parks and Wildlife Service Districts at Armidale, Grafton, Dorrigo, Glen Innes, Lismore, Port Macquarie and Raymond Terrace. A new sub-district office at Walcha and field operations group at Tenterfield are also planned.

Funding Commitment: A total of \$43 million over 3 years with possible extensions to funding (subject to recurrent funding).

Predicted employment benefit: A total of 90 to 105 people over 3 years with possible extensions (subject to recurrent funding)

6. Aboriginal Employment Opportunities

Aboriginal Cultural Heritage Officers

Four Aboriginal cultural heritage officers are to be employed equally between State Forests and National Parks and Wildlife Service, in the Upper North East and Lower North East Regions. These officers will give greater protection to cultural heritage and foster a close working partnership between the Aboriginal community and the Government.

Foremost in the tasks of the cultural heritage officers will be the surveying, care and maintenance of significant sites, permanent recording of their locations and consultation over protection mechanisms for these sites with management agencies. This initiative will encourage increased participation of the local Aboriginal community in forest management decisions.

The initiative also includes a number of traineeships to assist Aboriginal trainees gain land management skills. It is anticipated that this training should provide skills, which will enhance continued employment and promotional opportunities in the management of forested land.

Funding Commitment: \$520 000 per annum over 5 years

Predicted employment benefit: 10 positions in total; 4 Aboriginal Cultural Heritage officers in total equally distributed between agencies and RFA regions, 6 traineeships over both Upper and Lower North East.

7. Resource Inventory

Ongoing inventory of existing timber resource is a fundamental requirement of the Regional Forest Agreement and will be used to support ongoing management by SFNSW of the timber production forest. Advantages include:

- the ability to better model the growth of the forest through time,
- a more accurate understanding of the timber resource which would enable industry to plan and develop downstream value adding with more precision and certainty;
- and

- a better knowledge of the timber resource which would enabling scheduling of operations and shifting of multi aged forest crews to thinning systems;

A significant component of this initiative in its initial stages will involve the training of displaced timber workers in resource inventory techniques.

Funding Commitment: \$500,000 per annum for 5 years.

Predicted employment benefit: 10 new positions for a period of five years for SFNSW.

8. Biomass Energy Generation and Charcoal Production

NSW will investigate opportunities for the use of sawmill residue, waste material from sawlog driven logging operations and plantation thinning and harvesting in the Upper North East and Lower North East regions for potential use in biomass energy generation (or co-generation in existing power generating facilities) and for the production of charcoal for use in industrial processes. Negotiations concerning supply of resource for such ventures are currently taking place.

The recently introduced *Natural Resources Legislation Amendment (Rural Environmental Services) Act (1999) NSW* will, through amendments to the *Mining Act (1992) NSW* and *Electricity Supply Act (1995) NSW*, provide enhanced opportunities for investment and job creation in the emerging biomass electricity industry in NSW. In addition to facilitating the use of sawmill waste and forest residues for renewable energy generation, it will also allow electricity retailers to use carbon sequestration as an eligible activity to meet their licence conditions and explicitly includes biomass as a greenhouse reduction measure.

It is also predicted that the market for high grade charcoal will increase in the future, given the requirements for steel making and manufacture of silicon metals. Charcoal production can also utilise sawmill and forest wastes increasing local value adding within the timber industry.

Sustainable forest harvesting practices will not be compromised by the utilisation of forest wood residues and waste timber in both the above initiatives, these materials being already in existence as part of the sawlog driven harvesting process. The markets would also provide an additional and competitive avenue for silvicultural thinnings.

~~LONG TERM TIMBER SUPPLY STRATEGY AND SUSTAINABLE
YIELD SYSTEMS AND PROCESSES~~

- 1 The Parties agree that Sustainable Yield calculations and the method and processes used, are important in realising ESFM on the State forest and Crown-timber land estate.
- 2 The Parties agree that FRAMES provides a sound basis for volume allocations at the strategic level and will be used to estimate Sustainable Yield. Further information on FRAMES and its history and implementation can be found in the document *Forest Resource and Management Evaluation System (FRAMES) – A Report on its Development and Implementation to 30 June 2016* (FCNSW)
- 3 New South Wales will review and update Sustainable Yield calculations from State forest at least once every five-year review period, or more frequently on an as needs basis. Sustainable Yield calculations will be based on modelling with the goal of yielding the maximum non-declining yield of High Quality Logs over a minimum period of 100 years.
- 4 New South Wales will commission an independent audit of Sustainable Yield calculations at least once every five-yearly review period having regard to the elements in item 7.
- 5 New South Wales will make publicly available the independent audit of Sustainable Yield calculations by publication on the website of the relevant department or agency. Sustainable Yield calculations will address relevant Forest Products for the Upper North East and Lower North East regions, which may include High Quality Logs, Low Quality Logs, Pulpwood and Other Wood Products.
- 6 Any changes in volume allocations to the timber and forest-based industries will be based on Sustainable Yield and be consistent with modelling using FRAMES or an equivalent system.
- 7 New South Wales will maintain a continual improvement program for FRAMES including the following elements:
 - Establishing processes for appropriate internal reviews and audits of Sustainable Yield as part of the Forestry Corporation of NSW Hardwood Forest Management System.
 - Document and review systems, processes, models and databases used in the calculation of Sustainable Yield specifically:
 - growth models and growth model inputs.
 - inventory plot currency and measurement.

- spatial inputs that determine the modelled net harvest area.
- silviculture, product recovery, yield tables and modelling assumptions to ensure that the modelled outputs reflect current practices and actual yields.
- resource risk management aspects and mitigations (e.g. changes to the model due to resource loss through fire, changes to legislation or Regulatory Instruments that alter access to the resource and invalidate current modelling assumptions, or other impacts associated with climate change).
- monitor and publish a reconciliation of predicted versus actual Forest Products yields in the third and fifth years of every five-year period.

Introduction

- ~~1. The Long term Timber Supply Strategy for the Upper North East and Lower North East regions recognises the need to achieve environmental, social and economic objectives. It provides a basis for the timber industry to develop with a more secure wood supply. The cornerstone of the strategy is secure contractual arrangements for 20 years. Timber supplies from public native forests will increasingly be supplemented by plantation sourced timber and from purchased Private Land.~~
- ~~2. Under the strategy, timber supplies will be maintained at 1999 contracted levels for 20 years. Subsequent contracts will be based on the long term Sustainable Yield. Investment will reflect industry's response to the stable operating environment and the changing resource profile including an increasing proportion of sawlogs of smaller diameter.~~
- ~~3. NSW Government commitments provide for the supply of High Quality Large Sawlogs and Large Veneer Logs through Wood Supply Agreements. Supply commitments specified in these Wood Supply Agreements will be subject to a review by 1 December 2006 (see Part B).~~
- ~~4. This Agreement recognises that current native forest resources and current plantation resources are a major part of the long term timber resource. It is estimated that the 100 year supply levels after 2018 will average approximately 70,000 m³ per annum in the Upper North East Region and 113,500 m³ per annum in the Lower North East Region of High Quality Large Sawlogs and Large Veneer Logs from existing native forests and Plantations on State forests and other land owned by SFNSW, assuming harvesting under existing terms and conditions.~~
- ~~5. Both Governments aim to provide additional sawlog and other wood products that will become available through purchase by SFNSW of private native forest property and through Plantations established on purchased land or as joint ventures. These measures are currently predicted to bring the average annual available High Quality Large Sawlog and Large Veneer Log yield from State forests beyond the 20 years of this Agreement to within approximately 15 per cent of the 20 year contracted levels for Upper North East Region and Lower North East Region.~~

- ~~6. NSW is also committed to the supply of Forest Products such as firewood, fencing materials, seed, beekeeping products, cut wildflowers, commercial bush tucker and tea tree oil under relevant statutory controls.~~

~~Part A Timber Supply Commitments (Public Land)~~

- ~~7. The NSW Government has entered into 20 year Wood Supply Agreements, which commenced January 1999, that commit to the supply of 129,000 m³ per annum for 20 years in the Upper North East Region (of which 20,000 m³ will be sourced from the Lower North East Region) and 140,000 m³ per annum for 20 years in the Lower North East Region (net of the supply to Upper North East Region) of High Quality Large Sawlogs and Large Veneer Logs. These volumes are subject to review as set out in Part B of this attachment.~~
- ~~8. Additional volumes of 2,846 m³ of High Quality Large Sawlogs to mills in the Upper North East Region and 5,911 m³ to mills in the Lower North East Region are to be supplied under a transitional "top up" arrangement in 2000, to assist industry adjustments.~~
- ~~9. The 20 year Wood Supply Agreements provide industry with the certainty to invest and plan for long term operations. Wood Supply Agreements contain specific commitments for the supply of High Quality Large Sawlogs and Large Veneer Logs and may result in compensation in the event of failure to supply. The Wood Supply Agreements are specifically referred to in the NSW Government's *Upper North East Region Forest Agreement* and *Lower North East Region Forest Agreement*. The *Forestry and National Parks Estate Act (1998)* sets the framework for the development of the Forest Agreements and constrains the circumstances under which the Forest Agreements can be altered.~~
- ~~10. Contracted commitments and other arrangements associated with Wood Supply Agreements allow for the carrying forward of volumes under cut or over cut in any one year.~~
- ~~11. High Quality Small Sawlogs will be supplied at levels greater than 1999 contracted volumes. In addition NSW will use their best endeavours to provide a greater proportion of the High Quality Small Sawlogs resource through Wood Supply Agreements to enhance security for processors.~~
- ~~12. Arrangements for pulp grade timber include an amount of approximately 30,000 tonnes in the Upper North East Region per annum and approximately 152,000 tonnes in the Lower North East Region per annum, being a quantity which reflects current supply levels at the date of this Agreement. In addition, existing supply arrangements for other Forest Products (including poles, piles, girders, High Quality Small Sawlogs, low quality timber and small veneer logs) from forest operations will be honoured.~~
- ~~13. It should be noted that, the quantities referred to in the above paragraph (paragraph 12) simply reflect supply arrangements existing at the date of this Agreement. Other quantities of Forest Products will be supplied as a result of the management and harvesting of forests to meet the volumes specified in the Wood Supply Agreements for High Quality Large Sawlogs and Large Veneer Logs (paragraph 7). This will~~

~~not result in a net increase in the High Quality Large Sawlog or Large Veneer Log volumes specified in paragraph 7. Some of the Industry Initiatives referred to in Attachment 11 may create important markets for some of these materials.~~

- ~~14 NSW will use their best endeavours to provide increased resource security for processors using logs not currently covered by Wood Supply Agreements by the first five year review.~~

Part B FRAMES and Wood Supply Reviews

- ~~15 NSW, through SFNSW, agrees to complete the following by 1 December 2006:~~

- ~~• Update the FRAMES information base and enhance the FRAMES Models consistent with Part E of this Attachment;~~
- ~~• Commission and publish an independent review of the enhanced systems and process, models, information base, and assumptions which contribute to the FRAMES system;~~
- ~~• Using the results of the above FRAMES enhancement and review, NSW will review the timber resource and the annual volume which may be harvested from 2007–2018 consistent with the overall Sustainable Wood Supply Strategy to achieve a long term Sustainable Yield and to optimise sustainable use objectives consistent with this Agreement.~~

- ~~16. The two reviews above will be based on the Sustainable Wood Supply Strategy, the area available for harvesting in the *Upper North East Region Forest Agreement 1999* and *Lower North East Region Forest Agreement 1999* as defined through net harvestable area exclusions and the Integrated Forestry Operations Approvals (1999). The reviews will also consider the contribution to the Sustainable Wood Supply Strategy of any additions to the land available for harvesting resulting from the purchase of Private Land and development of new public hardwood Plantations (see Part C).~~

- ~~17. Informed by the review, NSW will consider additional supplementation of High Quality Large Sawlogs and Large Veneer Logs and have regard to the long term Sustainable Yield after 2018.~~

- ~~18. Any changes in the contracted volumes specified in clause 79 resulting from the review process outlined in Clause 81 will be incorporated into this Agreement through clause 8 and will be advised to holders of Wood Supply Agreements prior to 1 December 2006. These volumes will then be available to industry until the end of 2018.~~

Part C Hardwood Sawlog Supply Supplementation Strategy

- ~~19 The Parties agree that the following long term hardwood sawlog supply supplementation strategy will be implemented to allow the supply of more timber and raise the long term Sustainable Yield of hardwood sawlogs from public forests in northern New South Wales;~~

- ~~• Subject to availability of suitable land, New South Wales will spend the allocated \$18 million between 1999 and 2004 to purchase Private Land and/or timber rights to provide approximately 180,000 m³ of High Quality Large~~

~~Sawlogs and Large Veneer Logs for the Upper North East and Lower North East regions within the term of this Agreement.~~

- ~~• Subject to the availability of suitable land, New South Wales will spend the allocated \$30 million by 2004 to establish at least 10,000 ha of hardwood Plantations across both the Upper and Lower North East Regions to supplement supplies of High Quality Large Sawlogs and Large Veneer Logs from public forests. This initiative is expected to produce approximately 125,000m³ per annum for 10 years commencing in approximately 40 years time.~~

~~20 The following supplementation activities will also contribute to the Sustainable Wood Supply Strategy volumes and the long term Sustainable Yield:~~

- ~~• Adoption of a North Coast Thinnings program (Attachment 11) to increase the recovery of timber suitable for solid wood uses and increasing the economic viability of Forestry Operations; and~~
- ~~• Carbon sequestration initiatives to enhance plantation development and subsequent timber availability.~~

Part D Private Forest Resource Initiatives

~~21 The Parties recognise that industry development based on private forest resources including Plantations will be facilitated by the following measures:~~

- ~~• The State will improve administrative arrangements and cooperation and coordination by State agencies (refer to Attachment 8) to facilitate the timber industry utilising private forest resources. Education programs will be developed to deal with ecologically sustainable management issues and clearly relate these to management requirements for conservation and to the codes of forest practice governing activities in both public and private forests.~~
- ~~• As a means of encouraging private forestry development, consistent with clause **Error! Reference source not found.**, the State will develop a regulatory framework that enables a more efficient and integrated approval process to allow for effective private forestry development. Codes of Practice for private Plantations and private native forests will be in place within five years in accordance with clauses 0 and 57. The State will also provide advice regarding marketing and pricing.~~
- ~~• NSW will ensure that under the *Native Vegetation Conservation Act (1997)* and consistent with clause 56 of this Agreement, regional vegetation management plans covering Private Lands form a basis for strategic regional planning of private native forestry. With appropriate public involvement, and consistent with the *Native Vegetation Conservation Act (1997)* the Regional Vegetation Management Committees will pursue planning policies that provide for appropriate long term, secure, management provisions for private native forests. The management plans should provide for harvesting for commercial wood production to be an “as of right” use where appropriate and subject to relevant Codes and Ecologically Sustainable Forest Management consideration.~~

- ~~NSW will ensure that an integrated Code of Practice is developed for plantation activities across all tenures, under the *Plantations and Reafforestation Act* (1999). The need for local government planning consent for plantation establishment and reafforestation projects has been replaced through the new legislation by a stand alone authorisation process administered by the NSW Department for Land and Water Conservation (DLWC). Applications to establish a plantation that comply with the Code of Practice will be given approval by DLWC within 14 days. Existing Plantations can also continue to obtain certainty for the purposes of harvesting as per the *Timber Plantations (Harvest Guarantee) Act* (1995), and similar provisions included in the *Plantations and Reafforestation Act* (1999).~~
- ~~Parties agree that a private forest inventory of northern NSW to determine the basis of yield of wood products from Private Land is required. Parties will use their best endeavours to promote an inventory of private forests, with the agreement of forest owner groups, with the objective of having an inventory in place within five years.~~

Part E — FRAMES, Sustainable Yield Systems and Processes

~~22 The NSW Government will:~~

- ~~Implement across the Upper North East and Lower North East regions, site specific silvicultural regimes of light to medium Australian Group Selection and light, medium and heavy Single Tree Selection and thinning.~~
- ~~Reflect in the FRAMES models the above site specific silvicultural regimes (refer paragraph 24, point 6).~~
- ~~Review the FRAMES systems and wood supply by 1 December 2006 to predict timber yields from 2007—2018 consistent with Part B of this Attachment.~~
- ~~Report the annual production of all timber products.~~
- ~~Undertake additional inventory plot measurement consistent with FRAMES principles to improve the accuracy of volume estimates at the Regional Level, funded at \$500,000 per year for the first five years of this Agreement.~~
- ~~Monitor FRAMES performance through comparison of actual versus predicted volumes each 12 months for 20 years.~~

~~23 NSW will commission independent audits of the progress of the Sustainable Wood Supply Strategy to be completed and published in time for the second and third five-yearly reviews.~~

~~24 New South Wales will consult with the Commonwealth in the establishment of an ongoing FRAMES development program for the Upper North East and Lower North East regions. It is expected that this program will be implemented by 1 December 2006 and will include the following elements:~~

- ~~Improved inventory base and modifier models. Regular monitoring of predicted versus actual annual product yields and component measures as described in Section 3.5 of the *New South Wales Upper North East Forest Agreement* and the *Lower North East Forest Agreement*;~~

- ~~Increased number and coverage of permanent growth plots to cover an appropriate range of sites, strata and silvicultural systems;~~
- ~~Continued permanent growth plot measurement to update growth, mortality and recruitment models and development of new models to reflect changing silviculture (including thinning);~~
- ~~Development and implementation of a Native Forest Management Information System (MIS) that addresses silvicultural and harvesting planning and progressively improves estimates of net harvestable area, management history, silvicultural requirements of stands and operational feasibility. The system should also inform monitoring and reporting against Sustainability Indicators consistent with clause 0 of this Agreement;~~
- ~~Testing of simulation models against independent data sets and undertake sensitivity analysis to help inform error limits of Sustainable Yield;~~
- ~~Refine the FRAMES simulator and scheduler so that it selects and reports a range of silvicultural prescriptions and yield tables within strata, that reflect operational practices;~~
- ~~Better reporting within FRAMES of area harvested, residual stand characteristics and modelled silviculture and harvesting regimes;~~
- ~~Implementing a process to take into account the risks of fire, differing regulatory arrangements and other potential impacts on Sustainable Yield;~~
- ~~Documentation of systems, processes, models and databases used in the calculation of Sustainable Yield.~~
- ~~Processes for appropriate internal reviews and audits of Sustainable Yield as part of the SFNSW Native Forest Management System.~~

~~DATA AGREEMENT~~

~~Purpose~~

~~A This Data Agreement between the Commonwealth and New South Wales relates to the Data collected, developed for, and used in, the development, implementation and monitoring of the Regional Forest Agreements for New South Wales.~~

~~B This Data Agreement specifies access, ownership, custodianship, updating and archiving arrangements for the Data for all four RFA regions within New South Wales.~~

~~C Separate Schedules will be added to the Data Agreement following completion of each RFA. These Schedules, which address the Data specific to each RFA region, and which will be completed on the dates specified in clause 4.6, are as follows:~~

- ~~• Eden Region (Schedule 1);~~
- ~~• Upper North East Region (Schedule 2);~~
- ~~• Lower North East Region (Schedule 3), and~~
- ~~• Southern Region (Schedule 4).~~

~~Schedules will identify the name, custodian, ownership and access including for reports and software.~~

~~1. Definitions and Interpretation~~

~~1.1 Unless otherwise stated to the contrary, the definitions contained in the Agreement will also apply to this Data Agreement.~~

~~1.2 A reference to a clause means a clause of this Data Agreement, unless specified to the contrary.~~

~~1.3 The following additional definitions will apply to this Data Agreement:~~

~~*Access Category:* means a category of access for an item of Data as indicated in a Schedule. The Access Categories are Restricted Data, Licensed Data and Unrestricted Data.~~

~~*Archived Data:* means all Data used to develop the Agreement, and which must be archived in accordance with clause 4.~~

~~*Assessment Data:* means all Comprehensive Regional Assessment and integration project outputs and products including reports, required to complete the NSW Regional Forest Agreements (as determined by the Joint Steering Committee).~~

<i>Custodian:</i>	means a custodian of Data, or component of that Data, is an individual or organisation having the responsibility to ensure that the Data is collected, maintained and distributed according to this Data Agreement.
<i>Data:</i>	means all Source Data, Derived Data, Assessment Data, and models listed in the Schedules,.
<i>Data Agreement</i>	means these clauses 1-9 (inclusive) and all Schedules.
<i>Data Archive:</i>	means a secure repository for Archived Data which meets the standards required by clause 4.
<i>Derived Data:</i>	includes Data which is obtained by analysis, modelling, aggregation or other complex manipulation of Data. A derived Data set can have either Source Data or other derived Data sets as inputs to its creation.
<i>Existing Data:</i>	means Data and/or Data sets that existed in either Commonwealth agencies or NSW State agencies prior to commencement of Comprehensive Regional Assessments or integration projects.
<i>Jointly Owned Data:</i>	means Data jointly funded by the Parties to inform the development of or implementation of these RFAs and identified as jointly owned in the Schedules.
<i>Licence:</i>	means a document which authorises the use of Data or a number of Data sets for specified purposes, and specifies any restrictions on the use of Data.
<i>Licensed Data:</i>	means Data designated in a Schedule as Licensed.
<i>Metadata:</i>	means information about Data or Data sets including descriptions or specifications of Source Data or derived information. Metadata are to be recorded in a standard format or as agreed documentation.
<i>New Data:</i>	Data that has been created after the signing of an RFA.
<i>Owner:</i>	the individual(s), organisation(s) or jurisdiction(s) that holds the intellectual property rights over a particular set of information or Data.
<i>Unrestricted Data:</i>	means Data designated in a Schedule as being Unrestricted.
<i>Restricted Data:</i>	means Data which is considered sensitive by an Owner and which is designated in a Schedule as being Restricted. Restricted Data includes any Data to which confidentiality and limitation on use conditions apply.
<i>RFA Purpose:</i>	includes purposes relating to updating, implementation, review, monitoring or reporting of RFAs and includes provision of advice to government Ministers in relation to RFAs, and fulfilling statutory requirements with respect to RFAs.

<i>Schedule:</i>	means a Schedule to this Data Agreement as amended from time to time.
<i>Singly Owned Data:</i>	means Data which is identified as being singly owned in the Schedules to the Data Agreement and includes Data where the RFA process has funded only the enhancement of, or minor additions to, Existing Data.
<i>Source Data:</i>	means Data which is not obtainable from other Data or derivable by combining other Data sets.
<i>Third Party Data:</i>	means Data owned by a third party that was used for RFA Purposes and is identified in the Schedules to the Data Agreement as Third Party Data.

~~1. Schedules~~

~~The Parties agree that each Schedule, in respect of each item of Data listed there, includes:~~

- ~~(a) the title of the Data and/or identifier for the Data;~~
- ~~(b) the Owner;~~
- ~~(c) the Custodian;~~
- ~~(d) the Access Category; and~~
- ~~(e) the Ownership Type;~~

~~2. Ownership Types~~

~~2.1 Jointly Owned Data~~

- ~~2.1.1 Subject to this clause 2.1 and clause 3, and where confidentiality provisions do not apply, Jointly Owned Data may be used by either Party for any purpose.~~
- ~~2.1.2 Where confidentiality obligations limit access to or use of Jointly Owned Data, Parties must comply with those confidentiality obligations. Any Data subject to confidentiality obligations must be clearly identified as Restricted in the Schedules.~~
- ~~2.1.3 Custodianship of, and access to, Jointly Owned Data shall be as described in clause 3.~~

~~2.2 Singly Owned Data~~

- ~~2.2.1 The Parties agree that subject to this clause 2.2 and clause 3, Singly Owned Data identified in the Schedule can be used for RFA Purposes by either Party subject to any confidentiality or use provisions that limits its usage beyond that specifically agreed. Such Data will only be used in a manner that respects all rights of ownership, confidentiality and copyright of the Data Owner and Licence conditions. Use of Singly Owned Data for other purposes requires the prior written permission of the Owner.~~

~~2.2.2~~ Where confidentiality obligations or limitations on use are imposed, a Party who is not the Owner may only use Singly Owned Data for purposes other than RFA Purposes under Licence

~~2.2.3~~ Access to Singly Owned Data by third parties will generally be through arrangement with the Data Custodian except as provided for in the Data Agreement and Schedules. Parties to this Data Agreement that are not the Owner will not provide Singly Owned Data to a third party without the prior permission of the Owner.

~~2.2.4~~ The Custodian of Singly Owned Data will be responsible for providing access to such Data in accordance with its Access Category identified in the Schedules to the Data Agreement and described in clause 3 of this Data Agreement.

~~2.2.5~~ Access arrangements imposed by an Owner shall apply to Existing Data unless otherwise agreed by the Parties.

2.3 ~~Third Party Data~~

~~Third Party Data will be used in accordance with any Licence arrangements agreed with the Owner.~~

3. ~~Access Arrangements~~

~~a)~~ Subject to clause 2, all Data identified in the Schedules may be used by Parties (including the Governments' officers, employees, agents contractors, sub-contractors or consultants) for RFA Purposes consistent with the access provisions which apply to the Data's Access Category relevant to the access category as outlined below.

~~b)~~ Where confidentiality or limitations on use apply in respect of Singly Owned Data and Jointly Owned Data, such Data must only be used in accordance with the relevant Licence conditions.

~~c)~~ Access to Third Party Data will only be possible where explicitly permitted under the terms of a Licence agreement with the Owner.

~~d)~~ There are three categories that have been agreed for access to Data by Parties:

- ~~i)~~ Restricted
- ~~ii)~~ Licensed
- ~~iii)~~ Unrestricted

3.1 ~~Restricted Data~~

~~Restricted Data is Data which is considered sensitive by a Data Owner and is available to the other Party or third parties only by agreement of the Owner on a case by case basis. This includes Data for which confidentiality and use provisions apply.~~

~~3.2 — Licensed Data~~

~~3.2.1 — Licensed Data may be provided to third parties by means of a Licence with the relevant Data Custodian.~~

~~3.2.2 — Licensed Data may be used by third parties as agreed on a case by case basis subject to the conditions of the Licence.~~

~~3.3 — Unrestricted Data~~

~~3.3.1 — Subject to this clause 3.3.2, Unrestricted Data is available to the public without restriction in respect to the purposes for its use.~~

~~3.3.2 — Unrestricted Data and products may be used by third parties for unrestricted use provided that the copyright interests of the Owner are protected. Any party making available Unrestricted Data must require third parties to include on any reproduction of Unrestricted Data the following statement:~~

~~Copyright © [insert name of copyright owner] [insert year of creation].~~

~~3.4 — Data Management Arrangements~~

~~3.4.1 — The Parties agree to the custodianship, management, maintenance, access and use according to whether data is classified as ‘Restricted’, ‘Licensed’ or ‘Unrestricted’ as detailed above and in the Schedules. The classification of each Data set will be agreed on a case by case basis for all Data used for development of the RFA and as outlined in the Schedules to be added to this Data Agreement.~~

~~3.4.2 — The Parties will agree on the Data Custodian to manage, maintain and release the Data as outlined in the Schedules to this Data Agreement. The Data Custodian will maintain a register of all Data transfers for Data classified as Restricted or Licensed that will be available to either Party.~~

~~3.4.3 — Over time, Data may be reclassified from one access category to another, subject to the approval of the Data Owner, agreement by the Parties and the notification of the Custodian of this reclassification.~~

~~4. — Data Archive~~

~~4.1 — The intention and purpose of the Data Archive is to ensure that baseline Data is available for undertaking RFA reviews.~~

~~4.2 — Access to Archived Data shall be consistent with this Data Agreement.~~

~~4.3 — The Parties will ensure that, subject to clause 4.5, all Singly Owned Data, Jointly Owned Data and Third Party Owned Data including Assessment Reports, Source Data and Derived Data identified in the Schedules to the Data Agreement will be included in the Data Archive unless confidentiality provisions prevent this.~~

~~4.4 — The Data Archive shall include copies of all Data, models and software in the Schedules, Metadata, and documentation of models or modelling tools, required~~

~~for the purposes of meeting Regional Forest Agreement obligations and undertaking assessments for RFA Purposes.~~

- ~~4.5 Copies of the full Data Archive shall be held at one State location and two Commonwealth locations. Where this is prevented due to commercial, confidentiality, copyright or previous contractual arrangements that Data must nevertheless be archived by the Custodian in a manner satisfactory to both Parties. Remote archiving of Data should be avoided wherever possible.~~
- ~~4.6 The Custodian identified in the Schedules to this Data Agreement shall provide copies of the Data, Metadata and other documentation for the Data Archive by the following dates:~~
- ~~(a) Eden Region (Schedule 1) by 30 April 2000;~~
 - ~~(b) Upper North East Region (Schedule 2) by 30 June 2000;~~
 - ~~(c) Lower North East Region (Schedule 3) by 30 June 2000, and~~
 - ~~(d) Southern Region (Schedule 4) on a date to be agreed by the Parties on signing of the Agreement.~~
- ~~4.7 The manager of the NSW copy of the RFA Data Archive will be the Department of Urban Affairs and Planning. The managers of the Commonwealth copies of the RFA Data Archive will be Environment Australia — Department of Environment and Heritage, and Department of Agriculture, Fisheries and Forests (Bureau of Rural Sciences).~~
- ~~4.8 Maintenance of the Data Archive will be the responsibility of an appropriate nominee at each of the three Data Archive sites. All archiving of Data and other information must provide appropriate security and must ensure the continuing recoverability of Archived Data (preferably by CD ROM) and must include Metadata and/or other relevant supporting documentation to enable use of that Data and other information.~~
- ~~4.9 The Parties shall have access to all Archived Data in the Data Archive as baseline Data for RFA review purposes.~~
- ~~4.10 The Archived Data Archive must not be changed, amended or altered unless this is necessary to correct an error occurring during the archiving process, in which case all Data Archive Managers and Parties must be notified and the error must be rectified by the Custodian.~~

~~5. Metadata~~

- ~~5.1 All Singly Owned Data and Jointly Owned Data identified in the Schedule shall be described by standard Metadata. Standard Metadata will be freely exchanged between Parties and third parties.~~
- ~~5.2 The Australia New Zealand Land Information Council (ANZLIC) metadata standards as supplemented for the NSW CRA/RFA process (see CRA Data Manual — A report undertaken for the NSW CRA/RFA Steering Committee, May 1998) will be used to describe all Source Data, Existing Data and Derived Data.~~

~~Metadata for a given Data set is the responsibility of the Custodian for that Data set.~~

- ~~5.3 The ANZLIC (1996) metadata standard has been adopted as the metadata standard for the NSW CRA/RFA. (Reference: ANZLIC *Guidelines: Core Metadata Elements: Version 1 Metadata for high level land and geographic data directories in Australia and New Zealand*. ANZLIC 1996.).~~
- ~~5.4 The Parties will ensure that the custodian for each Data set will provide the Metadata statements to the Australia Spatial Data Directory (ASDD) consistent with jurisdictional practices.~~

~~6. Data updates~~

- ~~6.1 The Parties agree to provide appropriate mutual access to updated and modified Assessment Data that is not subject to confidentiality obligations and restrictions on use for the purposes of RFA review and monitoring. Any significant upgrades to, or modification of, the Assessment Data must be reported to the other Party on request.~~
- ~~6.2 If significantly upgraded versions of Jointly Owned Data are developed in the course of the normal business of either Party, they will be Singly Owned Data and provided to the other Party as required for RFA Purposes in accordance with this Data Agreement.~~
- ~~6.3 If upgraded versions are developed for RFA Purposes and the upgrade was jointly funded, the new versions of Data will be Jointly Owned Data unless otherwise agreed and will be provided to the other Party at no cost.~~
- ~~6.4 CRA Data yet to be completed and listed as 'work in progress' in the Schedules to this agreement will, on completion, be provided to the other Party consistent with the Ownership Type and Access Categories subsequently agreed between the Parties and identified in the Schedule.~~
- ~~6.5 The Parties recognise that access to New Data may be required for the purposes of RFA reviews. Immediately prior to any RFA review the Parties shall determine which New Data is appropriate for review purposes, and negotiate access to that New Data through the Custodian.~~
- ~~6.6 The Custodian of any 'work in progress' (as identified on the Schedules) shall notify both Parties upon the completion of those Data sets. Thereafter, access to that Data shall be through the Custodian, in accordance with the appropriate sections of this Data Agreement.~~

~~7. Participant Stakeholder Access to Assessment Data Post RFA Signing~~

~~On request, a copy of Licensed and Unrestricted Assessment Data, as archived, will be issued to participant stakeholders subject to the provisions of a Licence issued by the Department of Urban Affairs and Planning.~~

~~8. Data Access by Third Parties.~~

~~Data access by non RFA participants will be addressed on a case by case basis consistent with the appropriate sections of this Data Agreement and shall be granted through the relevant Custodian.~~

~~9. — Contacts~~

~~Correspondence concerning this Data Agreement should be marked to the attention of the GIS Manager for Regional Forest Agreements in the relevant agency as set out below.~~

~~Resources and Conservation Division
Department of Urban Affairs and Planning
GPO Box 3927
Sydney NSW 2001~~

~~Department of Agriculture, Fisheries and Forestry — Bureau of Rural Sciences
PO Box E11
BARTON ACT 2600~~

~~Environment Australia, Department of Environment and Heritage
GPO Box 787
CANBERRA ACT 2610~~

**PRINCIPLES OF ECOLOGICALLY SUSTAINABLE FOREST
MANAGEMENT (ESFM)**

Principle 1: Maintain or increase the full suite of forest values for present and future generations across the NSW native forest estate

- The principle of intergenerational equity (that in meeting the needs of the present generation, the ability of the future generations to meet their own needs is not compromised) is embodied in this principle.
- Ensure that ESFM at the regional and smaller scales is implemented by ecologically appropriate planning and operational practices, and that ESFM targets are set and indicators of performance are monitored.
- Ensure the long-term maintenance of the full range of values of the NSW existing forest estate. The intention is to maintain or increase not only the full range of values, but also the magnitude or level at which those values are maintained or increased.
- Encourage the increased production of plantation-grown timber and the social and economic benefits flowing from this increased production to supplement the wood supply from native forests.

Aims for values include

A Biodiversity

- Biological diversity of forests at the ecosystem, species and genetic levels where biological diversity includes natural patterns of ecosystems, species and gene pools in time and space.
- Address the requirements of vulnerable species.
- Assist with the recovery of threatened species, and maintain the full range of ecological communities at viable levels.
- Protect landscape values through the careful planning of operations and the reservation of appropriate patches and corridors of vegetation.

B The productive capacity and sustainability of forest ecosystems

- Maintain ecological processes within forests (such as the formation of soil, energy flows and the carbon, nutrient and water cycles, fauna and flora communities and their interactions).
- Maintain or increase the ability of forest ecosystems to produce biomass whether utilised by society or as part of nutrient and energy cycles.

- Ensure the rate of removal of any forest products is consistent with ecologically sustainable levels.
- Ensure the deleterious effects of activities/disturbances which threaten forests, forest health or forest values are minimised.

C Forest ecosystem health and vitality

- Reduce or avoid threats to forest ecosystems from introduced diseases, exotic plants and animals, unnatural regimes of fire or flooding, wind shear, land clearing and urbanisation.
- Promote good environmental practice in relation to pest management.
- Ensure the deleterious effects of activities/disturbances within forests, their scale and intensity, including their cumulative effects are minimised.
- Restore and maintain the suite of attributes (ecological condition, species composition and structure of native forests) where forest health and vitality have been degraded.

D Soil and water

- Maintain the chemical and biological functions of soils by protecting soils from unnatural nutrient losses, exposure, degradation and loss.
- Maintain the physical integrity of soils by protecting soils from erosion, mass movement, instability, compaction, pulverisation and loss.
- Protect water quality (physical, chemical, biological) by measures controlling disturbance resulting from forest activities.
- Identify and maintain at appropriate levels, water yield and flow duration in catchments.

E Positive contribution of forests to global geochemical cycles

- Maintain the positive contribution of forests to the global geochemical cycle (includes climate, air and water quality and deposition).

F Long-term social and economic benefits

- Maintain and enhance, on an ecologically sustainable basis, production of wood and wood products, including value adding, investment and resource security.
- Provided it is ecologically sustainable, set, maintain or enhance the level of use of non-wood products and uses, including bee-keeping, grazing, mining, recreation and tourism, reliable water supply.

- Maintain and enhance, on an ecologically sustainable basis, the provision of employment and community needs such as economic diversification, investment skills, education, jobs stability, training and Indigenous needs.
- Encourage the establishment and use of plantation forests on existing cleared land to expand social and economic values.
- Maintain and enhance the intangible social welfare benefits which forests provide.

G Natural and cultural heritage values

- Protect social, natural and cultural heritage values and sites, including aesthetic, landscape, historic, cultural, educational, scenic, spiritual and scientific values, including Indigenous values and sites.

Principle 2 Ensure public participation, access to information, accountability and transparency in the delivery of ESFM.

- Ensure public participation in decision-making processes at local, regional and State and Federal levels.
- Ensure comprehensive, timely and reasonable public access to information.
- Ensure transparency, openness and accountability in decision making processes and performance.

Principle 3 Ensure legislation, policies, institutional framework, codes, standards and practices related to forest management require and provide incentives for ecologically sustainable management of the native forest estate.

- Establish a process for shared management and administration, recognising the customary and traditional rights of Indigenous people, and the interests of private land-holders and other stakeholders in an area's management.

Principle 4 Apply precautionary principles for prevention of environmental degradation

The incorporation of the precautionary principle into decision making has been endorsed by State and Commonwealth Governments (Commonwealth of Australia 1992 p. 49, IGAE 1992) and is defined as *'where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. In the application of the precautionary principle, public and private decisions should be guided by:*

- *careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment; and*
- *an assessment of the risk-weighted consequences of various options.'*

Principle 5 Apply best available knowledge and adaptive management processes

ESFM would utilise the concept of adaptive management and ~~continuous~~ continual improvement based on best science and expert advice and targeted research on critical gaps in knowledge, monitoring or evaluation.

ANNEXURE 2 CLEAN VERSION OF THE AMENDED REGIONAL FOREST AGREEMENT

REGIONAL FOREST AGREEMENT

for

NORTH EAST

NEW SOUTH WALES

(Upper North East and Lower North East Regions)

between

THE COMMONWEALTH OF AUSTRALIA

&

THE STATE OF NEW SOUTH WALES

MARCH 2000 (includes 2018 VARIATION)

North East Regional Forest Agreement

THIS AGREEMENT is made on the 31st day of March 2000

BETWEEN

THE STATE OF NEW SOUTH WALES, (“New South Wales” or “the State”), and
THE COMMONWEALTH OF AUSTRALIA (“the Commonwealth”).

Recitals

WHEREAS:

Purpose of Agreement

- A. This Regional Forest Agreement (RFA) establishes the framework for the management of the forests of the Upper North East and Lower North East regions. Parties are committed to ensuring the Agreement is durable and the commitments are delivered to ensure effective conservation, sustainable forest management and industry stability outcomes.
- B. This Agreement is a Regional Forest Agreement, for the purposes of the *Export Control Act 1982* (Cth), the *Regional Forest Agreements Act 2002* (Cth) and the *Environment Protection and Biodiversity Conservation Act 1999* (Cth). As such the Agreement :
- (a) identifies areas in the region or regions that the Parties believe are required for the purposes of a Comprehensive, Adequate and Representative Reserve System, and provides for the conservation of those areas; and
 - (b) provides for the ecologically sustainable management and use of forested areas in the regions; and
 - (c) is for the purpose of providing long-term stability of forests and forest industries; and
 - (d) has regard to studies and projects carried out in relation to all of the following matters that are relevant to the regions:
 - (i) environmental values, including Old Growth, Wilderness, endangered species, National Estate Values and World Heritage Values;
 - (ii) Indigenous heritage values;
 - (iii) economic values of forested areas and forest industries;
 - (iv) social values (including community needs); and
 - (v) principles of Ecologically Sustainable Forest Management.

- C. This Agreement is divided into Parts. Part 1 applies to the whole Agreement. Part 2 is not intended to create legally binding relations. Part 3 is intended to create legally binding relations. The Attachments are not intended to create legally binding relations except to the extent that this is necessary to give effect to Part 3.

NOW IT IS AGREED as follows:

PART 1

Interpretation

- 1 This Agreement is to be interpreted, unless the contrary intention appears, with reference to the definitions and general provisions specified in clauses 2 and 3.

Definitions and General Provisions

- 2 In this Agreement unless the contrary intention appears:

“Aboriginal” for the purposes of this agreement means the First Peoples of NSW;

“Agreement” means all parts of this Agreement between the Commonwealth of Australia and the State of New South Wales and includes the Attachments to this Agreement;

“Australian World Heritage Intergovernmental Agreement” means the Australian World Heritage Intergovernmental Agreement, as agreed by the Commonwealth, the States and the Territories, as amended from time to time;

“Biodiversity” means biodiversity as defined in the JANIS Report;

“CAR Values” means the conservation values as described by the JANIS Reserve Criteria;

“Commonwealth Heritage Management Principles” has the same meaning as “Commonwealth Heritage management principles” in section 341Y of the EPBC Act;

“Commonwealth Heritage Place” has the same meaning as “Commonwealth Heritage place” in section 341C(3) of EPBC Act;

“Commonwealth Heritage Values” has the same meaning as “Commonwealth Heritage values” in section 341D of EPBC Act;

“Comprehensive Adequate and Representative Reserve System” or **“CAR Reserve System”** means areas under any of the following categories of land tenure - as described in the JANIS Report - Dedicated Reserves, Informal Reserves and other areas on Public Land protected by Regional Prescriptions (eg under any Integrated Forestry Operation Approval applicable to the North East region), and areas of Private Land where the CAR Values are protected under secure management arrangement by agreement with private landholders. This reserve system is based on the principles of comprehensiveness, adequacy and representativeness;

“Competition Principles Agreement” means the agreement of the same name updated by the Council of Australian Governments in 2007;

“Comprehensive Regional Assessment” or **“CRA”** means the assessment process carried out pursuant to Attachment 1 of the NSW RFAs Scoping Agreement for New South Wales Regional Forest Agreements between the Commonwealth of Australia and the State of New South Wales;

“Crown Land” means land that is vested in the Crown or was acquired under the Closer Settlements Acts as in force before their repeal, not in either case being:

- (a) land dedicated for a public purpose; or
- (b) land that has been sold or lawfully contracted to be sold and in respect of which the purchase price or other consideration for the sale has been received by the Crown.

“Dedicated Reserve” means a formal reserve equivalent to International Union for the Conservation of Nature and Natural Resources (IUCN) Protected Area Management Categories I, II, III, or IV as defined by the IUCN Commission for National Parks and Protected Areas (1994). The status of Dedicated Reserves is secure, requiring action by the New South Wales Parliament or in accordance with New South Wales legislation for reservation or revocation. In New South Wales, Dedicated Reserves include, but are not limited to, parks under the *National Parks and Wildlife Act 1974* (NSW), flora reserves under the *Forestry Act 2012* (NSW), and areas mapped as Special Protection Zone (FMZ 1), under the NSW Forest Management Zoning system ;

“Ecologically Sustainable Forest Management” or **“ESFM”** means forest management and use in accordance with the specific objectives and policies for ecologically sustainable development as detailed in the *National Forest Policy Statement* and as further described in Attachment 14;

“Environment and Heritage Values” means values assessed as part of the CRA. These included Biodiversity, Forest Ecosystems, Old Growth forests, Wilderness, endangered species, National Estate Values, World Heritage Values and Indigenous heritage values;

“EPBC Act” means the *Environment Protection and Biodiversity Conservation Act 1999* (Cth);

“Extractive Material” means sand, gravel, clay, soil, turf, rock, stone or similar substances, not being a Mineral, as defined in this Agreement;

“Extractive Operation” means the winning of Extractive Material, or, an industry or undertaking (not including Mining), which depends for its operations on the winning of Extractive Material from the land upon which it is carried on;

“Five-yearly Review Scoping Agreement” means a scoping agreement between the Commonwealth of Australia and the State of New South Wales for each five-yearly review, including any agreed priorities, procedures and funding arrangements for the conduct of the five-yearly review;

“Forest” means: a Forest Ecosystem listed in Table 1 of Attachments 1(A) and 1(B); the land on which a Forest Ecosystem listed in Table 1 of Attachments 1(A) and 1(B) occurs; or, a Plantation of trees for timber production. The carrying out of Forestry Operations on an area does not prevent it from remaining as a Forest;

“Forest Agreement” means a Forest Agreement as defined in the *Forestry Act* 2012 (NSW);

“Forest Ecosystem” means for the purposes of the Agreement a Forest ecosystem as defined in the JANIS Report. Forest Ecosystems in the North East region are listed in Attachments 1(A) and 1(B) of this Agreement;

“Forest Estate” means all Forests growing on Public Land or Private Land;

“Forest Management” means the management and administration of all Forests including State forest, national parks, other conservation reserves or Crown land, private native forest and Plantations.

“Forest Management Framework” means the New South Wales suite of legislation, regulations, other regulatory instruments and guidance. The elements of the framework are described in the report entitled ‘*Overview of the New South Wales Forest Management Framework*’ as published by the NSW Government and as amended from time to time;

“Forest Management Zoning” or “FMZ” is a land classification system which sets out, in map format, management intent across State forest. It is based on the “Components of the CAR System” in the JANIS Report, to clearly differentiate between those areas of State forest which are specifically set aside for conservation purposes (and utilising statutory protection in some cases) and those areas which are available for timber harvesting and other activities. The system is described in the document *Managing our forests sustainably: Forest Management Zoning in NSW State Forests*, State Forests of NSW [1999], and as amended from time to time;

“Forestry Corporation of NSW” or “FCNSW” means the Forestry Corporation of NSW, a State Owned Corporation under the *State Owned Corporations Act* 1989 (NSW);

“Forestry Corporation of NSW Hardwood Forest Management System” means the system of policies, processes and procedures used by Forestry Corporation of NSW to ensure forest activities achieve ESFM, including a system of monitoring, audit and management review that allows for continual improvement and adaptive management and maintaining EMS certification under ISO 14001 or a demonstrated equivalent environmental management system;

“Forestry Operations” means:

- (a) logging operations, namely, the cutting and removal of timber from land for the purpose of timber production;

- (b) forest products operations, namely, the harvesting of Forest Products that are of economic value;
- (c) on-going forest management operations, namely, activities relating to the management of land for timber production such as thinning, bush fire hazard reduction and other silvicultural activities; and
- (d) transport of Forest Products;

“Forest Products” means timber and forest products as defined in the *Forestry Act 2012* (NSW);

“Forest Resource and Management Evaluation System” or “FRAMES” means the Forestry Corporation of NSWs’ statewide forest resource inventory, growth modelling, simulation and harvest scheduling system for New South Wales’ public hardwood forest resource. ;

“Harvesting Exclusions Zone” or “FMZ 3A” means the zone of the name ‘Zone 3A – Harvest Exclusions’ under the NSW Forest Management Zoning system;

“High Quality Logs” means logs which are suitable for high-value solid log products such as poles, piles and girders as well as logs suited for processing into sawn timber or veneer;

“Indigenous” means the Aboriginal and Torres Strait Islander peoples of Australia. ‘Indigenous’ is used in this document to mirror its use in Commonwealth legislation. Otherwise ‘Aboriginal’ is used to refer to the First Peoples of NSW.

“Informal Reserve” means a reserve that contains and is managed for Environment and Heritage Values which contribute to the CAR Reserve System and meets the principles for Informal Reserves as described in the JANIS Report. In New South Wales, it includes, but is not limited to, areas mapped as Special Management Zone (FMZ 2), which meet the size and design criteria for Informal Reserves, under the NSW Forest Management Zoning system;

“Integrated Forestry Operations Approval” or “IFOA” means an Integrated Forestry Operations Approval as defined in the *Forestry Act 2012* (NSW);

“ISO 14001” means *AS/NZS ISO 14001: 2015, Environmental Management Systems: Requirements with guidance for use*, Standards Australia (as amended from time to time);

“JANIS Report” means the report by the Joint Australian and New Zealand Environment and Conservation Council (ANZECC) / Ministerial Council on Forestry, Fisheries and Aquaculture (MCFFA) National Forests Policy Statement Implementation Sub-committee, titled *Nationally Agreed Criteria for the Establishment of a Comprehensive, Adequate and Representative Reserve System for Forests in Australia*, published by the Commonwealth of Australia in 1997;

“JANIS Reserve Criteria” or **“Criteria”** means the criteria as described in the JANIS Report for establishing the CAR Reserve System addressing Biodiversity, Old Growth forest and Wilderness, taking account of reserve design and management and social and economic considerations;

“Listed Species and Communities” means species and communities listed in accordance with Part 13 of the EPBC Act, *Biodiversity Conservation Act 2016* (NSW) or *Fisheries Management Act 1994* (NSW), including threatened and endangered species, threatened ecological communities, migratory species and other listed categories (or equivalent);

“Low Quality Logs” means undersize or defective log sections that do not meet a high quality specification but are still suitable for processing into sawn timber or veneer;

“Matters of National Environmental Significance” for the purpose of this Agreement means those matters protected by Part 3 of the EPBC Act as matters of national environmental significance, including:

- (a) World Heritage Values of declared World Heritage Places;
- (b) National Heritage Values of National Heritage Places;
- (c) ecological character of Ramsar Wetlands;
- (d) listed species and communities in the EPBC Act (excluding those categories referred to in paragraphs 178(1)(a) and (f), and paragraph 181(1)(c) of the EPBC Act).

“Mineral” means any substance prescribed by the regulations of the *Mining Act 1992* (NSW) as a mineral, or petroleum as prescribed under the *Petroleum (Onshore) Act 1991* (NSW), and includes coal, oil shale and petroleum but does not include uranium;

“Mineral Exploration” means prospecting under an authority or other title under either the *Mining Act 1992* (NSW) or the *Petroleum (Onshore) Act 1991* (NSW);

“Mining” means mining under an authority or other title under the *Mining Act 1992* (NSW) and includes production of petroleum under the *Petroleum (Onshore) Act 1991* (NSW);

“Mining Operations” means operations or works carried out in the course of Mining, or Mineral Exploration;

“Montreal Process Criteria” means the Montreal Process criteria for the conservation and sustainable management of temperate and boreal forests;

“Montreal Process Implementation Group for Australia” or **“MIG”** means the Montreal Process Implementation Group established by the Commonwealth and all State and Territory Governments;

“National Estate” means those places as defined under section 4 of the repealed *Australian Heritage Commission Act 1975* (Cth);

“National Estate Values” means values attributed by the former Australian Heritage Commission to National Estate places;

“National Forest Policy Statement” or **“NFPS”** means the *National Forest Policy Statement* (1992) endorsed by the Commonwealth and all State and Territory Governments;

“National Heritage Management Principles” has the same meaning as “National Heritage management principles” in section 324Y of the EPBC Act;

“National Heritage Place” has the same meaning as “National Heritage place” in section 324C(3) of the EPBC Act;

“National Heritage Values” has the same meaning as “National Heritage values” in section 324D of the EPBC Act;

“NSW National Parks and Wildlife Service” or **“NPWS”** means the New South Wales National Parks and Wildlife Service;

“NSW RFAs Scoping Agreement” means the Scoping Agreement for New South Wales Regional Forest Agreements between the Commonwealth and the State of New South Wales signed on 25 January 1996;

“Old Growth forest” means old growth forest as defined in the JANIS Report;

“Other Wood Products” means timber that is not processed as a high quality, low quality or Pulpwood log, including firewood, biomaterial and fencing products;

“Owner” means:

- (a) in relation to land:
 - (i) the owner of any estate or interest in that land, including the Crown in right of the State; and
 - (ii) any statutory corporation which has the power to carry on Forestry Operations or Mining Operations as the case may be, on the land;
- (b) in relation to Forest Products or Mining products, as the case may be, the owner of any interest in those products.

“Parties” means the State of New South Wales and the Commonwealth of Australia;

“Party” means a Party to this Agreement;

“Plantations” means intensively managed stands of trees of either native or exotic species, created by the regular placement of seedlings or seed, but not principally for the purpose of the production of food or any other farm produce other than timber;

“Private Land” means lands other than Public Land and land owned or leased by the Commonwealth;

“Progress Report” means a report prepared by the Parties on the performance of this Agreement for each five-yearly review;

“Public Land” means lands of the New South Wales Crown;

“Pulpwood” means logs cut and prepared primarily for the manufacture of wood pulp;

“Ramsar Convention” means the Convention on Wetlands of International Importance Especially as Waterfowl Habitat;

“Ramsar Wetlands” means those places defined under section 17 of the EPBC Act;

“Recovery Plan” means a recovery plan made or adopted under the EPBC Act, or an equivalent instrument made under the *Biodiversity Conservation Act 2016* (NSW), or the *Fisheries Management Act 1994* (NSW) ;

“Regional ESFM Plan” means a plan covering State forests in the region that has the status of a management plan under the *Forestry Act 2012* (NSW) and meeting additional requirements under the Forestry Regulation 2012 (NSW);

“Regional Forest Agreement” or **“RFA”** means a Regional Forest Agreement within the meaning of the *Regional Forest Agreements Act 2002* (Cth);

“Regional Prescriptions” means those prescriptions within the Forest Management Framework that are applicable to Forestry Operations in the Upper North East and Lower North East regions. These prescriptions include but are not limited to silvicultural prescriptions and environment protection measures covered by Regulatory Instruments, Forest Management Zoning, and Aboriginal and non-Aboriginal cultural heritage guidelines;

“Regulatory Instruments” means the State’s suite of statutory and regulatory tools used to achieve ESFM for forestry operations currently in place (or as amended from time to time), including, but not limited to:

- Integrated Forestry Operations Approval applicable to the North East region under the *Forestry Act 2012* (NSW);
- Forestry Regulation 2012 made under the *Forestry Act 2012* (NSW);

- Plantations and Reafforestation (Code) Regulation 2001 made under the *Plantations and Reafforestation Act 1999* (NSW);
- Private Native Forestry Code of Practice for Northern NSW, 2013;
- Additional, new or amended Regulatory Instruments as released from time to time by the NSW Government;

“**Sawlog**” means logs which are suitable for processing into sawn timber;

“**Special Management Zone**” or “**FMZ 2**” means the zone of the name ‘Zone 2 – Special Management’ as described under the NSW Forest Management Zoning system;

“**Special Prescription Zone**” or “**FMZ 3B**” means the zone of the name ‘Zone 3B – Special Prescription’ as described under the NSW Forest Management Zoning system;

“**Special Protection Zone**” or “**FMZ 1**”, means the zone of the name ‘Zone 1 – Special Protection’ as described under the NSW Forest Management Zoning system;

“**State forest**” means land dedicated as State forest under the *Forestry Act 2012* (NSW);

“**Statutory Conservation Planning Document**” means a conservation advice, recovery plan, threat abatement plan or wildlife conservation plan made or adopted in accordance with the EPBC Act, or equivalent instruments or programs under the *Biodiversity Conservation Act 2016* (NSW) or the *Fisheries Management Act 1994* (NSW);

“**Sustainability Indicators**” means qualitative or quantitative measures, at the regional (sub-national) level developed to assess the criteria for sustainable forest management, as described in *Ecologically Sustainable Forest Management Criteria and Indicators for the NSW Forest Agreement regions* (EPA 2017), and as amended from time to time;

“**Sustainable Yield**” means the long term estimated wood yield from forests that can be maintained from a given region in perpetuity under a given management strategy and suite of sustainable use objectives, as determined using the processes described in Attachment 12, and as amended from time to time;

“**Threat Abatement Plan**” means a threat abatement plan made or adopted under (the EPBC Act);

“**Threatening Process**” means a threatening process listed as a key threatening process under the *Biodiversity Conservation Act 2016* (NSW), *Fisheries Management Act 1994* (NSW) and the EPBC Act in recognition that the process adversely affects or may threaten the survival, abundance or evolutionary development of a native species or ecological community;

“Values Protected by Prescription” means *values protected by prescription* as defined in the JANIS Report and includes areas in the Forest Management Zoning system including those areas in FMZ 2 that do not meet Informal Reserve criteria, FMZ 3A, FMZ 3B and other mapped areas under any IFOA applicable to the North East region.

“Wilderness” means wilderness as defined in the JANIS Report;

“Wilderness Values” means the values of the same name as defined in the JANIS Report and the NSW RFAs Scoping Agreement between NSW and the Commonwealth;

“Wild Rivers” means a water course, water course network, or a connected network of water bodies, of natural origin and exhibiting natural flow (perennial, intermittent or episodic) in which the biological, hydrological and geomorphological processes associated with the river flow; and the biological, hydrological and geomorphological processes in those parts of the catchment with which the river is intimately linked; have not been significantly altered by modern or colonial society;

“Woodchips and Unprocessed Wood” means goods that are prescribed goods under the *Export Control (Hardwood Wood Chips) Regulations 1996* (Cth) or the *Export Control (Unprocessed Wood) Regulations* (Cth), or would be prescribed goods under those regulations if not for the *Export Control (Regional Forest Agreements) Regulations* (Cth);

“World Heritage List” means the list kept under that title under Article 11 of the Convention Concerning the Protection of the World Cultural and Natural Heritage;

“World Heritage Nomination” means the submission by the Commonwealth of a nominated area to the UNESCO World Heritage Committee for assessment as a World Heritage area consistent with section 314 of the EPBC Act and the World Heritage Operational Guidelines for the Implementation of the World Heritage Convention;

“World Heritage Place” means a property on the World Heritage List;

“World Heritage Values” has the same meaning as in section 12(3) of the EPBC Act.

- 3 In this Agreement unless the contrary intention appears:
- (a) A reference to a clause or Attachment is a reference to a clause or Attachment to this Agreement and a reference to this Agreement includes a reference to an Attachment;
 - (b) A reference to this Agreement or another instrument is a reference to this Agreement or that other instrument as amended or varied from time to time;

- (c) A reference to a statute or ordinance includes any consolidations, amendments, re-enactments or replacements thereof and also includes regulations and other instruments made under them;
- (d) A reference to a code or other instrument includes any consolidations or amendments thereof;
- (e) A word importing the singular includes the plural and vice versa, a word importing a gender includes each other gender and a reference to a person includes an individual, firm, body corporate, association (whether incorporated or not), government, governmental or semi-governmental body, local authority or agency;
- (f) A reference to an act, matter or thing includes the whole or any part of that act, matter or thing and a reference to a group of acts, matters, things or persons includes each act, matter, thing or person in that group;
- (g) Where any terms and conditions are added to an Attachment of this Agreement it is agreed that those terms and conditions will form part of this Agreement;
- (h) Headings are inserted for convenience and do not affect the interpretation of this Agreement.

Definition of the Regions

- 4 The area covered by this Agreement includes two regions: the Upper North East region (Map 1(A)) and the Lower North East region (Map 1(B)).

Duration of Agreement

- 5 This Agreement takes effect on 31 March 2000 and, unless earlier terminated in accordance with clauses 112, 113, 114 or 115, will remain in force until 26 August 2039, or until a later date pursuant to clause 6A and 6B.
- 6 The process for extending the Agreement for a further period was determined jointly by the Parties as part of the third five-yearly review.
- 6A Subject to clause 6B, upon the satisfactory completion of each five-yearly review in accordance with clause 8M, the Agreement will be extended for a further five years.
- 6B The extension of this Agreement under clause 6A will occur upon the satisfactory completion of the five-yearly review due to commence in 2024 and thereafter upon the satisfactory completion of each subsequent five-yearly review until this Agreement is terminated by the Parties or subsequent extensions of this Agreement are withdrawn in accordance with clause 14C.

Basis of Agreement – National Forest Policy Statement

- 7 The Parties confirm their commitment to the goals, objectives and implementation of the *National Forest Policy Statement (NFPS)* by:

- (a) Implementing Ecologically Sustainable Forest Management (ESFM);
- (b) Establishing and maintaining the Comprehensive, Adequate and Representative (CAR) Reserve System;
- (c) Supporting an internationally competitive wood production and wood products industry through facilitating efficient and sustainable wood production, and wood products industries, based on maximising value-adding opportunities and efficient use of wood resources; and
- (d) Promoting the conservation and management of the private Forest Estate.

Changes to the Agreement

- 8 This Agreement may only be amended with the consent, in writing, of both Parties. Parties agree to work cooperatively to address any differences between them as to the interpretation or implementation of the Agreement.

Monitoring the Agreement

General monitoring

- 8A. The implementation of this Agreement is monitored through the five-yearly reviews and the annual meetings between the Parties in the periods between the five-yearly reviews. Further:
- (a) The Parties agree to maintain open communication on matters relating to the implementation of this Agreement, including raising and responding to issues at any time.
 - (b) The Parties agree that for efficiency and consistency with prior practices, the timing of monitoring and reporting of the North East and Southern RFAs will be aligned with the Eden RFA and will complement NSW and national forest reporting.
 - (c) The Parties agree that the assessment process, the consultation undertaken in early 2018 and the results of the monitoring of Sustainability Indicators in *A report on progress with implementation of the New South Wales Regional Forest Agreements: Second and third five-yearly reviews July 2004 – June 2014*, November 2017 constitute the five-yearly review that was due in 2019.
 - (d) The next five-yearly review required by this Agreement will commence in 2024.
 - (e) New South Wales agrees to develop and maintain a coordinated Monitoring, Evaluation and Reporting Plan, including the identification of research priorities, within the broader Forest Management Framework across relevant forest management tenures and to support RFA outcomes reporting for ESFM.

Annual meetings

8B. The Parties agree to hold annual officials-level, bi-lateral meetings in the years between each five-yearly review to monitor the implementation of the Agreement and discuss any matters or issues that arise.

8C. An online statement will be made publicly available on the outcomes of the meeting.

Five-yearly reviews

Five-yearly review

8D. A review of the performance of this Agreement is to commence during the last year of each five year period during the term of the Agreement (the five-yearly review) with the release of the Five-yearly Review Scoping Agreement.

8E. The purpose of the five-yearly review is to examine New South Wales' forest Management to demonstrate Ecologically Sustainable Forest Management, including to:

- (a) demonstrate adaptive Forest Management in accordance with the RFA;
- (b) demonstrate how the Parties have provided for the protection of Matters of National Environmental Significance, including identifying trends and the status of Matters of National Environmental, in accordance with the RFA;
- (c) demonstrate how relevant Statutory Conservation Planning Documents have been implemented as part of the Forest Management Framework;
- (d) demonstrate how social and economic benefits of forestry and other forest uses are being achieved;
- (e) evaluate current and future research priorities across the Forest Estate; and
- (f) assess the extent to which key findings and/or recommendations for preceding five-yearly reviews have been addressed.

8F. The Parties will prepare a Progress Report addressing the items listed at clause 8E including across key environmental, social and economic indicators (Sustainability Indicators). As such, the Progress Report will be a key source of information in the five-yearly reviews under this Agreement.

Conduct of five-yearly review

8G. Five-yearly reviews are to be conducted by an independent person or body jointly appointed by the Parties.

8H. In conducting the five-yearly review, the independent person or body will:

- (a) take into account public comments;
- (b) use and take into account the relevant Progress Report;
- (c) use and take into account the document titled '*Overview of the New South Wales Forest Management Framework*', as updated from time to time;
- (d) develop and submit to the Parties a report detailing the five-yearly review process and its findings and recommendations, within three months of commencement.

- 8I. In accordance with subsection 10(6) of the *Regional Forest Agreements Act 2002* (Cth), the Commonwealth Minister responsible for forestry will table the report provided under paragraph 8H (d) in each House of the Parliament within 15 sitting days of that House after the report is provided to the Minister.
- 8J. The Parties will consider the five-yearly review recommendations and publish a joint government response to the recommendations within six months of receiving the review report.
- 8K. The Parties will make a determination of satisfactory performance under this Agreement in the joint government response. If satisfactory performance is not determined, the Parties will include in the joint government response a list of remedial actions and when they will be delivered. The subsequent five-yearly review process will assess whether remedial actions have been delivered.
- 8L. The purpose of the five-yearly review process under this Agreement is not to re-negotiate the Agreement.

Satisfactory completion of 5 yearly review

- 8M. A five-yearly review will be satisfactorily completed upon the public release of the joint government response to the review report, which is to include identified remedial actions pursuant to clause 8K. The five-year extension pursuant to clauses 6A and 6B will then take effect, unless the joint government response identifies that there are outstanding remedial actions from a previous five-yearly review that have not been delivered to the satisfaction of both Parties, in which case the five-year extension will not take effect until a supplementary joint government response demonstrating the completion of the outstanding remedial actions has been released.

Requirement for an audit

- 8N. Either Party may initiate an audit, if in the opinion of the initiating Party, there has been, or is likely to be, an adverse finding or outcome relating to this Agreement, whether or not the outcome relates to non-compliance or likely non-compliance with the Agreement.
- 8O. Before an audit process commences, the initiating Party must notify and consult with the other Party on the following:
- (a) the initiating Party's reason for initiating the audit or review;
 - (b) the scope and criteria for the audit, and
 - (c) the appointment of an independent auditor.
- 8P. An audit may include:
- (a) an examination of the operation of this Agreement over a particular period of time; or
 - (b) preparation of an audit report which addresses the criteria specified by the initiating Party.
- 8Q. An audit should be conducted in the most efficient and effective manner possible to address the opinion of and concerns identified by the initiating Party.

- 8R The Parties agree to cooperate fully in any audit.
- 8S The initiating Party may publish any report produced under clause 8P(b), provided the initiating Party, prior to publication:
- (a) notifies the other Party of the intent to publish the report;
 - (b) provides the other Party with a copy of a draft of the final report; and
 - (c) provides the other Party with 20 business days to respond to the draft of the final report.
- 8T The costs of an audit will be borne by the initiating Party.

Dispute Resolution

- 9 The Parties agree that if a dispute arises between the Parties regarding this Agreement it must be resolved expeditiously in accordance with the provisions of clauses 10 to 14.
- 10 When a dispute arises, a Party may serve a notice on the other specifying:
- (a) the nature and substance of the matter or issue in dispute;
 - (b) that it is a dispute to be resolved in accordance with clauses 10 to 14.
- 11 If a notice is served under clause 10 the Parties must attempt to settle the dispute within 14 days. At the expiration of that 14 days and, if agreed, any additional period the Parties must appoint a mediator to conduct a mediation concerning the matter or issue in dispute.
- 12 If the dispute is not settled under clause 11 and the Parties fail to appoint a mediator, either of them may request the President of the Law Council of Australia, or the equivalent officer of such body as in future may have the functions of the Law Council of Australia, to nominate a mediator to conduct the mediation.
- 13 The costs of a mediator appointed under clauses 11 or 12 are to be shared equally between the Parties.
- 14 Each of the Parties agrees to use its best endeavours to resolve the dispute through mediation.

Withdrawal from extension process

- 14A. If there is no resolution or agreement on a dispute in accordance with clauses 9 to 14 (including the failure of mediation), either the Commonwealth Minister responsible for forestry (in consultation with the Commonwealth Minister responsible for the environment) or New South Wales Minister(s) responsible for the environment and/or forestry may send to the other Party and publish a written notice of its intention, unless the dispute is resolved, to withdraw from the extension process in clause 6A and 6B .
- 14B. Any notice under clause 14A above must specify the time period in which the other Party must address the dispute.

- 14C. If, at the end of the specified time period, the dispute has not been resolved, the Commonwealth Minister responsible for forestry (in consultation with the Commonwealth Minister for the environment) or the New South Wales Minister(s) responsible for the environment and/or forestry may write to the other Party's government giving notice confirming the effective date of withdrawal from the extension process in clause 6A and 6B.
- 14D. In the event either Party withdraws from the extension process in clause 6A and 6B, negotiation of any subsequent extension to this Agreement will only be considered following the satisfactory completion of the penultimate five-yearly review (that is, the five-yearly review prior to the final five years of the Agreement's duration).
- 14E. In the event the Parties subsequently extend this Agreement subject to clause 14D and pursuant to clause 8M, the extension process in clause 6A and 6B will not apply to the extended Agreement unless otherwise agreed by the Parties.

Notices

- 15 Any notice or other communication to be given or made pursuant to this Agreement shall be in writing and addressed as the case may be as follows:

THE STATE

The Secretary
Department of Premier and Cabinet
52 Martin Place
SYDNEY NSW 2000

THE COMMONWEALTH

The Secretary
Department of Agriculture and Water Resources
18 Marcus Clarke Street
CANBERRA ACT 2600

PART 2

- 16 This Part is not intended to create legally binding relations and provisions in Part 1 in so far as they relate to Part 2 are also not binding. Where there are references in this Part to obligations which are referred to in Part 3 and are intended to be legally binding, they are only included in Part 2 insofar as they provide context and for the sake of completeness so that the whole scheme which the Parties wish to implement is set out in this Part. The inclusion of references to these legally binding obligations in Part 2 does not derogate from the Parties intent that they be legally binding in Part 3.

FUNCTIONING OF THE AGREEMENT

- 17 NOT USED

Relationship to Statutory Obligations

- 18 This Agreement cannot impose on either Party or a third party any obligation that is inconsistent with Australia's international obligations, or a law of the Commonwealth or of New South Wales.

- 19 Neither Party will seek to use existing or future legislation to undermine or impede this Agreement.

- 20 NOT USED

- 21 NOT USED

- 22 NOT USED

- 23 NOT USED

- 24 NOT USED

- 25 NOT USED

- 26 The Commonwealth notes that its obligations under the EPBC Act to promote protection of Listed Species and Communities will involve ongoing cooperative work with New South Wales agencies concerning the Upper North East and Lower North East regions.

Matters of National Environmental Significance

- 26A New South Wales will use best endeavours to ensure that the Forest Management Framework provides for the protection of Matters of National Environmental Significance.

- 26B The Parties agree that research, monitoring, reporting, evaluation and the communication of findings are important to support decision making with regard to Matters of National Environmental Significance.

- 26C New South Wales will use best endeavours to continue to improve research, monitoring, reporting, evaluation and communication mechanisms as part of its adaptive Forest Management Framework in accordance with clause 46.
- 26D The Parties agree that the monitoring, audit, reporting and review processes set out in this Agreement provides an assurance that the Forest Management Framework takes into account the protection of Matters of National Environmental Significance.

Listed Species and Communities, including threatened flora and fauna

- 26E New South Wales will use best endeavours to ensure that the Forest Management Framework provides for the protection of Listed Species and Communities.
- 26F The Parties, recognising that priorities can change in light of new information, will continue to consult on the priorities for:
- (a) Listed Species and Communities, Forest Ecosystems, and Threatening Processes (further information at Attachment 3);
 - (b) the preparation of all Statutory Conservation Planning Documents relevant to this Agreement.
 - (c) research on Listed Species and Communities, Forest Ecosystems, and Threatening Processes.
- 26G New South Wales will use best endeavours to ensure that any new or altered actions in the Forest Management Framework are developed and implemented over the term of the Agreement for Listed Species and Communities to:
- (a) provide for the maintenance of the relevant species;
 - (b) have a sound scientific basis;
 - (c) give consideration to relevant determinations made by the New South Wales Threatened Species Scientific Committee or Fisheries Scientific Committee;
 - (d) be consistent with relevant Statutory Conservation Planning Documents; and
 - (e) take note of public comment.
- 26H New South Wales will use best endeavours to ensure that the State's Statutory Conservation Planning Documents and Regulatory Instruments that include management actions, prescriptions or protections for Listed Species and Communities in accordance with the Forest Management Framework, will:
- (a) be maintained, implemented and updated on an as needs basis to provide ongoing protection for Listed Species and Communities;
 - (b) be made publicly accessible.

World Heritage Places

- 27 The Parties acknowledge that the World Heritage Values of a property included in the World Heritage List are protected by Part 3 of the EPBC Act, as the exemption to the application of Part 3 for Forestry Operations does not apply to a World Heritage Place pursuant to section 42 of the EPBC Act.
- 28 NOT USED
- 29 NOT USED
- 30 The Parties agree to participate in the assessment of any future World Heritage Places consistent with the Australian World Heritage Intergovernmental Agreement.
- 31 The Parties agree that any World Heritage Nominations involving any part of the Forest Estate in the Upper North East and Lower North East regions will be from areas within the Dedicated Reserve elements of the CAR Reserve System.
- 32 NOT USED
- 33 NOT USED

National Heritage Places

- 33A. New South Wales will use best endeavours to ensure that the Forest Management Framework provides for the protection of National Heritage Values of National Heritage Places in accordance with National Heritage Management Principles.

Commonwealth Heritage Places

- 33B. New South Wales will use best endeavours to ensure that the Forest Management Framework provides for the protection of Commonwealth Heritage Values through the management of Commonwealth Heritage Places in accordance with Commonwealth Heritage Management Principles.

Ramsar Wetlands

- 33C. The Parties acknowledge that the Forest Management Framework provides for the protection of the ecological character of Ramsar Wetlands, in accordance with Australia's obligations under the Ramsar Convention, by:
- (a) the application of Part 3 of the EPBC Act, as the exemption to the application of Part 3 of the EPBC Act for Forestry Operations does not apply to Ramsar Wetlands pursuant to section 42 of the EPBC Act;
 - (b) management of Ramsar Wetlands, including having regard to Ramsar Wetland information sheets and Ramsar Wetland ecological character descriptions; and
 - (c) management of the relevant threatened ecological communities listed in Schedule 2 of the *Biodiversity Conservation Act 2016* (NSW), and/or listed under the *Fisheries*

Management Act 1994 (NSW).

Export controls

- 34 Parties note that current Commonwealth export arrangements provide that, after 31 March 2000, exports of Woodchips and Unprocessed Wood from native forests can occur from areas covered by an RFA, without the need for a licence under the *Export Control Act (1982) (Cth)*.
- 35 Parties note that no controls under the *Export Control Act 1982 (Cth)* or any other export control law within the meaning of the *Regional Forest Agreements Act 2002 (Cth)* will apply to Woodchips and Unprocessed Wood sourced from the Upper North East and Lower North East regions while this Agreement is in place.

Integrated Forestry Operations Approval applicable to the North East region

- 36 New South Wales confirms that relevant Regulatory Instruments, such as the Integrated Forestry Operations Approval, for all or part of the Upper North East and Lower North East regions are parts of the New South Wales Forest Management Framework and are means by which New South Wales will implement obligations arising from this Agreement.
- 37 NOT USED
- 38 NOT USED
- 39 NOT USED
- 40 NOT USED
- 41 NOT USED
- 42 NOT USED
- 43 NOT USED

ECOLOGICALLY SUSTAINABLE FOREST MANAGEMENT (ESFM)

- 44 The Parties agree that ESFM is an objective which requires a long term commitment to continual improvement and that the key elements for achieving it are:
 - (a) The establishment and maintenance of the CAR Reserve System;
 - (b) Efficient and sustainable wood production and wood products industries based on maximising value-adding opportunities and efficient use of wood resources; and
 - (c) An integrated, complementary and strategic Forest Management Framework capable of responding to new information, including climate change risks and adaptation responses.

- 45 The Parties recognise that the NSW Forest Management Framework is designed to produce effective outcomes for fauna, flora, soil and water conservation, and heritage values on State forests and provides a sound basis for implementation and continual improvement of such to achieve ESFM.
- 46 New South Wales confirms its commitment to the ongoing implementation and achievement of ESFM on both Public Land and Private Land through the continued implementation and improvements to its Forest Management Framework and adaptive management in accordance with the ESFM principles in Attachment 14.

Monitoring and reporting on Ecologically Sustainable Forest Management

47 The Parties recognise that:

- (a) the Forest Management Framework is enhanced by adaptive management and continuing mechanisms to monitor, report and review the sustainability of forest management policies and practices;
- (b) fostering stakeholder understanding of ESFM in NSW is important; and
- (c) a range of processes and instruments exist which provide for public participation and consultation, as outlined in the summary document titled '*Overview of the New South Wales Forest Management Framework*'.

48 New South Wales undertakes to:

- (a) Review and update the summary document titled '*Overview of the New South Wales Forest Management Framework*', which describes the Forest Management Framework at a given point in time, as a minimum for each Five-yearly Review period;
- (b) Maintain for the duration of this Agreement an Integrated Forestry Operations Approval covering the Upper North East and Lower North East regions, consistent with Attachments 1A, 1B, 3, 8 and 12;
- (c) Use best endeavours to ensure that plans of management are developed and implemented for Dedicated Reserves under the *National Parks and Wildlife Act 1974* (NSW) and for flora reserves under the *Forestry Act 2012* (NSW) ensuring review and revision on a regular basis;
- (d) Implement the Regional ESFM Plan applicable to the North East region (currently the *Forest Management Plan for the Coastal Forests of NSW* (FCNSW 2016))– or an equivalent instrument – ensuring review and revision on a regular basis;
- (e) Ensure that the Forest Management Zoning system for the North East region is maintained, implemented and reviewed on a regular basis;
- (f) Manage cultural values, both Aboriginal and non-Aboriginal, in the North East region, in accordance with guidelines developed by New South Wales to meet the requirements in the EPBC Act, *National Parks and Wildlife Act*

1974 (NSW) and the *Heritage Act 1977* (NSW), as amended from time to time;

- (g) Manage availability of timber resources for the State forest estate in accordance with Sustainable Yield estimates calculated using FRAMES or an equivalent, including to:
 - (i) take account of climate risks and adaptation responses;
 - (ii) ensure that FRAMES or an equivalent for the North East region is maintained and continually improved and provide periodic reviews of wood product yields as documented in Attachment 12;
 - (iii) undertake and make publicly available an independent review of Sustainable Yield estimates for the North East region during each five-yearly review period;
- (h) Maintain and implement a management system for public Forests that meets the criteria for an environmental management system meeting the requirements of ISO 14001 and demonstrates ESFM;
- (i) Identify and integrate relevant climate risks and adaptation responses into the monitoring, evaluation and reporting requirements in Regional ESFM Plans and plans of management under the *National Parks and Wildlife Act 1974* (NSW);
- (j) Ensure that there is a transparent, systematic and credible process for investigating alleged environmental incidents reported by members of the public in relation to Forestry Operations on Public and Private Land and that information about regulatory actions are made publicly available where appropriate; and
- (k) Establish and maintain a coordinated forum for stakeholder engagement.

Sustainability Indicators

48A Pursuant to clause 8F, the State will continue to publicly report on the results of monitoring of Sustainability Indicators every five years to align with and inform the five-yearly reviews required under this Agreement and reporting will be under the headings of the Montreal Process Criteria in Attachment 9.

49 The Parties recognise that the document *Ecologically Sustainable Forest Management Criteria and Indicators for the NSW Forest Agreement regions* (EPA 2017) is consistent with *Australia's Sustainable Forest Management Framework of Criteria and Indicators 2008 – Policy Guidelines* (Commonwealth of Australia 2008) developed by the Montreal Implementation Group for Australia (MIG).

50 New South Wales agrees to review and revise its Sustainability Indicators to align with any relevant review of Sustainability Indicators at a national level.

51 NOT USED

52 NOT USED

53 NOT USED

Private Land

54 The Parties reaffirm their commitments made in the *National Forest Policy Statement* (1992) to the conservation and management of the private Forest Estate. The Parties note that Forestry Operations on Private Land in New South Wales are undertaken in accordance with the Private Native Forestry Code of Practice. The Parties note that New South Wales has provisions under the *Local Land Services Act 2013* (NSW) for native vegetation retention controls to regulate the clearance of native forest on Private Land.

54A New South Wales confirms that the CAR Reserve System is being maintained and implemented through this Agreement, including Attachment 2, and that conservation levels achieved will not subsequently be used as a basis for preventing timber harvesting in accordance with the Private Native Forestry Code of Practice applying to the North East region being carried out on Private Lands. Consistent with clause 18 this is not to be interpreted as preventing voluntary conservation measures and mechanisms to protect CAR Values on Private Land.

54B The Parties will use best endeavours to ensure any changes to the Regional Prescriptions applied to Private Land will not subsequently lead to a net deterioration in Environment and Heritage Values on Private Land.

54C The Parties recognise that Values Protected by Prescription on Private Land will be protected during Forestry Operations by adherence to Regulatory Instruments including the Private Native Forestry Code of Practice applying to the North East region.

55 The Parties recognise the Private Native Forestry Code of Practice, applying to Forestry Operations on Private Land in the North East region, which requires Forestry Operations to be consistent with ESFM practices.

56 CAR Values which are priorities for the CAR Reserve System and which occur on Private Land will be dealt with by the principles and mechanisms outlined in Attachments 1(A), 1(B) and 2. Parties agree the values listed at Attachment 2 can be managed consistently with the JANIS Reserve Criteria through a range of mechanisms, with the consent of the Private Land Owner, as specified in Attachment 2. Priorities for protection of Forest Ecosystems as at 2000 are given in Tables 1 and 2 of Attachment 2.

56A The Parties recognise the importance to the CAR Reserve System of Environment and Heritage Values on Private Land and the State agrees to continue to support processes that will facilitate the voluntary participation by Private Land Owners to protect CAR Values on Private Land. All conservation mechanisms for the establishment of the Private Land component of the CAR Reserve System will be voluntary.

57 NOT USED

58 NOT USED

- 59 NOT USED
- 60 NOT USED
- 61 NOT USED
- 62 NOT USED
- 63 NOT USED
- 64 NOT USED

THE CAR RESERVE SYSTEM

65 The Parties agree that the CAR Reserve System has been established and progressively added to for the purpose of ensuring the long-term conservation and protection of the values defined by the JANIS Reserve Criteria. The CAR Reserve System includes the land identified in Attachment 1.

65A The Parties agree that the CAR Reserve System will continue to support the long-term conservation and protection of Environment and Heritage Values, including Listed Species and Communities.

66 Parties agree that the CAR Reserve System as identified on Map 1(A) and Map 1(B) and presented in Attachment 1(A), Attachment 1(B) and Attachment 2, and as amended from time to time, satisfies the JANIS Reserve Criteria. Each element of the CAR Reserve System, with the exception of Commonwealth owned or leased land, will be administered in accordance with New South Wales legislation.

66A The Parties agree that the CAR Reserve System established in accordance with this Agreement (including as it has been progressively added to and as further defined in Attachment 1(A), Attachment 1(B) and Attachment 2), comprises:

- (a) Dedicated Reserves; and
- (b) Informal Reserves; and
- (c) areas with CAR Values Protected by Prescription; and
- (d) Private Land with CAR Values protected under secure management arrangement by agreement with Private Land Owners.

Action to manage the CAR Reserve System on public land

67 New South Wales agrees to implement, manage and conserve the Upper North East region CAR Reserve System described in Attachment 1(A) and identified on Map 1(A), and the Lower North East region CAR Reserve System described in Attachment 1(B) and identified on Map 1(B), with the exception of Commonwealth owned or leased land.

- 67A The State will manage and conserve the Dedicated Reserve and Informal Reserve elements of the CAR Reserve System consistent with its obligations in relation to the relevant statutory principles and values of reservation set out in Part 4, Division 2 of the *National Parks and Wildlife Act 1974* (NSW), or obligations under the *Forestry Act 2012* (NSW).
- 68 The Commonwealth agrees to manage and conserve those parts of the CAR Reserve system on Commonwealth owned or leased lands consistent with the conditions outlined in Attachment 1(B).
- 69 Parties agree that through the acquisition of Private Land (by voluntary sale), transfer of lands of the Crown, or transfer of land from an existing reserve tenure to one of higher conservation protection status, enhancements to the CAR Reserve System could occur. Both Parties agree to use best endeavours such that enhancements to the CAR Reserve System will not impede access to State forest lands.
- 70 In the incorporation into the CAR Reserve System of lands of the Crown over which a licence or occupational permit is held NSW will:
- confirm the presence of CAR Values needed for reservation;
 - through consultation, take into consideration any existing interests in the land of the licence or permit holder;
 - ensure where practicable that suitable transition arrangements apply; and
 - ensure that practical and legal access remains available where such access to adjacent private, licensed or leased land currently crosses or falls within land to be added to the CAR Reserve System under this Agreement.
- 71 The Parties agree to ensure changes to the CAR Reserve System will:
- a) only occur in accordance with this Agreement;
 - b) be made publicly available; and
 - c) not lead to deterioration in the representation or protection of identified CAR Values to below levels established by this Agreement in 2000, noting that minor changes to the levels of representation or protection of specific CAR Values may occur as a result of actions that are in accordance with this Agreement.
- 71A New South Wales will:
- (a) discuss with and notify the Commonwealth of any proposed changes to the CAR Reserve System that will significantly impact Forestry Operations, wood supply to industry, or change the Sustainable Yield of the region by more than one per cent;
 - (b) not make any changes to the CAR Reserve System that would reduce the total percentage for each Forest Ecosystem, non-forest ecosystem or Old Growth forest

below the targets set in the JANIS Report, noting that minor changes may occur as a result of actions that are in accordance with this Agreement; and

- (c) use best endeavours to not reduce the Dedicated Reserve component of the CAR Reserve System to below the level of protection as at December 2017 as contained in Attachment 1(A) Clause 6 and Attachment 1(B) Clause 6 to this Agreement noting that minor changes may occur as a result of actions that are in accordance with this Agreement.

71B The State will maintain public records indicating the location, extent and purpose of any amendment to those elements of the CAR Reserve System in Informal Reserves or Values Protected by Prescription categories and the net impact that any amendments have on CAR Values.

Environment and Heritage Values

Protection of Environment and Heritage Values

72 Parties agree to maintain the levels of protection of Environment and Heritage Values in a regional context; however, minor changes to the levels of protection of individual values may occur as a result of changes to the CAR Reserve System in State forest.

72A The Parties agree that the CAR Reserve System, established in accordance with this Agreement, and the application of the NSW Forest Management Framework, protects Environment and Heritage Values.

Climate change

72B The State agrees to manage its Forests in accordance with the NFPS objectives and policies as they relate to climate change, adaptation and carbon.

72C The Parties acknowledge:

- (a) climate change is driving more extreme weather events that will impact on Forest Management, including biodiversity and Listed Species and Communities, resource availability, and risk management for projected increases in frequency and magnitude of hazards including fire, floods, storms, sea level rise and heatwaves;
- (b) integrating climate change adaptation into Forest Management is required to build resilience and manage climate risks and meet the objectives of ESFM; and
- (c) the need to manage Forests to maintain or enhance the contribution of all elements of the Forest Estate to the effective management of carbon within the carbon cycle.

Environmental processes within forests

72D The State agrees to manage its Forests in accordance with the NFPS objectives and policies as they relate to water supply and catchment management and implement forest management practices that seek to:

- (a) ensure the availability of reliable, high-quality water supplies from forested land and to protect catchment values;
- (b) minimise soil compaction and soil disturbance to encourage healthy forest growth and minimise downstream impacts.

INDUSTRY STABILITY

73 The Parties agree that State forest outside the CAR Reserve System is available for timber harvesting in accordance with this Agreement and the laws of New South Wales.

74 The Parties will use best endeavours to ensure that any changes to the total area of State forest or areas excluded from timber harvesting or Regional Prescriptions applied to State forest will not lead to a net deterioration in the capacity to supply wood from the Upper North East region and the Lower North East region.

75 In recognition of the contribution of timber and forest-based industries to the New South Wales' economy, the Parties intend that this Agreement will support future growth and development of New South Wales' industries associated with forests and timber products specifically through:

- (a) certainty of resource access for the timber and forest-based industries;
- (b) encouraging increased production of Plantation-grown timber to supplement wood supply from native forests;
- (c) facilitating timber and forest-based industries growth and development, in areas such as:
 - skills retention and workforce development;
 - research, innovation and extension;
 - strategic marketing, communications and education;
 - essential and strategic infrastructure;
 - resource management and access; and
 - regulatory modernisation;
- (d) providing for other forest based industries, including:
 - security of access to the Mining industry by continuing to recognise defined land tenures which allow for Mineral Exploration and Mining subject to the requirements of State and Commonwealth legislation; and
 - facilitating economic opportunities for tourism and recreation.

- 76 As part of providing greater security of access to forest resources, the Commonwealth will not prevent enterprises obtaining, using or exporting the quantities of timber, Woodchips and Unprocessed Wood products sourced from the Upper North East and Lower North East regions in accordance with this Agreement.
- 77 NOT USED
- 78 New South Wales will implement Sustainable Yield in accordance with Attachment 12.
- 78A NSW will ensure Sustainable Yield is calculated and managed consistent with the ESFM principles at Attachment 14.
- 79 New South Wales agrees to make available to ³timber and forest based industries, Forest Products at volumes no greater than Sustainable Yields for the Upper North East region and ³ the Lower North East region, and as amended from time to time, and determined in accordance with Attachment 12.
- 80 New South Wales agrees that the timber volumes made available under this Agreement will be reviewed using the processes described in clause 48 (g), and in accordance with the provisions of this Agreement. Any additional sustainable timber volumes identified in this way will be made available to industry provided this is consistent with this Agreement, including the provisions relating to Ecologically Sustainable Forest Management, and that there are no adverse environmental effects, including deleterious effects on CAR Values or Matters of National Environmental Significance.
- 81 NOT USED
- 82 NOT USED
- 83 NOT USED
- 84 NOT USED
- 85 NOT USED
- 86 NOT USED
- 87 NOT USED
- 88 Wherever possible New South Wales will enhance silvicultural programs and reforestation works to improve the productive capacity of State forests.
- 89 NOT USED
- 90 NOT USED
- 91 NOT USED

ABORIGINAL CULTURE AND HERITAGE

92 New South Wales agrees to maintain, implement and regularly review guidelines and other measures to ensure the appropriate management of Aboriginal heritage including the maintenance of traditional historic uses and values, and to facilitate ongoing involvement of Aboriginal people in the management of natural and cultural values of relevant forested land of the Upper North East and Lower North East regions. The principles to be applied are at Attachment 10.

92A The Parties agree that the Forest Management Framework provides a framework for the protection of Aboriginal heritage values that aligns with the NSW legislative framework for Aboriginal cultural heritage management, including in relation to consultation and ongoing involvement with Aboriginal people and managing the impacts of forestry operations on Aboriginal cultural heritage values.

92B The Parties commit to ongoing Aboriginal involvement in forest management and as required by the Aboriginal Cultural Heritage Advisory Committee (or any successor) in relation to protection of significant sites and places.

93 This Agreement is not intended to influence either current or future Native Title claims in any way. The Parties acknowledge that if any implementation of this Agreement affects any native title rights and interests such implementation must be in accordance with the *Native Title Act 1993* (Cth).

93A The Parties recognise that Aboriginal Land Councils in NSW can claim land vested in the Crown to compensate Aboriginal persons for historic dispossession of land and to support their social and economic development under the *Aboriginal Land Rights Act 1983* (NSW). Under section 36AA of the *Aboriginal Land Rights Act 1983* (NSW), Aboriginal Land Councils can also negotiate Aboriginal Land Agreements. The Parties agree that during the life of this Agreement its provisions do not restrict the rights of Aboriginal Land Councils to make land claims or have existing land claims determined over land the subject of this Agreement, or negotiate rights to use and enjoy such land as part of an Aboriginal Land Agreement under the *Aboriginal Land Rights Act 1983* (NSW).

93B In acknowledging the ongoing aspirations of Aboriginal persons to future ownership and/or roles in the management of Crown lands, the State agrees, so far as possible, not to transfer Public Land the subject of this Agreement to any other entity or authority unless:

- (a) if the land includes land for which a claim has been made under the *Aboriginal Land Rights Act 1983* (NSW), written consent for the transfer of the land has been given by:
 - (i) the Local Aboriginal Land Council for the Local Aboriginal Land Council area (as defined in that Act) in which the land is located, and
 - (ii) where the claim is made by the New South Wales Aboriginal Land Council, the New South Wales Aboriginal Land Council, and

- (b) in any other case the State will, so far as possible, ensure that notice of its intent to transfer the land is given to the NSW Aboriginal Land Council, and to the Local Aboriginal Land Council within whose constituted area the land is situated.

93C The Parties recognise the *United Nations Declaration on the Rights of Indigenous Peoples*, including the right for the Aboriginal people of New South Wales to practise and revitalise their cultural traditions and customs. This includes the right to maintain, protect and develop their cultural traditions and customs.

PLANTATIONS

94 The Parties note that export controls on the export of Woodchips and Unprocessed Wood sourced from New South Wales Plantations have been removed in accordance with the *Export Control Act 1982* (Cth).

94A The Parties encourage the establishment and use of Plantation forests on existing essentially cleared land to generate social and economic values.

OTHER FOREST USES

95 Parties agree that Forest uses other than timber production will be determined in accordance with New South Wales legislation with due regard for protection of Environment and Heritage Values. In some limited circumstances that do not relate to the substance of this Agreement (for example foreign investment approval, export controls for non-forest products and major infrastructure developments) Commonwealth legislative provisions may also apply.

Mineral Exploration and Mining Operations

96 Parties recognise that under the *National Parks and Wildlife Act 1974* (NSW), issuing of new Mineral Exploration and Mining titles is not permitted (except by Act of Parliament) in national parks or historic sites, nature reserves, state game reserves, karst conservation reserves, aboriginal areas and regional parks.

97 The Parties agree that Mining Operations are permitted within parts of the CAR Reserve System, to the extent permitted by relevant State and Commonwealth legislation. In addition to any requirements for the protection of Matters of National Environmental Significance under the EPBC Act, a condition of Mining Operations in Informal Reserves and areas with Values Protected by Prescription is that: CAR Values that are compatible with those Mining Operations will be maintained; and for CAR Values not compatible with those Mining Operations, conservation be provided for elsewhere. Where a Mining Operation is not compatible with that part of the CAR Reserve System described as Values Protected by Prescription in Attachment 1, the State will use best endeavours to ensure that conservation of these values is provided for elsewhere.

98 New South Wales will ensure that any proposed Mining Operations will be subject to environmental impact assessment (including species impact statements where required) under the provisions of the *Environmental Planning and Assessment Act 1979* (NSW). Mining Operations will be subject to the *Mining Act 1992* (NSW),

the *Petroleum (Onshore) Act 1991* (NSW), the *Protection of the Environment Operations Act 1997* (NSW), and the EPBC Act. Mining will be in accordance with an approved Mining Operations Plan and Annual Environmental Management Reports. Rehabilitation of any sites disturbed by Mining Operations will be carried out in accordance with the provisions of the relevant statutes (including the *Environmental Planning and Assessment Act 1979* (NSW) and the *Mining Act 1992* (NSW)).

COMPETITION PRINCIPLES

99 Parties recognise that under the Competition Principles Agreement, as amended from time to time, Governments aim to achieve more transparency and greater efficiency in Government owned business enterprises. The Commonwealth agrees that the day to day pricing and allocation arrangements for Forest Products from public Forests are matters for New South Wales. New South Wales confirms its commitment to the pricing and allocation principles set out in the *National Forest Policy Statement* and the application of competitive neutrality principles.

RESEARCH

100 The Parties agree that continuing research in a range of areas is vital to ensure that all aspects of Forest Management remain up to date with the latest information and technological developments. Parties have outlined themes for further research in Attachment 7.

101 The Parties agree to hold discussions on research themes and coordination as part of annual meetings pursuant clause 8B.

102 New South Wales will prepare for each five-yearly review, a compendium of New South Wales Forest research that will provide a bibliography of research in progress as well as published and unpublished works.

103A The Parties agree to document relevant Forest research undertaken in each reporting period and to update research themes in each five-yearly Progress Report.

103 Parties agree to consult each other in the development of joint research projects that may affect the Agreement and note that the subject themes and priorities may change throughout the duration of the Agreement.

104 Parties agree to make publicly available, wherever possible, research reports relevant to this Agreement.

DATA

105 The Parties recognise that the implementation and monitoring of this Agreement depends on appropriate mutual access to and availability of relevant information owned and held by each of them.

106 The Parties agree to manage and provide access to data, including models used to develop and implement this Agreement.

106A The Parties commit to a policy of open access to information and agree that all data held by each of them that is used for ongoing implementation and monitoring of this Agreement is published under the least restrictive AusGOAL endorsed licences (including Creative Commons) unless otherwise agreed, or where data is confidential or otherwise restricted.

PART 3

Nature of Obligations under this Part

107 It is the intention of the Parties that this Part is to create legally enforceable rights and obligations. It is also their intention that, in the event that any provision of this Part exceeds the power of either Party or is unenforceable for any other reason, that provision is to be read as not intending to create legally enforceable rights and obligations.

Forest Management

108 New South Wales will for the duration of the Agreement:

108.1 NOT USED

108.2 Report annually to the New South Wales Parliament on compliance with any Integrated Forestry Operations Approval applying to the Upper North East and Lower North East regions as required by the *Forestry Act 2012* (NSW) ;

108.3 Notify the Commonwealth within 14 days that:

- (a) a copy of the annual reports of compliance with the Integrated Forestry Operations Approval for the Upper North East and Lower North East regions is available on a relevant State government website;
- (b) a copy of any Integrated Forestry Operations Approval for the Upper North East and Lower North East regions, and any amendments to that document is available on a relevant State government website;
- (c) there has been a termination, suspension or revocation of any Integrated Forestry Operations Approval applying to the Upper North East or Lower North East regions; or
- (d) there has been a termination of any Private Native Forestry Code of Practice applying to the North East region;

108.4 Discuss with and notify the Commonwealth on proposed changes of a significant nature to the Forest Management Framework;

108.5 Implement and maintain an Integrated Forestry Operations Approval applicable to the Upper North East and Lower North East regions ;

108.6 Implement and periodically review the Regional ESFM Plans containing the Ecologically Sustainable Forest Management strategy for State forests in the North East region, made under the *Forestry Regulation 2012* (NSW) under the *Forestry Act 2012* (NSW) ;

108.7 Maintain a forest yield estimation system for State forest and periodically review the calculation of Sustainable Yield consistent with Attachment 12;

108.8 Maintain and implement environmental management systems in accordance with the principles outlined in Attachment 8.

108.9 Maintain and implement a Private Native Forestry Code of Practice applying to the North East region;

108.10 NOT USED

108.11 NOT USED

109 The Commonwealth will:

109.1 Not prevent enterprises obtaining, using or exporting timber, Woodchips and Unprocessed Wood products sourced from the Upper North East and Lower North East regions in accordance with this Agreement;

109.2 Recognise that the Forest Management Framework, as amended from time to time and as it applies to the North East region, demonstrates continual improvement, for the purposes of ESFM and relevant provisions of this Agreement.

Compensation

110 The Parties agree that:

110.1 If to protect the Environment and Heritage Values in native forests and in connection therewith the protection of:

- (a) CAR Values; or
- (b) National Estate Values; or
- (c) World Heritage Values; or
- (d) Wild Rivers

the Commonwealth takes any Action during the period of this Agreement which is inconsistent with any provision of this Agreement and a foreseeable and probable consequence of which is to prevent or substantially limit:

- (e) the use of land which is not included within the CAR Reserve System for Forestry Operations which, immediately before the announcement of the proposed Commonwealth Action, are being undertaken or were intended to be undertaken at any time or the use of land which is not included within the CAR Reserve System or of land within that system but not within a Dedicated Reserve in which mineral exploration and mining is prohibited pursuant to a statutory licence, permit or authority permitting those Mining Operations or Extractive Operations which was in force immediately prior to the announcement of the proposed Commonwealth Action; or,
- (f) the sale or commercial use of Forest Products sourced from land which is not included within the CAR Reserve System or the first sale or first

commercial use of Mining Products or Extractive Materials sourced from land which is not included within the CAR Reserve System or land within that system but not within a Dedicated Reserve in which mineral exploration and mining is prohibited for a purpose for which, immediately prior to the announcement of the proposed Commonwealth Action, they had been intended to be sold or used commercially at any time; or,

- (g) the construction on land which is not included within the CAR Reserve System of roads being built or intended to be built, immediately before the announcement of the proposed Commonwealth Action, where those roads' primary purpose is for the transportation of Forest Products sourced from land which is not included within the CAR Reserve System,

the Commonwealth will pay compensation to the State in accordance with the remaining provisions of clauses 110.2 to 110.20.

110.2 Subject to:

- (a) clauses 110.3, 110.4, 110.5, 110.6, 110.8, 110.9, 110.10, 110.11 and 110.12 the compensation to be paid by the Commonwealth to the State in accordance with clause 110.1 in relation to the prevention by Commonwealth Action of the use of land for Forestry Operations or prevention by Commonwealth Action of the sale or commercial use of Forest Products is the amount of the reasonable loss or damage sustained by reason of that prevention, calculated as at the time at which the prevention referred to in clause 110.1 occurred, by any person in any of the following classes of person:
 - (i) the Owner of the land or of the Forest Products on the land;
 - (ii) any person who, prior to the announcement of the proposed Commonwealth Action but not in anticipation of that Action, entered into a contract with the Owner of the land or of the Forest Products on the land or with any person mentioned in sub-paragraph (iii) below for the carrying out of Forestry Operations on the land; and
 - (iii) any person who, prior to the announcement of the proposed Commonwealth Action but not in anticipation of that Action, entered into a contract with the Owner of the land or of the Forest Products on the land to purchase the Forest Products on the land.
- (b) clauses 110.3, 110.4, 110.5, 110.6, 110.7, 110.8, 110.10, 110.11 and 110.12 the compensation to be paid by the Commonwealth to the State in accordance with clause 110.1 in relation to the prevention by Commonwealth Action of the use of land for Mining Operations or Extractive Operations or the first sale or first commercial use of Mining Products or Extractive Materials is the amount of the reasonable loss or damage sustained by reason of that prevention, calculated as at the time at which the prevention referred to in clause 110.1 occurred, by any person carrying on Mining Operations or Extractive Operations on the land pursuant to a statutory licence, permit or authority permitting those

operations which was in force immediately prior to the announcement of the proposed Commonwealth Action.

- (c) clauses 110.3, 110.6, 110.8, 110.9, 110.11 and 110.12 the compensation to be paid by the Commonwealth to the State in accordance with clause 110.1 in relation to the prevention by Commonwealth Action of construction of a road is the amount of reasonable loss or damage sustained by reason of that prevention, calculated as at the time at which the prevention referred to in clause 110.1 occurred, by any person who, immediately before the announcement of the proposed Commonwealth Action, was contracted to construct that road.

110.3 No amount of compensation is payable in the event of any loss or damage being sustained which would have been so sustained regardless of the Commonwealth Action. No compensation is payable hereunder in respect of any additional areas included pursuant to this Agreement in the CAR Reserve System.

110.4 The State warrants that no claim will be made in respect of areas where Forestry Operations or Mining Operations or Extractive Operations would not have been permitted by this Agreement and that any claims will be certified by it as being or not being in respect of such areas and as having been assessed by the State in this regard.

110.5 The State warrants that no claim will be made in respect of Forest Products or Mining Products or Extractive Materials which would not have been available for sale or commercial use under this Agreement and that any claims will be certified by it as being or not being in respect of such Products and as having been assessed by the State in this regard.

110.6 The State undertakes to supply to the Commonwealth on request information, including as to areas protected by prescription, required by the Commonwealth for the purposes of considering claims under this clause.

110.7 To the extent that clause 110.2(b) relates to loss or damage in respect of an exploration licence or assessment lease, that clause is to be read as providing for compensation to be payable only:

- (a) in respect of the part of the area to which that licence or lease relates that is affected by the Commonwealth Action; and
- (b) up to the loss in market value of that licence or lease resulting from the prevention of the Mining Operations or Extractive Operations.

110.8 Any claim made by the State hereunder is to be notified in writing within six months after the loss or damage is sustained.

110.9 For the purposes of clauses 110.1(e) and (g), the intention to conduct Forestry Operations, or the intention to construct roads is to be established on the basis of contracts, documentation of management history or other records establishing clear intent and in existence immediately prior to the announcement of the proposed Commonwealth Action.

110.10 For the purposes of clause 110.1(f)(e), the purpose for which there was an intention to sell or use commercially is to be established on the basis of contracts, documentation of management history or other records establishing clear intent and in existence immediately prior to the announcement of the proposed Commonwealth Action.

110.11 No compensation is payable under clause 110.2 in relation to any loss or damage which the person who sustained the loss or damage might have avoided by taking reasonable steps in mitigation including by the making of alternative contractual arrangements which would have avoided or reduced that loss or damage.

110.12 Clause 110.2 does not apply so as to entitle the State to recover compensation more than once in respect of the same loss or damage.

110.13 The initial procedure in relation to a claim for compensation under this clause is as follows:

- (a) a person who claims to have sustained loss or damage for which compensation is payable may lodge an initiating claim with the State;
- (b) on receiving a claim, the State must make a corresponding claim for compensation to the Commonwealth;
- (c) the State is to make the claim for compensation by a notice in writing to the Commonwealth which indicates the amount claimed, for whom the claim is made, the area to which it relates and gives detailed particulars of the basis for the claim, and of the manner in which it has been calculated;
- (d) where there is a dispute concerning a claim for compensation, or on or before the expiry of 30 days after the receipt of the claim, the Commonwealth notifies the State that it does not accept the amount claimed, then either Party may serve a notice of dispute under clause 10;
- (e) in the event that the amount of compensation payable in response to a claim has not been agreed in the dispute resolution process for which clauses 10 to 14 provide, or the Commonwealth fails to pay the agreed amount of compensation to the State within 60 days of agreement (for reasons other than lack of the necessary appropriation), the Parties hereby refer the claim to arbitration;
- (f) an arbitration under this Agreement is to be conducted in accordance with the provisions of the *Commercial Arbitration Act 1984* (NSW) which are, to the extent permitted by the *Judiciary Act 1903* (C'wlth) and the Commonwealth constitution, incorporated by reference into this Agreement.

110.14 The procedure in relation to any arbitration required by reason of the provisions of clause 110.13 is as follows:

- (a) The Parties must meet to appoint an arbitrator within seven days of an unsuccessful mediation.

- (b) If the Parties are unable to agree on the appointment of an arbitrator, either of them may refer the matter to the President of the Law Council of Australia, or equivalent officer of such body as in future may have the functions of the Law Council of Australia, with a request that that person appoint an arbitrator.
- (c) At an arbitration under this clause:
 - (i) the Parties are entitled to representation by a legal practitioner qualified to practice in any State or Territory of Australia;
 - (ii) the arbitrator may order the Parties to discover any relevant documents prior to the hearing;
 - (iii) the arbitrator may order the Parties to exchange proofs of evidence of witnesses (whether expert or not) prior to the hearing;
 - (iv) the arbitrator may, in accordance with the *Commercial Arbitration Act 1984* (NSW), inform himself or herself, in relation to any matter in such manner as the arbitrator thinks fit; provided that if the arbitrator takes advice from any person who is not a Party to this Agreement as to the matters in issue, the arbitrator must provide the Parties with an opportunity to:
 - (1) make submissions on the matter in which the advice is to be taken;
 - (2) make submissions on the identity of the person from whom the advice is to be taken;
 - (3) make submission on the substance of any advice given before making any decision on the issue on which the advice is taken.

110.15 Unless the Commonwealth appeals the decision of the arbitrator under the *Commercial Arbitration Act 1984* (NSW), and subject to clause 110.18, the Commonwealth undertakes to pay the State the amount of any award made by an arbitrator under clause 110.14 as a debt due to the State, within 60 days of the award.

110.16 Except where the State is the person who sustained the relevant loss or damage, any payment of compensation made by the Commonwealth to the State in accordance with this clause will be paid to and received by the State as trustee for the person who sustained the relevant loss or damage.

110.17 Subject to clause 110.18(b), where the State receives monies as a trustee pursuant to clause 110.16, it will pay those monies to the person who sustained the relevant loss or damage within 30 days.

110.18 (a) Where the Commonwealth has agreed to pay compensation to the State under this clause, or an award of compensation has been made under clause 110.14 as a result of arbitration, and the Commonwealth claims that events have since taken place which have the result that the compensation so

agreed or awarded no longer reflects the actual loss or damage that has been or will be sustained, the Commonwealth may by notice in writing to the State, decline to pay that compensation.

- (b) If a notice under paragraph (a) is delivered after the State has received the compensation so agreed or awarded, but before the State has paid it to the person who sustained the relevant loss or damage, the State will not pay the compensation to that person.
- (c) If a notice under paragraph (a) is delivered, the Parties will attempt to agree the amount of the compensation which the Commonwealth should pay, and
 -
 - (i) in default of agreement, will first seek to resolve the dispute by dispute resolution under clauses 10 to 14; and
 - (ii) in the event that the dispute is not so resolved, or the Commonwealth fails to pay the agreed amount of compensation to the State within 60 days of agreement (for reasons other than lack of the necessary appropriation), hereby refer the claim for compensation to arbitration in accordance with the *Commercial Arbitration Act 1984* (NSW).
- (d) Subject to paragraph (e) of this clause, where an arbitration takes place in accordance with sub-paragraph (c)(ii), clauses 110.14 and 110.15 of this Agreement apply to that arbitration and to any amount awarded in that arbitration.
- (e) If, following the observance of paragraph (c) of this clause, it is determined by agreement or award that the Commonwealth should pay a reduced amount of compensation to the State, the State will within 30 days of that determination -
 - (i) repay to the Commonwealth the amount by which the compensation paid to it by the Commonwealth is reduced; and
 - (ii) pay the balance of the compensation to the person who sustained the relevant loss or damage.
- (f) If, following the observance of paragraph (c) of this clause, it is determined by agreement or award that the amount of compensation previously paid to the State is correct the State will within 30 days of that determination pay to the person who sustained the relevant loss or damage the amount of the compensation previously paid to it by the Commonwealth.

110.19 Where the State:

- (a) has received monies as a trustee pursuant to clause 110.16; and
- (b) has made all reasonable endeavours to pay the monies to the person who sustained the relevant loss or damage; and
- (c) but has been unable to do so within six months of receiving payment

the State shall repay to the Commonwealth at the expiry of that period the monies so received.

110.20 In this clause

(a) “Action” means

- (i) the commencement of legislation or subordinate legislation; and
- (ii) administrative action which is taken pursuant to legislation or subordinate legislation, or otherwise than in accordance with such legislation.

(b) “Owner” means

- (i) in relation to land
 - (1) the owner of any estate or interest in that land, including the Crown in right of the State; and
 - (2) any statutory corporation which has the power to carry on Forestry Operations or Mining Operations or Extractive Operations, as the case may be, on the land for profit.
- (ii) in relation to Forest Products or Mining Products or Extractive Materials, as the case may be, the owner of any interest in those products.

111 NOT USED

Termination

112 This Agreement may only be terminated by the Commonwealth:

- (a) where the dispute resolution procedures in clauses 10 to 14 have been observed and the State has been given a 90 day period of notice on:
 - (i) a failure by the State to comply with clause 67, being a failure to implement the CAR Reserve System described in Attachments 1(A) and 1 (B) and to manage and conserve the identified CAR Values; or
 - (ii) a failure to comply with clause 36, 48(a), and 48(b) being a failure to maintain a New South Wales Forest Agreement and an IFOA that reflects the outcomes of this Agreement throughout the life of this Agreement. The Commonwealth agrees not to terminate this Agreement because of a failure by New South Wales to maintain a Forest Agreement or Forest Agreements for the North East region. However, the Parties acknowledge that if the State does not maintain Forest Agreements covering the North East region, termination of this Agreement by the Commonwealth would be authorised by s 7 of the *Regional Forest Agreements Act 2002* (Cth); or

- (iii) a failure to comply with clause 48(d); or
- (iv) a failure to comply with clause 78 being to implement the Sustainable Yield Systems and Processes described in Attachment 12; or
- (v) a failure to comply with clauses 48(h) and clause 57 being a failure to both develop and implement the environmental management systems in accordance with Attachment 8, and produce a Code of Practice for timber harvesting of native forest on Private Land.

other than a failure of a minor nature which is not one or part of a series of deliberate or reckless failures of a minor nature; and save that the above provisions do not apply if rectification is possible and has occurred before the end of the 90 day period; or

- (b) on a fundamental failure by the State to comply with the spirit of the Agreement after the observance of the dispute resolution procedures in clauses 10 to 14.

113 This Agreement may only be terminated by the State:

- (a) where the dispute resolution procedures in clauses 10 to 14 have been observed and the Commonwealth has been given a 90 day period of notice on:
 - (i) a failure by the Commonwealth to comply with clause 110, being a failure to pay compensation due under that clause;

save that the above provisions do not apply if rectification is possible and has occurred before the end of the 90 day period; or

- (b) on a fundamental failure by the Commonwealth to comply with the spirit of the Agreement after the observance of the dispute resolution procedures in clauses 10 to 14.

114 This Agreement may be terminated with the consent of the Commonwealth and the State.

Notice of intention to review before termination by consent

115 A consent under clause 114 is of no effect, unless:

115.1 it is given at least 12 months after a notice of intention to review the operation of this Agreement is published in the Commonwealth *Gazette* and a national newspaper and a newspaper circulating in New South Wales stating that a joint review is being undertaken by the Parties because they intend to terminate the Agreement by consent;

115.2 the Parties have conducted the joint review as in accordance with this clause;

115.3 The joint review must consider whether the operation of the Agreement has met the goals set out in Recitals A and B;

115.4 Within eight months after the notice of intention to review is published under this clause, and after considering any submissions to the joint review, the Parties must make a report of the review publicly available; and

115.5 If, under clause 8D and 8E a five-yearly review is to be conducted during the 12 month period after a notice of intention to review is published under this clause, and the joint review is conducted under this clause, the Parties may agree that the review under clause 8D and 8E need not be undertaken.

IN WITNESS WHEREOF this Agreement has been signed for and on behalf of the Parties as at the day and year first above written.

SIGNED by

the HONOURABLE JOHN WINSTON HOWARD MP, Prime Minister

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for and on behalf of the Commonwealth of Australia

in the presence of:

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SIGNED by

the HONOURABLE BOB CARR MP, Premier

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for and on behalf of the State of New South Wales

in the presence of:)

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ATTACHMENTS

Attachment 1(A)	Comprehensive, Adequate and Representative (CAR) Reserve System – Upper North East Region.
Attachment 1(B)	Comprehensive, Adequate and Representative (CAR) Reserve System – Lower North East Region.
Attachment 2	Private Land Conservation.
Attachment 3	Listed Species and Communities.
Attachment 4	NOT USED
Attachment 5	NOT USED
Attachment 6	NOT USED
Attachment 7	Research Priorities.
Attachment 8	Continual improvements to the NSW Forest Management Framework.
Attachment 9	Montreal Process Criteria for the Conservation and Sustainable Management of Temperate and Boreal Forests.
Attachment 10	Managing Lands of Significance to Aboriginal People
Attachment 11	NOT USED
Attachment 12	Sustainable Yield Systems and Processes.
Attachment 13	NOT USED
Attachment 14	Principles of Ecologically Sustainable Forest Management (ESFM).

**COMPREHENSIVE, ADEQUATE AND REPRESENTATIVE (CAR)
RESERVE SYSTEM**

UPPER NORTH EAST REGION

- 1 Map 1(A) and this Attachment identify the CAR Reserve System on Public Land for the Upper North East region for the purpose of this Agreement, as amended from time to time.
- 2 The *National Forest Policy Statement* (NFPS) established that the CAR Reserve System will, in the first instance, be selected from Public Land. Provision is also made in the JANIS Reserve Criteria for inclusion of Private Land in the CAR Reserve System, with the agreement of landholders, where the Criteria cannot be met from Public Land.

PUBLIC LAND

- 3 In the Upper North East region, the CAR Reserve System on Public Land primarily comprises areas established for conservation purposes (eg National Parks and Nature Reserves) and areas reserved for conservation in State forest.

CAR RESERVE SYSTEM COMPONENTS AND PROTECTION MECHANISMS.

- 4 The CAR Reserve System on Public Land has the following three components:
 - *Dedicated Reserves*. This comprises reserves established through legislation for conservation purposes such as National Parks, Nature Reserves and Flora Reserves (Special Protection Zone, FMZ 1).
 - *Informal Reserves*. This comprises those parts of the Special Management Zone (FMZ 2) under the Forest Management Zoning system that are greater than 40ha, and wider than 200m wide, or are directly adjacent to Dedicated Reserves. It also includes those areas dedicated as State Conservation Areas under the provisions of the *National Parks and Wildlife Act 1974* (NSW) and State Recreation Areas which are managed by the NSW National Parks and Wildlife Service. *Values Protected by Prescription*. These comprise those elements of habitat protected by Regional Prescriptions as detailed in the Integrated Forestry Operations Approval covering the Upper North East region and areas within the Harvesting Exclusions (FMZ 3A) and Special Prescription Zone (FMZ 3B) under the Forest Management Zoning system that are excluded from harvesting. They also include elements of the Special Management Zone (FMZ 2) that are less than 40ha and less than 200m wide. The Integrated Forestry Operations Approval complements the Dedicated and Informal Reserve network and includes additional levels of protection for rare non-commercial forest types, Old Growth forest, rainforest and threatened species in all areas that have been identified to be primarily managed for sustainable production.

- 5 As at December 2017, the Dedicated Reserve component of the CAR Reserve System covers 869,000 ha, the Informal Reserve component 57,000 ha and the prescriptive component 97,000 ha. Together the Dedicated Reserve and Informal Reserve components of the CAR Reserve System cover an area of approximately 926,000 ha (about 68% of the Public Land in the region or 24% percent of the entire region).
- 6A Levels of protection for Forest Ecosystems and Old Growth forest achieved in the Dedicated Reserve, Informal Reserve and the Values Protected by Prescription components of the CAR Reserve System are shown in Tables 1 and 2. The tabulated percentage area of these values in prescription includes elements of the Special Management Zone (FMZ 2) that are less than 40ha and less than 200m wide, as well as areas of Old Growth forest (and Forest Ecosystems within these areas) that will be managed by the Integrated Forestry Operations Approval.
- 6B The IFOA provides for protection of environmental values in addition to those protected in FMZ 2, FMZ 3A, FMZ 3B, mapped areas under the IFOA, or other CAR Reserves and quantified in Tables 1 and 2. The protections under the IFOA are updated and modified from time to time as a result of the continual improvement process to improve the effectiveness and efficiency of these conditions.

Forest Management Zoning

- 6 Within the Forest Management Zoning system, of particular significance for the conservation of Forest Ecosystems and Old Growth forest are the:
- *Special Protection Zone (FMZ 1)*. These areas are dedicated and managed to maximise the protection of natural and cultural values. Timber harvesting, removal of Forest Products and materials, grazing by domestic stock, gravel/hard rock quarrying and mineral and petroleum exploration are not generally permitted within this zone.
 - *Special Management Zone (FMZ 2)*. These areas are established following public comment and are gazetted and managed for the protection of natural and cultural conservation values where it is not possible or practicable to include them in the Special Protection Zone. Activities not permitted in this zone are similar to the Special Protection Zone except that mineral and petroleum exploration are permitted. Any mining proposal following from exploration will require standard environmental impact assessment and development approval processes.
 - *Harvesting Exclusions Zone (FMZ 3A)*. These are areas where harvesting is excluded but other management and production activities preclude zoning as Special Protection Zone (FMZ 1) or Special Management Zone (FMZ 2). These may be:
 - i) Dedicated leasehold where lease conditions permit activities such as grazing and timber supply for lease fencing etc, and in some cases residency, or

- ii) Areas identified as important by the Department of Planning and Environment where there are current or imminent petroleum and Mineral Exploration and/ or Mining Operations , or
 - iii) Other areas which are excluded from harvesting (eg. Net Harvestable Area (NHA) exclusions) but size, boundaries or management practicabilities preclude designation as FMZ 1 or FMZ 2.
- *Special Prescription Zone (FMZ 3B)*. These areas are established for the protection and management of identified conservation values, whilst also allowing other management and production activities. These activities (which in some cases includes timber, Forest Product and materials extraction) are minimised in their design and implementation to maintain or enhance the values that the area is zoned to protect. A case by case assessment of these areas will be undertaken to determine which forestry activities can occur. The decision is dependent on the specific values involved.

7 NOT USED

Environment and Heritage Values protected by prescription

- 8 For Environment and Heritage Values that are not included in reserves, the JANIS Reserve Criteria provide for the management of such values through prescriptions. Within the General Management Zone of the Forest Management Zoning system (FMZ 4), Forestry Operations and other activities are permitted. The principal vehicles by which Environment and Heritage Values will be managed within FMZ 4 are:
- The Integrated Forestry Operations Approval covering the Upper North East region will be the principal vehicle by which environment values are protected through prescription. The Integrated Forestry Operations Approval takes account of the extent of reserved habitat, and balances an operationally efficient timber industry with the need to protect native plants and animals, ecosystems, soils and water.
 - Aboriginal and non-Aboriginal cultural heritage guidelines made in accordance with relevant legislation and amended from time to time, provide prescriptions for the management of heritage values that are impracticable to include in reserves in the North East region.

IDENTIFIED CAR VALUES AND THEIR PROTECTION AFFORDED THROUGH THE RFA

- 9 Levels of protection for Forest Ecosystems and Old Growth forest achieved in the CAR Reserve System are shown in Tables 1 and 2 of this Attachment as follows:
- Dedicated Reserves; as described in Clause 4 of this Attachment,
 - Informal Reserves; as described in Clause 4 of this Attachment,

- Values Protected by Prescription; includes the areas within the Harvesting Exclusions Zone (Zone 3A), the Special Prescription Zone (FMZ 3B), those areas of the Special Management Zone (Zone 2) that, due to the size or shape, do not meet the Informal Reserve category outlined above and mapped areas under the IFOA.

It should be noted that the IFOA affords additional protection over that included in the table.

Table 1. Representative conservation (percentage reservation status as at 2000 and December 2017) of Forest and Non-Forest Ecosystems in the CAR Reserve System in the Upper North East region based on vegetation modelling to establish the pre-1750 extent of Forest Ecosystems in the region^d

Forest Ecosystemsb	Area		Percent Remaining as at 2000	Status c as at 2000	Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at 2000				Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at December 2017 ^f			
	Pre 1750 (ha)	As at 2000 (ha)			Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total	Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total
2 Alpine Gum*	4165	1329	31.9	V	5.9	1.5	0.8	8.2	7	1	1	8
3 Baileys Stringybark	46720	34931	74.8	-	28.6	5.1	0.2	33.9	35	0	0	35
10 Black Sallee	6	6	100.0	R	100.0	0.0	0.0	100.0	100	0	0	100
12 Blue Mountain Ash	121	121	100.0	R	43.3	0.0	52.4	95.7	87	0	10	97
14 Brown Barrell	398	166	41.7	R	6.0	0.0	0.1	6.2	6	0	0	6
15 Brown Barrell-Gum*	2587	1004	38.8	R	6.1	0.0	0.1	6.2	6	0	0	6
16 Bull Oak	2	2	100.0	R	0.0	100.0	0.0	100.0	100	0	0	100
17 Candlebark*	10200	1961	19.2	R	0.8	0.1	0.0	0.9	2	0	0	2
19 Central Mid Elevation Sydney Blue Gum*	12586	6786	53.9	-	6.9	0.9	3.0	10.8	8	1	4	13
20 Clarence Lowland Needlebark Stringybark	12496	10817	86.6	-	26.6	21.9	6.9	55.4	40	11	6	57
21 Lowlands Grey Box*	61789	23913	38.7	V	0.3	0.1	0.2	0.6	1	0	0	1
22 Coast Cypress Pine*	158	82	51.9	R	41.2	0.0	0.0	41.2	44	0	0	44
23 Coast Range Bloodwood-Mahogany	18055	5919	32.8	-	9.0	4.5	0.3	13.8	13	2	0	14
24 Clarence Lowlands Spotted Gum*	343968	174787	50.8	-	2.5	1.6	1.4	5.5	4	1	1	6
25 Coast Range Spotted Gum-Blackbutt*	885	743	84.0	R	10.0	0.9	3.1	14.0	10	1	3	15
26 Coastal Flooded Gum	14910	9426	63.2	-	22.2	0.4	1.4	24.0	23	0	2	25
27 Coastal Sands Blackbutt	4518	3101	68.6	-	63.0	0.0	0.1	63.1	64	0	0	64
29 Corkwood-Crabapple and Mixed Stringybarks	7149	6093	85.2	-	30.4	5.3	12.4	48.1	39	4	9	51
30 Diehard Stringybark-New England Blackbutt*	2769	1062	38.4	R	4.0	0.3	0.1	4.3	4	0	0	5
31 Dorrig White Gum*	3851	3385	87.9	R	9.3	0.1	0.1	9.5	61	0	0	61
32 Dry Foothills Blackbutt-Turpentine	9370	7364	78.6	-	8.1	1.8	3.1	12.9	14	2	4	20
33 Dry Foothills Spotted Gum	97714	90829	93.0	-	13.4	4.1	10.6	28.1	22	5	9	36

Forest Ecosystemsb	Area		Percent Remaining as at 2000	Status c as at 2000	Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at 2000				Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at December 2017 ^f			
	Pre 1750 (ha)	As at 2000 (ha)			Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total	Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total
34 Dry Grassy Blackbutt-Tallowwood	9880	6052	61.3	-	9.8	0.4	3.4	13.6	11	1	3	15
35 Dry Grassy Stringybark	87820	69987	79.7	-	23.1	2.3	4.6	30.1	35	2	3	40
36 Dry Grassy Tallowwood-Grey Gum*	9726	5564	57.2	-	3.9	0.4	1.4	5.7	5	1	1	7
37 Dry Heathy Blackbutt-Bloodwood	75580	46630	61.7	-	8.4	6.6	2.6	17.6	15	2	3	19
38 Dry Heathy New England Blackbutt	4580	4276	93.4	-	38.9	5.9	16.5	61.4	44	2	17	62
39 Dry Heathy New England Stringybarks	1178	1178	100.0	-	99.5	0.0	0.0	99.5	100	0	0	100
40 Dry Heathy Sandstone Blackbutt	20939	19036	90.9	-	25.2	5.9	3.0	34.1	30	3	3	36
41 Dry Open New England Blackbutt	219262	121339	55.3	-	13.6	1.5	3.0	18.0	17	1	3	21
42 Dry Redgum-Bloodwood-Apple	245	243	99.2	R	89.5	0.0	0.2	89.7	96	0	0	97
43 Dry Silvertop Stringybark-Apple	15059	13041	86.6	-	31.7	0.1	0.2	32.0	60	0	0	61
44 Dry open Redgum-Broad Leaved Apple	11330	10484	92.5	-	46.9	0.5	1.0	48.4	69	0	0	69
45 Dunns White Gum*	1453	975	67.1	R	34.9	1.3	4.2	40.3	37	2	4	43
46 Eastern Red Gums	2967	3002	100.0	V	38.2	19.4	7.0	64.5	39	19	8	66
47 Escarpment Redgum*	55897	28206	50.5	-	8.1	0.8	4.1	12.9	10	1	3	14
48 Escarpment Scribbly Gum-Apple	5871	5488	93.5	-	14.7	13.6	16.8	45.1	34	12	16	62
50 Wet Bangalow-Brushbox*	16154	10098	62.5	V	19.2	0.5	0.7	20.4	21	0	1	22
52 Foothill Grey Gum-Ironbark-Spotted Gum	59393	46753	78.7	-	11.4	4.1	3.0	18.5	14	3	3	20
53 Gorge Grey Box	12259	11147	90.9	-	47.5	0.3	1.9	49.7	67	0	0	67
54 Grey Box-Red Gum-Grey Ironbark	38416	20438	53.2	-	5.4	0.2	0.6	6.2	7	0	1	8
55 Foothills Grey Gum-Spotted Gum	10634	8685	81.7	-	5.9	3.7	4.5	14.1	9	2	5	17
56 Granite Mallee	1951	1887	96.7	-	74.8	4.1	0.0	78.8	81	0	0	81
57 Highland Granite Stringybarks	2708	2483	91.7	-	83.8	0.0	0.0	83.8	84	0	0	84
58 Gorge Grey Gum	6218	5532	89.0	-	46.2	2.0	0.8	49.0	59	2	0	60
59 Gorge Ironbark-Grey Gum	74798	63226	84.5	-	16.7	1.6	10.5	28.8	22	2	9	33

Forest Ecosystemsb	Area		Percent Remaining as at 2000	Status c as at 2000	Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at 2000				Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at December 2017 ^f			
	Pre 1750 (ha)	As at 2000 (ha)			Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total	Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total
60 Grassy New England Blackbutt-Tallowood-Blue Gum	46952	40245	85.7	-	19.1	3.7	11.1	33.8	30	3	9	41
61 Grey Box-Ironbark*	146	131	89.7	R	20.3	1.4	0.1	21.7	21	4	0	25
62 Grey Box-Northern Grey Gum*	1625	509	31.3	R	0.4	1.7	1.1	3.2	1	2	1	4
63 Grey Gum-Stringybark	14033	12810	91.3	-	30.4	1.4	3.5	35.3	52	1	1	55
65 Heathy Scribbly Gum	10544	7758	73.6	-	31.3	5.8	2.8	39.9	39	2	3	44
67 High Elevation Ferny Blackbutt	12235	10462	85.5	-	14.6	2.5	5.6	22.6	21	2	6	29
68 High Elevation Messmate-Brown Barrell*	1932	329	17.0	R	4.7	0.0	0.1	4.8	5	0	0	5
69 High Elevation Moist Open Tallowood-Blue Gum	4003	3533	88.3	-	15.3	6.9	12.3	34.5	30	2	7	38
70 High Elevation Open Spotted Gum	61596	50005	81.2	-	8.8	2.1	7.3	18.2	16	3	5	24
71 Ironbark*	24667	7713	31.3	-	4.1	0.1	0.5	4.7	6	0	0	7
72 Low Relief Coastal Blackbutt*	1574	859	54.6	R	9.1	0.6	0.6	10.4	26	0	1	26
73 Lowland Red Gum*	141011	57016	40.4	-	3.5	2.6	1.2	7.3	6	1	1	8
74 Lowlands Scribbly Gum*	6783	3496	51.5	V	26.4	1.0	2.3	29.7	29	1	2	31
75 Lowlands Spotted Gum-Box	37104	19737	53.2	-	7.7	0.8	0.3	8.8	8	1	1	10
76 Coastal Mallee	2493	1412	56.6	V	48.3	0.0	0.0	48.3	48	0	0	48
78 Mann River Wet New England Blackbutt	5139	5132	99.9	-	88.4	0.2	0.9	89.5	92	0	0	92
79 Manna Gum-Stringybark*	95	90	94.7	R	55.8	0.0	0.0	55.8	63	0	0	63
80 Manna Gum*	5476	1287	23.5	R	3.4	0.0	1.8	5.2	4	0	1	5
81 Messmate*	17001	6309	37.1	V	5.6	1.2	0.5	7.3	7	0	0	8
83 Mid Elevation Wet Blackbutt	1333	1180	88.5	-	45.2	8.5	5.9	59.5	47	4	17	68
84 Mid North Coast Wet Brushbox-Tallowood-Blue Gum	12743	10378	81.4	-	21.0	6.7	6.5	34.1	25	6	7	39
85 Mixed Moist Hardwood*	818	346	42.3	R	14.9	0.9	1.2	16.9	15	1	1	17
86 Mixed New England Stringybarks	3320	3002	90.4	-	17.9	2.9	14.9	35.6	22	3	14	40
87 Mixed Tableland Stringybark-Gum Open Forest*	13471	4694	34.9	-	2.6	1.1	0.4	4.1	5	0	0	6
88 Moist Escarpment New England Blackbutt	10354	10275	99.2	-	70.4	4.6	3.3	78.3	76	3	3	82
89 Moist Foothills Spotted Gum	37545	35657	95.0	-	17.2	4.4	13.5	35.0	24	5	11	41

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	Pre 1750 (ha)	As at 2000 (ha)			Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total	Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total
90 Moist Messmate-Gum	30214	25159	83.3	-	30.7	4.2	6.4	41.3	39	2	3	44
91 Moist Open Escarpment White Mahogany	1966	1814	92.3	-	13.1	9.2	10.0	32.3	50	3	3	56
92 Moist Shrubby Stringybark-Gum	5868	4139	70.5	-	18.9	2.5	7.2	28.6	23	2	5	30
93 Montane Stringybark-Gum*	61335	28687	46.8	-	4.3	0.5	1.2	6.0	7	0	1	8
95 Northern Moist Blackbutt	10897	9101	83.5	-	37.3	0.9	0.9	39.1	47	0	0	47
97 Needlebark Stringybark-Large Fruited Blackbutt	10595	9966	94.1	-	25.8	18.2	3.5	47.6	36	8	4	48
98 New England Peppermint	4372	3590	82.1	-	21.3	8.3	37.6	67.1	33	4	28	66
99 New England Stringybark-Blakelys Red Gum	14496	10786	74.4	-	20.5	0.0	0.4	20.8	37	0	0	37
100 Northern Grassy Sydney Blue Gum*	11251	9245	82.2	V	27.9	5.2	9.7	42.8	34	2	9	46
101 Northern Open Grassy Blackbutt	30488	21590	70.8	-	14.0	2.6	1.3	17.9	17	2	1	20
102 Northern Ranges Dry Tallowwood	100595	57107	56.8	-	6.7	0.4	2.8	9.9	9	0	3	12
103 Northern Wet Brushbox	25433	16379	64.4	-	18.0	1.8	3.6	23.3	20	2	3	26
104 Northern Wet Tallowwood-Blue Gum	29607	25764	87.0	-	33.8	3.4	4.0	41.2	35	3	5	44
105 Nymboida Tallowwood-Turpentine	3005	2645	88.0	-	54.1	1.6	8.1	63.8	54	3	9	66
106 Open Coastal Brushbox	9549	6533	68.4	-	11.1	2.2	8.5	21.7	14	3	9	26
109 Open Shrubby Brushbox-Tallowwood	23572	17472	74.1	-	13.7	2.7	8.0	24.4	17	2	8	27
110 Open Silvertop Stringybark-Blue Gum	3681	3130	85.0	-	44.3	3.7	3.2	51.2	52	3	3	57
111 Open Silvertop Stringybark-Tallowwood	4876	4525	92.8	-	16.7	7.4	16.0	40.1	24	7	13	45
112 Paperbark*	NA	28577	NA	V	NA	NA	NA	NA	NA	NA	NA	NA
113 Peppermint	11200	6478	57.8	-	22.1	0.8	2.4	25.3	23	1	2	26
114 Peppermint-Mountain/Manna Gum*	42796	12829	30.0	V	3.5	0.0	0.0	3.5	4	0	0	4
115 Red Bloodwood	239	217	90.8	R	13.2	37.3	31.5	82.0	14	35	35	84
116 Red Gum-Stringybark*	58064	27128	46.7	-	0.5	0.4	0.2	1.1	1	0	0	1
117 Red Mahogany	1363	1273	93.4	-	85.1	0.1	0.1	85.4	88	0	0	88

Forest Ecosystemsb	Area		Percent Remaining as at 2000	Status c as at 2000	Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at 2000				Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at December 2017 ^f			
	Pre 1750 (ha)	As at 2000 (ha)			Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total	Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total
118 Richmond Range Spotted Gum	48691	22511	46.2	-	4.8	0.3	0.5	5.6	5	0	0	6
119 Richmond Range Spotted Gum-Box*	41836	24814	59.3	-	5.0	0.8	0.6	6.3	5	1	1	7
120 River Oak*	4771	3221	67.5	V	4.0	0.3	1.7	6.0	9	0	1	10
122 Rough-barked Apples	3764	1683	44.7	V	20.5	9.2	6.4	36.2	25	4	6	36
123 Roundleaved Gum*	40718	17975	44.2	-	11.1	1.0	1.3	13.4	14	1	1	16
124 Roundleaved Gum-Turpentine	30	30	100.0	R	0.0	0.0	69.5	69.5	0	0	70	70
126 Sandstone Spotted Gum-Blackbutt*	8872	4808	54.2	-	5.4	3.2	3.1	11.7	9	1	3	12
127 Sherwood Needlebark Stringybark	11497	9098	79.1	-	6.9	4.2	0.5	11.6	11	0	0	12
128 Silverleaved Ironbark	2328	1988	85.4	-	0.1	0.0	2.9	3.0	0.1	0	3	3
129 Smoothbarked Apple	273	270	98.9	R	93.0	3.3	0.0	96.3	95	3	0	98
131 Snow Gum	304	288	94.7	R	77.0	0.0	2.7	79.7	79	0	1	81
132 Snow Gum -Mountain/Manna Gum*	97976	21305	21.8	V	0.9	0.3	0.4	1.6	1	0	0	2
133 Snow Gum-Black Sallee	2	2	100.0	R	100.0	0.0	0.0	100.0	100	0	0	100
135 South Coast Tallowwood-Blue Gum	6754	5338	79.0	-	14.3	2.7	6.3	23.4	17	4	8	29
138 Steel Box/Craven Grey Box*	634	427	67.4	R	23.6	0.9	1.5	26.0	24	0	3	27
139 Stringybark-Apple	57502	34813	60.5	-	6.5	0.1	2.1	8.7	13	0	1	14
140 Stringybark-Mallee	2196	2194	99.9	-	98.6	0.1	0.0	98.6	99	0	0	99
142 Swamp Mahogany*	695	578	83.2	R	25.7	12.3	1.4	39.5	40	1	1	41
143 Swamp Oak*	11165	2883	25.8	R	7.6	0.2	0.5	8.3	9	0	0	9
145 Sydney Peppermint-Stringybark*	267	255	95.5	R	9.4	0.3	0.0	9.7	12	0	0	13
146 Tallowwood	9191	8430	91.7	-	52.3	0.9	2.5	55.6	70	0	1	71
147 Turpentine	6784	2943	43.4	-	15.2	0.6	0.6	16.4	18	0	0	18
148 Very Wet New England Blackbutt-Tallowwood	1499	1498	99.9	-	89.0	1.1	0.1	90.2	91	0	1	92
149 Mallee-Peppermint mosaic*	2721	1618	59.5	-	11.4	0.4	1.3	13.0	14	0	2	16
150 Washpool Brushbox-Tallowwood	5683	5683	100.0	-	83.5	4.3	3.5	91.3	87	3	3	93
152 Wet Bloodwood-Tallowwood	53783	33357	62.0	-	9.6	0.5	2.2	12.3	12	0	2	14

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	Pre 1750 (ha)	As at 2000 (ha)			Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total	Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total
153 Wet Coastal Tallowwood-Brushbox	12436	6581	52.9	-	0.7	0.6	1.6	2.9	4	1	2	6
154 Wet Flooded Gum-Tallowwood*	24207	9317	38.5	-	2.2	0.7	1.1	3.9	6	0	1	7
155 Wet Foothills Blackbutt-Turpentine	8219	7437	90.5	-	16.0	4.6	4.9	25.6	22	5	9	36
157 Wet Shrubby Brushbox-Tallowwood	6265	4891	78.1	-	22.2	5.9	13.5	41.6	30	4	11	45
158 Wet Spotted Gum-Tallowwood	2539	2538	100.0	-	24.7	3.5	5.4	33.6	25	4	7	36
162 Whitetopped Box	4	4	100.0	R	0.0	23.0	77.0	100.0	100	0	0	100
163 Yellow Box-Blakely's Red Gum*	39525	7245	18.3	V	0.5	0.4	0.1	1.0	1	0	0	1
168 Rainforest*	NA	159211	NA	E	NA	NA	NA	NA	NA	NA	NA	NA
174 Orange Gum-Tumbledown Gum-Apple	27288	15435	56.6	-	0.0	0.0	0.6	0.7	0	0	1	1
175 Orange Gum-New England Blackbutt-Tumbledown Gum*	39537	19304	48.8	-	2.3	0.3	0.1	2.7	3	0	0	3
176 Orange Gum-Ironbark*	82312	34295	41.7	-	0.5	0.6	0.1	1.1	1	0	0	1
177 Outcrop Orange Gum-New England Blackbutt*	26428	7945	30.1	-	1.1	2.4	0.3	3.8	3	0	0	4
178 Outcrop Black Cypress-Tumbledown Gum	1642	1034	63.0	-	0.0	0.1	0.2	0.3	0	0	0	0
179 Yellow Box-Broad-leaved Stringybark*	11549	3859	33.4	V	0.0	0.7	6.1	6.8	1	0	6	7
180 Western New England Blackbutt	14754	12415	84.2	-	0.0	21.9	0.3	22.2	22	0	0	23
181 Stringybark-Gum	34306	30258	88.2	-	0.0	53.3	0.1	53.4	54	0	0	54
182 Apple-Black Cypress	2350	1994	84.9	-	0.0	9.3	0.0	9.3	9	0	0	9
183 Red Gum-Apple*	1569	592	37.7	R	0.0	0.1	0.0	0.1	0	0	0	0
184 Tumbledown Gum-Ironbark	13841	11070	80.0	-	0.0	27.2	0.4	27.6	32	0	0	32
185 Orange Gum-Black Cypress	5585	3510	62.9	-	0.0	15.9	9.3	25.2	15	0	10	25
186 Open Tumbledown Gum-Black Cypress-Orange Gum*	25417	10593	41.7	-	1.7	0.4	0.3	2.4	2	0	0	3
189 Silverleaved Ironbark-Cypress	40819	23285	57.0	-	0.2	0.2	0.0	0.5	0	0	0	0
190 Yellow Box-Grey Box-Red Gum*	60630	21273	35.1	V	0.5	0.5	0.1	1.0	1	0	0	1

Forest Ecosystems ^b	Area		Percent Remaining as at 2000	Status ^c as at 2000	Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at 2000				Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at December 2017 ^f			
	Pre 1750 (ha)	As at 2000 (ha)			Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total	Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total
194 Round-leaved Gum wet heath	8627	5997	69.5	-	0.0	26.0	2.3	28.3	26	0	3	28
195 Apple-Manna Gum woodland*	35674	16214	45.5	-	2.9	0.1	0.0	3.0	3	0	0	3
196 Broad-leaved Stringybark-Apple Box*	53457	19948	37.3	V	2.3	1.4	3.1	6.8	4	0	3	7
197 Broad-leaved Stringybark*	4409	1643	37.3	V	1.6	0.3	0.1	2.0	2	0	0	2
198 Silvertop Stringybark*	4527	1200	26.5	V	0.1	0.1	0.2	0.3	0.1 [^]	0.1 [^]	0.2 [^]	0.3 [^]
200 Broad-leaved Stringybark-Ribbon Gum*	2022	650	32.2	R	0.0	0.0	0.0	0.0	0	0	0	0

Non-Forest Ecosystems ^b	Area		Percent Remaining as at 2000	Status ^c as at 2000	Percent of Non-Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at 2000				Percent of Non-Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at December 2017			
	Pre 1750 (ha)	As at 2000 (ha)			Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total	Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total
5 Banksia	7561.0	2046	27.1	R	6.5	0.3	0.0	6.8	10	0	24	34
18 Casuarina Woodland	NA	43	NA	R	NA	NA	NA	NA	NA	NA	NA	NA
64 Heath	NA	9805	NA	V	NA	NA	NA	NA	NA	NA	NA	NA
66 Herbfield and Fjaeldmark	NA	68	NA	R	NA	NA	NA	NA	NA	NA	NA	NA
77 Mangrove	NA	734	NA	R	NA	NA	NA	NA	NA	NA	NA	NA
96 Natural Grassland	NA	370	NA	R	NA	NA	NA	NA	NA	NA	NA	NA
121 Rock	NA	18162	NA	-	NA	NA	NA	NA	NA	NA	NA	NA
125 Saltbush	17.0	16	94.1	R	55.8	0.0	0.0	55.8	65	0	0	65
141 Swamp	NA	24118	NA	E	NA	NA	NA	NA	NA	NA	NA	NA
169 Scrub	NA	5447	NA	V	NA	NA	NA	NA	NA	NA	NA	NA
199 Riparian Shrubland	5508.0	1252	22.7	V	0.0	0.0	0.0	0.0	0	0	0	0

NOTES ACCOMPANYING TABLE 1

- The figures shown in this table are based on modelled information mapped at a scale of 1:25 000 derived during the pre-1750 analysis of vegetation types in the Upper North East and Lower North East regions, and are therefore only approximate. Those ecosystems with 'NA' listed under Pre-1750 (ha) were not modelled to determine their pre-1750 extent (refer to CRA project report NA35/EH).
- Forest Ecosystems are as described in the document *Forest Ecosystem Classification and Mapping for the Upper and Lower North East CRA Regions* CRA Unit, Northern Zone National Parks and Wildlife Service. (Project NA35/EH January 1999)

- c. The status is based on: Rare (R) which has a total current area below 1000 hectares and a target of 100% of its current distribution. Endangered (E) which has < 10% remaining and a target of 100% of its current distribution. Vulnerable (V) which has between 10-30% remaining and a target of 60% of its current distribution. Some values were given their rare, endangered or vulnerable status due to other factors such as range of distribution, patch size and expert opinion on vulnerability. All remaining Forest Ecosystems have a target of 15% of their pre-1750 distribution.
 - d. Informal Reserve includes Special Management Zones that are > 40ha and > 200m wide, or that are adjacent to Dedicated Reserves.
 - e. Tabulated prescriptions include those elements of the Special Management Zone that, due to the size of shape, do not meet the Informal Reserve category outline above, and the Harvesting Exclusions Zone.
 - f. Source: compiled by ABARES from RFA data, including data from CRA reports, IFOAs, NPWS and FCNSW
 - * These Forest Ecosystems have been identified as priorities for protection on Private Land (see Attachment 2).
- NA Pre-1750 distribution was not able to be predicted.
- ^ The figure supplied by ABARES has been amended by DPI to address inconsistencies resulting from changes in spatial analysis systems and processes over time.

Table 2. Representative conservation of Old Growth forest in the CAR Reserve System as at 2000 and 2018 in the Upper North East region^a

Forest Ecosystem	Area of Forest Ecosystem (ha) as at 2000	Percent of Forest Ecosystem as Candidate Old Growth ^b as at 2000	Area Candidate Old Growth (ha) as at 2000	Percent of Candidate Old Growth forest in the CAR Reserve System as at 2000				Percent of Old Growth forest in the CAR Reserve System as at December 2017 ^e			
				Dedicated Reserve	Informal Reserve ^c	Prescription ^d	Total	Dedicated Reserve	Informal Reserve ^c	Prescription ^d	Total
2 OG Alpine Gum	1329	18.9	251	44.7	17.2	5.1	67.0	54	13	4	70
3 OG Baileys Stringybark	34931	62.2	21733	58.1	1.3	0.4	59.8	68	0	0	68
10 OG Black Sallee	6	66.7	4	100.0	0.0	0.0	100.0	100	0	0	100
12 OG Blue Mountain Ash	121	87.6	106	48.7	0.0	50.5	99.1	92	0	7	99
14 OG Brown Barrell	166	18.1	30	50.0	0.0	0.0	50.0	57	0	0	57
15 OG Brown Barrell-Gum	1004	14.0	141	42.8	0.0	1.1	43.9	43 [^]	1	1	44 [^]
17 OG Candlebark	1961	25.4	498	7.0	0.3	0.1	7.3	26	0	0	26
19 OG Central Mid Elevation Sydney Blue Gum	6786	16.7	1131	40.3	4.3	17.9	62.5	48	4	20	72
20 OG Clarence Lowland Needlebark Stringybark	10817	54.1	5847	41.4	36.4	3.3	81.1	59	21	3	82
21 OG Lowlands Grey Box	23913	11.1	2642	1.8	0.1	1.8	3.8	10	0	2	12
23 OG Coast Range Bloodwood-Mahogany	5919	33.0	1951	47.6	21.8	1.7	71.1	61	9	2	72
24 OG Clarence Lowlands Spotted Gum	174787	18.8	32921	18.2	8.9	12.2	39.3	27	5	11	42
25 OG Coast Range Spotted Gum-Blackbutt	743	14.4	107	17.1	4.7	21.5	43.2	18	7	22	47
26 OG Coastal Flooded Gum	9426	22.4	2108	78.2	2.0	5.0	85.2	79	2	5	86
27 OG Coastal Sands Blackbutt	3101	72.2	2240	96.8	0.0	0.3	97.0	97	0	0	97
29 OG Corkwood-Crabapple and Mixed Stringybarks	6093	47.5	2891	49.0	8.0	22.3	79.2	61	6	17	84
30 OG Diehard Stringybark-New England Blackbutt	1062	14.2	151	38.2	2.7	0.2	41.0	49	0	0	49
31 OG Dorrigo White Gum	3385	82.8	2802	11.8	0.0	0.1	11.8	79	0	0	79
32 OG Dry Foothills Blackbutt-Turpentine	7364	14.2	1043	31.7	10.6	13.3	55.6	52	11	14	77
33 OG Dry Foothills Spotted Gum	90829	44.0	39933	22.9	7.6	23.3	53.8	39	9	19	67

Forest Ecosystem	Area of Forest Ecosystem (ha) as at 2000	Percent of Forest Ecosystem as Candidate Old Growth ^b as at 2000	Area Candidate Old Growth (ha) as at 2000	Percent of Candidate Old Growth forest in the CAR Reserve System as at 2000				Percent of Old Growth forest in the CAR Reserve System as at December 2017 ^e			
				Dedicated Reserve	Informal Reserve ^c	Prescription ^d	Total	Dedicated Reserve	Informal Reserve ^c	Prescription ^d	Total
34 OG Dry Grassy Blackbutt-Tallowwood	6052	19.0	1148	41.2	0.9	24.2	66.3	47	1	23	71
35 OG Dry Grassy Stringybark	69987	58.5	40951	42.9	2.7	7.3	52.8	64	2	5	72
36 OG Dry Grassy Tallowwood-Grey Gum	5564	10.3	572	41.9	0.9	18.9	61.6	46	9	12	66
37 OG Dry Heathy Blackbutt-Bloodwood	46630	31.4	14649	24.3	20.8	9.7	54.9	41	7	10	58
38 OG Dry Heathy New England Blackbutt	4276	64.6	2762	53.7	3.3	21.5	78.5	58	1	20	80
39 OG Dry Heathy New England Stringybarks	1178	93.3	1099	99.8	0.0	0.0	99.8	100	0	0	100
40 OG Dry Heathy Sandstone Blackbutt	19036	41.4	7877	49.7	7.0	6.4	63.1	55	5	7	67
41 OG Dry Open New England Blackbutt	121339	43.1	52268	43.2	3.2	10.5	56.8	53	3	9	65
42 OG Dry Redgum-Bloodwood-Apple	243	91.0	221	92.0	0.0	0.3	92.2	100	0	0	100
43 OG Dry Silvertop Stringybark-Apple	13041	75.9	9893	42.6	0.0	0.2	42.8	81	0	0	81
44 OG Dry open Redgum-Broad Leaved Apple	10484	79.9	8373	54.5	0.2	0.7	55.5	83	0	0	83
45 OG Dunns White Gum	975	11.1	108	75.5	4.9	1.7	82.2	79	1	2	81
46 OG Eastern Red Gums	3002	47.8	1436	34.9	33.5	8.2	76.5	36	33	9	78
47 OG Escarpment Redgum	28206	23.3	6571	26.6	2.7	25.9	55.2	35	3	20	58
48 OG Escarpment Scribbly Gum-Apple	5488	58.4	3205	24.8	15.7	12.4	52.9	56	15	13	83
50 OG Wet Bangalow-Brushbox	10098	34.2	3452	61.9	0.8	2.2	64.9	66	1	1	68
52 OG Foothill Grey Gum-Ironbark-Spotted Gum	46753	26.9	12588	37.4	9.0	9.6	56.0	40	8	11	59
53 OG Gorge Grey Box	11147	74.7	8325	57.2	0.4	1.6	59.2	83	0	0	84
54 OG Grey Box-Red Gum-Grey Ironbark	20438	23.7	4836	23.1	1.2	2.9	27.2	30	1	3	34
55 OG Foothills Grey Gum-Spotted Gum	8685	17.2	1495	21.0	14.3	22.8	58.1	30	10	25	65
56 OG Granite Mallee	1887	75.1	1417	90.8	1.3	0.0	92.1	98	1	0	99

Forest Ecosystem	Area of Forest Ecosystem (ha) as at 2000	Percent of Forest Ecosystem as Candidate Old Growth ^b as at 2000	Area Candidate Old Growth (ha) as at 2000	Percent of Candidate Old Growth forest in the CAR Reserve System as at 2000				Percent of Old Growth forest in the CAR Reserve System as at December 2017 ^e			
				Dedicated Reserve	Informal Reserve ^c	Prescription ^d	Total	Dedicated Reserve	Informal Reserve ^c	Prescription ^d	Total
57 OG Highland Granite Stringybarks	2483	72.3	1795	98.6	0.0	0.0	98.7	99	0	0	99
58 OG Gorge Grey Gum	5532	75.9	4198	60.1	2.2	0.8	63.2	78	2	0	80
59 OG Gorge Ironbark-Grey Gum	63226	43.0	27179	40.2	3.0	20.9	64.2	50	3	17	70
60 OG Grassy New England Blackbutt-Tallowwood-Blue Gum	40245	47.7	19176	37.0	6.5	23.2	66.7	57	5	17	79
61 OG Grey Box-Ironbark	131	32.1	42	50.0	2.4	0.0	52.4	52	2	0	55
62 OG Grey Box-Northern Grey Gum	509	2.6	13	10.5	60.0	5.5	76.0	15	62	15	92
63 OG Grey Gum-Stringybark	12810	71.9	9212	43.8	1.8	4.3	49.9	73	2	2	77
65 OG Heathy Scribbly Gum	7758	41.0	3179	71.2	11.3	0.7	83.2	81	4	1	86
67 OG High Elevation Ferny Blackbutt	10462	19.0	1990	38.2	14.7	28.3	81.1	46	10	27	82
68 OG High Elevation Messmate-Brown Barrell	329	32.8	108	80.2	0.0	0.9	81.0	80	0	1	81
69 OG High Elevation Moist Open Tallowwood-Blue Gum	3533	42.8	1513	31.6	15.3	26.8	73.8	67	4	10	81
70 OG High Elevation Open Spotted Gum	50005	31.2	15622	22.0	4.6	21.2	47.8	43	6	14	63
71 OG Ironbark	7713	6.1	472	15.8	1.4	21.2	38.4	17	1	21	38
72 OG Low Relief Coastal Blackbutt	859	4.3	37	51.4	13.3	11.0	75.7	68	0	3	70
73 OG Lowland Red Gum	57016	15.2	8679	26.2	10.1	8.3	44.7	33	6	8	47
74 OG Lowlands Scribbly Gum	3496	39.9	1396	83.2	3.2	0.9	87.3	84	2	0	87
75 OG Lowlands Spotted Gum-Box	19737	6.5	1288	19.2	10.7	3.8	33.7	23	9	5	37
76 OG Coastal Mallee	1412	18.5	261	93.2	0.0	0.0	93.2	93	0	0	93
78 OG Mann River Wet New England Blackbutt	5132	83.4	4280	93.2	0.2	1.1	94.6	95	0	0	95
79 OG Manna Gum-Stringybark	90	70.0	63	77.5	0.0	0.0	77.5	87	11	0	98
80 OG Manna Gum	1287	12.7	164	43.8	0.0	21.9	65.7	54	0	18	72
81 OG Messmate	6309	28.1	1775	40.2	10.0	3.8	54.0	51	1	3	56
83 OG Mid Elevation Wet Blackbutt	1180	18.8	222	36.3	34.3	18.9	89.6	42	13	35	90

Forest Ecosystem	Area of Forest Ecosystem (ha) as at 2000	Percent of Forest Ecosystem as Candidate Old Growth ^b as at 2000	Area Candidate Old Growth (ha) as at 2000	Percent of Candidate Old Growth forest in the CAR Reserve System as at 2000				Percent of Old Growth forest in the CAR Reserve System as at December 2017 ^e			
				Dedicated Reserve	Informal Reserve ^c	Prescription ^d	Total	Dedicated Reserve	Informal Reserve ^c	Prescription ^d	Total
84 OG Mid North Coast Wet Brushbox-Tallowwood-Blue Gum	10378	30.4	3152	47.6	22.6	16.4	86.6	58	17	14	89
85 OG Mixed Moist Hardwood	346	17.9	62	64.3	10.3	9.6	84.3	65	10	6	81
86 OG Mixed New England Stringybarks	3002	36.5	1096	37.2	6.5	26.5	70.1	38	6	26	71
87 OG Mixed Tableland Stringybark-Gum Open Forest	4694	21.4	1005	11.5	8.7	3.1	23.2	34	2	5	40
88 OG Moist Escarpment New England Blackbutt	10275	72.5	7451	85.6	1.4	3.4	90.4	93	1	3	96
89 OG Moist Foothills Spotted Gum	35657	39.6	14111	27.9	8.9	28.8	65.5	42	11	22	75
90 OG Moist Messmate-Gum	25159	42.2	10627	59.9	7.5	11.7	79.0	75	5	7	86
91 OG Moist Open Escarpment White Mahogany	1814	44.5	807	16.3	21.4	22.8	60.5	74	7	5	86
92 OG Moist Shrubby Stringybark-Gum	4139	31.8	1314	59.6	4.2	17.9	81.7	73	3	12	88
93 OG Montane Stringybark-Gum	28687	25.1	7190	20.5	1.8	8.2	30.4	26	5	7	38
95 OG Northern Moist Blackbutt	9101	17.4	1585	56.6	2.3	1.1	60.0	59	1	1	62
97 OG Needlebark Stringybark-Large Fruited Blackbutt	9966	53.8	5360	45.5	20.9	6.0	72.4	56	10	7	73
98 OG New England Peppermint	3590	40.6	1459	30.8	18.1	44.5	93.4	62	10	23	95
99 OG New England Stringybark-Blakelys Red Gum	10786	61.7	6653	37.1	0.0	0.3	37.4	71	0	0	71
100 OG Northern Grassy Sydney Blue Gum	9245	35.3	3263	45.3	7.0	21.0	73.2	62	3	17	83
101 OG Northern Open Grassy Blackbutt	21590	22.3	4816	42.5	7.4	5.0	54.9	48	6	6	59
102 OG Northern Ranges Dry Tallowwood	57107	19.8	11286	21.5	2.9	17.3	41.7	27	3	16	45
103 OG Northern Wet Brushbox	16379	28.9	4740	53.0	7.0	13.3	73.3	59	7	11	77
104 OG Northern Wet Tallowwood-Blue Gum	25764	37.9	9766	67.1	6.4	6.8	80.3	69	6	7	82
105 OG Nymboida Tallowwood-Turpentine	2645	48.5	1284	78.9	2.1	16.0	97.1	79	4	15	98
106 OG Open Coastal Brushbox	6533	28.5	1860	33.6	7.3	27.7	68.6	38	12	28	78

Forest Ecosystem	Area of Forest Ecosystem (ha) as at 2000	Percent of Forest Ecosystem as Candidate Old Growth ^b as at 2000	Area Candidate Old Growth (ha) as at 2000	Percent of Candidate Old Growth forest in the CAR Reserve System as at 2000				Percent of Old Growth forest in the CAR Reserve System as at December 2017 ^e			
				Dedicated Reserve	Informal Reserve ^c	Prescription ^d	Total	Dedicated Reserve	Informal Reserve ^c	Prescription ^d	Total
109 OG Open Shrubby Brushbox-Tallowwood	17472	40.1	7011	32.8	6.8	20.9	60.5	39	6	20	65
110 OG Open Silvertop Stringybark-Blue Gum	3130	60.2	1885	67.1	2.7	5.4	75.2	79	2	4	85
111 OG Open Silvertop Stringybark-Tallowwood	4525	47.4	2144	32.6	13.7	28.1	74.3	46	14	21	81
113 OG Peppermint	6478	41.6	2693	66.0	1.3	3.7	71.0	69	1	3	72
114 OG Peppermint-Mountain/Manna Gum	12829	24.3	3112	27.4	0.0	0.5	27.9	30	3	0	33
115 OG Red Bloodwood	217	6.9	15	93.3	0.0	0.0	93.3	93	0	0	93
116 OG Red Gum-Stringybark	27128	9.6	2616	8.3	1.0	4.1	13.4	10	0	5	15
117 OG Red Mahogany	1273	51.0	649	94.5	0.3	0.0	94.8	97	0	0	98
118 OG Richmond Range Spotted Gum	22511	8.9	2011	8.6	6.9	6.5	22.0	11	7	7	24
119 OG Richmond Range Spotted Gum-Box	24814	14.9	3694	20.9	7.9	4.4	33.3	22	6	7	35
122 OG Rough-barked Apples	1683	53.5	900	59.0	21.3	15.0	95.3	72	8	14	94
123 OG Roundleaved Gum	17975	38.6	6929	52.2	3.8	5.1	61.1	61	5	5	71
124 OG Roundleaved Gum-Turpentine	30	23.3	7	0.0	0.0	68.0	68.0	0	0	86	86
126 OG Sandstone Spotted Gum-Blackbutt	4808	28.7	1378	15.4	19.2	16.9	51.4	32	4	17	53
127 OG Sherwood Needlebark Stringybark	9098	41.1	3736	17.9	0.9	1.2	20.1	28	0	1	29
128 OG Silverleaved Ironbark	1988	49.2	978	0.2	0.0	4.5	4.7	0	0	5	5
129 OG Smoothbarked Apple	270	75.2	203	93.5	4.4	0.0	97.9	95	4	0	99
131 OG Snow Gum	288	45.5	131	89.3	0.0	0.7	89.9	89	1	2	91
132 OG Snow Gum - Mountain/Manna Gum	21305	8.7	1860	34.7	6.3	19.9	60.9	41	0	22	62
135 OG South Coast Tallowwood-Blue Gum	5338	24.0	1283	56.6	10.0	18.1	84.7	59	11	18	88
138 OG Steel Box/Craven Grey Box	427	3.8	16	0.0	0.0	31.3	31.3	6	0	31	38
139 OG Stringybark-Apple	34813	36.3	12652	14.3	0.5	7.0	21.8	38	1	5	43

Forest Ecosystem	Area of Forest Ecosystem (ha) as at 2000	Percent of Forest Ecosystem as Candidate Old Growth ^b as at 2000	Area Candidate Old Growth (ha) as at 2000	Percent of Candidate Old Growth forest in the CAR Reserve System as at 2000				Percent of Old Growth forest in the CAR Reserve System as at December 2017 ^e			
				Dedicated Reserve	Informal Reserve ^c	Prescription ^d	Total	Dedicated Reserve	Informal Reserve ^c	Prescription ^d	Total
140 OG Stringybark-Mallee	2194	84.0	1842	99.1	0.1	0.0	99.1	99	0	0	99
142 OG Swamp Mahogany	578	17.3	100	87.8	0.0	0.0	87.8	85	0	0	85
145 OG Sydney Peppermint-Stringybark	255	47.1	120	18.1	0.0	0.0	18.1	21	0	1	22
146 OG Tallowwood	8430	62.6	5278	56.6	1.2	3.6	61.4	85	0	1	87
147 OG Turpentine	2943	11.5	338	51.7	5.2	5.0	62.0	58	0	6	64
148 OG Very Wet New England Blackbutt-Tallowwood	1498	82.8	1240	93.8	0.3	0.1	94.2	96	0	0	96
149 OG Mallee-Peppermint mosaic	1618	44.1	714	37.2	0.0	0.9	38.1	44	3	2	49
150 OG Washpool Brushbox-Tallowwood	5683	88.8	5047	89.3	0.4	3.5	93.1	93	0	3	96
152 OG Wet Bloodwood-Tallowwood	33357	13.2	4400	32.9	4.8	18.0	55.7	41	2	13	56
153 OG Wet Coastal Tallowwood-Brushbox	6581	2.8	187	10.7	3.6	48.4	62.7	12	-1	52	64
154 OG Wet Flooded Gum-Tallowwood	9317	7.2	675	28.6	13.3	10.6	52.5	40	4	11	56
155 OG Wet Foothills Blackbutt-Turpentine	7437	16.1	1196	32.1	23.2	20.2	75.5	43	18	25	86
157 OG Wet Shrubby Brushbox-Tallowwood	4891	47.8	2339	43.5	13.7	25.5	82.7	63	6	18	86
158 OG Wet Spotted Gum-Tallowwood	2538	31.5	800	76.0	10.8	10.9	97.7	76	11	11	98
162 OG Whitetopped Box	4	100.0	4	0.0	23.0	77.0	100.0	100	0	0	100
163 OG Yellow Box-Blakely's Red Gum	7245	10.1	728	26.2	3.6	3.7	33.4	43	0	6	50
174 OG Orange Gum-Tumbledown Gum-Apple	15435	10.8	1663	0.6	0.3	9.5	10.4	1	0	10	11
175 OG Orange Gum-New England Blackbutt-Tumbledown Gum	19304	8.5	1645	42.5	0.2	1.2	43.9	45	4	3	52
176 OG Orange Gum-Ironbark	34295	6.7	2306	14.8	1.3	2.7	18.7	18	0	4	22
177 OG Outcrop Orange Gum-New England Blackbutt	7945	21.5	1706	15.0	34.1	4.5	53.6	49	0	5	55

Forest Ecosystem	Area of Forest Ecosystem (ha) as at 2000	Percent of Forest Ecosystem as Candidate Old Growth ^b as at 2000	Area Candidate Old Growth (ha) as at 2000	Percent of Candidate Old Growth forest in the CAR Reserve System as at 2000				Percent of Old Growth forest in the CAR Reserve System as at December 2017 ^e			
				Dedicated Reserve	Informal Reserve ^c	Prescription ^d	Total	Dedicated Reserve	Informal Reserve ^c	Prescription ^d	Total
178 OG Outcrop Black Cypress-Tumbledown Gum	1034	10.6	110	0.0	1.7	2.5	4.2	0	0	4	4
179 OG Yellow Box-Broad-leaved Stringybark	3859	22.6	873	0.0	1.9	79.8	81.6	3	0	80	83
180 OG Western New England Blackbutt	12415	63.3	7857	0.0	40.1	0.6	40.7	41	0	1	41
181 OG Stringybark-Gum	30258	80.7	24412	0.0	73.5	0.2	73.7	74	0	0	74
182 OG Apple-Black Cypress	1994	35.3	703	0.0	31.0	0.0	31.0	30	0	0	30
183 OG Red Gum-Apple	592	3.0	18	0.0	0.0	0.0	0.0	6	0	0	6
184 OG Tumbledown Gum-Ironbark	11070	73.1	8089	0.0	45.3	0.7	46.0	48	0	1	49
185 OG Orange Gum-Black Cypress	3510	68.9	2419	0.0	34.4	21.2	55.7	33	0	22	55
186 OG Open Tumbledown Gum-Black Cypress-Orange Gum	10593	8.9	939	36.1	2.5	6.6	45.3	39	0	10	49
189 OG Silverleaved Ironbark-Cypress	23285	29.0	6741	1.0	0.2	0.0	1.1	2	0	0	2
190 OG Yellow Box-Grey Box-Red Gum	21273	7.8	1662	13.0	0.9	2.5	16.4	14	0	3	18
194 OG Round-leaved Gum wet heath	5997	50.2	3011	0.0	68.1	6.5	74.6	68	0	7	75
195 OG Apple-Manna Gum woodland	16214	9.9	1599	49.5	0.0	0.0	49.5	50	3	6	58
196 OG Broad-leaved Stringybark-Apple Box	19948	21.7	4326	22.7	10.6	37.5	70.7	34	0	38	72
197 OG Broad-leaved Stringybark	1643	9.3	153	40.9	2.0	1.3	44.2	45	0	5	50
198 OG Silvertop Stringybark	1200	3.5	42	15.5	0.0	16.7	32.2	26	0	7	33
200 OG Broad-leaved Stringybark-Ribbon Gum	650	13.4	87	0.0	0.3	0.0	0.3	5	0	0	5

NOTES ACCOMPANYING TABLE 2

a. The figures shown in this table are based on modelled information mapped at a scale of 1:25 000 derived during the pre-1750 analysis of vegetation types in the Upper North East and Lower North East regions, and are therefore only approximate.

- b. Old growth Forest Ecosystems are referred to as Candidate old growth because time constraints and availability of data sets did not allow for the full assessment of values characteristic of old growth forests (eg. some structural, compositional and functional characteristics and aesthetic values). Candidate old growth forest was identified primarily by aerial photographic interpretation, and information on disturbance from logging and fire. Further information is available in the report *Old-Growth Forest Related Projects – UNE / LNE CRA Regions*. National Parks and Wildlife Service (Part of Project NA28/EHFebruary 1999).
 - C. Informal Reserve includes Special Management Zones that are > 40ha and > 200m wide, or that are adjacent to Dedicated Reserves.
 - d. Tabulated prescriptions include those elements of the Special Management Zone that, due to the size or shape, do not meet the Informal Reserve Category outlined above, and the Harvesting Exclusions Zone.
 - e. Source: compiled by ABARES from RFA data, including data from CRA reports, IFOAs, NPWS and FCNSW
- ^ The figure supplied by ABARES has been amended by DPI to address inconsistencies resulting from changes in spatial analysis systems and processes over time.

Wilderness

10 59% of Wilderness, as defined in the JANIS Reserve Criteria (ie National Wilderness Inventory (Lesslie and Maslen 1995) minimum rating 12 in patches greater than 8000ha), in the Upper North East region is protected within Dedicated Reserves under this Agreement. Of the Wilderness outside Dedicated Reserves, two thirds (66%) is on freehold or leasehold land. Informal Reserves provide a level of additional protection for Wilderness.

Additional Protection for Forest Ecosystems

11 Forestry Operations are prohibited from rare non-commercial Forest Ecosystems by the Integrated Forestry Operations Approval applicable to the Upper North East region. These Forest Ecosystems include:

33	Mangrove
42	Blackbutt – Sydney peppermint - Smooth-barked apple
64	Grey gum - Stringybark
66	Grey Ironbark-Stringybark
82	Grey box
94	Forest type 94 (not named)
107	Banksia
115	Sydney peppermint – Stringybark
136	Snow gum - Black sallee
162	White Ash
164	Eurabbie
211	River oak
213	Bull oak
214	Wattle
225	Mallee
30	Swamp mahogany
31	Paperbark
32	Swamp Oak
52	Round-leaved gum
63	Woollybutt
98	Dorrigo white gum
105	Smoothbarked-apple
119	Scribbly gum – Bloodwood
129	Rough-barked apple
130	Red bloodwood
131	Peppermint - Mountain / Manna gum

12A Forestry Operations are prohibited from Threatened Ecological Communities (TECs) by the Integrated Forestry Operations Approval applicable to the Upper North East region.

Rainforest Protection

- 12 Forestry Operations are prohibited from all rainforest, including a 20m buffer around any areas identified as RN 17 forest types 10 to 15, by the Integrated Forestry Operations Approval applicable to the North East Region.

Old Growth forest

- 13B Forestry Operations are prohibited from all Old Growth forest in the Upper North East region by the Integrated Forestry Operations Approval.

Management of CAR Values

- 13 Management plans for Dedicated Reserve and Informal Reserve elements of the CAR Reserve System will clearly identify the CAR Values and the actions being taken in each reserve to appropriately manage and conserve those values.
- 14 As an integral component of managing CAR values New South Wales agrees to implement systematic and target fauna and flora surveys in Dedicated Reserves and Informal Reserves to complement surveys carried out under the IFOAs. The extent of survey work undertaken will be subject to available funding.

Protections on Public Land subject to Plantation authorisation

- 15 For Plantations on Public Land, the Plantations and Reafforestation (Code) Regulation 2001 (NSW), contains standards for the protection of soil and water, Biodiversity, and places, objects or items of heritage significance.

ATTACHMENT 1 (B)
(clauses 2, 48, 56, 65, 66, 66A, 71A, 97, 112, Attachment 8)

**COMPREHENSIVE, ADEQUATE AND REPRESENTATIVE (CAR)
RESERVE SYSTEM**

LOWER NORTH EAST REGION

- 1 Map 1(B) and this Attachment identify the CAR Reserve System on Public Land for the Lower North East region for the purpose of this Agreement, as amended from time to time.
- 2 The *National Forest Policy Statement* (NFPS) established that the CAR Reserve System will, in the first instance, be selected from Public Land. Provision is also made in the JANIS Reserve Criteria for inclusion of Private Land in the CAR Reserve System, with the agreement of landholders, where the Criteria cannot be met from Public Land.

PUBLIC LAND

- 3 In the Lower North East region, the CAR Reserve System on Public Land primarily comprises areas established for conservation purposes (eg National Parks and Nature Reserves) and areas reserved for conservation in State forest.

CAR RESERVE SYSTEM COMPONENTS AND PROTECTION MECHANISMS

- 4 The CAR Reserve System on Public Land has the following three components:
 - *Dedicated Reserves*. This comprises reserves established through legislation for conservation purposes such as National Parks, Nature Reserves and Flora Reserves (Special Protection Zone, FMZ 1).
 - *Informal Reserves*. This comprises those parts of the Special Management Zone (FMZ 2) under the Forest Management Zoning system that are greater than 40ha, and more than 200m wide, or are directly adjacent to Dedicated Reserves. It also includes those areas dedicated as State Conservation Areas under the provisions of the *National Parks and Wildlife Act 1974* (NSW) and State Recreation Areas which are managed by the NSW National Parks and Wildlife Service.
 - *Values Protected by Prescription*. These comprise those elements of habitat protected by Regional Prescriptions as detailed in the Integrated Forestry Operations Approval covering the Lower North East region and areas within the Harvesting Exclusions (FMZ 3A) and Special Prescription Zone (FMZ 3B) under the Forest Management Zoning system that are excluded from harvesting. They also include elements of the Special Management Zone (FMZ 2) that, due to the size or shape, do not meet the Informal Reserve category outlined above. The Integrated Forestry Operations Approval complements the Dedicated and Informal Reserve network and includes additional levels of protection for rare non-commercial forest types, Old Growth forest, rainforest and threatened

species in all areas that have been identified to be primarily managed for sustainable production.

5 NOT USED

6 As at December 2017, the Dedicated Reserve component of the CAR Reserve System covers 1,385,000 ha, the Informal Reserve component 80,000 ha and the prescriptive component 94,000 ha. Together the Dedicated Reserve and Informal Reserve components of the CAR Reserve System cover an area of approximately 1,465,000 ha (about 72% of the Public Land in the region or 25% percent of the entire region).

6A Levels of protection for Forest Ecosystems and Old Growth forest achieved in the Dedicated Reserve, Informal Reserve and the Values Protected by Prescription components of the CAR Reserve System are shown in Tables 1 and 2. The tabulated percentage area of these values in prescription includes elements of the Special Management Zone (FMZ 2) that are less than 40ha and less than 200m wide, as well as areas of Old Growth forest (and Forest Ecosystems within these areas) that will be managed by the Integrated Forestry Operations Approval.

6B The IFOA provides for protection of environmental values in addition to those protected in FMZ 2, FMZ 3A, FMZ 3B, mapped areas under the IFOA, or other CAR Reserves and quantified in Tables 1 and 2. The protections under the IFOA are updated and modified from time to time as a result of the continual improvement process to improve the effectiveness and efficiency of these conditions.

Commonwealth Land

7 Informal Reserves on Commonwealth land total 6,200 hectares and are identified on Map 1(B).

8 The Commonwealth agrees to manage those areas of Commonwealth owned land identified in the Singleton Army Training Area as CAR Informal Reserves for the protection of identified CAR Values, on the following conditions:

- Condition 1. That the reserve boundaries encompass only those areas that actually contain the CAR Values.
- Condition 2. That the reserves do not exclude Defence activities that would not compromise the long-term survival of the CAR Values.
- Condition 3. That the establishment of the reserves are based on the development of Defence management arrangements (ie Defence Environmental Management Plans) rather than any modification to existing tenures which may be detrimental to Defence's usage of the training areas.
- Condition 4. That Defence is the sole approving agency for the Defence Environmental Management Plans that prescribe the management regime for the reserves. Defence will consult with relevant experts, State

and Commonwealth agencies on the appropriateness of the management regimes.

- Condition 5. Defence will make environmental management plans for the Singleton Army Training Area available to State and Local authorities and will cooperate with those authorities to make changes if they are required to protect CAR Values.
- Condition 6. Defence will be provided advance notification of any proposed changes to reserve boundaries on Defence land and will be given 40 days to provide a submission on the feasibility of changes with respect to Defence use of the area.
- Condition 7. The reserve boundaries will delineate the actual CAR Values. Defence will establish operational and environmental management buffer zones around the reserves based on particular land use activities that may occur adjacent to the reserves. The buffer zones will be identified in the Defence Environmental Management Plans. The buffer zones will be designed to permit appropriate levels of wildlife and conservation connectivity between isolated stands of the CAR identified forest areas.

8A The Parties recognise that the 1998 Singleton Environmental Management Plan has been superseded by an Environmental Management System (EMS).

The EMS documents the biodiversity values of each site and prescribes management actions to ensure Defence activities do not adversely affect these values. As part of this, the Department works closely with state and local agencies to develop and implement components of the EMS, such as bushfire management, threatened species monitoring, catchment management, feral animal control and native fauna management.

8B The Department of Defence will continue to manage the environmental values of the Singleton Army Training Area in general alignment with the seven conditions at point 8 above.

9 The Department of Defence will identify this CAR Informal Reserve on Commonwealth land on operational and planning maps as part of the EMS.

10 NOT USED

Forest Management Zoning

11 Within the Forest Management Zoning system, of particular significance for the conservation of Forest Ecosystems and Old Growth forest are :

- *Special Protection Zone (FMZ 1)*. These areas are dedicated and managed to maximise the protection of natural and cultural values. Timber harvesting, removal of Forest Products and materials, grazing by domestic stock, gravel/hard rock quarrying and mineral and petroleum exploration are not generally permitted within this zone.

- *Special Management Zone (FMZ 2)*. These areas are established following public comment and are gazetted and managed for the protection of natural and cultural conservation values where it is not possible or practicable to include them in the Special Protection Zone. Activities not permitted in this zone are similar to the Special Protection Zone except that mineral and petroleum exploration are permitted. Any mining proposal following from exploration will require standard environmental impact assessment and development approval processes.
- *Harvesting Exclusions Zone (FMZ 3A)*. These are areas where harvesting is excluded but other management and production activities preclude zoning as Special Protection Zone or Special Management Zone. These may be:
 - i) Dedicated leasehold where lease conditions permit activities such as grazing and timber supply for lease fencing etc, and in some cases residency, or
 - ii) Areas identified as important by the Department of Planning and Environment where there are current or imminent petroleum and Mineral Exploration and/ or Mining Operations , or
 - iii) Other areas which are excluded from harvesting (eg. Net Harvestable Area (NHA) exclusions) but size, boundaries or management practicabilities preclude designation as FMZ 1 or FMZ 2.
- *Special Prescription Zone (FMZ 3B)*. These areas are established for the protection and management of identified values whilst also allowing other management and production activities. These activities (which in some cases includes timber, Forest Product and materials extraction) are minimised in their design and implementation to maintain or enhance the values that the area is zoned to protect. A case by case assessment of these areas will be undertaken to determine which forestry activities can occur. The decision is dependent on the specific values involved.

12 NOT USED

Environment and Heritage Values protected by prescription

13 For Environment and Heritage Values that are not included in reserves, the JANIS Reserve Criteria provide for the management of such values through prescriptions. Within the General Management Zone of the Forest Management Zoning system (FMZ 4), Forestry Operations and other activities are permitted. The principal vehicles by which Environment and Heritage Values will be managed within FMZ 4 are:

- The Integrated Forestry Operations Approval covering the Lower North East region will be the principal vehicle by which environment values are protected through prescription. The Integrated Forestry Operations Approval takes account of the extent of reserved habitat, and balances an operationally efficient timber industry with the need to protect native plants and animals, ecosystems, soils and water.

14 Aboriginal and non-Aboriginal cultural heritage guidelines made in accordance with relevant legislation and amended from time to time, provide prescriptions for the management of heritage values that are impracticable to include in reserves in the Lower North East region.

IDENTIFIED CAR VALUES AND THEIR PROTECTION AFFORDED THROUGH THE RFA

15 Levels of protection for Forest Ecosystems and Old Growth forest achieved in the CAR Reserve System are shown in Tables 1 and 2 of this Attachment as follows:

- Dedicated Reserves; as described in Clause 4 of this Attachment,
- Informal Reserves; as described in Clause 4 of this Attachment,
- Values Protected by Prescription; includes the areas within the Harvesting Exclusions Zone (Zone 3A), those areas of the Special Management Zone (Zone 2) that, due to the size or shape, do not meet the Informal Reserve category outlined above, and mapped areas under the IFOA.

It should be noted that the IFOA affords additional protection over that included in the table.

Table 1. Representative conservation (percentage reservation status as at 2000 and December 2017) of Forest and Non-Forest Ecosystems in the CAR Reserve System in the Lower North East region based on vegetation modelling to establish the pre-1750 extent of Forest Ecosystems in the region^a

Forest Ecosystems ^b	Area		Percent Remaining as at 2000	Status ^c as at 2000	Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at 2000				Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System ^f			
	Pre 1750 (ha)	As at 2000 (ha)			Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total	Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total
2 Alpine Gum*	15021	3971	26.4	V	7.7	3.1	0.5	11.3	11	0	1	12
3 Baileys Stringybark*	301	285	94.7	R	71.1	0.0	0.0	71.1	77	0	0	77
6 Barrington Dry Shrubby New England Blackbutt-Blue Gum	3667	3227	88.0	-	37.7	3.4	2.7	43.7	39	4	3	46
7 Barrington Moist Blue Gum-White Mahogany*	46597	32659	70.1	-	5.6	3.6	3.4	12.6	19	4	3	26
8 Barrington Wet New England Blackbutt-Blue Gum*	68504	45911	67.0	-	10.7	1.7	1.7	14.1	13	2	3	17
10 Black Sallee	2	2	100.0	R	50.0	0.0	0.0	50.0	50	0	0	50
11 Blackbutt-Sydney Peppermint-Smoothbarked Apple*	3560	1382	38.8	-	7.0	5.0	0.0	12.0	12	0	0	12
12 Blue Mountain Ash	1	1	100.0	R	100.0	0.0	0.0	100.0	100	0	0	100
13 Blue-leaved Stringybark	25	25	100.0	R	97.1	0.0	0.0	97.1	100	0	0	100
14 Brown Barrell*	1557	814	52.3	R	25.0	0.0	1.2	26.2	26	0	1	27
15 Brown Barrell-Gum	15290	8711	57.0	-	11.6	8.3	1.6	21.5	21	0	2	23
16 Bull Oak	5	5	100.0	R	100.0	0.0	0.0	100.0	100	0	0	100
17 Candlebark*	243	20	8.2	E	0.0	0.8	0.0	0.8	1	0	0	1
19 Central Mid Elevation Sydney Blue Gum*	92222	40971	44.4	-	5.1	1.1	2.1	8.3	8	1	2	10
20 Clarence Lowland Needlebark Stringybark	81	81	100.0	R	99.8	0.0	0.0	99.8	99.8 [^]	0	0	99.8 [^]
21 Lowlands Grey Box*	5917	1219	20.6	V	10.8	0.2	0.0	11.0	12	0	0	12
22 Coast Cypress Pine	34	34	100.0	R	88.5	0.0	0.0	88.5	94	0	0	94
23 Coast Range Bloodwood-Mahogany	636	564	88.7	R	82.7	0.0	0.1	82.8	83	0	0	83
25 Coast Range Spotted Gum-Blackbutt	25	25	100.0	R	100.0	0.0	0.0	100.0	100	0	0	100
26 Coastal Flooded Gum*	15166	8753	57.7	-	9.1	0.7	2.3	12.1	9	2	3	14
27 Coastal Sands Blackbutt	27026	17312	64.1	-	29.7	0.2	0.0	29.9	35	0	0	35
28 Cool Moist Messmate*	14324	6467	45.2	-	9.4	1.2	1.2	11.7	10	2	1	13
29 Corkwood-Crabapple and Mixed Stringybarks	2891	2293	79.3	-	34.6	1.1	7.8	43.5	50	1	2	52

Forest Ecosystems ^b	Area		Percent Remaining as at 2000	Status ^c as at 2000	Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at 2000				Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System ^f			
	Pre 1750 (ha)	As at 2000 (ha)			Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total	Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total
30 Diehard Stringybark-New England Blackbutt	51716	43510	84.1	-	42.0	7.1	2.6	51.6	53	1	3	57
31 Dorrigo White Gum*	6449	1123	17.4	V	0.9	0.1	1.0	1.9	1	0	1	2
32 Dry Foothills Blackbutt-Turpentine*	48456	33592	69.3	-	8.7	1.0	2.4	12.0	10	1	4	14
33 Dry Foothills Spotted Gum*	32880	17688	53.8	-	8.7	0.3	0.3	9.3	10	0	0	10
34 Dry Grassy Blackbutt-Tallowwood*	134865	59390	44.0	-	5.4	0.2	0.4	6.0	6	0	1	7
35 Dry Grassy Stringybark	133894	97614	72.9	-	16.5	2.0	1.9	20.4	24	2	2	27
36 Dry Grassy Tallowwood-Grey Gum	264265	178516	67.6	-	12.1	1.9	1.6	15.6	14	1	2	17
37 Dry Heathy Blackbutt-Bloodwood	4939	2889	58.5	-	27.4	0.9	1.2	29.6	28	1	1	31
38 Dry Heathy New England Blackbutt	550	528	96.0	R	58.7	6.7	5.0	70.4	66	0	4	71
39 Dry Heathy New England Stringybarks	15	15	100.0	R	100.0	0.0	0.0	100.0	100	0	0	100
41 Dry Open New England Blackbutt*	115751	32932	28.5	V	4.1	0.3	1.7	6.1	6	0	1	8
42 Dry Redgum-Bloodwood-Apple	107232	69509	64.8	-	15.4	1.1	0.4	16.9	19	1	1	20
43 Dry Silvertop Stringybark-Apple	19265	14918	77.4	-	27.5	1.9	1.3	30.8	40	1	1	42
44 Dry open Redgum-Broad Leaved Apple	2404	2291	95.3	-	47.6	1.3	0.0	48.9	61	0	0	61
46 Eastern Red Gums	38	38	100.0	R	59.3	0.0	0.0	59.3	95	0	0	95
47 Escarpment Redgum*	74953	20498	27.4	V	2.2	0.5	0.5	3.2	3	0	0	4
48 Escarpment Scribbly Gum-Apple*	27471	7574	27.6	V	6.8	0.2	0.2	7.2	11	0	0	11
49 Escarpment Tallowwood-Bloodwood	57865	49918	86.3	-	26.3	4.3	2.6	33.1	30	3	3	37
50 Wet Bangalow-Brushbox	5677	3614	63.7	-	23.4	1.5	2.6	27.5	24	1	3	29
51 Eurabbie	277	276	99.6	R	85.9	1.7	0.0	87.6	91	0	0	92
53 Gorge Grey Box	6995	6034	86.3	-	41.1	0.7	1.1	42.9	56	0	1	57
54 Grey Box-Red Gum-Grey Ironbark*	91248	19838	21.7	V	8.4	1.3	0.3	10.0	9	0	0	9
55 Foothills Grey Gum-Spotted Gum	3065	2438	79.5	-	14.1	2.4	4.9	21.4	30	0	2	32
56 Granite Mallee*	7173	4025	56.1	-	12.0	1.2	1.1	14.4	16	1	1	19
57 Highland Granite Stringybarks*	2481	924	37.2	R	8.6	0.0	1.3	9.9	9	0	1	10
58 Gorge Grey Gum*	51	51	100.0	R	57.3	5.9	0.0	63.1	71	0	0	71
60 Grassy New England Blackbutt-Tallowwood-Blue Gum	40573	33586	82.8	-	32.0	2.9	2.6	37.5	38	3	2	43
63 Grey Gum-Stringybark	23099	16056	69.5	-	22.5	2.8	1.1	26.4	70	0	1	71
65 Heathy Scribbly Gum	31362	23471	74.8	-	28.1	6.3	1.9	36.3	33	3	2	37
67 High Elevation Ferny Blackbutt	34934	30899	88.5	-	39.8	3.4	3.4	46.6	42	3	5	49
68 High Elevation Messmate-Brown Barrell	19641	15974	81.3	-	7.0	15.3	4.0	26.4	22	1	6	28

Forest Ecosystems ^b	Area		Percent Remaining as at 2000	Status ^c as at 2000	Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at 2000				Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System ^f			
	Pre 1750 (ha)	As at 2000 (ha)			Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total	Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total
69 High Elevation Moist Open Tallowwood-Blue Gum	30029	27141	90.4	-	34.3	4.3	3.1	41.7	41	3	4	48
70 High Elevation Open Spotted Gum*	21	12	57.1	R	0.4	0.0	2.3	2.7	5	0	0	5
71 Ironbark	209443	89985	43.0	-	13.4	1.6	1.7	16.7	17	1	2	19
72 Low Relief Coastal Blackbutt*	23365	10894	46.6	-	5.0	0.3	0.5	5.9	7	0	1	8
73 Lowland Red Gum*	574	366	63.8	R	20.5	3.9	10.1	34.6	23	4	12	39
74 Lowlands Scribbly Gum	11527	9724	84.4	-	58.8	0.7	0.4	59.9	61	1	0	62
76 Coastal Mallee	963	801	83.2	R	75.0	0.6	0.0	75.6	77	0	0	77
79 Manna Gum-Stringybark*	1180	632	53.6	R	6.9	0.1	0.5	7.5	8	0	0	9
80 Manna Gum*	13123	3852	29.4	V	5.1	0.6	1.7	7.4	7	1	1	9
81 Messmate*	60985	20291	33.3	-	4.5	0.5	0.7	5.6	6	1	1	7
82 Messmate-Mountain Gum Forest*	19288	8537	44.3	-	12.2	0.3	0.9	13.5	14	0	1	15
83 Mid Elevation Wet Blackbutt	7883	6981	88.6	-	37.7	14.7	4.2	56.6	47	10	4	61
84 Mid North Coast Wet Brushbox-Tallowwood-Blue Gum	43303	31917	73.7	-	26.8	6.6	3.5	36.9	33	3	5	40
85 Mixed Moist Hardwood	232	232	100.0	R	7.8	0.7	9.2	17.8	8	3	10	21
87 Mixed Tableland Stringybark-Gum OpenForest*	20293	7897	38.9	-	7.7	0.9	1.4	10.0	10	1	1	12
88 Moist Escarpment New England Blackbutt	23267	22579	97.0	-	59.1	10.9	4.7	74.6	69	3	6	78
89 Moist Foothills Spotted Gum*	12467	7929	63.6	-	12.4	0.5	1.4	14.3	18	0	1	19
90 Moist Messmate-Gum*	113	78	69.0	R	1.7	0.9	2.1	4.7	2	1	3	5
91 Moist Open Escarpment White Mahogany	42669	38495	90.2	-	37.7	2.8	2.3	42.8	44	2	3	49
92 Moist Shrubby Stringybark-Gum*	805	423	52.6	R	17.9	1.0	1.3	20.3	21	0	0	21
93 Montane Stringybark-Gum*	11191	2567	22.9	V	2.4	0.0	1.7	4.1	5	0	0	5
94 Mountain Gum-Brown Barrell	3210	3196	99.6	-	91.2	3.2	0.0	94.4	95	0	0	95
97 Needlebark Stringybark-Large Fruited Blackbutt*	556	502	90.3	R	47.1	0.2	0.2	47.6	47 [^]	0	1	48 [^]
98 New England Peppermint	814	656	80.6	R	73.2	0.0	0.0	73.2	73 [^]	0	0	73 [^]
99 New England Stringybark-Blakelys Red Gum*	116133	28245	24.3	V	5.4	0.3	0.3	6.0	9	0	0	9
105 Nymboida Tallowwood-Turpentine*	310	248	80.0	R	5.8	10.9	33.4	50.1	39	6	6	52
106 Open Coastal Brushbox	103225	64878	62.9	-	12.0	3.7	4.0	19.7	14	3	5	22

Forest Ecosystems ^b	Area		Percent Remaining as at 2000	Status ^c as at 2000	Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at 2000				Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System ^f			
	Pre 1750 (ha)	As at 2000 (ha)			Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total	Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total
107 Open Messmate-New England Blackbutt	14929	12151	81.4	-	33.3	2.8	1.0	37.1	35	2	2	38
108 Open Ribbon Gum	34467	24537	71.2	-	16.1	3.8	7.4	27.2	21	2	8	31
109 Open Shrubby Brushbox-Tallowwood	5033	2887	57.4	-	17.7	0.3	1.3	19.2	18	0	2	21
110 Open Silvertop Stringybark-Blue Gum	68155	53990	79.2	-	17.4	4.2	3.1	24.7	23	3	4	29
111 Open Silvertop Stringybark-Tallowwood	2116	1889	89.3	-	36.5	2.5	3.9	42.8	47	1	1	48
112 Paperbark*	NA	12866	NA	V	NA	NA	NA	NA	NA	NA	NA	NA
113 Peppermint*	51650	13115	25.4	V	7.2	0.3	0.4	7.8	8	0	0	9
114 Peppermint-Mountain/Manna Gum*	29728	5736	19.3	V	4.2	0.2	0.6	5.0	5	0	0	5
115 Red Bloodwood	5	5	100.0	R	86.4	0.0	0.0	86.4	86 [^]	0	0	86 [^]
116 Red Gum-Stringybark*	38169	12238	32.1	V	0.0	0.0	0.0	0.0	0	0	0	0
117 Red Mahogany*	65	65	100.0	R	3.1	0.0	0.0	3.1	11	0	0	11
120 River Oak*	1566	922	58.9	R	26.5	0.2	2.4	29.2	38	0	0	39
122 Rough-barked Apples*	13990	2636	18.8	V	6.7	0.0	0.1	6.8	7	0	0	7
123 Roundleaved Gum*	1544	172	11.1	R	0.3	0.0	0.8	1.1	1	0	0	1
124 Roundleaved Gum-Turpentine*	59	59	100.0	R	57.6	0.0	0.0	57.6	22	0	0	22
129 Smoothbarked Apple	25437	18751	73.7	-	10.3	2.2	4.1	16.7	18	5	3	26
130 Smoothbarked Apple-Sydney Peppermint-Stringybark	16521	9517	57.6	-	9.4	0.1	12.9	22.4	25	0	1	26
131 Snow Gum	6526	4433	67.9	-	46.2	3.7	1.8	51.8	50	0	2	52
132 Snow Gum -Mountain/Manna Gum*	83882	23120	27.6	V	5.8	3.4	0.7	9.9	9	0	1	10
133 Snow Gum-Black Sallee	16	16	100.0	R	95.3	0.0	2.8	98.0	100	0	0	100
134 South Coast Shrubby Grey Gum*	357935	151030	42.2	-	5.0	0.3	0.4	5.7	6	0	0	7
135 South Coast Tallowwood-Blue Gum*	106137	71217	67.1	-	10.3	1.2	2.6	14.1	13	2	2	17
137 Southern Wet Sydney Blue Gum	57235	41695	72.9	-	13.4	1.9	4.6	19.8	17	2	5	24
138 Steel Box/Craven Grey Box	133	125	94.0	R	27.9	0.0	24.8	52.7	88	0	0	88
139 Stringybark-Apple*	208921	81300	38.9	-	9.1	0.5	0.7	10.3	15	0	0	15
140 Stringybark-Mallee	671	665	99.1	R	94.2	0.0	0.4	94.7	94	0	0	94
142 Swamp Mahogany*	4645	2177	46.9	-	8.3	1.6	4.9	14.7	13	2	2	17
143 Swamp Oak*	21477	4868	22.7	V	5.8	0.4	0.4	6.6	9	0	0	9

Forest Ecosystems ^b	Area		Percent Remaining as at 2000	Status ^c as at 2000	Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at 2000				Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System ^f			
	Pre 1750 (ha)	As at 2000 (ha)			Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total	Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total
145 Sydney Peppermint-Stringybark	13866	13778	99.4	-	78.5	5.2	0.6	84.3	79	5	1	85
146 Tallowwood*	875	746	85.3	R	38.4	0.9	0.2	39.5	50	0	0	50
147 Turpentine	239	235	98.3	R	15.1	0.4	6.6	22.0	31	0	5	37
148 Very Wet New England Blackbutt-Tallowwood	3218	2867	89.1	-	70.0	4.9	2.3	77.3	71	5	3	78
149 Mallee-Peppermint mosaic*	6208	3621	58.3	-	10.8	1.0	2.2	13.9	16	1	1	18
153 Wet Coastal Tallowwood-Brushbox*	15901	10245	64.4	-	3.7	0.7	1.0	5.3	5	0	2	8
154 Wet Flooded Gum-Tallowwood*	9393	6161	65.6	-	7.4	0.8	2.9	11.1	10	1	4	15
155 Wet Foothills Blackbutt-Turpentine	54288	50264	92.6	-	18.9	6.6	3.8	29.3	25	4	6	35
156 Wet New England Blackbutt-Silvertop Stringybark	18005	15604	86.7	-	32.3	3.1	2.2	37.6	34	3	4	42
157 Wet Shrubby Brushbox-Tallowwood	35601	30589	85.9	-	34.0	7.0	6.2	47.2	38	6	7	51
162 Whitetopped Box*	1743	967	55.5	R	18.8	0.8	5.1	24.7	31	0	2	33
163 Yellow Box-Blakely's Red Gum*	28088	2696	9.6	E	0.1	0.0	0.0	0.1	0	0	0	0
168 Rainforest*	NA	256326	NA	R	NA	NA	NA	NA	NA	NA	NA	NA
174 Orange Gum-Tumbledown Gum-Apple*	33343	10169	30.5	V	0.4	0.3	0.0	0.7	1	0	0	1
175 Orange Gum-New England Blackbutt-Tumbledown Gum*	64031	23572	36.8	V	0.3	0.6	0.0	0.9	1	0	0	1
176 Orange Gum-Ironbark*	34097	6636	19.5	V	0.0	0.0	0.0	0.0	0	0	0	0
177 Outcrop Orange Gum-New England Blackbutt*	15949	3170	19.9	V	0.5	0.1	0.0	0.5	1	0	0	1
178 Outcrop Black Cypress-Tumbledown Gum*	1492	659	44.2	R	0.0	0.0	0.0	0.0	0	0	0	0
179 Yellow Box-Broad-leaved Stringybark*	1026	273	26.6	R	1.0	0.0	0.0	1.0	1	0	0	1
182 Apple-Black Cypress*	46374	14635	31.6	V	0.2	0.0	0.0	0.2	0.2 [^]	0	0	0.2 [^]
183 Red Gum-Apple	8088	4065	50.3	-	27.5	0.4	0.9	28.8	28	0	1	29
184 Tumbledown Gum-Ironbark*	527	160	30.4	R	0.0	0.0	0.0	0.0	0	0	0	0
186 Open Tumbledown Gum-Black Cypress-Orange Gum*	43246	7959	18.4	V	0.2	0.1	0.0	0.3	0.2 [^]	0.1 [^]	0	0.3 [^]
189 Silverleaved Ironbark-Cypress*	6649	2007	30.2	V	0.0	0.0	0.0	0.0	0	0	0	0
190 Yellow Box-Grey Box-Red Gum*	35934	7724	21.5	V	0.6	0.0	0.0	0.6	1	0	0	1
195 Apple-Manna Gum woodland*	36588	6638	18.1	V	0.3	0.1	0.0	0.4	0.3 [^]	0.1 [^]	0	0.4 [^]

Forest Ecosystems ^b	Area		Percent Remaining as at 2000	Status ^c as at 2000	Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at 2000				Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System ^f			
	Pre 1750 (ha)	As at 2000 (ha)			Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total	Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total
196 Broad-leaved Stringybark-Apple Box*	55280	10442	18.9	V	0.3	0.1	0.0	0.4	0.3 [^]	0.1 [^]	0	0.4 [^]
197 Broad-leaved Stringybark*	8827	1346	15.3	V	0.5	0.0	0.0	0.5	1	0	0	1
198 Silvertop Stringybark*	5634	1501	26.6	V	1.2	0.4	0.0	1.6	2	0	0	2
200 Broad-leaved Stringybark-Ribbon Gum*	25	7	28.0	R	4.0	0.0	0.0	4.0	4	0	0	4
202 Peppermint-Apple-Turpentine	37165	36556	98.4	-	68.3	10.6	1.4	80.3	76	4	1	82
203 Grey Gum-Stringybark-Apple	38398	37492	97.6	-	80.7	3.2	0.1	84.0	83	1	0	85
204 Grey Gum - Scribbly Gum	18966	18871	99.5	-	94.9	1.2	0.0	96.2	95	1	0	96
205 Peppermint-Silvertop Ash-Stringybark	1346	1309	97.3	-	75.5	0.0	0.0	75.5	77	0	0	77
206 Apple-Grey Gum-Turpentine	30010	28264	94.2	-	39.9	7.2	4.4	51.5	47	1	5	53
207 Hunter Spotted Gum-Ironbark*	67295	25740	38.3	-	2.0	3.7	0.7	6.4	5	0	0	5
208 Hunter Roughbarked Apple- Red Gum*	66023	8876	13.4	V	1.0	0.9	0.1	2.0	1	0	0	1
209 Yellow Bloodwood-Stringybark	54429	52329	96.1	-	62.7	3.5	1.4	67.6	64	3	2	68
210 Yellow Bloodwood-Ironbark	32597	29520	90.6	-	51.9	5.9	0.3	58.1	58	2	0	60
211 Apple-Turpentine	22208	21680	97.6	-	55.3	26.0	0.0	81.3	79	3	0	82
212 Yellow Bloodwood-Narrowleaved Apple	59334	57711	97.3	-	64.9	11.3	0.1	76.2	76	1	0	77
213 Stringybark-Scribbly Gum Woodland	9288	9196	99.0	-	96.3	0.7	0.0	97.0	96	1	0	97
214 Brown Bloodwood-Dwyers Redgum	2051	1862	90.8	-	56.5	0.0	0.0	56.5	57	0	0	57
215 Brown Bloodwood-Ironbark	12308	11650	94.7	-	90.2	0.5	0.0	90.7	90	0	0	91
216 Sandstone Ironbark	14298	12427	86.9	-	61.6	0.0	0.0	61.6	62	0	0	62
217 Grey Gum-Stringybark (Hunter)	31103	30921	99.4	-	96.6	0.1	0.0	96.7	97 [^]	0 [^]	0 [^]	97 [^]
218 Ironbark-Stringybark	17677	15843	89.6	-	35.4	0.0	0.0	35.4	35	0	0	35
219 Brown Bloodwood	15182	8905	58.7	-	27.7	0.0	0.0	27.7	28	0	0	28
220 Yellow Bloodwood-Stringybark-Narrowleaved Apple	40270	39881	99.0	-	70.1	12.4	0.0	82.5	82	1	0	83
221 Apple-Red Bloodwood-Peppermint-Turpentine	26788	23923	89.3	-	59.3	6.3	1.2	66.8	64	3	1	68
222 Stringybark-Mallee Woodland	7107	7084	99.7	-	96.1	0.5	0.0	96.6	96	0	0	97
223 Dwarf Apple Forest	20932	20238	96.7	-	57.1	26.4	0.1	83.5	83	2	0	84

Forest Ecosystems ^b	Area		Percent Remaining as at 2000	Status ^c as at 2000	Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at 2000				Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System ^f			
	Pre 1750 (ha)	As at 2000 (ha)			Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total	Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total
224 Coastal Apple-Stringybark-Scribbly Gum*	2370	1070	45.2	-	0.0	1.8	0.2	1.9	2	0	0	2
225 Wyong Apple-Scribbly Gum*	5905	3768	63.8	-	0.0	1.0	0.7	1.6	2	0	1	3
226 Mahogany-Banksia Heath	13310	9830	73.9	-	45.5	3.1	0.1	48.7	51	0	0	51
227 Turpentine-Myrtle	15805	15745	99.6	-	72.6	3.2	1.0	76.8	73	3	2	78
228 Turpentine-Oak-Myrtle	15234	13833	90.8	-	55.2	2.3	1.7	59.2	55	2	2	59
229 Roughbarked Apple-Forest Oak	40244	33615	83.5	-	49.0	4.9	0.2	54.1	52	3	0	55
230 Watagan Blackbutt-Blue Gum	17059	13664	80.1	-	11.2	3.4	3.5	18.1	24	4	4	33
231 Watagan Blue Gum	17524	16218	92.6	-	14.8	11.9	4.3	30.9	26	13	3	43
232 Watagan Spotted Gum-Ironbark-White Mahogany*	9232	8609	93.3	-	3.7	4.5	4.0	12.2	30	5	1	35
233 Roundleaved Gum - Turpentine	10605	8565	80.8	-	21.7	4.4	1.2	27.3	21.7 [^]	4.4 [^]	1.2 [^]	27.3 [^]
234 Grey Gum - Grey Myrtle	36947	35600	96.4	-	53.9	6.1	2.1	62.0	55	7	2	64
235 Wet Roundleaved Gum Forest	2710	2637	97.3	-	80.2	1.0	0.3	81.5	81	0	0	82
236 Bangalay-Blue Gum	16055	14197	88.4	-	27.2	27.2	0.0	54.4	48	6	0	54
237 Wollemi Manna Gum	2285	2260	98.9	-	94.1	0.5	0.0	94.6	94	1	0	95
238 Tablelands Grey Gum-Scribbly Gum	218	210	96.3	R	96.3	0.0	0.0	96.3	96	0	0	96
239 Wollemi Roughbarked Apple	13174	6021	45.7	-	15.9	3.9	0.0	19.9	21	0	0	21
240 Roughbarked Apple-Redgum*	331	316	95.5	R	29.6	4.0	0.0	33.6	35	2	0	38
241 Ironbark-Redgum*	13378	2550	19.1	V	1.6	0.0	0.0	1.6	2	0	0	2
242 Hunter Grey Box	16739	12040	71.9	-	31.6	1.8	0.0	33.4	33	0	0	33
243 Grey Gum-Mugga Ironbark	3559	2988	84.0	-	57.1	0.0	0.0	57.1	58	0	0	58
244 White Box-Grey Gum	2419	1818	75.2	-	36.1	5.2	3.6	44.9	38	0	4	41
245 Grey Box	5832	1024	17.6	V	10.4	0.0	0.0	10.4	10	0	0	10
246 Scribbly Gum-Redgum Woodland	8259	3141	38.0	-	20.0	0.0	0.0	20.0	21	0	0	21
247 Coastal Bastard Mahogany Forest*	32848	18002	54.8	-	7.1	3.2	0.6	10.9	14	0	0	14
248 Apple-Forest Oak	12254	7508	61.3	-	17.8	1.3	0.2	19.2	21	1	0	21
249 White Box-Ironbark-Red Gum*	156637	26170	16.7	V	2.3	0.2	0.0	2.5	2	0	0	2
250 Banksia Heath-Scribbly Gum-Apple*	21544	10795	50.1	-	0.3	1.5	0.3	2.1	4	0	0	4

Non-Forest Ecosystems ^b	Area	Percent Remaining	Status ^c	Percent of Non-Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at 2000	Percent of Non-Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at December 2017 ^f
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Forest Ecosystems ^b	Area		Percent Remaining as at 2000	Status ^c as at 2000	Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at 2000				Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System ^f			
	Pre 1750 (ha)	As at 2000 (ha)			Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total	Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total
	Pre 1750 (ha)	As at 2000 (ha)	as at 2000	as at 2000	Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total	Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total
5 Banksia*	8786	4196	47.8	V	16.0	0.0	0.0	16.1	22	0	0	22
18 Casuarina Woodland*	NA	362	NA	R	NA	NA	NA	NA	NA	NA	NA	NA
64 Heath*	NA	14286	NA	R	NA	NA	NA	NA	NA	NA	NA	NA
66 Herbfield and Fjaeldmark	NA	2	NA	R	NA	NA	NA	NA	NA	NA	NA	NA
77 Mangrove*	NA	1001	NA	R	NA	NA	NA	NA	NA	NA	NA	NA
96 Natural Grassland	NA	138	NA	R	NA	NA	NA	NA	NA	NA	NA	NA
121 Rock	NA	6576	NA	-	NA	NA	NA	NA	NA	NA	NA	NA
125 Saltbush*	187	200	107.0	R	0.0	0.5	0.1	0.5	0	0	0	0
141 Swamp	NA	9130	NA	R	NA	NA	NA	NA	NA	NA	NA	NA
169 Scrub	NA	3073	NA	V	NA	NA	NA	NA	NA	NA	NA	NA
199 Riparian Shrubland*	6978	1172	16.8	V	0.1	0.1	0.0	0.2	0	0	0	0

NOTES ACCOMPANYING TABLE 1

- The figures shown in this table are based on modelled information mapped at a scale of 1:25 000 derived during the pre-1750 analysis of vegetation types in the Upper North East and Lower North East regions, and are therefore only approximate. Those ecosystems with 'NA' listed under Pre-1750 (ha) were not modelled to determine their pre-1750 extent (refer to CRA project report NA35/EH).
 - Forest Ecosystems are as described in the documents *Forest Ecosystem Classification and Mapping for the Upper and Lower North East CRA Regions* CRA Unit, Northern Zone National Parks and Wildlife Service. (Project NA35/EH January 1999), and *Forest Ecosystem Classification and Mapping for the Hunter Sub-Region in the Lower North East Comprehensive Regional Assessment*. Project Numbers NL 10/EH & NL 02/EH (March 1999).
 - The status is based on: Rare (R) which has a total current area below 1000 hectares and a target of 100% of its current distribution. Endangered (E) which has < 10% remaining and a target of 100% of its current distribution. Vulnerable (V) which has between 10-30% remaining and a target of 60% of its current distribution. Some values were given their rare, endangered or vulnerable status due to other factors such as range of distribution, patch size and expert opinion on vulnerability. All remaining Forest Ecosystems have a target of 15% of their pre-1750 distribution.
 - Informal Reserve includes Special Management Zones that are > 40ha and > 200m wide, or that are adjacent to Dedicated Reserves.
 - Tabulated prescriptions include those elements of the Special Management Zone that, due to size or shape, do not meet the Informal Reserve Category outlined above, and the Harvesting Exclusions Zone.
 - Source: compiled by ABARES from RFA data, including data from CRA reports, IFOAs, NPWS and FCNSW.
- * These Forest Ecosystems have been identified as priorities for protection on Private Land (see Attachment 2).

NA Pre-1750 distribution was not able to be predicted.

^ The figure supplied by ABARES has been amended by DPI to address inconsistencies resulting from changes in spatial analysis systems and processes over time.

Table 2. Representative conservation of Old Growth forest in the CAR Reserve System as at 2000 and December 2017 in the Lower North East region^a

Forest Ecosystem	Area of Forest Ecosystem (ha) as at 2000	Percent of Forest Ecosystem as Old Growth ^b as at 2000	Area Old Growth (ha) as at 2000	Percent of Candidate Old Growth forest in the CAR Reserve System				Percent of Old Growth forest in the CAR Reserve System as at December 2017 ^e			
				Dedicated Reserve	Informal Reserve ^c	Prescription ^d	Total	Dedicated Reserve	Informal Reserve ^c	Prescription ^d	Total
2 OG Alpine Gum	3971	23.5	932	60.1	9.5	2.7	72.3	76	0	2	78
3 OG Baileys Stringybark	285	43.5	124	70.8	0.0	0.0	70.8	100	0	0	100
6 OG Barrington Dry Shrubby New England Blackbutt-Blue Gum	3227	52.0	1676	51.4	6.4	4.7	62.4	82	6	6	94
7 OG Barrington Moist Blue Gum-White Mahogany	32659	7.9	2582	24.4	6.5	14.4	45.3	62	2	17	81
8 OG Barrington Wet New England Blackbutt-Blue Gum	45911	18.8	8636	39.9	7.7	5.0	52.6	65	9	12	86
10 OG Black Sallee	2	32.0	1	100.0	0.0	0.0	100.0	100	0	0	100
11 OG Blackbutt-Sydney Peppermint-Smoothbarked Apple	1382	24.9	344	59.9	40.1	0.0	100.0	93	0	0	93
13 OG Blue-leaved Stringybark	25	95.7	24	97.0	0.0	0.0	97.0	100	0	0	100
14 OG Brown Barrell	814	17.8	145	57.5	0.0	10.4	68.0	85	0	2	86
15 OG Brown Barrell-Gum	8711	20.4	1775	50.9	4.9	7.2	63.0	78	1	4	82
17 OG Candlebark	20	6.4	1	0.0	0.0	0.0	0.0	100	0	0	100
19 OG Central Mid Elevation Sydney Blue Gum	40971	14.1	5775	37.3	7.2	9.8	54.3	73	4	7	84
20 OG Clarence Lowland Needlebark Stringybark	81	18.6	15	100.0	0.0	0.0	100.0	100	0	0	100
21 OG Lowlands Grey Box	1219	60.7	740	62.2	0.1	0.0	62.3	73	0	0	73
23 OG Coast Range Bloodwood-Mahogany	564	21.4	121	95.6	0.0	0.6	96.2	97	0	0	97
25 OG Coast Range Spotted Gum-Blackbutt	25	27.8	7	100.0	0.0	0.0	100.0	NA	NA	NA	NA
26 OG Coastal Flooded Gum	8753	7.0	610	31.7	11.1	4.6	47.5	63	5	1	70
27 OG Coastal Sands Blackbutt	17312	45.0	7781	73.6	0.2	0.0	73.9	99	0	0	99
28 OG Cool Moist Messmate	6467	13.9	901	63.0	5.3	7.7	75.9	67	6	3	76
29 OG Corkwood-Crabapple and Mixed Stringybarks	2293	38.0	872	62.8	1.1	7.7	71.6	85	1	2	88
30 OG Diehard Stringybark-New England Blackbutt	43510	56.8	24726	63.0	9.8	4.0	76.8	88	1	3	91
31 OG Dorrigo White Gum	1123	18.0	202	20.8	1.5	13.4	35.8	27	0	34	60
32 OG Dry Foothills Blackbutt-Turpentine	33592	16.3	5481	33.3	5.1	10.3	48.7	55	7	7	69
33 OG Dry Foothills Spotted Gum	17688	30.2	5334	21.1	1.2	1.6	23.9	61	0	4	65

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34 OG Dry Grassy Blackbutt-Tallowwood	59390	9.3	5504	31.6	2.1	4.9	38.5	57	0	1	58
35 OG Dry Grassy Stringybark	97614	46.6	45446	37.3	3.0	3.2	43.5	67	4	3	74
36 OG Dry Grassy Tallowwood-Grey Gum	178516	19.1	34124	37.2	11.8	5.9	54.9	59	5	4	68
37 OG Dry Heathy Blackbutt-Bloodwood	2889	39.6	1144	67.3	3.5	2.3	73.1	89	4	1	94
38 OG Dry Heathy New England Blackbutt	528	52.8	279	86.5	3.5	8.5	98.6	86	0	7	93
39 OG Dry Heathy New England Stringybarks	15	31.2	5	100.0	0.0	0.0	100.0	NA	NA	NA	NA
41 OG Dry Open New England Blackbutt	32932	38.8	12786	25.9	1.4	13.5	40.9	62	3	8	73
42 OG Dry Redgum-Bloodwood-Apple	69509	38.8	26960	48.3	1.9	0.9	51.1	67	2	2	71
43 OG Dry Silvertop Stringybark-Apple	14918	63.7	9497	47.0	2.2	0.6	49.8	69	2	1	72
44 OG Dry open Redgum-Broad Leaved Apple	2291	90.0	2061	52.0	1.3	0.0	53.4	65	0	0	65
46 OG Eastern Red Gums	38	29.3	11	10.4	0.0	0.0	10.4	100	0	0	100
47 OG Escarpment Redgum	20498	27.2	5582	15.9	4.0	3.7	23.6	65	6	9	80
48 OG Escarpment Scribbly Gum-Apple	7574	41.9	3174	51.7	1.0	0.0	52.7	79	0	0	80
49 OG Escarpment Tallowwood-Bloodwood	49918	44.1	21998	47.6	9.4	4.8	61.7	69	6	6	81
50 OG Wet Bangalow-Brushbox	3614	43.1	1557	44.2	1.9	2.0	48.0	86	3	2	90
51 OG Eurabbie	276	76.9	212	87.5	1.4	0.0	88.9	93	0	0	93
53 OG Gorge Grey Box	6034	85.5	5156	51.8	0.8	0.7	53.3	72	0	1	73
54 OG Grey Box-Red Gum-Grey Ironbark	19838	39.5	7837	85.2	0.3	0.4	85.9	93	0	0	93
55 OG Foothills Grey Gum-Spotted Gum	2438	28.6	698	13.0	10.0	21.0	44.0	47	0	18	65
56 OG Granite Mallee	4025	39.4	1586	30.4	2.5	3.1	36.1	67	4	2	72
57 OG Highland Granite Stringybarks	924	41.5	383	43.2	0.2	8.1	51.5	72	0	8	81
58 OG Gorge Grey Gum	51	95.3	49	56.1	6.2	0.0	62.3	65	0	0	65
60 OG Grassy New England Blackbutt-Tallowwood-Blue Gum	33586	46.8	15722	58.6	5.4	4.1	68.1	73	3	3	79
63 OG Grey Gum-Stringybark	16056	67.1	10768	43.7	5.2	1.1	50.0	73	0	2	75
65 OG Heathy Scribbly Gum	23471	38.2	8960	78.4	16.0	3.4	97.8	91	4	2	98
67 OG High Elevation Ferny Blackbutt	30899	37.0	11441	63.6	5.0	5.3	73.9	84	2	3	89
68 OG High Elevation Messmate-Brown Barrell	15974	9.6	1538	25.1	32.7	23.1	80.8	75	1	9	85

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69 OG High Elevation Moist Open Tallowwood-Blue Gum	27141	43.1	11698	58.8	5.4	3.0	67.2	80	3	3	86
70 OG High Elevation Open Spotted Gum	12	15.0	2	0.0	0.0	0.0	0.0	0	0	0	0
71 OG Ironbark	89985	33.2	29876	71.6	5.6	1.4	78.6	94	1	3	98
72 OG Low Relief Coastal Blackbutt	10894	5.8	633	16.8	5.7	2.9	25.4	28	4	2	33
73 OG Lowland Red Gum	366	33.4	122	44.5	16.2	21.6	82.3	53	9	32	94
74 OG Lowlands Scribbly Gum	9724	50.2	4881	96.5	0.5	0.5	97.5	97	1	0	98
76 OG Coastal Mallee	801	15.1	121	89.1	0.0	0.0	89.1	100	0	0	100
79 OG Manna Gum-Stringybark	632	20.8	131	51.1	0.0	2.6	53.8	84	3	0	86
80 OG Manna Gum	3852	14.5	557	42.6	4.8	14.9	62.3	70	5	4	79
81 OG Messmate	20291	9.4	1912	52.3	2.6	9.1	63.9	63	5	3	71
82 OG Messmate-Mountain Gum Forest	8537	16.6	1416	84.4	0.6	3.8	88.7	78	1	3	82
83 OG Mid Elevation Wet Blackbutt	6981	29.5	2058	54.3	24.8	7.6	86.7	72	15	5	92
84 OG Mid North Coast Wet Brushbox-Tallowwood-Blue Gum	31917	30.9	9850	53.7	11.2	6.8	71.7	79	5	4	88
85 OG Mixed Moist Hardwood	232	0.0	0	0.0	0.0	0.0	0.0	NA	NA	NA	NA
87 OG Mixed Tableland Stringybark-Gum OpenForest	7897	16.0	1259	54.7	6.6	8.2	69.5	71	8	2	81
88 OG Moist Escarpment New England Blackbutt	22579	57.4	12954	72.6	9.9	6.4	88.8	85	3	5	93
89 OG Moist Foothills Spotted Gum	7929	8.3	657	13.9	6.4	21.2	41.5	42	0	16	58
90 OG Moist Messmate-Gum	78	35.6	28	6.8	3.6	1.3	11.7	40	0	40	80
91 OG Moist Open Escarpment White Mahogany	38495	49.4	19026	60.9	3.2	3.2	67.2	79	3	3	85
92 OG Moist Shrubby Stringybark-Gum	423	24.1	102	46.4	6.2	3.8	56.3	81	1	1	83
93 OG Montane Stringybark-Gum	2567	18.7	480	37.0	0.0	27.3	64.3	84	0	0	84
94 OG Mountain Gum-Brown Barrell	3196	36.3	1159	97.6	0.0	0.0	97.6	100	0	0	100
97 OG Needlebark Stringybark-Large Fruited Blackbutt	502	18.5	93	53.7	0.5	0.0	54.1	73	0	0	73
98 OG New England Peppermint	656	81.3	533	97.3	0.0	0.0	97.3	97	0	0	97
99 OG New England Stringybark-Blakelys Red Gum	28245	44.2	12469	41.8	0.9	0.7	43.5	71	0	0	71
105 OG Nymboida Tallowwood-Turpentine	248	25.4	63	7.0	13.2	54.0	74.2	61	11	0	72
106 OG Open Coastal Brushbox	64878	34.3	22254	23.8	8.9	6.0	38.7	61	8	7	75

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107 OG Open Messmate-New England Blackbutt	12151	27.2	3302	80.2	7.7	2.8	90.7	93	4	1	98
108 OG Open Ribbon Gum	24537	36.6	8987	41.4	8.3	20.9	70.6	68	2	15	86
109 OG Open Shrubby Brushbox-Tallowwood	2887	32.7	944	43.6	1.2	1.1	45.9	82	1	4	86
110 OG Open Silvertop Stringybark-Blue Gum	53990	23.7	12786	49.8	8.3	8.1	66.2	71	8	6	85
111 OG Open Silvertop Stringybark-Tallowwood	1889	38.5	727	61.0	4.5	1.5	67.0	89	1	0	90
113 OG Peppermint	13115	40.5	5311	49.7	0.8	2.9	53.3	83	1	1	85
114 OG Peppermint-Mountain/Manna Gum	5736	35.8	2054	49.6	0.1	5.3	55.0	91	0	0	91
115 OG Red Bloodwood	5	87.2	4	95.4	0.0	0.0	95.4	NA	NA	NA	NA
116 OG Red Gum-Stringybark	12238	32.1	3923	0.1	0.2	0.0	0.3	25	0	0	25
122 OG Rough-barked Apples	2636	34.0	896	49.1	0.0	0.1	49.3	93	0	0	93
123 OG Roundleaved Gum	172	17.3	30	10.1	0.0	21.7	31.8	43	0	14	57
124 OG Roundleaved Gum-Turpentine	59	85.9	51	51.7	0.0	0.0	51.7	100	0	0	100
129 OG Smoothbarked Apple	18751	7.5	1412	81.3	1.4	12.6	95.3	80	1	15	96
130 OG Smoothbarked Apple-Sydney Peppermint-Stringybark	9517	21.1	2009	4.1	0.0	33.9	38.1	59	0	8	67
131 OG Snow Gum	4433	45.9	2035	91.7	1.6	2.2	95.5	97	0	1	97
132 OG Snow Gum -Mountain/Manna Gum	23120	29.0	6698	46.1	1.2	1.1	48.4	94	0	2	96
133 OG Snow Gum-Black Sallee	16	56.5	9	100.0	0.0	0.0	100.0	100	0	0	100
134 OG South Coast Shrubby Grey Gum	151030	7.5	11329	18.6	7.8	5.8	32.2	61	1	2	65
135 OG South Coast Tallowwood-Blue Gum	71217	14.6	10374	30.6	7.9	7.6	46.0	67	5	5	77
137 OG Southern Wet Sydney Blue Gum	41695	15.9	6613	44.6	6.1	13.2	63.9	65	4	11	80
138 OG Steel Box/Craven Grey Box	125	16.3	20	0.0	0.0	42.8	42.8	100	0	0	100
139 OG Stringybark-Apple	81300	49.1	39882	40.9	1.2	1.6	43.7	74	1	2	76
140 OG Stringybark-Mallee	665	30.2	201	92.3	0.0	1.3	93.5	98	0	0	98
142 OG Swamp Mahogany	2177	13.1	285	42.8	4.0	3.7	50.5	90	5	1	95
145 OG Sydney Peppermint-Stringybark	13778	67.0	9225	92.4	0.7	0.0	93.2	97	1	0	99
146 OG Tallowwood	746	79.3	591	50.4	1.3	0.3	52.1	64	0	0	64
147 OG Turpentine	235	21.5	51	42.0	0.0	0.0	42.0	100	0	0	100

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148 OG Very Wet New England Blackbutt-Tallowwood	2867	55.7	1596	84.4	6.9	3.5	94.7	90	5	2	97
149 OG Mallee-Peppermint mosaic	3621	33.6	1216	35.4	1.8	7.3	44.4	63	3	1	66
153 OG Wet Coastal Tallowwood-Brushbox	10245	5.2	529	26.8	1.8	9.0	37.7	40	2	2	44
154 OG Wet Flooded Gum-Tallowwood	6161	4.1	252	33.8	2.9	8.1	44.9	47	1	5	54
155 OG Wet Foothills Blackbutt-Turpentine	50264	16.5	8282	42.0	11.8	9.7	63.5	72	4	5	80
156 OG Wet New England Blackbutt-Silvertop Stringybark	15604	28.4	4437	72.3	7.9	1.3	81.5	89	2	3	94
157 OG Wet Shrubby Brushbox-Tallowwood	30589	43.2	13214	45.7	8.4	4.5	58.6	78	5	5	88
162 OG Whitetopped Box	967	27.0	261	75.0	1.7	3.8	80.4	93	2	2	96
163 OG Yellow Box-Blakely's Red Gum	2696	20.2	543	1.2	0.0	0.0	1.2	60	0	0	60
174 OG Orange Gum-Tumbledown Gum-Apple	10169	46.7	4753	2.4	1.8	0.0	4.1	2.4 [^]	1.8 [^]	0.0 [^]	4.1 [^]
175 OG Orange Gum-New England Blackbutt-Tumbledown Gum	23572	38.1	8983	1.3	4.3	0.0	5.5	43	0	0	43
176 OG Orange Gum-Ironbark	6636	18.5	1230	0.1	0.0	0.0	0.1	50	0	0	50
177 OG Outcrop Orange Gum-New England Blackbutt	3170	26.1	828	4.5	0.0	0.0	4.5	71	0	0	71
178 OG Outcrop Black Cypress-Tumbledown Gum	659	39.1	257	0.0	0.0	0.0	0.0	0	0	0	0
179 OG Yellow Box-Broad-leaved Stringybark	273	36.9	101	6.2	0.0	0.0	6.2	NA	NA	NA	NA
182 OG Apple-Black Cypress	14635	25.2	3690	1.1	0.1	0.0	1.2	39	0	0	39
183 OG Red Gum-Apple	4065	43.8	1778	84.9	0.1	0.1	85.1	99	0	0	99
184 OG Tumbledown Gum-Ironbark	160	25.3	40	0.0	0.0	0.0	0.0	NA	NA	NA	NA
186 OG Open Tumbledown Gum-Black Cypress-Orange Gum	7959	26.0	2069	1.5	0.7	0.0	2.2	45	0	0	45
189 OG Silverleaved Ironbark-Cypress	2007	28.2	565	0.0	0.0	0.0	0.0	0	0	0	0
190 OG Yellow Box-Grey Box-Red Gum	7724	21.4	1653	11.0	0.0	0.0	11.0	98	0	0	98
195 OG Apple-Manna Gum woodland	6638	31.4	2086	2.8	1.7	0.0	4.4	48	0	0	48
196 OG Broad-leaved Stringybark-Apple Box	10442	27.0	2819	3.1	0.6	0.0	3.7	56	0	0	56
197 OG Broad-leaved Stringybark	1346	23.9	322	4.7	0.0	0.0	4.7	58	0	0	58
198 OG Silvertop Stringybark	1501	26.5	397	9.2	0.0	0.0	9.2	86	0	0	86
200 OG Broad-leaved Stringybark-Ribbon Gum	7	30.3	2	47.2	0.0	0.0	47.2	NA	NA	NA	NA
202 OG Peppermint-Apple-Turpentine	36556	64.7	23654	90.5	8.5	0.3	99.3	99	0	0	99

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203 OG Grey Gum-Stringybark-Apple	37492	73.4	27511	97.4	1.5	0.0	99.0	100	0	0	100
204 OG Grey Gum - Scribbly Gum	18871	82.6	15587	99.8	0.1	0.0	99.8	100	0	0	100
205 OG Peppermint-Silvertop Ash-Stringybark	1309	67.3	881	100.0	0.0	0.0	100.0	100	0	0	100
206 OG Apple-Grey Gum-Turpentine	28264	42.6	12030	84.1	12.9	1.1	98.0	96	0	2	98
207 OG Hunter Spotted Gum-Ironbark	25740	0.1	32	11.3	38.0	45.6	94.9	97	0	0	97
208 OG Hunter Roughbarked Apple- Red Gum	8876	7.4	655	77.9	20.4	0.0	98.3	92	1	0	93
209 OG Yellow Bloodwood-Stringybark	52329	55.6	29118	96.6	1.5	0.3	98.4	99	0	0	99
210 OG Yellow Bloodwood-Ironbark	29520	49.9	14733	90.9	8.8	0.2	99.9	98	1	0	99
211 OG Apple-Turpentine	21680	69.1	14990	69.3	30.6	0.0	100.0	98	2	0	100
212 OG Yellow Bloodwood-Narrowleaved Apple	57711	65.1	37582	85.7	14.1	0.0	99.8	99	1	0	100
213 OG Stringybark-Scribbly Gum Woodland	9196	85.0	7814	99.9	0.0	0.0	99.9	100	0	0	100
214 OG Brown Bloodwood-Dwyers Redgum	1862	67.7	1261	79.4	0.0	0.0	79.4	99	0	0	99
215 OG Brown Bloodwood-Ironbark	11650	83.3	9705	99.5	0.0	0.0	99.5	100	0	0	100
216 OG Sandstone Ironbark	12427	60.8	7560	99.9	0.0	0.0	99.9	100 [^]	0	0	100 [^]
217 OG Grey Gum-Stringybark	30921	85.0	26277	99.2	0.0	0.0	99.2	100	0	0	100
218 OG Ironbark-Stringybark	15843	65.5	10373	50.4	0.0	0.0	50.4	99	0	0	99
219 OG Brown Bloodwood	8905	50.8	4521	78.7	0.0	0.0	78.7	97	0	0	97
220 OG Yellow Bloodwood-Stringybark-Narrowleaved Apple	39881	65.6	26154	84.9	15.1	0.0	100.0	99	1	0	100
221 OG Apple-Red Bloodwood-Peppermint-Turpentine	23923	59.2	14168	93.5	5.6	0.6	99.7	98	1	0	99
222 OG Stringybark-Mallee Woodland	7084	83.9	5940	99.9	0.0	0.0	99.9	100	0	0	100
223 OG Dwarf Apple Forest	20238	72.1	14583	66.6	31.3	0.0	97.9	99	1	0	100
225 OG Wyong Apple-Scribbly Gum	3768	0.7	27	0.0	0.0	100.0	100.0	0	0	100	100
226 OG Mahogany-Banksia Heath	9830	54.0	5312	97.9	2.0	0.1	100.0	99	0	0	99
227 OG Turpentine-Myrtle	15745	64.3	10115	97.8	0.7	0.5	99.1	98	0	1	100
228 OG Turpentine-Oak-Myrtle	13833	62.6	8658	82.3	0.1	0.6	83.0	98	0	1	99
229 OG Roughbarked Apple-Forest Oak	33615	52.5	17641	94.2	3.2	0.0	97.4	99	0	0	99
230 OG Watagan Blackbutt-Blue Gum	13664	4.4	605	44.0	12.3	23.4	79.7	56	12	20	87

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231 OG Watagan Blue Gum	16218	3.2	524	51.7	16.7	23.4	91.7	66	8	22	96
232 OG Watagan Spotted Gum-Ironbark-White Mahogany	8609	2.4	202	36.9	4.0	43.7	84.6	79	0	11	90
233 OG Roundleaved Gum - Turpentine	8565	22.4	1922	96.2	2.2	0.9	99.3	96 [^]	2	1	99 [^]
234 OG Grey Gum - Grey Myrtle	35600	47.8	17002	96.9	0.5	0.9	98.3	97 [^]	1	2	99
235 OG Wet Roundleaved Gum Forest	2637	73.0	1924	97.9	1.2	0.4	99.4	99	0	0	99
236 OG Bangalay-Blue Gum	14197	49.0	6961	53.2	45.7	0.0	98.9	94	5	0	99
237 OG Wollemi Manna Gum	2260	83.1	1878	100.0	0.0	0.0	100.0	100	0	0	100
238 OG Tablelands Grey Gum-Scribbly Gum	210	92.4	194	100.0	0.0	0.0	100.0	100	0	0	100
239 OG Wollemi Roughbarked Apple	6021	34.4	2073	79.0	20.7	0.0	99.7	97	0	0	97
240 OG Roughbarked Apple-Redgum	316	28.3	89	89.9	10.1	0.0	100.0	95	5	0	100
241 OG Ironbark-Redgum	2550	31.0	789	21.9	0.0	0.0	21.9	95	0	0	95
242 OG Hunter Grey Box	12040	48.6	5853	74.1	0.7	0.0	74.8	99	0	0	99
243 OG Grey Gum-Mugga Ironbark	2988	57.4	1716	99.9	0.0	0.0	99.9	100 [^]	0	0	100 [^]
244 OG White Box-Grey Gum	1818	34.5	627	83.5	1.2	0.0	84.6	98	0	0	98
245 OG Grey Box	1024	50.3	515	100.0	0.0	0.0	100.0	100 [^]	0	0	100 [^]
246 OG Scribbly Gum-Redgum Woodland	3141	44.3	1393	100.0	0.0	0.0	100.0	100 [^]	0	0	100 [^]
247 OG Coastal Bastard Mahogany Forest	18002	14.9	2677	70.2	27.1	2.7	100.0	97	0	1	98
248 OG Apple-Forest Oak	7508	24.8	1863	96.5	2.6	0.6	99.7	97	0	1	98
249 OG White Box-Ironbark-Red Gum	26170	19.0	4971	44.3	0.4	0.0	44.7	97	0	0	97
250 OG Banksia Heath-Scribbly Gum-Apple	10795	0.9	94	20.1	63.0	15.0	98.1	84	0	13	97

NOTES ACCOMPANYING TABLE 2

- The figures shown in this table are based on modelled information mapped at a scale of 1:25 000 derived during the pre-1750 analysis of vegetation types in the Upper North East and Lower North East regions, and are therefore only approximate.
- Old growth Forest Ecosystems are referred to as Candidate old growth because time constraints and availability of data sets did not allow for the full assessment of values characteristic of old growth forests (eg. some structural, compositional and functional characteristics and aesthetic values). Candidate old growth forest was identified primarily by aerial photographic interpretation, and information on disturbance from logging and fire. Further information is available in the report *Old-Growth Forest Related Projects – UNE / LNE CRA Regions*. National Parks and Wildlife Service (Part of Project NA28/EHFebruary 1999).
- Informal Reserve includes Special Management Zones that are > 40ha and > 200m wide, or that are adjacent to Dedicated Reserves.

d. Tabulated prescriptions include those elements of the Special Management Zone that, due to the size or shape, do not meet the Informal Reserve Category outlined above, and the Harvesting Exclusions Zone.

e. Source: compiled by ABARES from RFA data, including data from CRA reports, IFOAs, NPWS and FCNSW

^ The figure supplied by ABARES has been amended by DPI to address inconsistencies resulting from changes in spatial analysis systems and processes over time.

Wilderness

16 84% of Wilderness, as defined in the JANIS Reserve Criteria (ie National Wilderness Inventory (Lesslie and Maslen 1995) minimum rating 12 in patches greater than 8000ha), in the Lower North East region is protected within Dedicated Reserves under this Agreement. Of the Wilderness outside Dedicated Reserves, 60% is on freehold or leasehold land. Informal Reserves provide a level of additional protection for Wilderness.

Additional Protection for Forest Ecosystems

17 Forestry Operations are prohibited from rare non-commercial Forest Ecosystems by the Integrated Forestry Operations Approval applicable to the Lower North East region. These Forest Ecosystems include:

30	Swamp mahogany
31	Paperbark
32	Swamp Oak
51	Dunn's white gum
52	Round-leaved gum
63	Woollybutt
98	Dorrigo white gum
101	Blue mountain ash
105	Smoothbarked-apple
119	Scribbly gum – Bloodwood
129	Rough-barked apple
130	Red bloodwood
131	Peppermint - Mountain / Manna gum

17A Forestry Operations are prohibited from Threatened Ecological Communities (TECs) by the Integrated Forestry Operations Approval applicable to the Lower North East region.

Rainforest Protection

18 Forestry Operations are prohibited from all rainforest, including a 20m buffer around any areas identified as RN 17 forest types 10 to 15, by the Integrated Forestry Operations Approval applicable to the North East Region.

Old Growth forest

18B Forestry Operations are prohibited from all Old Growth forest in the Lower North East region by the Integrated Forestry Operations Approval.

Management of CAR Values

19 Management plans for Dedicated Reserve and Informal Reserve elements of the CAR Reserve System will clearly identify the CAR Values and the actions being taken in each reserve to appropriately manage and conserve those values.

- 20 As an integral component of managing CAR values New South Wales agrees to implement systematic and target fauna and flora surveys in Dedicated Reserves and Informal Reserves to complement surveys carried out under the IFOAs. The extent of survey work undertaken will be subject to available funding.

Protections on Public Land subject to Plantation authorisation

- 21 For Plantations on Public Land, the Plantations and Reafforestation (Code) Regulation 2001 (NSW), contains standards for the protection of soil and water, Biodiversity, and places, objects or items of heritage significance.

ATTACHMENT 2
(clauses, 54A, 56, 66, 66A and Attachments 1(A) and 1(B))

PRIVATE LAND CONSERVATION

- 1 Both Parties agree that CAR Values on Private Land are complementary to the CAR Reserve System identified on Public Land.
- 2 Both Parties agree that in complementing the CAR Reserve System on Public Land, conservation on Private Land can only be voluntary.
- 2A Both Parties recognise that for Private Land to be included in the CAR Reserve System, the conservation mechanism applied must be legally binding and in-perpetuity.
- 3 Both Parties agree that the following objectives should apply to the voluntary conservation of CAR Values on Private Land:
 - to seek to maximise protection of agreed CAR Values;
 - that the processes are clearly understood by the community;
 - that real partnerships are developed;
 - that the outcomes will provide benefits for all parties; and
 - that actions must be strategic and integrated.
- 4 Both Parties agree that the most important elements in any mechanism designed to achieve conservation management on private forested land in the Upper North East and Lower North East regions are:
 - effectiveness of the outcomes;
 - ownership of the process;
 - simplicity of the process;
 - clarity of roles of the participants;
 - certainty of the outcomes;
 - flexibility in the approaches adopted; and
 - equity between participants.
- 5 Both Parties agree that a range of conservation mechanisms are applicable to Private Land. These may include mechanisms which are legally binding and in-perpetuity, or non-legally binding and/or fixed term, such as:
 - voluntary options under the Conservation Partners Program

- landholder initiated agreements;
 - noncontractual voluntary agreements;
 - fee for service;
 - voluntary acquisition;
 - fixed term common law contract;
 - in perpetuity common law contract;
 - community grants;
 - property management plans;
 - voluntary land and water management plans; and
 - other mechanisms that may be developed to suit individual landholders or situations.
- 6 Both Parties agree that capacity building within the private landholder estate to support individual and community decision making are prerequisites to the voluntary processes outlined above.
- 7 Consistent with clause 58, priority Forest Ecosystems for voluntary conservation on Private Land have been listed and prioritised for the Upper North East region in Table 1 and the Lower North East region in Table 2.
- 8 The areas of priority Forest Ecosystems and Non-Forest Ecosystems in the CAR Reserve System on Private Land as at June 2016 are provided in Table 3 and Table 4.

Table 1 Private Land priorities for the Upper North East CAR Reserve System

Priority for voluntary protection of Forest Ecosystems on Private Land		
<i>Forests</i>		
2 Alpine Gum	73 Lowland Red Gum	143 Swamp Oak
15 Brown Barrell-Gum	74 Lowlands Scribbly Gum	145 Sydney Peppermint-Stringybark
17 Candlebark	79 Manna Gum-Stringybark	149 Mallee-Peppermint mosaic
19 Central Mid Elevation Sydney Blue Gum	80 Manna Gum	154 Wet Flooded Gum-Tallowwood
21 Lowlands Grey Box	81 Messmate	163 Yellow Box-Blakely's Red Gum
22 Coast Cypress Pine	85 Mixed Moist Hardwood	168 Rainforest
24 Clarence Lowlands Spotted Gum	87 Mixed Tableland Stringybark-Gum OpenForest	175 Orange Gum-New England Blackbutt-Tumbledown Gum
25 Coast Range Spotted Gum-Blackbutt	93 Montane Stringybark-Gum	176 Orange Gum-Ironbark
30 Diehard Stringybark-New England Blackbutt	100 Northern Grassy Sydney Blue Gum	177 Outcrop Orange Gum-New England Blackbutt
31 Dorrig White Gum	112 Paperbark	179 Yellow Box-Broad-leaved Stringybark
36 Dry Grassy Tallowwood-Grey Gum	114 Peppermint-Mountain/Manna Gum	183 Red Gum-Apple
45 Dunns White Gum	116 Red Gum-Stringybark	186 Open Tumbledown Gum-Black Cypress-Orange Gum
47 Escarpment Redgum	119 Richmond Range Spotted Gum-Box	190 Yellow Box-Grey Box-Red Gum
50 Wet Bangalow-Brushbox	120 River Oak	195 Apple-Manna Gum woodland

61 Grey Box-Ironbark	123 Roundleaved Gum	196 Broad-leaved Stringybark-Apple Box
62 Grey Box-Northern Grey Gum	126 Sandstone Spotted Gum-Blackbutt	197 Broad-leaved Stringybark
68 High Elevation Messmate-Brown Barrell	132 Snow Gum -Mountain/Manna Gum	198 Silvertop Stringybark
71 Ironbark	138 Steel Box/Craven Grey Box	200 Broad-leaved Stringybark-Ribbon Gum
72 Low Relief Coastal Blackbutt	142 Swamp Mahogany	

<i>Non-Forest</i>		
5 Banksia	77 Mangrove	199 Riparian Shrubland
18 Casuarina Woodland	96 Natural Grassland	
66 Herbfield and Fjaeldmark	141 Swamp	

Notes Accompanying Table 1

- The Forest Ecosystems listed and prioritised for the Upper North East region in Table 1 have been identified as priorities for voluntary conservation on Private Land, based on the following criteria:
 - Identification by expert panels convened during the UNE and LNE CRA as Forest Ecosystems of concern on Private Land;
 - Ecosystems with 100% target set and not met, that have extant occurrences on Private Land;
 - Ecosystems with 60% target set and not met, that are ranked as highly vulnerable (CRA expert panel vulnerability rankings 1 and 2, based on key threatening processes) or are more than 50% cleared, and have more than 50% of their occurrence on Private Land;
 - Ecosystems with 15% target set and not met, that are ranked as highly vulnerable or are more than 50% cleared, and have more than 50% of their occurrence on Private Land.
- It should be noted that these are priorities only for protection by voluntary conservation mechanisms.

Table 1A Upper North East RFA Forest Ecosystems

Forest Ecosystems	Total Ecosystem Area (hectares)	Area in CAR Reserve System on Private Land (hectares)	Proportion in CAR Reserve System on Private Lands as at 30 June 2016 (%)
2 Alpine Gum	1,329	20	2
15 Brown Barrell-Gum	1,004	14	1
17 Candlebark	1,961	30	2
19 Central Mid Elevation Sydney Blue Gum	6,786	46	1
21 Lowlands Grey Box	23,913	252	1
22 Coast Cypress Pine	82	0	0
24 Clarence Lowlands Spotted Gum	174,787	1,435	1
25 Coast Range Spotted Gum-Blackbutt	743	38	5
30 Diehard Stringybark-New England Blackbutt	1062	1	0.1
31 Dorrigo White Gum	3385	0	0
36 Dry Grassy Tallowwood-Grey Gum	5564	56	1
45 Dunns White Gum	975	2	0.2
47 Escarpment Redgum	28,206	96	0.3
50 Wet Bangalow-Brushbox	10,098	123	1
61 Grey Box-Ironbark	131	0	0
62 Grey Box-Northern Grey Gum	509	0	0
68 High Elevation Messmate-Brown Barrell	329	0	0
71 Ironbark	7,713	51	1
72 Low Relief Coastal Blackbutt	859	0	0
73 Lowland Red Gum	57,016	711	1
74 Lowlands Scribbly Gum	3,496	74	2
79 Manna Gum-Stringybark	90	1	1
80 Manna Gum	1,287	7	1
81 Messmate	6,309	244	4
85 Mixed Moist Hardwood	346	1	0.3
87 Mixed Tableland Stringybark-Gum OpenForest	4,694	79	2
93 Montane Stringybark-Gum	28,687	379	1

Forest Ecosystems	Total Ecosystem Area (hectares)	Area in CAR Reserve System on Private Land (hectares)	Proportion in CAR Reserve System on Private Lands as at 30 June 2016 (%)
100 Northern Grassy Sydney Blue Gum	9,245	8	0.1
112 Paperbark	28,577	701	2
114 Peppermint-Mountain/Manna Gum	12,829	292	2
116 Red Gum-Stringybark	27,128	27	0.1
119 Richmond Range Spotted Gum-Box	24,814	50	0.2
120 River Oak	3,221	2	0.1
123 Roundleaved Gum	17,975	167	1
126 Sandstone Spotted Gum-Blackbutt	4,808	66	1
132 Snow Gum - Mountain/Manna Gum	21,305	86	0.4
138 Steel Box/Craven Grey Box	427	2	0.5
142 Swamp Mahogany	578	42	7
143 Swamp Oak	2,883	27	1
145 Sydney Peppermint-Stringybark	255	1	0.4
149 Mallee-Peppermint mosaic	1,618	32	2
154 Wet Flooded Gum-Tallowwood	9,317	166	2
163 Yellow Box-Blakely's Red Gum	7,245	57	1
168 Rainforest	159,211	748	0.5
175 Orange Gum-New England Blackbutt-Tumbledown Gum	19,304	464	2
176 Orange Gum-Ironbark	34,295	57	0.2
177 Outcrop Orange Gum-New England Blackbutt	7,945	58	1
179 Yellow Box-Broad-leaved Stringybark	3,859	6	0.2
183 Red Gum-Apple	592	0	0
186 Open Tumbledown Gum-Black Cypress-Orange Gum	10,593	122	1
190 Yellow Box-Grey Box-Red Gum	21,273	42	0.2
195 Apple-Manna Gum woodland	16,214	645	4
196 Broad-leaved Stringybark-Apple Box	19,948	369	2
197 Broad-leaved Stringybark	1,643	21	1
198 Silvertop Stringybark	1,200	13	1
200 Broad-leaved Stringybark-Ribbon Gum	650	0	0
NON-FOREST ECOSYSTEMS			
5 Banksia	N/A	N/A	N/A
18 Casuarina Woodland	43	0	0
66 Herbfield and Fjaeldmark	N/A	N/A	N/A
77 Mangrove	734	0	0
96 Natural Grassland	N/A	N/A	N/A
141 Swamp	N/A	N/A	N/A
199 Riparian Shrubland	N/A	N/A	N/A

Table 2 Private Land priorities for the Lower North East CAR Reserve System

Priority for voluntary protection of Forest Ecosystems

<i>Forests</i>		
2 Alpine Gum	87 Mixed Tableland Stringybark-Gum Open Forest	168 Rainforest
3 Baileys Stringybark	89 Moist Foothills Spotted Gum	174 Orange Gum-Tumbledown Gum-Apple
7 Barrington Moist Blue Gum-White Mahogany	90 Moist Messmate-Gum	175 Orange Gum-New England Blackbutt-Tumbledown Gum
8 Barrington Wet New England Blackbutt-Blue Gum	92 Moist Shrubby Stringybark-Gum	176 Orange Gum-Ironbark
11 Blackbutt-Sydney Peppermint-Smoothbarked Apple	93 Montane Stringybark-Gum	178 Outcrop Black Cypress-Tumbledown Gum
14 Brown Barrell	97 Needlebark Stringybark-Large Fruited Blackbutt	177 Outcrop Orange Gum-New England Blackbutt
17 Candlebark	99 New England Stringybark-Blakelys Red Gum	179 Yellow Box-Broad-leaved Stringybark
19 Central Mid Elevation Sydney Blue Gum	105 Nymboidea Tallowwood-Turpentine	182 Apple-Black Cypress
21 Lowlands Grey Box	112 Paperbark	184 Tumbledown Gum-Ironbark
26 Coastal Flooded Gum	113 Peppermint	186 Open Tumbledown Gum-Black Cypress-Orange Gum
28 Cool Moist Messmate	114 Peppermint-Mountain/Manna Gum	189 Silverleaved Ironbark-Cypress
31 Dorrigio White Gum	116 Red Gum-Stringybark	190 Yellow Box-Grey Box-Red Gum
32 Dry Foothills Blackbutt-Turpentine	117 Red Mahogany	195 Apple-Manna Gum woodland
33 Dry Foothills Spotted Gum	120 River Oak	196 Broad-leaved Stringybark-Apple Box
34 Dry Grassy Blackbutt-Tallowwood	122 Rough-barked Apples	197 Broad-leaved Stringybark
41 Dry Open New England Blackbutt	123 Roundleaved Gum	198 Silvertop Stringybark
47 Escarpment Redgum	124 Roundleaved Gum-Turpentine	200 Broad-leaved Stringybark-Ribbon Gum
48 Escarpment Scribbly Gum-Apple	132 Snow Gum -Mountain/Manna Gum	207 Hunter Spotted Gum-Ironbark
54 Grey Box-Red Gum-Grey Ironbark	134 South Coast Shrubby Grey Gum	208 Hunter Roughbarked Apple- Red Gum
56 Granite Mallee	135 South Coast Tallowwood-Blue Gum	224 Coastal Apple-Stringybark-Scribbly Gum
57 Highland Granite Stringybarks	139 Stringybark-Apple	225 Wyong Apple-Scribbly Gum
58 Gorge Grey Gum	142 Swamp Mahogany	232 Watagan Spotted Gum-Ironbark-White Mahogany
70 High Elevation Open Spotted Gum	143 Swamp Oak	240 Roughbarked Apple-Redgum
72 Low Relief Coastal Blackbutt	146 Tallowwood	241 Ironbark-Redgum
73 Lowland Red Gum	149 Mallee-Peppermint mosaic	247 Coastal Bastard Mahogany Forest
79 Manna Gum-Stringybark	153 Wet Coastal Tallowwood-Brushbox	249 White Box-Ironbark-Red Gum
80 Manna Gum	154 Wet Flooded Gum-Tallowwood	250 Banksia Heath-Scribbly Gum-Apple
81 Messmate	162 Whitetopped Box	
82 Messmate-Mountain Gum Forest	163 Yellow Box-Blakely's Red Gum	

<i>Non-Forest</i>		
5 Banksia	64 Heath	125 Saltbush
18 Casuarina Woodland	77 Mangrove	199 Riparian Shrubland

Notes Accompanying Table 2

- The Forest Ecosystems listed and prioritised for the Lower North East region in Table 2 have been identified as priorities for voluntary conservation on Private Land, based on the following criteria:
 - Identification by expert panels convened during the UNE and LNE CRA as forest ecosystems of concern on Private Land;
 - Ecosystems with 100% target set and not met, that have extant occurrences on Private Land;
 - Ecosystems with 60% target set and not met, that are ranked as highly vulnerable (CRA expert panel vulnerability rankings 1 and 2, based on key threatening processes) or are more than 50% cleared, and have more than 50% of their occurrence on Private Land;
 - Ecosystems with 15% target set and not met, that are ranked as highly vulnerable or are more than 50% cleared, and have more than 50% of their occurrence on Private Land.
- It should be noted that these are priorities only for protection by voluntary conservation mechanisms.

Table 2A Lower North East RFA Forest Ecosystems

Forest Ecosystems	Total Ecosystem Area (hectares)	Area in CAR Reserve on Private Land (hectares)	Proportion in CAR reserves on Private Lands as at 30 June 2016 (%)
2 Alpine Gum	3,971	8	0.2
3 Baileys Stringybark	285	0	0
7 Barrington Moist Blue Gum-White Mahogany	32,659	121	0.4
8 Barrington Wet New England Blackbutt-Blue Gum	45,911	210	0.5
11 Blackbutt-Sydney Peppermint-Smoothbarked Apple	1,382	17	1
14 Brown Barrell	814	0	0
17 Candlebark	20	0	0
19 Central Mid Elevation Sydney Blue Gum	40,971	232	1
21 Lowlands Grey Box	1,219	0	0
26 Coastal Flooded Gum	8,753	58	1
28 Cool Moist Messmate	6,467	28	0.4
31 Dorriggo White Gum	1,123	16	1
32 Dry Foothills Blackbutt-Turpentine	33,592	125	0.4
33 Dry Foothills Spotted Gum	17,688	99	1
34 Dry Grassy Blackbutt-Tallowwood	59,390	302	1
41 Dry Open New England Blackbutt	32,932	202	1
47 Escarpment Redgum	20,498	103	1
48 Escarpment Scribbly Gum-Apple	7,574	23	0.3
54 Grey Box-Red Gum-Grey Ironbark	19,838	111	1
56 Granite Mallee	4,025	30	1
57 Highland Granite Stringybarks	924	11	1
58 Gorge Grey Gum	51	0	0
70 High Elevation Open Spotted Gum	12	0	0
72 Low Relief Coastal Blackbutt	10,894	5	0
73 Lowland Red Gum	366	0	0
79 Manna Gum-Stringybark	632	1	0.2
80 Manna Gum	3,852	9	0.2
81 Messmate	20,291	159	1
82 Messmate-Mountain Gum Forest	8,537	24	0.3
87 Mixed Tableland Stringybark-Gum Open Forest	7,897	65	1
89 Moist Foothills Spotted Gum	7,929	81	1
90 Moist Messmate-Gum	78	2	3
92 Moist Shrubby Stringybark-Gum	423	5	1
93 Montane Stringybark-Gum	2,567	2	0.1
97 Needlebark Stringybark-Large Fruited Blackbutt	502	3	1
99 New England Stringybark-Blakelys Red Gum	28,245	58	0.2
105 Nymboida Tallowwood-Turpentine	248	0	0
112 Paperbark	12,866	18	0.1
113 Peppermint	13,115	45	0.3
114 Peppermint-Mountain/Manna Gum	5,736	43	1
116 Red Gum-Stringybark	12,238	11	0.1
117 Red Mahogany	65	0	0
120 River Oak	922	0	0
122 Rough-barked Apples	2,636	36	1
123 Roundleaved Gum	172	2	1
124 Roundleaved Gum-Turpentine	8,624	4	0

Forest Ecosystems	Total Ecosystem Area (hectares)	Area in CAR Reserve on Private Land (hectares)	Proportion in CAR reserves on Private Lands as at 30 June 2016 (%)
132 Snow Gum - Mountain/Manna Gum	23,120	69	0.3
134 South Coast Shrubby Grey Gum	151,030	1,035	1
135 South Coast Tallowwood-Blue Gum	71,217	457	1
139 Stringybark-Apple	81,300	434	1
142 Swamp Mahogany	2,177	12	1
143 Swamp Oak	4,868	13	0.3
146 Tallowwood	746	8	1
149 Mallee-Peppermint mosaic	3,621	35	1
153 Wet Coastal Tallowwood-Brushbox	10,245	51	0.5
154 Wet Flooded Gum-Tallowwood	6,161	18	0.3
162 Whitetopped Box	967	24	2
163 Yellow Box-Blakely's Red Gum	2,696	10	0.4
168 Rainforest	256,326	778	0.3
174 Orange Gum - Tumbledown Gum - Apple	10,169	14	0.1
175 Orange Gum - New England Blackbutt - Tumbledown Gum	23,572	112	0.5
176 Orange Gum - Ironbark	6,636	7	0.1
178 Outcrop Black Cypress - Tumbledown Gum	659	0	0
177 Outcrop Orange Gum - New England Blackbutt	3,170	19	1
179 Yellow Box - Broad-leaved Stringybark	273	0	0
182 Apple - Black Cypress	14,635	164	1
184 Tumbledown Gum - Ironbark	160	0	0
186 Open Tumbledown Gum - Black Cypress - Orange Gum	7,959	51	1
189 Silverleaved Ironbark - Cypress	2,007	0	0
190 Yellow Box - Grey Box - Red Gum	7,724	4	0.1
195 Apple - Manna Gum woodland	6,638	14	0.2
196 Broad-leaved Stringybark - Apple Box	10,442	54	1
197 Broad-leaved Stringybark	1,346	6	0.4
198 Silvertop Stringybark	1,501	6	0.4
200 Broad-leaved Stringybark - Ribbon Gum	7	0	0
207 Hunter Spotted Gum-Ironbark	25,740	227	1
208 Hunter Roughbarked Apple-Red Gum	8,876	61	1
224 Coastal Apple-Stringybark-Scribbly Gum	1,070	0	0
225 Wyong Apple-Scribbly Gum	3,768	1	0
232 Watagan Spotted Gum-Ironbark-White Mahogany	8,609	55	1
240 Roughbarked Apple-Redgum	316	0	0
241 Ironbark-Redgum	2,550	0	0
247 Coastal Bastard Mahogany Forest	18,002	38	0.2
249 White Box-Ironbark-Red Gum	26,170	15	0.1
250 Banksia Heath-Scribbly Gum-Apple	10,795	9	0.1
NON-FOREST ECOSYSTEMS			
5 Banksia	4,196	18	0.4

18 Casuarina Woodland (Now listed under Forest System in latest ABARES data)	362	0	0
64 Heath	14,286	36	0.3
77 Mangrove (Now listed under Forest System in latest ABARES data)	1,001	0	0
125 Saltbush	200	0	0
199 Riparian Shrubland	1,172	6	1

Rainforest Protection

- 9 Rainforest is protected from Forestry Operations in accordance with the Private Native Forestry Code of Practice.

Old Growth forest

- 10 Old Growth forest is protected from Forestry Operations in accordance with the Private Native Forestry Code of Practice.

Additional Protection for Forest Ecosystems

- 11 Under the Private Native Forestry Code of Practice, Forestry Operations in and adjacent to specified landscape features must comply with requirements to protect these features. This includes requirements to protect threatened ecological communities, endangered populations, vulnerable ecological communities, wetlands, heathland, rocky outcrops and steep slopes.
- 12 The Private Native Forestry Code of Practice contains standards for the protection of threatened ecological communities and threatened species.

Protections on Private Land subject to Plantation authorisation

- 13 For Plantations on Private Land, the Plantations and Reafforestation (Code) Regulation 2001 (NSW), contains standards for the protection of soil and water, biodiversity, and places, objects or items of heritage significance.

LISTED SPECIES AND COMMUNITIES

- 1 Both Parties recognise the range of mechanisms to conserve the habitat of Listed Species and Communities in both the Upper North East and Lower North East regions. These include: (i) protection within the CAR Reserve System; (ii) protection of key habitat components using the Integrated Forestry Operations Approval; (iii) protection of key habitats such as rainforest, heaths, swamps and other wet communities, rocky outcrops and threatened ecological communities; and (iv) Biodiversity Conservation Programs for species and communities listed under the *Biodiversity Conservation Act 2016* (NSW) and the development, maintenance and implementation of relevant Statutory Conservation Planning Documents under the *Fisheries Management Act 1994* (NSW) and for species, populations and communities listed under the EPBC Act. Key species are protected by a combination of reservation and prescription.
- 2 Priorities at the signing of the North East RFA for developing Recovery Plans for threatened forest dependent fauna and flora for the first five years of this Agreement are provided in Table 1. Parties note that the list at Table 1 is indicative only. These priorities may change and new priorities may arise in response to additional information, funding etc.
- 3 Where Statutory Conservation Planning Documents under the *Biodiversity Conservation Act 2016* (NSW) or the *Fisheries Management Act 1994* (NSW) meet the requirements of the EPBC Act, the Commonwealth will consider adopting them under the EPBC Act.

Threatening Processes

- 4 Threatening Processes are those listed as a key threatening process under the *Biodiversity Conservation Act 2016* (NSW), *Fisheries Management Act 1994* (NSW) and the EPBC Act in recognition that the process adversely affects or may threaten the survival, abundance or evolutionary development of a native species or ecological community. Threatening Processes are managed under the Biodiversity Conservation Program or with Threat Abatement Plans under the EPBC Act or other coordinated programs across land tenure. Some Threatening Processes affecting forests are mitigated by the settings in the Integrated Forestry Operations Approval applicable to the Upper North East and Lower North East regions.

Table 1: Priority species for preparation of Recovery Plans (as at 2000 and showing June 2018 status).

Scientific name	Common Name	NSW Status	National Status	NSW Management Stream under the Biodiversity Conservation Program ¹	Current status of national recovery plans and conservation advice
<i>Acacia baueri baueri</i>	Tiny wattle	-	Delisted	N/A	N/A
<i>Acacia bynoeana</i>	Bynoe wattle	Endangered	Vulnerable	Data deficient	Conservation Advice made 2013
<i>Acacia courtii</i>	Northern brother wattle	Vulnerable	Vulnerable	Site-managed	National Plan adopted in 2010 and in force; Conservation Advice made 2008
<i>Acacia macnuttiana</i>	McNutt's wattle	Vulnerable	Vulnerable	Keep watch	Conservation Advice made 2008
<i>Acacia pubifolia</i>	Velvet wattle	Endangered	Vulnerable	Site-managed	Conservation Advice made 2008
<i>Acacia pycnostachya</i>	Bolivia wattle	Vulnerable	Vulnerable	Site-managed	Conservation Advice made 2014
<i>Acacia ruppii</i>	Rupp's wattle	Endangered	Endangered	Site-managed	National recovery plan adopted in 2010 and in force
<i>Acronychia littoralis</i>	Scented Acronychia	Endangered	Endangered	Site-managed	Conservation Advice made 2008
<i>Allocasuarina defungens</i>	Dwarf heath casuarina	Endangered	Endangered	Site-managed	Conservation Advice made 2008
<i>Allocasuarina simulans</i>	Nabiac casuarina	Vulnerable	Vulnerable	Site-managed	Conservation Advice made 2008
<i>Almaleea cambagei</i>	Torrington pea	Endangered	Vulnerable	Data deficient	Conservation Advice made 2008
<i>Amyema scandens</i>		Endangered	Endangered	Site-managed	Conservation Advice made 2008

Scientific name	Common Name	NSW Status	National Status	NSW Management Stream under the Biodiversity Conservation Program ¹	Current status of national recovery plans and conservation advice
<i>Angophora robur</i>	Sandstone roughbarked apple	Vulnerable	Vulnerable	Keep watch	National recovery plan adopted in 2010 and in force; Conservation Advice made 2008
<i>Arthraxon hispidus</i>	Hairy-joint grass	Vulnerable	Vulnerable	Keep watch	Conservation Advice made 2008
<i>Asperula asthenes</i>	Trailing woodruff	Vulnerable	Vulnerable	Site-managed	Conservation Advice made 2008
<i>Austromyrtus fragrantissima</i>	Sweet Myrtle; Small-leaved Myrtle	Endangered	Endangered	Site-managed	National recovery plan adopted in 2010
<i>Baloghia marmorata</i>	Marbled balogia	Vulnerable	Vulnerable	Site-managed	Conservation Advice made 2008
<i>Bertya ingramii</i>	Narrow-leaved bertya	Endangered	Endangered	Data deficient	National recovery plan adopted in 2010; Conservation Advice made 2008
<i>Boronia granitica</i>	Granite boronia	Endangered	Endangered	Keep watch	National recovery plan adopted in 2004 and in force; Conservation Advice made 2016
<i>Bosistoa selwynii</i>	Three-leaved bosistoa	Vulnerable	Vulnerable	Partnership	Conservation Advice made 2008
<i>Bosistoa transversa</i> (now included in <i>Bosistoa selwynii</i>)		-			
<i>Bothriochloa biloba</i>		-	Delisted	N/A	N/A
<i>Bulbophyllum globuliforme</i>	Miniature moss-orchid	Vulnerable	Vulnerable	Keep watch	Conservation Advice made 2008

Scientific name	Common Name	NSW Status	National Status	NSW Management Stream under the Biodiversity Conservation Program¹	Current status of national recovery plans and conservation advice
<i>Burhinus grallarius</i>	Bush Stone-curlew	Endangered	Not listed under the EPBC Act	Landscape	-
<i>Cadellia pentastylis</i>	Ooline	Vulnerable	Vulnerable	Keep watch	Conservation Advice made 2008
<i>Callitris oblonga</i>	Pigmy Cypress-pine	Endangered	Vulnerable	Site-managed	National recovery plan adopted in 2010 and in force; Conservation Advice made 2008
<i>Caretta caretta</i>	Loggerhead Turtle	Endangered	Endangered	Landscape	National recovery plan made in 2017 and in force
<i>Chelonia mydas</i>	Green Turtle	Vulnerable	Vulnerable	Landscape	National recovery plan made in 2017 and in force
<i>Clematis fawcettii</i>	Northern Clematis	Vulnerable	Vulnerable	Keep watch	Conservation Advice made 2008
<i>Corchorus cunninghamii</i>	Native jute	Endangered	Endangered	Site-managed	Conservation Advice made 2014
<i>Corokia whiteana</i>	Corokia	Vulnerable	Vulnerable	Keep watch	Conservation Advice made 2008
<i>Cryptocarya foetida</i>	Stinking Cryptocarya	Vulnerable	Vulnerable	Site-managed	Conservation Advice made 2008
<i>Cyclopsitta diophthalma coxeni</i>	Coxen's Double-eyed Fig Parrot	Critically Endangered	Endangered	Landscape	National recovery plan adopted in 2003 and in force; Conservation Advice made 2016
<i>Cynanchum elegans</i>	White-flowered Wax Plant	Endangered	Endangered	Keep watch	Conservation Advice made 2008
<i>Dasyornis brachypterus</i>	Eastern Bristlebird	Endangered	Endangered	Site-managed	National recovery plan adopted in 2014 and in force

Scientific name	Common Name	NSW Status	National Status	NSW Management Stream under the Biodiversity Conservation Program ¹	Current status of national recovery plans and conservation advice
<i>Dasyurus viverrinus</i>	Eastern Quoll	Endangered	Endangered	Data deficient	Conservation Advice made 2015
<i>Davidsonia pruriens</i> var. <i>jerseyana</i>	Davidson's Plum	Endangered	Endangered, listed under the EPBC Act as <i>Davidsonia jerseyana</i>	Site-managed	Conservation Advice made 2015
<i>Davidsonia</i> sp. A Mullumbimby-Currumbin Ck	Davidson's Plum	Endangered	Endangered, listed under the EPBC Act as <i>Davidsonia johnsonii</i>	Site-managed	National recovery plan adopted in 2006 and in force; Conservation Advice made 2016
<i>Dermochelys coriacea</i>	Leatherback Turtle	Vulnerable	Endangered	Landscape	National recovery plan made in 2017 and in force; Conservation Advice made 2008
<i>Desmodium acanthocladum</i>	Thorny Pea	Vulnerable	Vulnerable	Site-managed	Conservation Advice made 2008
<i>Dichanthium setosum</i>	Bluestem	Vulnerable	Vulnerable	Data deficient	Conservation Advice made 2008
<i>Dichelachne parva</i>			Delisted	N/A	N/A
<i>Digitaria porrecta</i>	Finger panic grass	Endangered	Delisted	Data deficient	-
<i>Diomedea exulans</i>	Wandering Albatross	Endangered	Vulnerable	Landscape	National recovery plan made in 2011 and in force
<i>Diospyros mabacea</i>	Red-fruited Ebony; Silky Persimmon	Endangered	Endangered	Site-managed	National recovery plan adopted 2010 and in force
<i>Diploglottis campbellii</i>	Small-leaved Tamarind	Endangered	Endangered	Site-managed	National recovery plan adopted 2010 and in force

Scientific name	Common Name	NSW Status	National Status	NSW Management Stream under the Biodiversity Conservation Program ¹	Current status of national recovery plans and conservation advice
<i>Diuris pedunculata</i>	Small Snake Orchid	Endangered	Endangered	Data deficient	Conservation Advice made 2014
<i>Diuris venosa</i>	Veined Doubletail	Vulnerable	Vulnerable	Site-managed	Conservation Advice made 2008
<i>Elaeocarpus sp. Rocky Creek</i>	Minyon quandong	Endangered	Endangered, listed under the EPBC Act as <i>Elaeocarpus sedenarius</i>	Site-managed	National recovery plan adopted in 2004 and in force; Conservation Advice made 2016
<i>Elaeocarpus williamsianus</i>	Hairy Quandong	Endangered	Endangered	Site-managed	National recovery plan adopted in 2010 and in force; Conservation Advice 2008
<i>Myuchelys georgesi</i>	Bellinger River Snapping Turtle	Critically Endangered	Critically Endangered, listed as <i>Wollumbinia georgesi</i> in the EPBC Act	Site-managed	Conservation Advice made 2016
<i>Endiandra floydii</i>	Crystal Creek walnut	Endangered	Endangered	Site-managed	National recovery plan adopted in 2010 and in force
<i>Endiandra hayesii</i>	Rusty rose walnut	Endangered	Vulnerable	Site-managed	National recovery plan adopted in 2010 and in force; Conservation Advice made 2008
<i>Eriocaulon australasicum</i>	Austral pipewort	Endangered	Endangered	Partnership	National recovery plan adopted in 2010 and in force

Scientific name	Common Name	NSW Status	National Status	NSW Management Stream under the Biodiversity Conservation Program ¹	Current status of national recovery plans and conservation advice
<i>Eriostemon ericifolius</i>		-	Vulnerable, listed under the EPBC Act as <i>Philotheca ericifolia</i>	N/A	Conservation Advice made 2008
<i>Erythranthera pumila</i>	Feldmark grass	Vulnerable	Vulnerable, listed under the EPBC Act as <i>Rytidosperma pumilum</i>	Site-managed	National recovery plan adopted in 2007 and in force; Conservation Advice made 2016
<i>Erythrorchis radiatus</i>	Red Goshawk	Critically Endangered	Vulnerable	Landscape	National recovery plan adopted in 2012 and in force; Conservation Advice made 2015
		-			
<i>Eucalyptus caleyi ovoidenii</i>	Ovenden's ironbark	Vulnerable	Vulnerable	Keep watch	Conservation Advice made 2008
<i>Eucalyptus camfieldii</i>	Camfield's Stringybark	Vulnerable	Vulnerable	Site-managed	Conservation Advice made 2008
<i>Eucalyptus glaucina</i>	Slaty Red Gum	Vulnerable	Vulnerable	Site-managed	Conservation Advice made 2008
				N/A	Conservation Advice made 2008
<i>Eucalyptus mckieana</i>	McKie's Stringybark	Vulnerable	Vulnerable	Keep watch	Conservation Advice made 2008
<i>Eucalyptus nicholii</i>	Narrow Leaved Black Peppermint	Vulnerable	Vulnerable	Site-managed	Conservation Advice made 2008

Scientific name	Common Name	NSW Status	National Status	NSW Management Stream under the Biodiversity Conservation Program ¹	Current status of national recovery plans and conservation advice
<i>Eucalyptus pachycalyx</i>	Shiny-barked Gum	Endangered	Endangered, listed under the EPBC Act as <i>Eucalyptus pachycalyx</i> subsp. <i>banyabba</i>	Site-managed	National recovery plan adopted in 2010 and in force
<i>Eucalyptus parramattensis decadens</i>	Earp's Gum	Vulnerable	Vulnerable, listed under the EPBC Act as <i>Eucalyptus parramattensis</i> subsp. <i>decadens</i>	Keep watch	Conservation Advice made 2014
<i>Eucalyptus pumila</i>	Polkolbin Mallee	Vulnerable	Vulnerable	Site-managed	Conservation Advice made 2008
<i>Eucalyptus scoparia</i>	Wallangarra White Gum	Endangered	Vulnerable	Site-managed	Conservation Advice made 2008
<i>Eucalyptus tetrapleura</i>	Square-fruited Ironbark	Vulnerable	Vulnerable	Keep watch	National recovery plan adopted in 2010 and in force; Conservation Advice made 2008
<i>Euphrasia bella</i>	Lamington eyebright	Vulnerable	Vulnerable	Site-managed	National recovery plan adopted in 2010 and in force; Conservation Advice made 2008
<i>Euphrasia collina</i> subsp. <i>muelleri</i>	Purple eyebright	Endangered	Endangered	Data deficient	National recovery plan adopted in 2006 and in force; Conservation Advice made 2016

Scientific name	Common Name	NSW Status	National Status	NSW Management Stream under the Biodiversity Conservation Program¹	Current status of national recovery plans and conservation advice
<i>Floydia praealta</i>	Ball nut	Vulnerable	Vulnerable	Site-managed	Conservation Advice made 2008
<i>Fontainea australis</i>	Southern fontainea	Vulnerable	Vulnerable	Site-managed	National recovery plan adopted in 2010 and in force; Conservation Advice made 2008
<i>Fontainea oraria</i>	Coastal Fontainea	Critically Endangered	Endangered	Site-managed	National recovery plan adopted in 2010 and in force
<i>Gentiana wissmannii</i>	New England gentian	Vulnerable	Vulnerable	Site-managed	National recovery plan adopted in 2010 and in force; Conservation Advice made 2008
<i>Gingidia montana</i>	Mountain angelica	Endangered	Endangered	Keep watch	National recovery plan adopted in 2010 and in force; Conservation Advice made 2008
<i>Grevillea beadleana</i>	Beadle's grevillea	Endangered	Endangered	Keep watch	Conservation Advice made 2015
<i>Grevillea guthrieana</i>	Guthrie's grevillea	Endangered	Endangered	Keep watch	Conservation Advice made 2014
<i>Grevillea masonii</i>	Mason's grevillea	Endangered	Endangered	Site-managed	National recovery plan adopted in 2010 and in force
<i>Grevillea mollis</i>	Soft grevillea	Endangered	Endangered	Site-managed	National recovery plan adopted in 2010 and in force; Conservation Advice made 2008

Scientific name	Common Name	NSW Status	National Status	NSW Management Stream under the Biodiversity Conservation Program ¹	Current status of national recovery plans and conservation advice
<i>Grevillea obtusiflora</i>	Grey grevillea	Endangered	Endangered	Site-managed	National recovery plan adopted in 2004 and in force; Conservation Advice made 2016
<i>Grevillea shiressii</i>	Blue grevillea	Vulnerable	Vulnerable	Site-managed	Conservation Advice made 2008
<i>Hakea pulvinifera</i>	Lake Keepit hakea	Endangered	Endangered	Site-managed	National recovery plan adopted in 2001 and in force; Conservation Advice made 2016
<i>Hakea sp. B Kowmung River</i>	Kowmung hakea	Endangered	Endangered, listed under the EPBC Act as <i>Hakea dohertyi</i>	Site-managed	Conservation Advice made 2008
<i>Haloragis exalata velutina</i>	Tall velvet sea-berry	Vulnerable	Vulnerable, listed under the EPBC Act as <i>Haloragis exalata</i> subsp. <i>velutina</i>	Keep watch	Conservation Advice made 2008
<i>Hicksbeachia pinnatifolia</i>	Red bopple nut	Vulnerable	Vulnerable	Keep watch	Conservation Advice made 2008
<i>Homoranthus darwinioides</i>		Vulnerable	Vulnerable	Keep watch	Conservation Advice made 2008
<i>Hoplocephalus bungaroides</i>	Broad Headed Snake	Endangered	Vulnerable	Site-managed	Conservation Advice made 2014
<i>Hydrocharis dubia</i>			Delisted	N/A	N/A
<i>Isoglossa eranthemoides</i>	Isoglossa	Endangered	Endangered	Site-managed	National recovery plan adopted in 2010 and in force

Scientific name	Common Name	NSW Status	National Status	NSW Management Stream under the Biodiversity Conservation Program ¹	Current status of national recovery plans and conservation advice
<i>Kennedia retrorsa</i>	Crimson coral pea	Vulnerable	Vulnerable	Site-managed	Conservation Advice made 2008
<i>Kunzea rupestris</i>	Rocky kunzea	Vulnerable	Vulnerable	Site-managed	Conservation Advice made 2008
<i>Lasiopetalum longistamineum</i>		Vulnerable	Vulnerable	Site-managed	Conservation Advice made 2008
<i>Lathamus discolor</i>	Swift Parrot	Endangered	Critically Endangered	Landscape	National recovery plan adopted in 2012 and in force; Conservation Advice made 2016
<i>Lepidium hyssopifolium</i>	Bassalt peppercress	Endangered	Endangered	Site-managed	National recovery plan adopted in 2010 and in force
<i>Leucopogon confertus</i>	Torrington beard-heath	Endangered	Endangered	Data deficient	Conservation Advice made 2008
<i>Litoria aurea</i>	Green and Golden Bell Frog	Endangered	Vulnerable	Site-managed	Conservation Advice made 2014
<i>Litoria booroolongensis</i>	Booroolong Frog	Endangered	Endangered	Site-managed	National recovery plan adopted in 2012 and in force; Conservation Advice made 2007
<i>Litoria castanea</i>	Yellow Spotted Bell Frog	Critically Endangered	Endangered	Site managed	National recovery plan adopted in 2004 and in force; Conservation Advice made 2017
<i>Litoria piperata</i>	Peppered Frog	Critically Endangered	Vulnerable	Data deficient	National recovery plan adopted in 2004 and in force; Conservation Advice made 2017

Scientific name	Common Name	NSW Status	National Status	NSW Management Stream under the Biodiversity Conservation Program ¹	Current status of national recovery plans and conservation advice
<i>Macadamia tetraphylla</i>	Rough leaved Queensland nut	Vulnerable	Vulnerable	Site-managed	National recovery plan adopted in 2009 and in force; Conservation Advice made 2008
<i>Macrozamia occidua</i>			Delisted	N/A	Conservation Advice made 2008, no longer in force
<i>Melichrus hirsutus</i>	Hairy melichrus	Endangered	Endangered, listed under the EPBC Act as <i>Melichrus</i> sp. Newfoundland State Forest (P.Gilmour 7852)	Site-managed	National recovery plan adopted in 2010 and in force
<i>Mixophyes balbus</i>	Stuttering Frog	Endangered	Vulnerable	Landscape	National recovery plan adopted in 2012 and in force
<i>Mixophyes fleayi</i>	Fleay's Frog	Endangered	Endangered	Site-managed	National recovery plan adopted in 2003 and in force; Conservation Advice made 2017
<i>Mixophyes iteratus</i>	Giant Barred Frog	Endangered	Endangered	Site-managed	National recovery plan adopted in 2003 and in force; Conservation Advice made 2017
Vulnerable	Silver sword lily	Vulnerable	Vulnerable	Data deficient	National recovery plan adopted in 2010 and in force; Conservation Advice made 2008

Scientific name	Common Name	NSW Status	National Status	NSW Management Stream under the Biodiversity Conservation Program ¹	Current status of national recovery plans and conservation advice
<i>Ochrosia moorei</i>	Southern ochrosia	Endangered	Endangered	Site-managed	National recovery plan adopted in 2010 and in force; Conservation Advice made 2008
<i>Olearia cordata</i>		Vulnerable	Vulnerable	Site-managed	Conservation Advice made 2008
<i>Olearia flocktoniae</i>	Dorrigo daisy bush	Endangered	Endangered	Site-managed	National recovery plan adopted in 2010 and in force
<i>Owenia cepiodora</i>	Bog onion	Vulnerable	Vulnerable	Site-managed	National recovery plan adopted in 2010 and in force; Conservation Advice made 2008
<i>Parsonsia dorrigoensis</i>	Milky silkpod	Vulnerable	Endangered	Keep watch	National recovery plan adopted in 2010 and in force; Conservation Advice made 2008
<i>Persoonia acerosa</i>	Neede geebung	Vulnerable	Vulnerable	Keep watch	Conservation Advice made 2008
<i>Petalura gigantea</i>	Giant Dragonfly	Endangered	Not listed	Landscape	-
<i>Petrogale penicillata</i>	Brush-tailed Rock Wallaby	Endangered	Vulnerable	Iconic	National recovery plan adopted in 2012 and in force
<i>Phaius australis</i>	Lesser swamp-orchid	Endangered	Endangered	Site-managed	Conservation advice made 2014
<i>Phaius tankervilleae</i>	Swamp Lily; Swamp Orchid	Delisted	Delisted	N/A	N/A
<i>Phebalium elatius beckleri</i>		-	Endangered		
<i>Pimelea venosa</i>	Bolivia Holl pimelea	Endangered	Endangered	Data deficient	Conservation Advice made 2008

Scientific name	Common Name	NSW Status	National Status	NSW Management Stream under the Biodiversity Conservation Program ¹	Current status of national recovery plans and conservation advice
<i>Plectranthus nitidus</i>	Nightcap plectranthus	Endangered	Endangered	Keep watch	National recovery plan adopted in 2010 and in force; Conservation Advice made 2008
<i>Poephila cincta</i>	Southern Black-throated Finch	Endangered	Endangered, listed as <i>Poephila cincta</i> subsp. <i>cincta</i>	Partnership	National recovery plan adopted in 2008 and in force; Conservation Advice made 2005
<i>Pomaderris brunnea</i>	Rufous pomaderris	Vulnerable	Vulnerable	Site-managed	National recovery plan adopted in 2011 and in force
<i>Prostanthera askania</i>	Tranquility mint-bush	Endangered	Endangered	Site-managed	National recovery plan adopted in 2007 and in force
<i>Prostanthera cineolifera</i>	Singleton-mint-bush	Vulnerable	Vulnerable	Data deficient	Conservation Advice made 2008
<i>Prostanthera densa</i>	Villous mint-bush	Vulnerable	Vulnerable	Site-managed	Conservation Advice made 2008
<i>Prostanthera sp. Somersby (syn. P. junonensis)</i>	Somersby mint-bush	Endangered	Endangered, listed under the EPBC Act as <i>Prostanthera junonensis</i>	Site-managed	National recovery plan adopted in 2001 and in force; Conservation Advice made 2016
<i>Pseudomys oralis</i>	Hastings River Mouse	Endangered	Endangered	Keep watch	National recovery plan adopted in 2008 and in force
<i>Psittaculirostris diophthalma coxeni</i>	Coxen's Fig-Parrot	Critically Endangered	Endangered, listed under the EPBC Act as <i>Cyclopsitta diophthalma coxeni</i>	Data deficient	National recovery plan adopted in 2003 and in force; Conservation Advice made 2016

Scientific name	Common Name	NSW Status	National Status	NSW Management Stream under the Biodiversity Conservation Program ¹	Current status of national recovery plans and conservation advice
<i>Pterodroma leucoptera leucoptera</i>	Gould's Petrel	Vulnerable	Endangered	Site-managed	National recovery plan adopted in 2008 and in force
<i>Pultenaea campbellii</i>		-	Delisted	N/A	N/A
<i>Pultenaea stuartiana</i>		-	Delisted	N/A	N/A
<i>Quassia sp. Mooney Creek</i>	Moonee quassia	Endangered	Endangered, listed under the EPBC Act as <i>Samadera sp. Mooney Creek (J.King s.n. Nov. 1949)</i>	Site managed	National recovery plan adopted in 2010 and in force
<i>Randia moorei</i>	Spiny gardenia	Endangered	Endangered	Site-managed	National recovery plan adopted in 2010 and in force
<i>Rapanea sp. A Richmond River</i>	-	Endangered	Endangered, listed under the EPBC Act as <i>Myrsine richmondensis</i>	Site-managed	Conservation Advice made 2015
<i>Rutidosia heterogama</i>	Heath wrinklewort	Vulnerable	Vulnerable	Keep watch	Conservation Advice made 2008
<i>Sarcophilus fitzgeraldii</i>	Ravine orchid	Vulnerable	Vulnerable	Keep watch	Conservation Advice made 2008
<i>Sophora fraseri</i>	Brush sophora	Vulnerable	Vulnerable	Site-managed	Conservation Advice made 2008
<i>Sterna albifrons</i>	Little Tern	Endangered	Migratory	Site-managed	Listing Advice made 2002
<i>Symplocos baeuerlenii</i>	Small-leaved hazelwood	Vulnerable	Vulnerable	Site-managed	National recovery plan adopted in 2010 and in force; Conservation Advice made 2008

Scientific name	Common Name	NSW Status	National Status	NSW Management Stream under the Biodiversity Conservation Program¹	Current status of national recovery plans and conservation advice
<i>Syzygium hodgkinsoniae</i>	Red Lilly-Pilly	Vulnerable	Vulnerable	Site-managed	Conservation Advice made 2008
<i>Syzygium moorei</i>	Coolamon Robby; Rose-Apple	Vulnerable	Vulnerable	Landscape	National recovery plan adopted in 2010 and in force; Conservation Advice made 2008
<i>Syzygium paniculatum</i>	Magenta Lilly Pilly; Creek Satin Ash	Endangered	Vulnerable	Site-managed	National recovery plan adopted in 2012 and in force
<i>Tasmannia glaucifolia</i>	Fragrant pepperbush	Vulnerable	Vulnerable	Site-managed	Conservation Advice made 2008
<i>Tasmannia purpurascens</i>	Purple or road-leaved pepperbush	Vulnerable	Delisted	Keep watch	-
<i>Tetradlea glandulosa</i>	Glandular pink-bell	Vulnerable	Delisted	Site-managed	-
<i>Tetradlea juncea</i>	Black-eyed Susan	Vulnerable	Vulnerable	Site-managed	Conservation Advice made 2008
<i>Thersites mitchellae</i>	Mitchell's Rainforest Snail	Endangered	Critically Endangered	Landscape	National recovery plan adopted in 2002 and in force; Conservation Advice made 2016
<i>Thesium australe</i>	Austral toad-flax	Vulnerable	Vulnerable	Keep watch	Conservation Advice made 2013
<i>Tinospora tinosporoides</i>	Arrow-head vine	Vulnerable	Delisted	Site-managed	-

Scientific name	Common Name	NSW Status	National Status	NSW Management Stream under the Biodiversity Conservation Program ¹	Current status of national recovery plans and conservation advice
<i>Turnix melanogaster</i>	Black-breasted Button-Quail	Critically Endangered	Vulnerable	Partnership	National recovery plan adopted in 2009 and in force; Conservation Advice made 2015
<i>Tylophora woollsii</i>	Cryptic forest twiner	Endangered	Endangered	Site managed	National recovery plan adopted in 2010 and in force; Conservation Advice made 2008
<i>Uromyrtus australis</i>	Peach myrtle	Endangered	Endangered	Site-managed	National recovery plan adopted in 2010 and in force
<i>Velleia perfoliata</i>		Vulnerable	Vulnerable	Site-managed	Conservation Advice made 2008
<i>Anthochaera phrygia</i>	Regent Honeyeater	Critically Endangered	Critically Endangered	Site-managed	National recovery plan adopted in 2016 and in force; Conservation Advice made 2015
<i>Xerothamnella parvifolia</i>	-	Endangered	Vulnerable	Site-managed	Conservation Advice made 2008
<i>Zieria lasiocaulis</i>	Willi willi zieria	Endangered	Endangered	Site-managed	National recovery plan adopted in 2004 and in force; Conservation Advice made 2016

Table notes:

(1) **Site-managed:** species can be successfully secured in the wild by carrying out targeted management actions at specific sites

Landscape: generally distributed across large areas and subject to threats at landscape scale

Iconic: species which the community places a high value on and has particular expectations for conservation

Data deficient: there is insufficient knowledge available on the ecology, distribution and/or management requirements to enable a site-managed species project

Partnership: has less than 10% of its population/distribution occurring within NSW

Keep Watch: lower priority for investment in management

ATTACHMENT 4 NOT USED

ATTACHMENT 5 NOT USED

ATTACHMENT 6 NOT USED

RESEARCH PRIORITIES

- 5 The Parties agree to hold annual discussions on research themes, coordination and potential future directions.
- 6 New South Wales will prepare for each five-yearly review, a compendium of New South Wales Forest research that will provide a bibliography of research in progress, as well as published and unpublished works.
- 7 Research priorities for this Agreement will be updated in each five-yearly Progress Report and discussed at annual meetings.
- 8 The Parties agree to include a summary of forest related research in each five-yearly Progress Report and include an update on current research themes.
- 9 Current research themes include:
 - Forest ecology and sustainability, including flora, fauna, soil and water conservation;
 - Forest health and biosecurity;
 - Forest Products innovation and value adding;
 - Forest resource assessment and security;
 - Forest carbon, bioenergy and biofuels;
 - Climate change impacts and adaptive management;
 - Effectiveness of management prescriptions;
 - Socio-economic values of forest based industries;
 - Cultural values and cultural use;
 - Fire ecology;
 - Long-term water quality and quantity impacts associated with forestry operations; and
 - Matters of National Environmental Significance.

**CONTINUAL IMPROVEMENT OF THE NEW SOUTH WALES' FOREST
MANAGEMENT FRAMEWORK**

- 1 New South Wales will implement, adapt and improve its Forest Management Framework across forest management agencies and land tenures by:
- (a) NSW National Parks and Wildlife Service maintaining an environmental management system (EMS) or equivalent management system demonstrating ESFM , for lands dedicated under the *National Park and Wildlife Act 1974* (NSW) consistent with the following broad principles:
 - an appropriate environmental policy should be in place;
 - the environmental aspects arising from the organisation's past, existing or planned activities, products or services should be identified to determine the environmental impacts of significance;
 - relevant legislative and regulatory arrangements should be identified;
 - priorities should be identified and appropriate environmental objectives and targets set;
 - a structure and program(s) to implement the policy and achieve objectives and targets should be established;
 - planning, monitoring, corrective action, auditing and review activities should be facilitated to ensure both that the policy is complied with and that the EMS or equivalent management system remains appropriate;
 - the system should be capable of adapting to changing circumstances.
 - (b) Forestry Corporation of NSW maintaining a Forestry Corporation of NSW Hardwood Forest Management System as an EMS and maintaining EMS certification under ISO14001 or a demonstrated equivalent environmental management system.
 - (c) Implementing the New South Wales Biodiversity Strategy, or any subsequent biodiversity strategy which compliments ESFM.
 - (d) Implementing a native vegetation regulatory map and regulatory framework under the *Local Land Services Act 2013* (NSW) which together with other management documents allow for specific activities to occur that comply with Regulatory Instruments.
 - (e) Improving the coordination and effective use of resources allocated to research for ESFM in New South Wales.

- (f) Providing ongoing formal public participation processes to raise awareness and understanding of ESFM and how it can be achieved in New South Wales forests.
- (g) Implementing information management systems to facilitate the sharing of data for the use by all agencies, including local government, involved in the management of forested land.
- (h) Improving the cooperation and coordination between NSW Government agencies so as to achieve integrated management for conservation, wood production, and other values in Forests on both Public Land and Private Land.
- (h)A Developing and implementing a community awareness program to build understanding of ESFM and clearly relate these to management requirements for conservation and to the Regulatory Instruments governing activities in both public and private forests.
- (i) Improving administrative arrangements to ensure Ecologically Sustainable Forest Management on private forests including providing technical advice, extension services and research including assistance in the estimation of Sustainable Yield.
- (j) Maintaining and enhancing competency based training for field staff and staff or contractors undertaking Forestry Operations in flora and fauna identification and management, heritage management, soil and water protection, silvicultural training, inventory and management information systems, and Aboriginal cultural awareness and Aboriginal site identification. .
- (k) Maintaining a Regional ESFM Plan or equivalent instrument which includes the ESFM strategy for the Upper North East and Lower North East regions consistent with any Integrated Forestry Operation Approval applicable to the Upper North East and Lower North East regions, and statutory requirements, and including:
 - Specification and description of the range of values and processes to be managed, including objectives and targets of management;
 - Descriptions of and links to Regulatory Instruments, standard operating procedures and guides or manuals ;
 - Determination of Sustainable Yield ;
 - Ongoing arrangements for monitoring activities specified in the plan and reporting against plan objectives and targets;
 - Process for regular reviews of the plan involving public consultation.
- (l) Integrating bush fire management, including hazard reduction burning activities, across tenure via co-ordinated Bush Fire Management Plans under the *Rural Fires Act 1997* (NSW).

- (m) Integrating pest animal and weed control activities across tenure via Regional Strategic Pest Animal Management Plans and Regional Strategic Weed Management Plans, which have been developed to support regional implementation of the *Biosecurity Act 2015* (NSW) and NSW Biosecurity Strategy.
- (n) Maintaining an Integrated Forestry Operations Approval under the *Forestry Act 2012* (NSW) applicable to the Southern region, noting that the Integrated Forestry Operations Approval will include the following:
- terms under which Forestry Operations may legally occur;
 - conservation for environment values to levels of achievement consistent with Attachments 1(A), 1(B) and 3;
 - measures for biodiversity conservation, soil and water protection and threatened fish protection;
 - linkages to prescribed fire management arrangements; and
 - measures for the recording and collection of data to inform adaptive management and continual improvement of the Integrated Forestry Operations Approval.
- (o) NOT USED
- (p) NOT USED
- (q) NOT USED
- (r) NOT USED
- (s) NOT USED
- 2 The Parties note that procedures for reviewing Integrated Forestry Operations Approvals are set out in the *Forestry Act 2012* (NSW).
- 3 The Parties note that the terms of an Integrated Forestry Operations Approval will have primacy over other elements of the Forestry Corporation of NSW Hardwood Forest Management System. The Parties recognise that the Forestry Corporation of NSW Hardwood Forest Management System (including the Regional ESFM Plan, the plan of operations, and harvesting plans), will be the mechanism for implementing the terms of the Integrated Forestry Operations Approval on State forest.
- 4 NOT USED

**MONTREAL PROCESS CRITERIA FOR THE CONSERVATION AND
SUSTAINABLE MANAGEMENT OF TEMPERATE AND BOREAL
FORESTS**

- Criterion 1: Conservation of biological diversity
- Ecosystem diversity
 - Species diversity
 - Genetic diversity
- Criterion 2: Maintenance of productive capacity of forest ecosystems
- Criterion 3: Maintenance of ecosystem health and vitality
- Criterion 4: Conservation and maintenance of soil and water resources
- Criterion 5: Maintenance of forest contribution to global carbon cycles
- Criterion 6: Maintenance and enhancement of long term multiple socio-economic benefits to meet the needs of societies
- Production and consumption
 - Recreation and tourism
 - Investment in the forest sector
 - Cultural, social and spiritual needs and values
 - Employment and community needs
- Criterion 7: Legal, institutional and economic framework for forest conservation and sustainable management

A framework for development of these criteria and indicators is described in the document, *Australia's Sustainable Forest Management Framework of Criteria and Indicators 2008-Policy Guidelines* (Commonwealth of Australia, 2008).

ATTACHMENT 10
(clauses 48, 100)

MANAGING LANDS OF SIGNIFICANCE TO ABORIGINAL PEOPLE

1 New South Wales agrees to continue to manage CAR Reserve System and State forest on Public Land with significance to Aboriginal people according to the following principles:

- It is appreciated by both Parties that the Aboriginal people of NSW have a spiritual, social, cultural and economic relationship with their traditional lands and waters, sky, ceremonial and viewing corridors and songlines, including natural values such as flora, fauna and landforms.
- The Parties recognise that the cultural heritage of the Aboriginal peoples of NSW is a living cultural heritage, and intrinsic to their well-being.
- The Parties recognise that the cultural heritage of the Aboriginal peoples of NSW comprises both intangible elements (such as beliefs, knowledge and practices) and tangible elements (such as objects, landforms, and ancestral remains).
- The Parties recognise the aspirations Aboriginal people have in regards to ownership of lands, and the rights of Aboriginal Land Councils under the *Aboriginal Land Rights Act 1983* (NSW) for certain Crown lands to be returned to Aboriginal peoples .
- Both Parties appreciate that the *Native Title Act 1993* (Cth) provides opportunities for Aboriginal people to make application to the Federal Court for their native title rights to be determined and to negotiate Indigenous Land Use Agreements with the NSW Government for the management of public lands in their native title area.
- The Parties recognise the rights Aboriginal people have in regards to management of traditional lands, and are committed to a working relationship with Aboriginal communities for co-operative design of relevant strategies and policies and co-operative management of Government managed lands as agreed, which may include lands managed by NSW National Parks and Wildlife Service and the Forestry Corporation of NSW.
- An integral part of this commitment to co-operative management is the transmission of culture to provide opportunity for local Aboriginal people to access training and to gain employment, to ensure that Aboriginal people can effectively participate in the management of their traditional country, where that country includes Forests on Public Land.
- The New South Wales Government has provided for Aboriginal people to own lands reserved under the *National Parks and Wildlife Act 1974* (NSW) that are of cultural significance to them through the *National Parks and Wildlife Amendment (Aboriginal Ownership) Act 1996* (NSW). Both Parties

acknowledge that there are National Parks and reserves within the Upper North East and Lower North East regions that may meet the terms of the *National Parks and Wildlife Act 1974* (NSW), and actively advocate the assessment of the Upper North East and Lower North East regions for this purpose.

- Both Parties support initiatives between Government agencies (both State and Local) and Aboriginal communities, that will both strategically manage and preserve New South Wales' rich cultural heritage, and ensure that the maintenance and enhancement of the CAR Reserve System considers Aboriginal interests and values.
 - The Parties will, with Aboriginal stakeholders, identify funding opportunities to support Aboriginal participation in forest management, in particular any Forest Estate areas identified as of special significance to Aboriginal people in the North East region, for example Working on Country and Indigenous Protected Area programs.
 - Aboriginal parties will be invited to participate in any new partnership arrangement evolved out of this Agreement for the management of the CAR Reserve System.
 - The Parties recognise that Traditional Owners under the *Native Title Act 1993* (Cth) have the right to access and use certain Government managed lands for the purposes of cultural practice. This includes access to Forest Products.
 - The NSW Government recognises that opportunities exist for Aboriginal people in the commercial development of areas of economic significance or for commercial use of Forest Products, and agrees to respond to requests from the Aboriginal community to develop these opportunities, for example through existing training and mentoring programs.
- 2 The Parties agree to use best endeavours to meet and exceed government Aboriginal employment and procurement targets in the North East RFA region, particularly in relation to public Forests and cultural heritage management.

ATTACHMENT 11 NOT USED

SUSTAINABLE YIELD SYSTEMS AND PROCESSES

- 1 The Parties agree that Sustainable Yield calculations and the method and processes used, are important in realising ESFM on the State forest and Crown-timber land estate.
- 2 The Parties agree that FRAMES provides a sound basis for volume allocations at the strategic level and will be used to estimate Sustainable Yield. Further information on FRAMES and its history and implementation can be found in the document *Forest Resource and Management Evaluation System (FRAMES) – A Report on its Development and Implementation to 30 June 2016* (FCNSW)
- 3 New South Wales will review and update Sustainable Yield calculations from State forest at least once every five-year review period, or more frequently on an as needs basis. Sustainable Yield calculations will be based on modelling with the goal of yielding the maximum non-declining yield of High Quality Logs over a minimum period of 100 years.
- 4 New South Wales will commission an independent audit of Sustainable Yield calculations at least once every five-yearly review period having regard to the elements in item 7.
- 5 New South Wales will make publicly available the independent audit of Sustainable Yield calculations by publication on the website of the relevant department or agency. Sustainable Yield calculations will address relevant Forest Products for the Upper North East and Lower North East regions, which may include High Quality Logs, Low Quality Logs, Pulpwood and Other Wood Products.
- 6 Any changes in volume allocations to the timber and forest-based industries will be based on Sustainable Yield and be consistent with modelling using FRAMES or an equivalent system.
- 7 New South Wales will maintain a continual improvement program for FRAMES including the following elements:
 - Establishing processes for appropriate internal reviews and audits of Sustainable Yield as part of the Forestry Corporation of NSW Hardwood Forest Management System.
 - Document and review systems, processes, models and databases used in the calculation of Sustainable Yield specifically:
 - growth models and growth model inputs.
 - inventory plot currency and measurement.
 - spatial inputs that determine the modelled net harvest area.

- silviculture, product recovery, yield tables and modelling assumptions to ensure that the modelled outputs reflect current practices and actual yields.
- resource risk management aspects and mitigations (e.g. changes to the model due to resource loss through fire, changes to legislation or Regulatory Instruments that alter access to the resource and invalidate current modelling assumptions, or other impacts associated with climate change).
- monitor and publish a reconciliation of predicted versus actual Forest Products yields in the third and fifth years of every five-year period.

ATTACHMENT 13 NOT USED

**PRINCIPLES OF ECOLOGICALLY SUSTAINABLE FOREST
MANAGEMENT (ESFM)**

Principle 1: Maintain or increase the full suite of forest values for present and future generations across the NSW native forest estate

- The principle of intergenerational equity (that in meeting the needs of the present generation, the ability of the future generations to meet their own needs is not compromised) is embodied in this principle.
- Ensure that ESFM at the regional and smaller scales is implemented by ecologically appropriate planning and operational practices, and that ESFM targets are set and indicators of performance are monitored.
- Ensure the long-term maintenance of the full range of values of the NSW existing forest estate. The intention is to maintain or increase not only the full range of values, but also the magnitude or level at which those values are maintained or increased.
- Encourage the increased production of plantation-grown timber and the social and economic benefits flowing from this increased production to supplement the wood supply from native forests.

Aims for values include

A Biodiversity

- Biological diversity of forests at the ecosystem, species and genetic levels where biological diversity includes natural patterns of ecosystems, species and gene pools in time and space.
- Address the requirements of vulnerable species.
- Assist with the recovery of threatened species, and maintain the full range of ecological communities at viable levels.
- Protect landscape values through the careful planning of operations and the reservation of appropriate patches and corridors of vegetation.

B The productive capacity and sustainability of forest ecosystems

- Maintain ecological processes within forests (such as the formation of soil, energy flows and the carbon, nutrient and water cycles, fauna and flora communities and their interactions).
- Maintain or increase the ability of forest ecosystems to produce biomass whether utilised by society or as part of nutrient and energy cycles.

- Ensure the rate of removal of any forest products is consistent with ecologically sustainable levels.
- Ensure the deleterious effects of activities/disturbances which threaten forests, forest health or forest values are minimised.

C Forest ecosystem health and vitality

- Reduce or avoid threats to forest ecosystems from introduced diseases, exotic plants and animals, unnatural regimes of fire or flooding, wind shear, land clearing and urbanisation.
- Promote good environmental practice in relation to pest management.
- Ensure the deleterious effects of activities/disturbances within forests, their scale and intensity, including their cumulative effects are minimised.
- Restore and maintain the suite of attributes (ecological condition, species composition and structure of native forests) where forest health and vitality have been degraded.

D Soil and water

- Maintain the chemical and biological functions of soils by protecting soils from unnatural nutrient losses, exposure, degradation and loss.
- Maintain the physical integrity of soils by protecting soils from erosion, mass movement, instability, compaction, pulverisation and loss.
- Protect water quality (physical, chemical, biological) by measures controlling disturbance resulting from forest activities.
- Identify and maintain at appropriate levels, water yield and flow duration in catchments.

E Positive contribution of forests to global geochemical cycles

- Maintain the positive contribution of forests to the global geochemical cycle (includes climate, air and water quality and deposition).

F Long-term social and economic benefits

- Maintain and enhance, on an ecologically sustainable basis, production of wood and wood products, including value adding, investment and resource security.
- Provided it is ecologically sustainable, set, maintain or enhance the level of use of non-wood products and uses, including bee-keeping, grazing, mining, recreation and tourism, reliable water supply.

- Maintain and enhance, on an ecologically sustainable basis, the provision of employment and community needs such as economic diversification, investment skills, education, jobs stability, training and Indigenous needs.
- Encourage the establishment and use of plantation forests on existing cleared land to expand social and economic values.
- Maintain and enhance the intangible social welfare benefits which forests provide.

G Natural and cultural heritage values

- Protect social, natural and cultural heritage values and sites, including aesthetic, landscape, historic, cultural, educational, scenic, spiritual and scientific values, including Indigenous values and sites.

Principle 2 Ensure public participation, access to information, accountability and transparency in the delivery of ESFM.

- Ensure public participation in decision-making processes at local, regional and State and Federal levels.
- Ensure comprehensive, timely and reasonable public access to information.
- Ensure transparency, openness and accountability in decision making processes and performance.

Principle 3 Ensure legislation, policies, institutional framework, codes, standards and practices related to forest management require and provide incentives for ecologically sustainable management of the native forest estate.

- Establish a process for shared management and administration, recognising the customary and traditional rights of Indigenous people, and the interests of private land-holders and other stakeholders in an area's management.

Principle 4 Apply precautionary principles for prevention of environmental degradation

The incorporation of the precautionary principle into decision making has been endorsed by State and Commonwealth Governments (Commonwealth of Australia 1992 p. 49, IGAE 1992) and is defined as *'where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. In the application of the precautionary principle, public and private decisions should be guided by:*

- *careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment; and*
- *an assessment of the risk-weighted consequences of various options.'*

Principle 5 Apply best available knowledge and adaptive management processes

ESFM would utilise the concept of adaptive management and continual improvement based on best science and expert advice and targeted research on critical gaps in knowledge, monitoring or evaluation.



Australian Government Solicitor

DEED OF VARIATION

DEED OF VARIATION IN RELATION TO THE REGIONAL FOREST AGREEMENT
FOR THE SOUTHERN REGION

The Commonwealth of Australia

The State of New South Wales

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DEED OF VARIATION

DEED OF VARIATION IN RELATION TO THE REGIONAL FOREST AGREEMENT FOR THE SOUTHERN REGION

Date

This deed is made on _____ 2018.

Parties

This deed is made between and binds the following parties:

1. The **Commonwealth of Australia** (the **Commonwealth**)
2. The **State of New South Wales** (the **State**)

Context

This deed is made in the following context:

- A. The parties entered into the Regional Forest Agreement to establish a framework for the management of certain forests.
- B. The parties have agreed to amend the Regional Forest Agreement on the terms and conditions contained in this deed.
- C. Except as amended by this deed, the Regional Forest Agreement continues in full force and effect without amendment.

Operative provisions

In consideration of the mutual promises contained in this deed, the parties to this deed agree as follows:

1. Definitions and Interpretation

Definitions

- 1.1. In this deed, unless the contrary intention indicates otherwise:

Effective Date	means the date of this deed.
Regional Forest Agreement	means the Regional Forest Agreement for the Southern Region dated 24 April 2001 between the Commonwealth and the State, as amended from time to time.

Interpretation

- 1.2. In this deed, unless the contrary intention appears:
- a. clause headings are for convenient reference only and have no effect in limiting or extending the language of provisions to which they refer;

- b. if any word or phrase is given a defined meaning, any other part of speech or other grammatical form of that word or phrase has a corresponding meaning;
- c. the annexures form part of this deed; and
- d. in the interpretation of this deed no rules of construction apply to the disadvantage of any party on the basis that it put forward this deed.

Guidance on construction of deed

- 1.3. As far as possible all provisions of this deed will be construed so as not to be void or otherwise unenforceable.
- 1.4. If anything in this deed is void or otherwise unenforceable then it will be severed and the rest of the deed remains in force.
- 1.5. A provision of this deed will not be construed to the disadvantage of a party solely on the basis that it proposed that provision.
- 1.6. In the event of conflict between this deed and the Regional Forest Agreement, the provisions of this deed will prevail.

Commencement

- 1.7. The terms of this deed apply on and from the date of this deed.

2. Amendment of the Regional Forest Agreement

- 2.1. With effect from the Effective Date, the Regional Forest Agreement is amended as set out in Annexure 1. For the avoidance of doubt, unless the context indicates otherwise:
 - a. text that is underlined is inserted into the Regional Forest Agreement; and
 - b. text that is struck through is deleted from the Regional Forest Agreement.
- 2.2. Each party acknowledges that a clean version of the Regional Forest Agreement, as amended by this deed with effect from the Effective Date pursuant to clause 2.1, is set out in Annexure 2.

3. Confirmations

Each of the parties confirms and acknowledges that:

- a. this deed varies the Regional Forest Agreement, and does not terminate, discharge, rescind or replace the Regional Forest Agreement;
- b. except as expressly agreed in this deed, its obligations and covenants under, and the provisions of, the Regional Forest Agreement continue and remain in full force and effect;

- c. nothing in this deed:
 - i. prejudices or adversely affects any right, power, authority, discretion or remedy which arose under or in connection with the Regional Forest Agreement before the date of this deed; or
 - ii. discharges, releases or otherwise affects any liability or obligation which arose under or in connection with the Regional Forest Agreement before the date of this deed; and
- d. notwithstanding anything in this deed, nothing in this deed is intended to make legally binding any obligations in the Regional Forest Agreement that the parties have expressed an intent to be non-binding.

4. Costs

- 4.1. Each party will bear its own costs and expenses (including legal costs) arising out of and incidental to the negotiation, preparation, execution and delivery of this deed.

5. Entire agreement and variation

- 5.1. This deed contains the entire agreement of the parties with respect to its subject matter and supersedes all prior understandings and representations between the parties with respect to its subject matter.
- 5.2. Each party will take such steps, execute all such documents and do all such acts and things as may be reasonably required by any other party to give effect to this deed.
- 5.3. The provisions of this deed will not be varied either in law or in equity except by agreement in writing signed by the parties.

6. Applicable law

- 6.1. This deed is to be construed in accordance with, and any matter related to it is to be governed by, the laws of the jurisdiction that govern the Regional Forest Agreement.

7. Counterparts

- 7.1. This deed may be executed in any number of counterparts and by each party in separate counterparts. All counterparts together constitute the one agreement.

Signing Page

EXECUTED as a deed.

SIGNED, SEALED AND)
DELIVERED for and on behalf)
of The Commonwealth of)
Australia by:)

Name of signatory

Signature

In the presence of:

Name of witness

Signature of witness

SIGNED, SEALED AND)
DELIVERED for and on behalf)
of the State of New South)
Wales by:)

Name of signatory

Signature

In the presence of:

Name of witness

Signature of witness

ANNEXURE 1 AMENDED REGIONAL FOREST AGREEMENT

REGIONAL FOREST AGREEMENT

for

SOUTHERN

NEW SOUTH WALES

between

THE COMMONWEALTH OF AUSTRALIA

&

THE STATE OF NEW SOUTH WALES

April 2001 (includes 2018 VARIATION)

Southern Regional Forest Agreement

THIS AGREEMENT is made on the 24th day of April 2001

BETWEEN

THE STATE OF NEW SOUTH WALES, (“New South Wales” or “the State”), and
THE COMMONWEALTH OF AUSTRALIA (“the Commonwealth”).

Recitals

WHEREAS:

Purpose of Agreement

- A. This Regional Forest Agreement (RFA) establishes the framework for the management of the forests of the Southern region. Parties are committed to ensuring the Agreement is durable and ~~that the obligations and commitments that it contains~~ are delivered to ensure effective conservation, sustainable forest management and ~~forest~~ industry stability outcomes.
- B. This Agreement is a Regional Forest Agreement, for the purposes of the *Export Control Act 1982 (CwthCth)*, the *Regional Forest Agreements Act 2002 (Cth)* and the *Environment Protection and Biodiversity Conservation Act 1999 (Cth)*. ~~Export Control (Hardwood Wood Chips) (1996) Regulations (Cwth), and the Export Control (Regional Forest Agreements) Regulations (Cwth)~~. As such the Agreement :
- (a) identifies areas in the region ~~or regions~~ that the Parties believe are required for the purposes of a Comprehensive, Adequate and Representative Reserve System, and provides for the conservation of those areas; and
 - (b) provides for the ecologically sustainable management and use of forested areas in the region ~~regions~~; and
 - (c) is for the purpose of providing long-term stability of forests and forest industries; and
 - (d) has regard to studies and projects carried out in relation to all of the following matters that are relevant to the region ~~regions~~:
 - (i) environmental values, including Old Growth, Wilderness, endangered species, National Estate Values and World Heritage Values;
 - (ii) Indigenous heritage values;
 - (iii) economic values of forested areas and forest industries;
 - (iv) social values (including community needs); and

(v) principles of Ecologically Sustainable Forest Management.

- C. This Agreement is divided into Parts. Part 1 applies to the whole Agreement. Part 2 is not intended to create legally binding relations. Part 3 is intended to create legally binding relations. The Attachments are not intended to create legally binding relations except to the extent that this is necessary to give effect to Part 3.

NOW IT IS AGREED as follows:

PART 1

Interpretation

- 1 This Agreement is to be interpreted, unless the contrary intention appears, with reference to the definitions and general provisions specified in clauses 2 and 3.

Definitions and General Provisions

- 2 In this Agreement unless the contrary intention appears:

“Aboriginal” for the purposes of this agreement means the First Peoples of NSW;

“Agreement” means all parts of this Agreement between the Commonwealth of Australia and the State of New South Wales and includes the Attachments to this Agreement;

~~**“Australian Heritage Commission”** or **“the Commission”** means the Commission established by the *Australian Heritage Commission Act 1975* (Cwlth);~~

“Australian World Heritage Intergovernmental Agreement” means the Australian World Heritage Intergovernmental Agreement, as agreed by the Commonwealth, the States and the Territories, as amended from time to time;

“Biodiversity” means biodiversity as defined in the JANIS Report;

“Commonwealth Heritage Management Principles” has the same meaning as “Commonwealth Heritage management principles” in section 341Y of the EPBC Act;

“Commonwealth Heritage Place” has the same meaning as “Commonwealth Heritage place” in section 341C(3) of the EPBC Act;

“Commonwealth Heritage Values” has the same meaning as “Commonwealth Heritage values” in section 341D of the EPBC Act;

“Comprehensive Adequate and Representative Reserve System” or **“CAR Reserve System”** means areas under any of the following categories of land tenure - as described in the JANIS Report - Dedicated Reserves, Informal Reserves and other areas on Public Land protected by ~~prescription~~ Regional Prescriptions (eg under any Integrated Forestry Operation Approvals applicable to the Southern Region-region), and areas of Private Land where the CAR Values are protected under secure management arrangement by agreement with private landholders. This reserve system is based on the principles of comprehensiveness, adequacy and representativeness;

“CAR Values” means the conservation values as described by the JANIS Reserve Criteria;

~~“Codes of Practice” or “Codes” means the State’s suite of codes identified in this Agreement or described in the *Assessment of Management Systems and Processes for Achieving Ecologically Sustainable Forest Management in New South Wales: Independent Expert Working Group Report* published by the Commonwealth and New South Wales Governments April 1998. Codes include the:~~

- ~~• Timber Plantations (Environmental Protection) Harvesting Code 1997 (Schedule 1 of Timber Plantations (Harvest Guarantee) Regulation 1997 (NSW)) and the equivalent Code (when it commences) under the *Plantations and Reafforestation Act (1999)*;~~
- ~~• State Forests of NSW Forests Practices Code : Part 1: Timber Harvesting in State Forests Plantations (July 1995) (Under review);~~
- ~~• State Forests of NSW Forests Practices Code : Part 2: Timber Harvesting in Native Forests (November 1995) (Under review);~~
- ~~• State Forests of NSW Forests Practices Code: Part 3: Plantation Establishment and Maintenance (Draft of August 1996) (Under review);~~
- ~~• State Forests of NSW Forest Practices Code : Part 4: Forest Roads and Fire Trails (February 1999);~~
- ~~• State Forests of NSW Forest Practices Code : Part 5: Wildlife Management in Native Forests (due for completion by 31 December 2001);~~
- ~~• Integrated Forestry Operations Approvals applying to the Southern region; and~~
- ~~• Additional or new Codes identified in the Forest Agreement covering the Southern region;~~

“Competition Principles Agreement” means the agreement of the same name described in the Compendium of National Competition Policy Agreements, January 1997, National Competition Council updated by the Council of Australian Governments in 2007;

“Comprehensive Regional Assessment” or **“CRA”** means the assessment process carried out pursuant to Attachment 1 of the NSW RFAs Scoping Agreement for New South Wales Regional Forest Agreements between the Commonwealth of Australia and the State of New South Wales;

“Crown Land” means land that is vested in the Crown or was acquired under the Closer Settlements Acts as in force before their repeal, not in either case being:

- (a) land dedicated for a public purpose; or

(b) land that has been sold or lawfully contracted to be sold and in respect of which the purchase price or other consideration for the sale has been received by the Crown.

~~“**Crown Reserve**” means land dedicated or reserved as a reserve under the *Crown Lands Act 1989* (NSW) and managed by the NSW National Parks and Wildlife Service;~~

~~“**Data**” means all Source Data, Derived Data, Assessment Data, and models listed in the Schedules as defined in Attachment 12 to this Agreement;~~

“Dedicated Reserve” means a formal reserve equivalent to International Union for the Conservation of Nature and Natural Resources (IUCN) Protected Area Management Categories I, II, III, or IV as defined by the IUCN Commission for National Parks and Protected Areas (1994). The status of Dedicated Reserves is secure, requiring action by the New South Wales Parliament or in accordance with New South Wales legislation for reservation or revocation. In New South Wales, Dedicated Reserves include, but are not limited to, parks under the *National Parks and Wildlife Act 1974* (NSW) and flora reserves under the *Forestry Act 1916-2012* (NSW), and areas mapped as Special Protection Zone (FMZ 1), under the NSW (~~Special Protection Zones under the Forest Management Zoning system~~);

~~“**Deferred Forest Agreement**” means the Deferred Forest Agreement between the Commonwealth and the State of New South Wales signed on 25th January 1996 as subsequently amended;~~

~~“**Eco Field Guide**” means *An Overview of Forest Management in South Coast New South Wales, SFNSW, (in prep)*, and *A Field Guide to Forest Management in South Coast New South Wales, SFNSW, (in prep)*, and/ or *An Overview of Forest Management in Southern Highlands (Tumut) New South Wales, SFNSW, (in prep)* and *A Field Guide to Forest Management in Southern Highlands (Tumut) New South Wales, SFNSW, (in prep)* and *The Native Forest Silviculture Manual, SFNSW, (in prep)*;~~

“Ecologically Sustainable Forest Management” or **“ESFM”** means forest management and use in accordance with the specific objectives and policies for ecologically sustainable development as detailed in the *National Forest Policy Statement* and as further described in Attachment 13;

~~“**Environment and Heritage Values**” means those values assessed pursuant to Attachment 1 of the RFA Scoping Agreement;~~

“Environment and Heritage Values” means values assessed as part of the CRA. These included Biodiversity, Forest Ecosystems, Old Growth forests, Wilderness, endangered species, National Estate Values, World Heritage Values and Indigenous heritage values;

“EPBC Act” means the *Environment Protection and Biodiversity Conservation Act 1999* (Cth);

“Extractive Material” means sand, gravel, clay, soil, turf, rock, stone or similar substances, not being a Mineral, as defined in this Agreement;

“Extractive Operation” means the winning of Extractive Material, or, an industry or undertaking (not including Mining), which depends for its operations on the winning of Extractive Material from the land upon which it is carried on;

“Five-yearly Review Scoping Agreement” means a scoping agreement between the Commonwealth of Australia and the State of New South Wales for each five-yearly review, including any agreed priorities, procedures and funding arrangements for the conduct of the five-yearly review;

“Forest” means: a Forest Ecosystem listed in Table 1 of Attachment 1; the land on which a Forest Ecosystem listed in Table 1 of Attachment 1 occurs; ~~and~~, or a ~~plantation~~ Plantation of trees for timber production. The carrying out of a ~~forestry operation~~ Forestry Operations on an area does not prevent it from remaining ~~as~~ a Forest;

“Forest Agreement” means a Forest Agreement as defined in the *Forestry and National Park Estate Act 1998 2012* (NSW);

“Forest Ecosystem” means, for the purposes of the Agreement, a forest ecosystem as defined in the JANIS Report. Forest Ecosystems ~~as they exist at the present time in the Southern region~~ are ~~described~~ listed in Attachment 1 of this Agreement;

“Forest Estate” means all Forests growing on Public Land or Private Land;

“Forest Management” means the management and administration of all Forests including State forest, national parks, other conservation reserves or Crown land, private native forest and Plantations.

“Forest Management System Framework” means the New South Wales ~~Forest Management System~~ suite of legislation, regulations, other regulatory instruments and guidance. The elements of the framework are ~~as described in the report entitled Assessment of Management Systems and Processes for Achieving Ecologically Sustainable Forest Management in New South Wales¹: Independent Expert Working Group Report published by the Commonwealth and New South Wales Governments April 1998 and as modified by the Forestry and National Park Estate Act 1998 (NSW). ‘Overview of the New South Wales Forest Management Framework’ as published by the NSW Government and as amended from time to time~~ Major elements of the system include Forest Agreements, Integrated Forestry Operations Approvals, Codes of Practice, Eco-Field Guides and Regional ESFM Plans;

“Forest Management Zoning” or “FMZ” is a land classification system which ~~identifies~~ sets out, in map format, management intent across State forest. It is based on the “Components of the CAR System” in the JANIS Report, to

¹ Reference to this report in this agreement does not imply or convey any agreement with or agreement to any commentary or recommendation but is restricted to description of the forest management system described within that report.

clearly differentiate between those areas of State forest which are specifically set aside for conservation purposes (and utilising statutory protection in some cases) and those areas which are available for timber harvesting and other activities. The system is described in the document *Forest Management Zoning in NSW State Forests* Managing our forests sustainably: Forest Management Zoning in NSW State Forests, State Forests of NSW [1999] and as amended from time to time;

“Forestry Corporation of NSW” or **“FCNSW”** means the Forestry Corporation of NSW, a State Owned Corporation under the *State Owned Corporations Act 1989* (NSW);

“Forestry Corporation of NSW SFNSW Native Hardwood Forest Management System” means the system of the same name described in all existing *Forest Agreements* of policies, processes and procedures used by Forestry Corporation of NSW to ensure forest activities achieve ESFM, including a system of monitoring, audit and management review that allows for continual improvement and adaptive management and maintaining EMS certification under ISO 14001 or a demonstrated equivalent environmental management system;

“Forestry Operations” means:

- (a) logging operations, namely, the cutting and removal of timber from land for the purpose of timber production;
- (b) forest products operations, namely, the harvesting of Forest Products that are of economic value;
- (c) on-going forest management operations, namely, activities relating to the management of land for timber production such as thinning, bush fire hazard reduction and other silvicultural activities; and
- (d) transport of Forest Products;

“Forest Products” means timber and forest products as defined in the *Forestry Act 1916 2012* (NSW);

“Forest Resource and Management Evaluation System” or **“FRAMES”** means ~~State Forests of New South Wales’~~ the Forestry Corporation of NSW statewide forest resource inventory, growth modelling, simulation and harvest scheduling system for New South Wales’ public ~~native~~ hardwood forest resource. This system is documented in the project reports ~~Strategic Inventory, Biometric Models, Yield Simulator, Strategic Yield Scheduler and Application of Protective Measures and Forest Practices into a Quantitative Database for the Southern region;~~

“Harvesting Exclusions Zone” or **“FMZ 3A”** (~~Zone 3A~~) means the zone of the same name ‘Zone 3A – Harvest Exclusions’ under the NSW Forest Management Zoning system in the document *Forest Management Zoning in State Forests*, SFNSW 1999;

"High Quality Large Logs" means High Quality Logs having a centre diameter under bark of at least 40cm;

"High Quality Logs" means logs of 2.4 metres or more in length, which meet the SFNSW specifications for high quality;

"High Quality Small Logs" means High Quality Logs having a centre diameter under bark of less than 40cm;

"High Quality Logs" means logs which are suitable for high-value solid log products such as poles, piles and girders as well as logs suited for processing into sawn timber or veneer;

"Indigenous" means the Aboriginal and Torres Strait Islander peoples of Australia. 'Indigenous' is used in this document to mirror its use in Commonwealth legislation. Otherwise 'Aboriginal' is used to refer to the First Peoples of NSW.

"Informal Reserve" means a reserve that contains and is managed for Environment and Heritage Values which contribute to the CAR Reserve System and meets the principles for Informal Reserves as described in the JANIS Report. In New South Wales, it includes, but is not limited to, ~~parts of the Special Management Zone areas mapped as~~ Special Management Zone (FMZ 2), which meet the size and design criteria for Informal Reserves, under the NSW Forest Management Zoning system;

"Integrated Forestry Operations Approval" or "IFOA" means an Integrated Forestry Operations Approval ~~or Integrated Forestry Operations Approvals~~ as defined in the *Forestry and National Park Estate Act 1998-2012* (NSW);

"ISO 14000 Series" means ~~AS/NZS ISO 14000 series, Environmental Management Systems, Standards Australia, 1996;~~

"ISO 14001" means *AS/NZS ISO 14001: 2015, Environmental Management Systems: Requirements with guidance for use, Standards Australia* (as amended from time to time);

"JANIS Report" means the report by the Joint Australian and New Zealand Environment and Conservation Council (ANZECC) / Ministerial Council on Forestry, Fisheries and Aquaculture (MCFFA) National Forests Policy Statement Implementation Sub-committee, titled *Nationally Agreed Criteria for the Establishment of a Comprehensive, Adequate and Representative Reserve System for Forests in Australia*, published by the Commonwealth of Australia in 1997;

"JANIS Reserve Criteria" or "Criteria" means the criteria as described in the JANIS Report for establishing the CAR Reserve System addressing Biodiversity, Old Growth forest and Wilderness, taking account of reserve design and management and social and economic considerations;

“Listed Species and Communities” means species and communities listed in accordance with Part 13 of the EPBC Act, *Biodiversity Conservation Act 2016* (NSW) or *Fisheries Management Act 1994* (NSW), including threatened and endangered species, threatened ecological communities, migratory species and other listed categories (or equivalent);

“Low Quality Logs” means undersize or defective log sections that do not meet a high quality specification but are still suitable for processing into sawn timber or veneer logs that do not meet specifications for High Quality Large Sawlogs or High Quality Small Sawlogs;

“Matters of National Environmental Significance” for the purpose of this Agreement means those matters protected by Part 3 of the EPBC Act as matters of national environmental significance, including:

- (a) World Heritage Values of declared World Heritage Places;
- (b) National Heritage Values of National Heritage Places;
- (c) ecological character of Ramsar Wetlands;
- (d) listed species and communities in the EPBC Act (excluding those categories referred to in paragraphs 178(1)(a) and (f), and paragraph 181(1)(c) of the EPBC Act);

“Mineral” means any substance prescribed by the regulations of the *Mining Act 1992* (NSW) as a mineral, ~~and~~ or petroleum as prescribed under the *Petroleum (Onshore) Act 1991* (NSW), and includes coal, oil shale and petroleum but does not include uranium;

“Mineral Exploration” means prospecting under an authority or other title under either the *Mining Act 1992* (NSW) or the *Petroleum (Onshore) Act 1991* (NSW);

“Mining” means ~~any operation or work carried out to obtain Minerals~~ mining under an authority or other title under the *Mining Act 1992* (NSW) and includes production of petroleum under the *Petroleum (Onshore) Act 1991* (NSW);

“Mining Operations” means operations or works carried out in the course of Mining, or Mineral Exploration operations authorised by an exploration licence or an assessment lease under the *Mining Act 1992* (NSW) or the *Petroleum (Onshore) Act 1991* (NSW);

“Montreal Process Criteria” means the Montreal Process criteria for the conservation and sustainable management of temperate and boreal forests;

“Montreal Process Implementation Group for Australia” or **“MIG”** means the Montreal Process Implementation Group established by the Commonwealth and all State and Territory Governments;

“National Estate” means those places as defined under section 4 of the repealed Australian Heritage Commission Act 1975 (C~~with~~ Cth);

“National Estate Values” means values attributed by the former Australian Heritage Commission to the National Estate places;

“National Forest Policy Statement” or **“NFPS”** means the *National Forest Policy Statement 1992 (1992)* endorsed by the Commonwealth and all State and Territory Governments;

“National Heritage Management Principles” has the same meaning as “National Heritage management principles” in section 324Y of the EPBC Act;

“National Heritage Place” has the same meaning as “National Heritage place” in section 324C(3) of the EPBC Act;

“National Heritage Values” has the same meaning as “National Heritage values” in section 324D of the EPBC Act;

“NPWS Environmental Management System” means ~~the system of the same name described in all existing *Forest Agreements*~~;

“NSW National Parks and Wildlife Service” or **“NPWS”** means the New South Wales National Parks and Wildlife Service;

“NSW RFAs Scoping Agreement” means the Scoping Agreement for New South Wales Regional Forest Agreements between the Commonwealth and the State of New South Wales signed on 25th January 1996;

“Old Growth forest” means old growth forest as defined in the JANIS Report;

“Other Wood Products” means timber that is not processed as a high quality, low quality or Pulpwood log, including firewood, biomaterial and fencing products;

“Owner” means:

- (a) in relation to land:
 - (i) the owner of any estate or interest in that land, including the Crown in right of the State; and
 - (ii) any statutory corporation which has the power to carry on Forestry Operations or Mining Operations as the case may be, on the land;
- (b) in relation to Forest Products or Mining products, as the case may be, the owner of any interest in those products.

“Parties” means the State of New South Wales and the Commonwealth of Australia;

“Party” means a Party to this Agreement;

“Plantations” means intensively managed stands of trees of either native or exotic species, created by the regular placement of seedlings or seed, but not principally for the purpose of the production of food or any other farm produce other than timber;

“Private Land” means lands other than Public Land and land owned or leased by the Commonwealth;

“Progress Report” means a report prepared by the Parties on the performance of this Agreement for each five-yearly review;

“Public Land” means lands of the New South Wales Crown;

“Pulpwood” means logs cut and prepared primarily for the manufacture of wood pulp;

“Ramsar Convention” means the Convention on Wetlands of International Importance Especially as Waterfowl Habitat;

“Ramsar Wetlands” means those places defined under section 17 of the EPBC Act;

“Recovery Plan” ~~includes~~ means a recovery plan made or adopted under the EPBC Act, or an equivalent instrument made under the *Biodiversity Conservation Act 2016* (NSW), or the *Fisheries Management Act 1994* (NSW) *Environment Protection and Biodiversity Conservation Act 1999* (Cwth) and/or relevant parts of the *Threatened Species Conservation Act 1995* (NSW);

“Regional ESFM Plan” means a plan covering State forests in the region that has the status of a management plan ~~under the Forestry Regulation 1999~~ (NSW) under the *Forestry Act 1916 2012* (NSW) and meeting additional requirements under the Forestry Regulation 2012 (NSW);

“Regional Forest Agreement” or **“RFA”** means a Regional Forest Agreement within the meaning of the ~~Export Control (Hardwood Wood Chips) (1996) Regulations~~ (C’wth) *Regional Forest Agreements Act 2002* (Cth);

“Regional Prescriptions” ~~include~~ means those prescriptions within the Forest Management Framework that are applicable to Forestry Operations in the Southern region. These prescriptions include but are not limited to silvicultural prescriptions ~~and systems~~, and environment protection measures covered by the Codes of Practices, Eco-Field Guides, and the ~~Integrated Forestry Operations Approval applying to the Southern region~~ Regulatory Instruments, Forest Management Zoning, and Aboriginal and non-Aboriginal cultural heritage guidelines;

“Register of the National Estate” means the register of the same name kept pursuant to the *Australian Heritage Commission Act 1975* (C’wth);

“Regulatory Instruments” means the State’s suite of statutory and regulatory tools used to achieve ESFM for forestry operations currently in place (or as amended from time to time), including, but not limited to:

- Integrated Forestry Operations Approval applicable to the Southern region under the *Forestry Act 2012* (NSW);
- Forestry Regulation 2012 made under the *Forestry Act 2012* (NSW);
- *Plantations and Reafforestation (Code) Regulation 2001* made under the *Plantations and Reafforestation Act 1999* (NSW);
- Private Native Forestry Code of Practice for Southern NSW, 2008;
- Additional, new or amended Regulatory Instruments as released from time to time by the NSW Government;

“Sawlog” means logs which are suitable for processing into sawn timber;

“Special Management Zone” or “FMZ 2” (~~Zone 2~~), means the zone of the same name ‘Zone 2 – Special Management’ as described under the NSW Forest Management Zoning system as described in S21A of the *Forestry Act 1916* (NSW) and described in the document *Forest Management Zoning in State Forests*, SFNSW 1999;

“Special Prescription Zone” or “FMZ 3B” (~~Zone 3B~~) means the zone of the same name ‘Zone 3B – Special Prescription’ as described under the NSW Forest Management Zoning system in the document *Forest Management Zoning in State Forests*, SFNSW 1999;

“Special Protection Zone” or “FMZ 1” (~~Zone 1~~), means the zone of the same name ‘Zone 1 – Special Protection’ as described under the NSW Forest Management Zoning system described in the document *Forest Management Zoning in State Forests*, SFNSW 1999;

“State forest” means land dedicated as State forest under the *Forestry Act 1916 2012* (NSW);

“State Forests of NSW” or “SFNSW” means the Forestry Commission of New South Wales, constituted as a corporation under the *Forestry Act 1916* (NSW) operating as State Forests of New South Wales;

“Statement of Significance” means a statement of significance made by the Australian Heritage Commission for a place, which forms part of the National Estate;

“Statutory Conservation Planning Document” means a conservation advice, recovery plan, threat abatement plan or wildlife conservation plan made or adopted in accordance with the EPBC Act, or equivalent instruments or programs under the *Biodiversity Conservation Act 2016* (NSW) or the *Fisheries Management Act 1994* (NSW);

“Sustainability Indicators” means qualitative or quantitative measures, at the regional (sub-national) level developed to assess the criteria for sustainable forest management, as described in *Ecologically Sustainable Forest Management Criteria and Indicators for the NSW Forest Agreement regions* (EPA 2017), and as amended from time to time;

“Sustainable Yield” means the long term estimated wood yield from forests that can be maintained from a given region in perpetuity under a given management strategy and suite of sustainable use objectives, as determined using the processes described in Attachment 11, and as amended from time to time;

“Threat Abatement Plan” means a threat abatement plan made or adopted under the EPBC Act *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth);

“Threatening Process” means a threatening process listed as a key threatening process under the *Biodiversity Conservation Act 2016* (NSW), *Fisheries Management Act 1994* (NSW) and the EPBC Act in recognition that the process adversely affects or may threaten the survival, abundance or evolutionary development of a native species or ecological community;

“Values Protected by Prescription” means *values protected by prescription* as defined in the JANIS Report and includes areas in the Forest Management Zoning system including those areas in FMZ 2 that do not meet Informal Reserve criteria, FMZ 3A, FMZ 3B and other mapped areas under the IFOA applicable to the Southern region.

“Wilderness” means wilderness as defined in the JANIS Report;

“Wilderness Values” means the values of the same name as defined in the JANIS Report and the NSW RFAs Scoping Agreement between NSW and the Commonwealth;

“Wild Rivers” means a water course, water course network, or a connected network of water bodies, of natural origin and exhibiting natural flow (perennial, intermittent or episodic) in which the biological, hydrological and geomorphological processes associated with the river flow; and the biological, hydrological and geomorphological processes in those parts of the catchment with which the river is intimately linked; have not been significantly altered by modern or colonial society;

“Woodchips and Unprocessed Wood” means ~~those goods that are prescribed goods under within the meaning of the *Export Control (Hardwood Wood Chips) Regulations 1996* (Cwlth Cth); the *Export Control (Regional Forest Agreements) Regulations* (Cwlth); and or the *Export Control (Unprocessed Wood) Regulations* (Cwlth Cth), or would be prescribed goods under those regulations if not for the *Export Control (Regional Forest Agreements) Regulations* (Cth)~~;

~~“Wood Supply Agreement” means an agreement in writing between State Forests of NSW and a person or company or organisation under which State Forests of NSW agrees to supply and the person or company or organisation agrees to take native hardwoods. It includes agreements commonly referred to as term agreements and wood supply agreements, of more than twelve months duration;~~

“World Heritage List” means the list kept under that title under Article 11 of the Convention Concerning the Protection of the World Cultural and Natural Heritage;

“World Heritage Nomination” means the submission by the Commonwealth of a nominated area to the UNESCO World Heritage Committee for assessment as a World Heritage area consistent with section 314 of the EPBC Act and the World Heritage Operational Guidelines for the Implementation of the World Heritage Convention;

“World Heritage Place” means a property on the World Heritage List;

~~“World Heritage Values” means features, formations, areas, and sites of outstanding universal value within the meaning of Article 2 of the Convention Concerning the Protection of the World Cultural and Natural Heritage, also known as the World Heritage Convention has the same meaning as in section 12(3) of the EPBC Act.~~

- 3 In this Agreement unless the contrary intention appears:
- (a) a reference to a clause or Attachment is a reference to a clause or Attachment to this Agreement and a reference to this Agreement includes a reference to an Attachment;
 - (b) a reference to this Agreement or another instrument is a reference to this Agreement or that other instrument as amended or varied from time to time;
 - (c) a reference to a statute or ordinance includes any consolidations, amendments, re-enactments or replacements thereof and also includes regulations and other instruments made under them;
 - (d) a reference to a code or other instrument includes any consolidations or amendments thereof;
 - (e) a word importing the singular includes the plural and vice versa, a word importing a gender includes each other gender and a reference to a person includes an individual, firm, body corporate, association (whether incorporated or not), government, governmental or semi-governmental body, local authority or agency;
 - (f) a reference to an act, matter or thing includes the whole or any part of that act, matter or thing and a reference to a group of acts, matters, things or persons includes each act, matter, thing or person in that group;

- (g) where any terms and conditions are added to an Attachment of this Agreement it is agreed that those terms and conditions will form part of this Agreement;
- (h) headings are inserted for convenience and do not affect the interpretation of this Agreement.

Definition of the Region

- 4 The area covered by this Agreement is the Southern RFA region as shown ~~on~~ in Map 1 ~~of~~ accompanying this Agreement.

Duration of Agreement

- 5 This Agreement takes effect on 24 April 2001 ~~upon signing by both Parties and,~~ unless earlier terminated in accordance with clauses 110, 111, 112 or 113, will remain in force ~~for 20 years~~ until 26 August 2039, or until a later date pursuant to clause 6A and 6B.
- 6 The process for extending the Agreement for a further period will be determined jointly by the Parties as part of the third five-yearly review.

6A Subject to clause 6B, upon the satisfactory completion of each five-yearly review in accordance with clause 8M, the Agreement will be extended for a further five years.

6B The extension of this Agreement under clause 6A will occur upon the satisfactory completion of the five-yearly review due to commence in 2024 and thereafter upon the satisfactory completion of each subsequent five-yearly review until this Agreement is terminated by the Parties or subsequent extensions of this Agreement are withdrawn in accordance with clause 14C.

Basis of Agreement – National Forest Policy Statement

- 7 The Parties confirm their commitment to the goals, objectives and implementation of the *National Forest Policy Statement (NFPS)* by:
 - (a) ~~Developing and implementing~~ Implementing Ecologically Sustainable Forest Management (ESFM);
 - (b) ~~Establishing and maintaining the~~ Comprehensive, Adequate and Representative (CAR) Reserve System;
 - (c) ~~Facilitating the development of an~~ Supporting an internationally competitive wood production and wood products industry through facilitating efficient and sustainable wood production, and wood products industries, based on maximising value-adding opportunities and efficient use of wood resources; and
 - (d) ~~Promoting the conservation and management of the private forest estate~~ Forest Estate.

Changes to the Agreement

- 8 This Agreement may only be amended with the consent, in writing, of both Parties. Parties agree to work cooperatively to address any differences between them as to the interpretation or implementation of the Agreement.

Monitoring the Agreement

General monitoring

8A. The implementation of this Agreement is monitored through the five-yearly reviews and the annual meetings between the Parties in the periods between the five-yearly reviews. Further:

- (a) The Parties agree to maintain open communication on matters relating to the implementation of this Agreement, including raising and responding to issues at any time.
- (b) The Parties agree that for efficiency and consistency with prior practices, the timing of monitoring and reporting of the North East and Southern RFAs will be aligned with the Eden RFA and will complement NSW and national forest reporting.
- (c) The Parties agree that the assessment process, the consultation undertaken in early 2018 and the results of the monitoring of Sustainability Indicators in *A report on progress with implementation of the New South Wales Regional Forest Agreements: Second and third five-yearly reviews July 2004 – June 2014, November 2017* constitute the five-yearly review that was due in 2019.
- (d) The next five-yearly review required by this Agreement will commence in 2024.
- (e) New South Wales agrees to develop and maintain a coordinated Monitoring, Evaluation and Reporting Plan, including the identification of research priorities, within the broader Forest Management Framework across relevant forest management tenures and to support RFA outcomes reporting for ESFM.

Annual meetings

8B. The Parties agree to hold annual officials-level, bi-lateral meetings in the years between each five-yearly review to monitor the implementation of the Agreement and discuss any matters or issues that arise.

8C. An online statement will be made publicly available on the outcomes of the meeting.

Five-yearly reviews

Five-yearly review

8D. A review of the performance of this Agreement is to commence during the last year of each five year period during the term of the Agreement (the five-yearly review) with the release of the Five-yearly Review Scoping Agreement.

8E. The purpose of the five-yearly review is to examine New South Wales' Forest Management to demonstrate Ecologically Sustainable Forest Management, including to:

- (a) demonstrate adaptive Forest Management in accordance with the RFA;
- (b) demonstrate how the Parties have provided for the protection of Matters of National Environmental Significance, including identifying trends and the status of Matters of National Environmental Significance, in accordance with the RFA;
- (c) demonstrate how relevant Statutory Conservation Planning Documents have been implemented as part of the Forest Management Framework;
- (d) demonstrate how social and economic benefits of forestry and other forest uses are being achieved;
- (e) evaluate current and future research priorities across the Forest Estate; and
- (f) assess the extent to which key findings and/or recommendations for preceding five-yearly reviews have been addressed.

8F. The Parties will prepare a Progress Report addressing the items listed at clause 8E including across key environmental, social and economic indicators (Sustainability Indicators). As such, the Progress Report will be a key source of information in the five-yearly reviews under this Agreement.

Conduct of five-yearly review

8G. Five-yearly reviews are to be conducted by an independent person or body jointly appointed by the Parties.

8H. In conducting the five-yearly review, the independent person or body will:

- (a) take into account public comments;
- (b) use and take into account the relevant Progress Report;
- (c) use and take into account the document titled 'Overview of the New South Wales Forest Management Framework' , as updated from time to time;
- (d) develop and submit to the Parties a report detailing the five-yearly review process and its findings and recommendations, within three months of commencement.

8I. In accordance with subsection 10(6) of the *Regional Forest Agreements Act 2002* (Cth), the Commonwealth Minister responsible for forestry will table the report provided under paragraph 8H (d) in each House of the Parliament within 15 sitting days of that House after the report is provided to the Minister.

8J. The Parties will consider the five-yearly review recommendations and publish a joint government response to the recommendations within six months of receiving the review report.

8K. The Parties will make a determination of satisfactory performance under this Agreement in the joint government response. If satisfactory performance is not determined, the Parties will include in the joint government response a list of remedial actions and when they will be delivered. The subsequent five-yearly review process will assess whether remedial actions have been delivered.

8L. The purpose of the five-yearly review process under this Agreement is not to re-negotiate the Agreement.

Satisfactory completion of 5 yearly review

8M. A five-yearly review will be satisfactorily completed upon the public release of the joint government response to the review report, which is to include identified remedial actions pursuant to clause 8K. The five-year extension pursuant to clauses 6A and 6B will then take effect, unless the joint government response identifies that there are outstanding remedial actions from a previous five-yearly review that have not been delivered to the satisfaction of both Parties, in which case the five-year extension will not take effect until a supplementary joint government response demonstrating the completion of the outstanding remedial actions has been released.

Requirement for an audit

8N. Either Party may initiate an audit, if in the opinion of the initiating Party, there has been, or is likely to be, an adverse finding or outcome relating to this Agreement, whether or not the outcome relates to non-compliance or likely non-compliance with the Agreement.

8O. Before an audit process commences, the initiating Party must notify and consult with the other Party on the following:

- (a) the initiating Party's reason for initiating the audit or review;
- (b) the scope and criteria for the audit, and
- (c) the appointment of an independent auditor.

8P. An audit may include:

- (a) an examination of the operation of this Agreement over a particular period of time; or
- (b) preparation of an audit report which addresses the criteria specified by the initiating Party.

8Q. An audit should be conducted in the most efficient and effective manner possible to address the opinion of and concerns identified by the initiating Party.

8R. The Parties agree to cooperate fully in any audit.

8S. The initiating Party may publish any report produced under clause 8P(b), provided the initiating Party, prior to publication:

- (a) notifies the other Party of the intent to publish the report;

- (b) provides the other Party with a copy of a draft of the final report; and
- (c) provides the other Party with 20 business days to respond to the draft of the final report.

8T The costs of an audit will be borne by the initiating Party.

Dispute Resolution

- 9 The Parties agree that if a dispute arises between the Parties regarding this Agreement it must be resolved expeditiously in accordance with the provisions of clauses 10 to 14.
- 10 When a dispute arises, a Party may serve a notice on the other specifying:
 - (a) the nature and substance of the matter or issue in dispute;
 - (b) that it is a dispute to be resolved in accordance with clauses 10 to 14.
- 11 If a notice is served under clause 10 the Parties must attempt to settle the dispute within 14 days. At the expiration of that 14 days and, if agreed, any additional period the Parties must appoint a mediator to conduct a mediation concerning the matter or issue in dispute.
- 12 If the dispute is not settled under clause 11 and the Parties fail to appoint a mediator, either of them may request the President of the Law Council of Australia, or the equivalent officer of such body as in future may have the functions of the Law Council of Australia, to nominate a mediator to conduct the mediation.
- 13 The costs of a mediator appointed under clauses 11 or 12 are to be shared equally between the Parties.
- 14 Each of the Parties agrees to use its best endeavours to resolve the dispute through mediation.

Withdrawal from extension process

- 14A. If there is no resolution or agreement on a dispute in accordance with clauses 9 to 14 (including the failure of mediation), either the Commonwealth Minister responsible for forestry (in consultation with the Commonwealth Minister responsible for the environment) or New South Wales Minister(s) responsible for the environment and/or forestry may send to the other Party and publish a written notice of its intention, unless the dispute is resolved, to withdraw from the extension process in clause 6A and 6B.
- 14B. Any notice under clause 14A above must specify the time period in which the other Party must address the dispute.
- 14C. If, at the end of the specified time period, the dispute has not been resolved, the Commonwealth Minister responsible for forestry (in consultation with the Commonwealth Minister for the environment) or the New South Wales Minister(s) responsible for the environment and/or forestry may write to the other Party's

government giving notice confirming the effective date of withdrawal from the extension process in clause 6A and 6B.

14D. In the event either Party withdraws from the extension process in clause 6A and 6B, negotiation of any subsequent extension to this Agreement will only be considered following the satisfactory completion of the penultimate five-yearly review (that is, the five-yearly review prior to the final five years of the Agreement's duration).

14E. In the event the Parties subsequently extend this Agreement subject to clause 14D and pursuant to clause 8M, the extension process in clause 6A and 6B will not apply to the extended Agreement unless otherwise agreed by the Parties.

Notices

15 Any notice or other communication to be given or made pursuant to this Agreement shall be in writing and addressed as the case may be as follows:

THE STATE

The Secretary
Department of Premier and Cabinet
52 Martin Place
SYDNEY NSW 2000
~~Director General~~
~~Premier's Department~~
~~Governor Macquarie Tower~~
~~1 Farrer Place~~
~~SYDNEY NSW 2000~~

THE COMMONWEALTH

The Secretary
Department of Agriculture and Water
Resources
18 Marcus Clarke Street
CANBERRA ACT 2600
~~Department of Agriculture, Fisheries &~~
~~Forestry Australia~~
~~Edmund Barton Building~~
~~BARTON ACT 2600~~

PART 2

- 16 This Part is not intended to create legally binding relations and provisions in Part 1 in so far as they relate to Part 2 are also not binding. Where there are references in this Part to obligations which are referred to in Part 3 and are intended to be legally binding, they are only included in Part 2 insofar as they provide context and for the sake of completeness so that the whole scheme which the Parties wish to implement is set out in this Part. The inclusion of references to these legally binding obligations in Part 2 does not derogate from the Parties intent that they be legally binding in Part 3.

FUNCTIONING OF THE AGREEMENT

~~Relationship to Previous Inter Government Forest Agreements~~

- 17 (a) ~~In relation to the Southern region, this Agreement replaces the *Deferred Forest Agreement*, signed by the Commonwealth and New South Wales Governments on 25 January 1996, and as subsequently amended. NOT USED~~
- (b) ~~New South Wales, in signing this Agreement, states that the area deferred from timber harvesting by the New South Wales Government Interim Forestry Assessment decision of 23 September 1996 (ie the Interim Deferred Forest Area), no longer applies in relation to the Southern region.~~

Relationship to Statutory Obligations

- 18 This Agreement cannot impose on either Party or a third party any obligation that is inconsistent with Australia's international obligations, or a law of the Commonwealth or of New South Wales.
- 19 Neither Party will seek to use existing or future legislation to undermine or impede this Agreement.
- 20 ~~The Commonwealth, in signing the Agreement, confirms that its obligations under the *Australian Heritage Commission Act 1975* (Cwlth) have been met. NOT USED~~
- 21 ~~Parties will manage their respective responsibilities with regard to the National Estate in accordance with the provisions of this Agreement as detailed in Attachment 4. NOT USED~~
- 22 ~~Parties acknowledge that the National Heritage Places Strategy may have implications for the cooperative management of the National Estate and agree to consult on those matters that may impact on the functioning of this Agreement in the development of the Strategy. The Parties note that when implemented, the Strategy may result in either Party seeking to amend those clauses of this Agreement relating to the Register of the National Estate. Any such amendment will be consistent with clauses 18 and 19 of this Agreement. NOT USED~~
- 23 ~~The Commonwealth confirms it has on or before the date of this Agreement entered into an agreement with the Australian Heritage Commission in which the Commission has agreed to perform and comply with all the agreements and~~

~~confirmations which are specified in Attachment 4 as being agreements and confirmations on the part of the Commission. NOT USED~~

- 24 ~~The Commonwealth, in signing the Agreement, confirms that its obligations under the *Environment Protection (Impact of Proposals) Act 1974* (Cwlth) have been met. The Commonwealth also confirms that, under the administrative procedures of the Act, any activities covered by the Agreement, including the five yearly reviews and minor amendments to the Agreement, will not trigger further environmental impact assessment. NOT USED~~
- 25 ~~The Commonwealth confirms that it has met its obligations in relation to this Agreement under the *Endangered Species Protection Act 1992* (Cwlth) up till 1 July 2000 and since then the *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth), in so far as they were to be performed prior to the date of the commencement of this Agreement. NOT USED~~
- 26 The Commonwealth notes that its obligations under the EPBC Act to promote protection of Listed Species and Communities ~~endangered species protection~~ will involve ongoing cooperative work with New South Wales agencies concerning the Southern region.

Matters of National Environmental Significance

- 26A New South Wales will use best endeavours to ensure that the Forest Management Framework provides for the protection of Matters of National Environmental Significance.
- 26B The Parties agree that research, monitoring, reporting, evaluation and the communication of findings are important to support decision making with regard to Matters of National Environmental Significance.
- 26C New South Wales will use best endeavours to continue to improve research, monitoring, reporting, evaluation and communication mechanisms as part of its adaptive Forest Management Framework in accordance with clause 44.
- 26D The Parties agree that the monitoring, audit, reporting and review processes set out in this Agreement provides an assurance that the Forest Management Framework takes into account the protection of Matters of National Environmental Significance.

Listed Species and Communities, including threatened flora and fauna

- 26E New South Wales will use best endeavours to ensure that the Forest Management Framework provides for the protection of Listed Species and Communities.
- 26F The Parties, recognising that priorities can change in light of new information, will continue to consult on the priorities for:
- (a) Listed Species and Communities, Forest Ecosystems, and Threatening Processes (further information at Attachment 3);

- (b) the preparation of all Statutory Conservation Planning Documents relevant to this Agreement; and
- (c) research on Listed Species and Communities, Forest Ecosystems, and Threatening Processes.

26G New South Wales will use best endeavours to ensure that any new or altered actions in the Forest Management Framework are developed and implemented over the term of the Agreement for Listed Species and Communities to:

- (a) provide for the maintenance of the relevant species;
- (b) have a sound scientific basis;
- (c) give consideration to relevant determinations made by the New South Wales Threatened Species Scientific Committee or Fisheries Scientific Committee;
- (d) be consistent with relevant Statutory Conservation Planning Documents; and
- (e) take note of public comment.

26H New South Wales will use best endeavours to ensure that the State's Statutory Conservation Planning Documents and Regulatory Instruments that include management actions, prescriptions or protections for Listed Species and Communities in accordance with the Forest Management Framework, will:

- (a) be maintained, implemented and updated on an as needs basis to provide ongoing protection for Listed Species and Communities;
- (b) be made publicly accessible.

World Heritage Places

27 ~~Parties agree to actively investigate, and jointly participate in the further World Heritage assessment of the relevant Australia wide themes specified in Section 3.4.2 (Table 17) of the World Heritage Expert Panel report, including any potential contribution from the Southern region. The Parties acknowledge that the World Heritage Values of a property included in the World Heritage List are protected by Part 3 of the EPBC Act, as the exemption to the application of Part 3 for Forestry Operations does not apply to a World Heritage Place pursuant to section 42 of the EPBC Act.~~

28 ~~Parties recognise that any areas nominated for World Heritage listing subject to clause 31 will be subject to the provisions of the *Environment Protection and Biodiversity Conservation Act 1999*. NOT USED~~

29 ~~The Commonwealth agrees that it will give full consideration to the potential social and economic consequences of any World Heritage Nomination of places in the Southern region and that any such nomination will only occur after the~~

~~fullest consultation and with the agreement of the State. The Parties agree to participate in the assessment of any future World Heritage Places consistent with the Australian World Heritage Intergovernmental Agreement.~~

30 ~~The Parties agree that any World Heritage Nomination involving any part of the forest estate in the Southern region will be from within the CAR Reserve System. The Parties agree that any World Heritage Nominations involving any part of the Forest Estate in the Southern region will be from areas within the Dedicated Reserve elements of the CAR Reserve System.~~

31 ~~The Parties agree that before any World Heritage Nomination is made: NOT USED~~

~~(a) all necessary management arrangements, including joint policy coordination arrangements will be agreed;~~

~~(b) all related funding issues will be resolved to the satisfaction of both Parties; and~~

~~(c) the Parties will develop an agreed management plan that is suitable for consideration for bilateral accreditation under section 46 of the *Environment Protection and Biodiversity Conservation Act 1999*.~~

National Heritage Places

31A. New South Wales will use best endeavours to ensure that the Forest Management Framework provides for the protection of National Heritage Values of National Heritage Places in accordance with National Heritage Management Principles.

Commonwealth Heritage Places

31B. New South Wales will use best endeavours to ensure that the Forest Management Framework provides for the protection of Commonwealth Heritage Values through the management of Commonwealth Heritage Places in accordance with Commonwealth Heritage Management Principles.

Ramsar Wetlands

31C. The Parties acknowledge that the Forest Management Framework provides for the protection of the ecological character of Ramsar Wetlands, in accordance with Australia's obligations under the Ramsar Convention, by:

(a) the application of Part 3 of the EPBC Act, as the exemption to the application of Part 3 of the EPBC Act for Forestry Operations does not apply to Ramsar Wetlands pursuant to section 42 of the EPBC Act;

(b) management of Ramsar Wetlands, including having regard to Ramsar Wetland information sheets and Ramsar Wetland ecological character descriptions; and

(c) management of the relevant threatened ecological communities listed in Schedule 2 of the *Biodiversity Conservation Act 2016* (NSW), and/or listed under the *Fisheries Management Act 1994* (NSW).

- 32 ~~The Commonwealth undertakes to use its best endeavours to secure the enactment of legislation which amends the *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth) by inserting definitions of “forestry operations”, “RFA forestry operations” and “RFA or Regional Forest Agreement” identical to those contained in the *Regional Forest Agreements Bill* (Cwlth) and introduced such legislation into the Parliament of the Commonwealth on 14 August 2000. NOT USED~~

Export controls

- 33 ~~Parties note that no controls under the *Export Control Act 1982* (Cwlth-Cth) or any other export control law within the meaning of the *Regional Forest Agreements Act 2002* (Cth) will apply to ~~hardwood~~ Woodchips ~~or~~ and Unprocessed Wood sourced from the Southern region while this Agreement is in place.~~

Integrated Forestry Operations Approval applicable to the Southern region

- 34 ~~New South Wales confirms that its Forest Agreement covering the Southern region and any Integrated Forestry Operations Approvals applying to all or part of the Southern region will be integral parts of the New South Wales Forest Management System and will be means by which New South Wales will implement obligations and undertakings arising from this Agreement. Consistent with clause 47, NSW agrees to have in place a Forest Agreement covering the Southern region and have granted an Integrated Forestry Operations Approval applying to the Southern region by 30 June 2001. New South Wales confirms that relevant Regulatory Instruments, such as the Integrated Forestry Operations Approval applicable to the Southern region, are parts of the New South Wales Forest Management Framework and are means by which New South Wales will implement obligations arising from this Agreement.~~
- 35 ~~The Parties note that until a Forest Agreement exists and an Integrated Forestry Operations Approval is granted covering the Southern region, forest management will be regulated through the *Threatened Species Licences* and *Pollution Control Licences* issued to SFNSW and applying in the region at the time of signing this Agreement. NOT USED~~
- 36 ~~New South Wales undertakes to notify the Commonwealth within fourteen days of any amendment or termination of a Forest Agreement or amendment, suspension or revocation of any Integrated Forestry Operations Approval, which applies to the Southern region. Copies of any Forest Agreements or Integrated Forestry Operations Approvals will be provided to the Commonwealth within fourteen days. NOT USED~~

Milestones

- 37 ~~This Agreement establishes milestones as given in Attachment 5 and Parties will report annually on their achievement during the first five years, using an appropriate public reporting mechanism. NOT USED~~

Five yearly review

- 38 ~~Within each five year period, a review of the performance of the Agreement will be undertaken. The purpose of the five yearly review is to provide an assessment of progress of the Agreement against the established milestones, and will include:~~ NOT USED
- ~~(a) the extent to which milestones and obligations have been met, including management of the National Estate;~~
 - ~~(b) the results of monitoring of Sustainability Indicators; and~~
 - ~~(c) invited public comment on the performance of the Agreement.~~
- 39 ~~While the review process will not open up the Agreement to re-negotiation, both Parties may agree to some minor modifications to incorporate the results of the review as per clause 8.~~ NOT USED
- 40 ~~The outcomes of the review will be made public. The mechanism for the review will be determined by both Parties before the end of the five year period and the review will be completed within three months.~~ NOT USED
- 41 ~~The Commonwealth will table in the Commonwealth Parliament the signed Regional Forest Agreement and, when completed, the annual reports detailing achievement of the milestones for the first four years of the Agreement and the first five yearly review on performance against milestones and commitments.~~ NOT USED

ECOLOGICALLY SUSTAINABLE FOREST MANAGEMENT (ESFM)

- 42 The Parties agree that ESFM is an objective which requires a long term commitment to ~~continuous~~ continual improvement and that the key elements for achieving it are:
- ~~(a) the~~ The establishment and maintenance of a the CAR Reserve System (Attachment 1);
 - ~~(b) the development of internationally competitive forest products industries~~ efficient Efficient and sustainable wood production and wood products industries based on maximising value-adding opportunities and efficient use of wood resources; and
 - ~~(c) An integrated, complementary and strategic forest management systems~~ Forest Management Framework capable of responding to new information, including climate change risks and adaptation responses.
- 43 ~~The Parties recognise that many of the existing New South Wales processes and regulations are designed to produce effective outcomes in terms of fauna, flora, soil and water conservation on State forests. These elements provide a sound basis for the further development of systems and processes to achieve ESFM. The Parties recognise that the NSW Forest Management Framework is designed to produce effective outcomes for fauna, flora, soil and water conservation, and heritage~~

values on State forests and provides a sound basis for implementation and continual improvement of such to achieve ESFM.

- 44 ~~New South Wales confirms its commitment to the achievement of ESFM on Public and Private Land consistent with the principles of Ecologically Sustainable Forest Management at Attachment 13, and to the ongoing review and subsequent implementation of its legislation, policy, plans, Codes and Regional Prescriptions to ensure ESFM objectives can be achieved in a more efficient regulatory environment. New South Wales confirms its commitment to the ongoing implementation and achievement of ESFM on both Public Land and Private Land through the continued implementation and improvements to its Forest Management Framework and adaptive management in accordance with the ESFM principles in Attachment 13.~~

Monitoring and reporting on Ecologically Sustainable Forest Management

- 45 ~~New South Wales agrees that in providing for ESFM, its Forest Management System will be amended to implement the undertakings of this Agreement, including those specified in Attachments 6 and 8. The Parties recognise that:~~
- ~~(a) the Forest Management Framework is enhanced by adaptive management and continuing mechanisms to monitor, report and review the sustainability of forest management policies and practices;~~
 - ~~(b) fostering stakeholder understanding of ESFM in NSW is important; and~~
 - ~~(c) a range of processes and instruments exist which provide for public participation and consultation, as outlined in the summary document titled 'Overview of the New South Wales Forest Management Framework'.~~
- 46 ~~Following processes outlined in the *Forestry and National Park Estate Act 1998*, NSW will establish by 30 June 2001 a Forest Agreement covering the Southern region and an associated Integrated Forestry Operations Approval applying to the Southern region which are consistent with this Agreement, the Integrated Forestry Operations Approvals and Forest Agreements presently in place in NSW.~~
- 47 New South Wales undertakes to:
- (a) ~~make by 30 June 2001 and maintain for the duration of this Agreement a Forest Agreement covering the Southern region; Review and update the summary document titled 'Overview of the New South Wales Forest Management Framework', which describes the Forest Management Framework at a given point in time, as a minimum for each five-yearly review period;~~
 - (b) ~~grant by 30 June 2001 and maintain for the duration of this Agreement an Integrated Forestry Operations Approval covering the Southern region, consistent with Attachments 1, 3, 4 and 8;~~
 - (c) ~~complete and publish plans of management for areas dedicated under the *National Parks and Wildlife Act 1974* (NSW) by 31 January 2006; Use best endeavours to ensure that plans of management are developed and~~

implemented for Dedicated Reserves under the *National Parks and Wildlife Act 1974* (NSW) and for flora reserves under the *Forestry Act 2012* (NSW) ensuring review and revision on a regular basis;

- (d) ~~complete and publish Regional ESFM Plans for State forests under the *Forestry Regulation 1999* (NSW) under the *Forestry Act 1916* (NSW) by 31 December 2004;~~ Implement the Regional ESFM Plan applicable to the Southern region (currently the *Forest Management Plan for the Coastal Forests of NSW* (FCNSW 2016)) – or an equivalent instrument – ensuring review and revision on a regular basis;
- (e) ~~implement the Forest Management Zoning system for the Southern region by 31 December 2004;~~ Ensure that the Forest Management Zoning system for the Southern region is maintained, implemented and reviewed on a regular basis;
- (f) ~~m- Manage cultural values, both Aboriginal and non-Aboriginal, in the Southern region, in accordance with guidelines developed by New South Wales to meet the requirements in the EPBC Act, *National Parks and Wildlife Act 1974* (NSW) and the *Heritage Act 1977* (NSW), as amended from time to time; consistent with the guidelines in the *Protective Mechanisms for Cultural Heritage – Southern Region* as outlined in clause 90, Attachment 4 and the principles in Attachment 10. The Commonwealth acknowledges that the Cultural Heritage Guidelines attached to the *Integrated Forestry Operations Approval* for the Upper North East Region that will be attached to the *Integrated Forestry Operations Approval* applying to the Southern region are consistent with the above documents.~~
- (g) ~~implement the review and monitoring processes and develop the strategic and operational requirements of Sustainable Yield systems and processes using enhanced Forest Resource and Management Evaluation System (FRAMES) as described in Attachment 8 to enable the review of Sustainable Yield by 1 December 2006;~~ Manage availability of timber resources for the State forest estate in accordance with Sustainable Yield estimates calculated using FRAMES or an equivalent, including to:
 - (i) take account of climate risks and adaptation responses;
 - (ii) ensure that FRAMES or an equivalent for the Southern region is maintained and continually improved and provide periodic reviews of wood product yields as documented in Attachment 11;
 - (iii) undertake and make publicly available an independent review of Sustainable Yield estimates for the Southern region during each five-yearly review period;
- (h) ~~develop and implement environmental management systems in accordance with the principles outlined in Attachment 8 by 30 April 2004.~~ Maintain and implement a management system for public Forests that meets the criteria for an environmental management system meeting the requirements of ISO 14001 and demonstrates ESFM;

- (i) Identify and integrate relevant climate risks and adaptation responses into the monitoring, evaluation and reporting requirements in Regional ESFM Plans and plans of management under the *National Parks and Wildlife Act 1974* (NSW);
- (j) Ensure that there is a transparent, systematic and credible process for investigating alleged environmental incidents reported by members of the public in relation to Forestry Operations on Public and Private Land and that information about regulatory actions are made publicly available where appropriate; and
- (k) Establish and maintain a coordinated forum for stakeholder engagement.

Monitoring, Reporting and Consultative Mechanisms

Sustainability Indicators

- 47A Pursuant to clause 8F, the State will continue to publicly report on the results of monitoring of Sustainability Indicators every five years to align with and inform the five-yearly reviews required under this Agreement and reporting will be under the headings of the Montreal Process Criteria in Attachment 9.
- 48 ~~New South Wales will report on the results of monitoring of the Sustainability Indicators, which are described in the report ‘Criteria, Indicators, Targets and Monitoring Processes of Ecologically Sustainable Forest Management for the Southern Region’. Reporting against the indicators will be consistent with the framework document *A Framework of Regional (Sub-National) Level Criteria and Indicators of Sustainable Forest Management in Australia* (Department of Primary Industries and Energy 1998) developed by the MIG. The Parties recognise that the document *Ecologically Sustainable Forest Management Criteria and Indicators for the NSW Forest Agreement regions* (EPA 2017) is consistent with *Australia’s Sustainable Forest Management Framework of Criteria and Indicators 2008 – Policy Guidelines* (Commonwealth of Australia 2008) developed by the Montreal Implementation Group for Australia (MIG).~~
- 49 ~~Comprehensive Regional Assessments and the development of this Agreement have provided extensive opportunities for public participation and reporting. Parties recognise that the public reporting activities and on-going opportunities for public participation and consultation associated with existing New South Wales and Commonwealth processes and instruments will continue. A range of these processes and improvements are listed in Attachment 6. New South Wales agrees to review and revise its Sustainability Indicators to align with any relevant review of Sustainability Indicators at a national level.~~
- 50 ~~As required by the *Forestry and National Park Estate Act 1998* (NSW), New South Wales will report annually to Parliament on compliance with any Integrated Forestry Operations Approval for the Southern region and the New South Wales *Southern Region Forest Agreement*. New South Wales will also furnish a copy of the reports to the Commonwealth within fourteen days of their tabling. NOT USED~~

Accreditation

51 ~~The Commonwealth accredits as providing for continuing improvement in ESFM New South Wales' Forest Management System (including its legislation, policies, Codes for the Southern region, plans and management practices applying to both Public and Private land), as agreed to be amended in this Agreement, particularly those undertakings in clauses 43, 47(a), (b), (d), (e), (g), (h) and 56. The System includes: NOT USED~~

- ~~• a New South Wales *Forest Agreement* under the *Forestry and National Park Estate Act 1998* (NSW) covering the Southern region;~~
- ~~• integrated Forestry Operations Approvals for the Southern region;~~
- ~~• regional ESFM Plans for the Southern region;~~
- ~~• New South Wales processes for forecasting Sustainable Yield from the Southern region~~
- ~~• codes of Practice and Eco Field Guide for Public Lands;~~
- ~~• codes of Practice for Private Lands;~~
- ~~• the *Native Vegetation Conservation Act 1997* (NSW);~~
- ~~• the SFNSW Native Forest Management System; and~~
- ~~• the NPWS Environmental Management System.~~

Sustainability Indicators

52 ~~Parties agree that the current Forest Management System will be enhanced by implementing mechanisms to monitor and review the sustainability of forest management practices. To ensure this occurs, Parties agree that: NOT USED~~

- ~~(a) the Sustainability Indicators referred to in clause 48 are consistent with the Montreal Process Criteria in Attachment 9, and take into account the *Framework of Regional (Sub National) Level Criteria and Indicators of Sustainable Forest Management in Australia* developed by the MIG;~~
- ~~(b) both Parties agree that the indicators referred to in clause 48 are to be trialed and assessed during the first five year period to ensure they are practical, measurable, cost effective and capable of being implemented at the regional level;~~
- ~~(c) reporting on the indicators referred to in clause 48 will be under the headings of the Montreal Process Criteria as in Attachment 9; and~~
- ~~(d) both Parties agree to further develop, review, and if necessary revise Sustainability Indicators in time for the first five yearly review.~~

Private Land

- 53 The Parties reaffirm their commitments made in the *National Forest Policy Statement (1992)* to the conservation and management of the private ~~forest estate~~ Forest Estate. The Parties note that Forestry Operations on Private Land in New South Wales are undertaken in accordance with the Private Native Forestry Code of Practice. The Parties note that New South Wales has provisions under the ~~Native Vegetation Conservation Act 1997~~ Local Land Services Act 2013 (NSW) for native vegetation retention controls to regulate the clearance of native forest on Private Land.
- 54 The Parties ~~agree to encourage private forest owners to ensure that their management operations are~~ recognise the Private Native Forestry Code of Practice, applying to Forestry Operations on Private Land in the Southern region, which requires Forestry Operations to be consistent with ESFM practices.
- 55 CAR Values which are priorities for the CAR Reserve System and which occur on Private Land will be dealt with by the principles and mechanisms outlined in Attachments 1 and 2. Parties agree the values listed at Attachment 2 can be managed consistently with the JANIS Reserve Criteria through a range of mechanisms, with the consent of the ~~land owner~~ Private Land Owner, as specified in Attachment 2. Priorities for protection of Forest Ecosystems as at 2001 are given in Tables 1 and 2 of Attachment 2. ~~All conservation mechanisms for the establishment of the Private Land component of the CAR Reserve System will be voluntary.~~
- 55A The Parties recognise the importance to the CAR Reserve System of Environment and Heritage Values on Private Land and the State agrees to continue to support processes that will facilitate the voluntary participation by Private Land Owners to protect CAR Values on Private Land. All conservation mechanisms for the establishment of the Private Land component of the CAR Reserve System will be voluntary.
- 56 ~~New South Wales agrees to produce a Code of Practice for timber harvesting of native forest on Private Lands by the first five yearly review. NOT USED~~
- 57 ~~Parties recognise that a Code of Practice for Plantations on Private Land under the *Plantations and Reafforestation Act 1999* is to be completed by 30 June 2001. NOT USED~~
- 58 New South Wales confirms that the CAR Reserve System ~~has been established~~ is being maintained and implemented through this Agreement, including Attachment 2, and that conservation levels achieved ~~in that reserve system~~ will not subsequently be used as a basis for preventing timber harvesting in accordance with the Private Native Forestry Code of Practice applying to the Southern region being carried out on Private Lands. Consistent with clause 18 this is not to be interpreted as preventing voluntary conservation measures and mechanisms to protect CAR Values on Private Land.
- 58A The Parties will use best endeavours to ensure any changes to the Regional Prescriptions applied to Private Land will not subsequently lead to a net deterioration in Environment and Heritage Values on Private Land.

58B The Parties recognise that Values Protected by Prescription on Private Land will be protected during Forestry Operations by adherence to Regulatory Instruments including the Private Native Forestry Code of Practice applying to the Southern region.

Threatened Flora and Fauna

- 59 ~~The Parties agree that the CAR Reserve System, actions under the New South Wales Biodiversity Strategy, *Threatened Species Conservation Act 1995* (NSW) and the *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth), *Forestry and National Parks Estate Act 1998* (NSW) and the application of a range of management strategies, management plans and the Integrated Forestry Operations Approval will provide for the protection of rare or threatened flora and fauna species and ecological communities. NOT USED~~
- 60 ~~Where threatened species, ecological communities and threatening processes restricted to New South Wales are listed under both the *Threatened Species Conservation Act 1995* (NSW) and the *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth), any new or revised Recovery Plans or Threat Abatement Plans will be jointly prepared to meet the requirements of both Acts. Where Recovery Plans or Threat Abatement Plans under the *Threatened Species Conservation Act 1995* (NSW) meet the requirement of the *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth), the Commonwealth will consider adopting them. NOT USED~~
- 61 ~~The Parties agree that the management prescriptions or actions identified in jointly prepared and agreed Recovery Plans or Threat Abatement Plans will be implemented as a matter of priority, including through the Integrated Forestry Operations Approval on State forest. NOT USED~~
- 62 ~~Recovery Plans for items listed under both Acts and extending beyond New South Wales will be prepared jointly with New South Wales and other relevant governments to be considered for adoption under the *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth). NOT USED~~
- 63 ~~Parties will continue to consult on the priorities for listing threatened species, ecological communities and threatening processes, and the preparation of Recovery Plans, recognising that priorities can change in the light of new information. Currently agreed priorities and commitments for the next five years are outlined in Attachment 3. NOT USED~~

THE CAR RESERVE SYSTEM

- 64 ~~Parties agree that the primary function of the CAR Reserve System is to ensure the conservation and protection of Environment and Heritage Values. The Parties agree that the CAR Reserve System has been established and progressively added to for the purpose of ensuring the long-term conservation and protection of the values defined by the JANIS Reserve Criteria. The CAR Reserve System includes the land identified in Attachment 1.~~

64A The Parties agree that the CAR Reserve System will continue to support the long-term conservation and protection of Environment and Heritage Values, including Listed Species and Communities.

65 Parties agree that the CAR Reserve System as identified on Map 1 and presented in Attachment 1 and Attachment 2, and as amended from time to time, satisfies the JANIS Reserve Criteria. Each element of the CAR Reserve System, with the exception of Commonwealth owned or leased land, will be administered in accordance with New South Wales legislation.

65A The Parties agree that the CAR Reserve System established in accordance with this Agreement (including as it has been progressively added to and as further defined in Attachment 1 and Attachment 2), comprises:

- (a) Dedicated Reserves; and
- (b) Informal Reserves; and
- (c) areas with CAR Values Protected by Prescription; and
- (d) Private Land with CAR Values protected under secure management arrangement by agreement with Private Land Owners.

Action to manage the CAR Reserve System on public land

66 New South Wales agrees to implement, manage and conserve the Southern region CAR Reserve System described in Attachment 1 and identified on Map 1 with the exception of Commonwealth owned or leased land.

66A The State will manage and conserve the Dedicated Reserve and Informal Reserve elements of the CAR Reserve System consistent with its obligations in relation to the relevant statutory principles and values of reservation set out in Part 4, Division 2 of the National Parks and Wildlife Act 1974 (NSW), or obligations under the Forestry Act 2012 (NSW).

~~67 The Commonwealth agrees to manage and conserve those parts of the CAR Reserve system on Commonwealth owned or leased lands consistent with the conditions outlined in Attachment 1. NOT USED~~

68 Parties agree that through the acquisition of Private Land (by voluntary sale), transfer of lands of the Crown, or transfer of land from an existing reserve tenure to one of higher conservation protection status, enhancements to the CAR Reserve System could occur. Both Parties agree to use best endeavours that such that enhancements to the CAR Reserve System will not impede access to the management of State forest lands or the meeting of the wood supply commitments in this Agreement (clauses 76, 77, 79, 80, 81).

69 In the incorporation into the CAR Reserve System of lands of the Crown over which a licence or occupational permit is held NSW will:

- confirm the presence of CAR ~~values~~ Values needed for reservation;

- through consultation, take into consideration any existing interests in the land of the licence or permit holder;
- ensure where practicable that suitable transition arrangements apply; and
- ensure that practical and legal access remains available where such access to adjacent private, licensed or leased land currently crosses or falls within land to be added to the CAR Reserve System under this ~~agreement~~ Agreement.

70 ~~Parties agree that changes to the CAR Reserve System will only occur in accordance with this Agreement, will be made publicly available, and will not lead to deterioration in the representation or protection of identified CAR Values, except that minor changes to the levels of representation or protection of specific CAR values may occur. The Parties agree to ensure changes to the CAR Reserve System will:~~

- only occur in accordance with this Agreement;
- be made publicly available; and
- not lead to deterioration in the representation or protection of identified CAR Values to below levels established by this Agreement in 2001, noting that minor changes to the levels of representation or protection of identified CAR Values may occur as a result of actions that are in accordance with this Agreement.

70A New South Wales will:

- discuss with and notify the Commonwealth of any proposed changes to the CAR Reserve System that will significantly impact Forestry Operations, wood supply to industry, or change the Sustainable Yield of the region by more than one per cent;
- not make any changes to the CAR Reserve System that would reduce the total percentage for each Forest Ecosystem, non-forest ecosystem or Old Growth forest below the targets set in the JANIS Report, noting that minor changes may occur as a result of actions that are in accordance with this Agreement; and
- use best endeavours to not reduce the Dedicated Reserve component of the CAR Reserve System to below the level of protection as at December 2017 as contained in Attachment 1 Clause 6 to this Agreement noting that minor changes may occur as a result of actions that are in accordance with this Agreement.

70B The State will maintain public records indicating the location, extent and purpose of any amendment to those elements of the CAR Reserve System in Informal Reserves or Values Protected by Prescription categories and the net impact that any amendments have on CAR Values.

Environment and Heritage Values

Protection of Environment and Heritage Values

71 Parties agree ~~that best endeavours will be used~~ to maintain the levels of protection of Environment and Heritage Values National Estate Values in a regional context; however, minor changes to the levels of protection of individual values may occur as a result of changes to the CAR Reserve System in State forest.

71A The Parties agree that the CAR Reserve System, established in accordance with this Agreement, and the application of the NSW Forest Management Framework, protects Environment and Heritage Values.

Climate change

71B The State agrees to manage its Forests in accordance with the NFPS objectives and policies as they relate to climate change, adaptation and carbon.

71C The Parties acknowledge:

- (a) climate change is driving more extreme weather events that will impact on Forest Management, including biodiversity and Listed Species and Communities, resource availability, and risk management for projected increases in frequency and magnitude of hazards including fire, floods, storms, sea level rise and heatwaves;
- (b) integrating climate change adaptation into Forest Management is required to build resilience and manage climate risks and meet the objectives of ESFM; and
- (c) the need to manage Forests to maintain or enhance the contribution of all elements of the Forest Estate to the effective management of carbon within the carbon cycle.

Environmental processes within forests

71C The State agrees to manage its Forests in accordance with the NFPS objectives and policies as they relate to water supply and catchment management and implement forest management practices that seek to:

- (a) ensure the availability of reliable, high-quality water supplies from forested land and to protect catchment values;
- (b) minimise soil compaction and soil disturbance to encourage healthy forest growth and minimise downstream impacts.

INDUSTRY AND REGIONAL DEVELOPMENT STABILITY

72 The Parties agree that State forest outside the CAR Reserve System is available for timber harvesting in accordance with this Agreement and the laws of New South Wales.

73 The Parties will use best endeavours to ensure ~~agree~~ that any changes to the total area of State forest or areas excluded from timber harvesting or Regional Prescriptions applied to State forest will not lead to a net deterioration in the

capacity to supply wood from the Southern region, ~~in terms of the volumes as specified in this Agreement and in terms of species and quality.~~

- 74
- ~~(a) The Parties acknowledge that the forest based industries in the Southern region contribute to both the regional and State economies and are an essential component of many communities in the region. The Parties intend that this Agreement will enhance opportunities for further growth and development of forest based industries in the Southern region.~~
 - ~~(b) The Agreement will provide long term stability for these industries through including long term certainty of timber supply. This stability will facilitate industry development through:
 - ~~(i) New investment, plantation development, reforestation, downstream processing, value adding and jobs growth in forests based industries;~~
 - ~~(ii) Further introduction of new technology, enhanced utilisation of regrowth timber for sawn products, thinning of regrowth forests and more efficient utilisation of residue wood;~~~~
 - ~~(c) There will be significant economic opportunities in other forest based industries, such as:
 - ~~(i) — tourism and recreation; and~~
 - ~~(ii) — mineral exploration and Mining.~~~~

In recognition of the contribution of timber and forest-based industries to the New South Wales' economy, the Parties intend that this Agreement will support future growth and development of New South Wales' industries associated with forests and timber products specifically through:

- (a) certainty of resource access for the timber and forest-based industries;
- (b) encouraging increased production of Plantation-grown timber to supplement wood supply from native forests;
- (c) facilitating timber and forest-based industries growth and development, in areas such as:
 - skills retention and workforce development;
 - research, innovation and extension;
 - strategic marketing, communications and education;
 - essential and strategic infrastructure;
 - resource management and access; and
 - regulatory modernisation;
- (d) providing for other forest based industries, including:
 - security of access to the Mining industry by continuing to recognise defined land tenures which allow for Mineral Exploration and Mining

subject to the requirements of State and Commonwealth legislation; and

- facilitating economic opportunities for tourism and recreation.

75 As part of providing greater security of access to forest resources, the Commonwealth will not prevent enterprises obtaining, using or exporting the quantities of timber, Woodchips ~~or~~ and Unprocessed Wood products sourced from the Southern region in accordance with this Agreement.

76 ~~NSW agrees to supply a minimum of 48,500 m³ per annum of High Quality Large Logs from the South Coast Sub Region and a minimum of 48,000 m³ per annum of high quality large logs from the Tumut Sub Region for 20 years from 1 January 2001.~~ New South Wales agrees to make available to timber and forest-based industries, Forest Products at volumes no greater than Sustainable Yields for the Southern region, as amended from time to time and determined in accordance with Attachment 11.

77 ~~The timber volumes in clause 76 will be allocated under twenty year Wood Supply Agreements. These agreements will take effect from 1 January 2001 for the South Coast Sub Region and as early as possible, but no later than 1 January 2002, for the Tumut Sub Region.~~ New South Wales will implement Sustainable Yield in accordance Attachment 11 to this Agreement.

77A NSW will ensure Sustainable Yield is calculated and managed consistent with the ESFM principles at Attachment 13.

78 ~~The Wood Supply Agreements in clause 77 will incorporate requirements for improved efficiency and increased processing to increase the value of products produced by the holders of the agreements from the timber supplied under the agreements (commonly referred to as “value adding” requirements).~~ New South Wales agrees that the timber volumes made available under this Agreement will be reviewed using the processes described in clause 47(g) and in accordance with the provisions of this Agreement. Any additional sustainable timber volumes identified in this way will be made available to industry provided this is consistent with this Agreement, including the provisions relating to Ecologically Sustainable Forest Management, and that there are no adverse environmental effects, including deleterious effects on CAR Values or Matters of National Environmental Significance.

79 ~~The volumes described in clause 76 from the Tumut Sub Region will be comprised of 18,500m³ of Ash and 29,500m³ of mixed hardwood logs. It is noted that an additional 1,000m³ per annum of Quota Sawlogs (a sawlog having dimensions and quality that are equal to or greater than those specified in the Wood Supply Agreements between SFNSW and sawlog using customers) will be supplied from Ingebirah State Forest in the Tumut Sub Region to the Eden RFA Region over the period of this Agreement. This 1,000m³ per annum for the Eden RFA Region is additional to the Tumut Sub Region High Quality Large Log volume of 48,000m³.~~ NOT USED

80 ~~The Parties note that for the South Coast Sub Region, arrangements for pulp grade timber/pulpwood include an amount of 97,000 tonnes per annum, being a quantity~~

~~which reflects the maximum supply levels contracted at the date of this Agreement.~~
~~NOT USED~~

- 81 ~~High Quality Small Logs will be supplied at a minimum of approximately 4,850 m³ per annum for the South Coast Sub Region and at levels greater than 1999 contracted volumes for the Tumut Sub Region, being 3,085 m³ per annum (1,500 m³ per annum hardwood and 1,585 m³ per annum Ash).~~ ~~NOT USED~~
- 82 ~~Supply arrangements for other Forest Products (including poles, piles, girders, veneer logs, High Quality Small Logs, Low Quality Logs and pulp logs) from forest operations will be in accordance with current and future market demands.~~
~~NOT USED~~
- 83 ~~The Forest Products referred to in clauses 80, 81 and 82 will be supplied as a result of the management and harvesting of forests (including thinning operations) to meet the volumes specified in clause 76.~~ ~~NOT USED~~
- 84 ~~Wherever possible NSW New South Wales will enhance silvicultural programs and reforestation works to improve the productive capacity of State forests. Such programs and works will be conducted in accordance with other clauses contained in this Agreement.~~
- 85 ~~The Parties agree that the timber volume to be supplied from the South Coast Sub Region and the Tumut Sub Region as provided in clause 76, is to be on a non-declining even flow Sustainable Yield basis for the period modelled by FRAMES (being 180 years).~~ ~~NOT USED~~
- 86 ~~To achieve the non-declining even flow Sustainable Yield for South Coast Sub Region agreed in clause 85:~~ ~~NOT USED~~
- ~~• NSW will carry out silviculture (such as thinning), purchase land for timber production and plantation establishment, may purchase timber rights, and, enter into joint ventures for plantations, and carry out other appropriate measures.~~
 - ~~• NSW will expend up to \$5 million on these measures (Attachment 11). In addition, \$1.5 million will be expended on silvicultural thinning to increase timber yields in the relevant period on other areas of State forests.~~
 - ~~• The Parties agree to jointly contribute a further \$2.5m (drawn in equal shares from Commonwealth and NSW contributions) from the Forest Industry Structural Adjustment Package (FISAP) for a project of regional significance to carry out silvicultural thinning and plantation establishment (but not land purchase) on those other areas of State forests.~~
- 87 ~~Both Parties are committed to the development and implementation of hardwood timber industry development initiatives through the Forest Industries Structural Adjustment Program.~~ ~~NOT USED~~

88 ~~Both Parties agree that this Agreement will promote the following objectives: NOT USED~~

- ~~• maximising opportunities for employment in the timber and forest industry as a result of the implementation of the CAR Reserve System; and~~
- ~~• development of an environmental management system, and MIG criteria and indicator monitoring program to a standard which would allow certification of the system under the ISO14000 series.~~

89 ~~Additional initiatives to promote industry and regional development across the Southern region are outlined in Attachment 11. NOT USED~~

ABORIGINAL CULTURE AND HERITAGE

90 ~~New South Wales agrees to develop maintain, implement and regularly review guidelines and a package of other measures that will be implemented to ensure the appropriate management of Aboriginal heritage including the maintenance of traditional historic uses and values, and to facilitate ongoing Aboriginal involvement of Aboriginal people in the management of natural and cultural values of relevant forested land of the Southern region. The principles to be applied ~~in the Southern region~~ are those in the *Protective Mechanisms for Cultural Heritage – Southern Region* in addition to the principles are at Attachment 4 and Attachment 10.~~

90A The Parties agree that the Forest Management Framework provides a framework for the protection of Aboriginal heritage values that aligns with the NSW legislative framework for Aboriginal cultural heritage management, including in relation to consultation and ongoing involvement with Aboriginal people and managing the impacts of forestry operations on Aboriginal cultural heritage values.

90B The Parties commit to ongoing Aboriginal involvement in forest management and as required by the Aboriginal Cultural Heritage Advisory Committee (or any successor) in relation to protection of significant sites and places.

91 This Agreement is not intended to influence either current or future Native Title claims in any way. The Parties acknowledge that if any implementation of this Agreement affects any native title rights and interests such implementation must be in accordance with the Native Title Act 1993 (Cwlth Cth).

91A The Parties recognise that Aboriginal Land Councils in NSW can claim land vested in the Crown to compensate Aboriginal persons for historic dispossession of land and to support their social and economic development under the *Aboriginal Land Rights Act 1983* (NSW). Under section 36AA of the *Aboriginal Land Rights Act 1983* (NSW), Aboriginal Land Councils can also negotiate Aboriginal Land Agreements. The Parties agree that during the life of this Agreement its provisions do not restrict the rights of Aboriginal Land Councils to make land claims or have existing land claims determined over land the subject of this Agreement, or negotiate rights to use and enjoy such land as part of an Aboriginal Land Agreement under the *Aboriginal Land Rights Act 1983* (NSW).

91B In acknowledging the ongoing aspirations of Aboriginal persons to future ownership and/or roles in the management of Crown lands, the State agrees, so far as possible, not to transfer Public Land the subject of this Agreement to any other entity or authority unless:

- (a) if the land includes land for which a claim has been made under the *Aboriginal Land Rights Act 1983 (NSW)*, written consent for the transfer of the land has been given by:
 - (i) the Local Aboriginal Land Council for the Local Aboriginal Land Council area (as defined in that Act) in which the land is located, and
 - (ii) where the claim is made by the New South Wales Aboriginal Land Council, the New South Wales Aboriginal Land Council, and
- (b) in any other case the State will, so far as possible, ensure that notice of its intent to transfer the land is given to the NSW Aboriginal Land Council, and to the Local Aboriginal Land Council within whose constituted area the land is situated.

91C The Parties recognise the *United Nations Declaration on the Rights of Indigenous Peoples*, including the right for the Aboriginal people of New South Wales to practise and revitalise their cultural traditions and customs. This includes the right to maintain, protect and develop their cultural traditions and customs.

PLANTATIONS

92 The Parties recognise that export controls have been removed from Unprocessed Wood and Woodchips sourced from New South Wales Plantations in accordance with the Export Control (Unprocessed Wood) Regulations (Cwlth). The Parties note that export controls on the export of Woodchips and Unprocessed Wood sourced from New South Wales Plantations have been removed in accordance with the *Export Control Act 1982 (Cth)*.

92A The Parties encourage the establishment and use of Plantation forests on existing essentially cleared land to generate social and economic values.

OTHER FOREST USES

93 Parties agree that ~~forest~~ Forest uses other than timber production will be determined in accordance with New South Wales legislation with due regard for protection of Environment and Heritage Values. In some limited circumstances that do not relate to the substance of this Agreement (for example foreign investment approval, export controls for non-forest products and major infrastructure developments) Commonwealth legislative provisions may also apply.

Mineral Exploration and Mining Operations

- 94 Parties recognise that under the *National Parks and Wildlife Act 1974* (NSW), issuing of new Mineral Exploration and Mining titles is not permitted (except by Act of Parliament) in national parks or historic sites, nature reserves, state game reserves, karst conservation reserves, Aboriginal areas and regional parks.
- 95 The Parties agree that Mining Operations are permitted within parts of the CAR Reserve System, to the extent permitted by relevant State or Commonwealth legislation which are State forest or Crown Reserves in Attachment 1. A In addition to any requirements for the protection of Matters of National Environmental Significance under the EPBC Act, a condition of Mining Operations in Informal Reserves and areas with Values Protected by Prescription is that: CAR Values that are compatible with those Mining Operations be maintained; and for CAR Values not compatible with those Mining Operations, conservation be provided for elsewhere. Where a Mining Operation is not compatible with that part of the CAR Reserve System described as ~~values protected by prescription~~ Values Protected by Prescription in Attachment 1, ~~NSW~~ the State will use best endeavours to ensure that conservation of these values is provided for elsewhere.
- 96 New South Wales will ensure that any proposed Mining Operations will be subject to environmental impact assessment (including species impact statements where required) under the provisions of the *Environmental Planning and Assessment Act 1979* (NSW). Mining Operations will be subject to the *Mining Act 1992* (NSW), ~~and the *Petroleum (Onshore) Act 1991* (NSW), the *Protection of the Environment Operations Act 1997* (NSW), and the EPBC Act.~~ Mining will be in accordance with an approved Mining Operations Plan and Annual Environmental Management Reports. Rehabilitation of any sites disturbed by Mining Operations will be carried out in accordance with the provisions of the relevant statutes (including the *Environmental Planning and Assessment Act 1979* (NSW) and the *Mining Act 1992* (NSW)) ~~and it will aim to achieve world's best practice.~~

COMPETITION PRINCIPLES

- 97 Parties recognise that under the Competition Principles Agreement, as amended from time to time, Governments aim to achieve more transparency and greater efficiency in Government owned business enterprises. The Commonwealth agrees that the day to day pricing and allocation arrangements for ~~wood~~ Forest Products from public ~~forests~~ Forests are matters for New South Wales. New South Wales confirms its commitment to the pricing and allocation principles set out in the *National Forest Policy Statement* and the application of competitive neutrality principles. ~~New South Wales confirms that legislation and policies relevant to the allocation and pricing of hardwood logs from State forests will be reviewed as part of the Competition Principles Agreement.~~

RESEARCH

- 98 ~~The results of the Comprehensive Regional Assessments of the forest values of the Southern region indicated a number of areas requiring further research. New South Wales will establish a Research Liaison Committee to identify research priorities relating to forest management and publish a list of priorities by 30 September 2001. The Parties agree that continuing research in a range of areas is vital to ensure that~~

all aspects of Forest Management remain up to date with the latest information and technological developments. Parties have outlined themes for further research in Attachment 7.

99 ~~In developing priorities, the Research Liaison Committee will take account of priorities arising out of the Comprehensive Regional Assessment process for the Southern region, particularly those outlined in the documents titled *Criteria, indicators, targets and monitoring processes of ecologically sustainable forest management for the Southern region* and *Knowledge and Information Gaps for the Upper North East, Lower North East and Southern CRA/RFA Regions*.~~ The Parties agree to hold discussions on research themes and coordination as part of annual meetings pursuant clause 8B.

100 New South Wales will prepare ~~by the first~~ for each five-yearly review, a Compendium ~~compendium~~ of New South Wales Forest ~~Research~~ research that will provide a bibliography of research in progress as well as published and unpublished works.

100A The Parties agree to document relevant Forest research undertaken in each reporting period and to update research themes in each five-yearly Progress Report.

101 Parties agree to consult each other in the development of joint research projects that may affect the Agreement and note that the subject ~~areas~~ themes and priorities may change throughout the duration of the Agreement.

102 Parties agree to make publicly available, wherever possible, research reports relevant to this Agreement.

DATA

103 NOT USED Parties agree to lodge archival copies of Data by 30 June 2001.

104 The Parties recognise that the implementation and monitoring of this Agreement depends on appropriate mutual access to and availability of relevant information owned and held by each of them. The Parties agree to manage and provide access to ~~Data~~ data, including models used to develop and implement this Agreement, ~~in accordance with the Data Agreement at Attachment 13 of the Regional Forest Agreement for North East New South Wales (copy provided at Attachment 12 of this Agreement).~~

104B The Parties commit to a policy of open access to information and agree that all data held by each of them that is used for ongoing implementation and monitoring of this Agreement is published under the least restrictive AusGOAL endorsed licences (including Creative Commons) unless otherwise agreed, or where data is confidential or otherwise restricted.

PART 3

Nature of Obligations under this Part

105 It is the intention of the Parties that this Part is to create legally enforceable rights and obligations. It is also their intention that, in the event that any provision of this Part exceeds the power of either Party or is unenforceable for any other reason, that provision is to be read as not intending to create legally enforceable rights and obligations.

Forest Management

106 New South Wales will for the duration of the Agreement:

106.1 ~~NOT USED~~ ~~In accordance with clause 97, under the Competition Principles Agreement review legislation and policies relevant to the allocation and pricing of hardwood logs from State forest;~~

106.2 ~~In accordance with clause 50, and Report annually to the New South Wales Parliament on compliance with any Integrated Forestry Operations Approval applying to the Southern region as required by the *Forestry and National Parks Estate Act 1998* *Forestry Act 2012* (NSW) report annually to Parliament on compliance with any Integrated Forestry Operations Approval for the Southern region and the New South Wales *Southern Region Forest Agreement*;~~

106.3 ~~In accordance with clauses 36 and 50 furnish to~~ Notify the Commonwealth within 14 days that:

- (a) a copy of the annual reports of compliance with the Forest Agreement covering the Southern region and on the Integrated Forestry Operations Approval applying to the Southern region, required by section 21 of the *Forestry and National Parks Estate Act 1998* (NSW) is available on a relevant State government website;
- (b) a copy of any ~~Forest Agreement and~~ Integrated Forestry Operations Approvals Approval for applying to the Southern region, and any amendments to those that documents is available on a relevant State government website; and
- (c) ~~notification of there has been a termination, suspension or revocation of any Forest Agreement or~~ Integrated Forestry Operations Approval applying to the Southern region; or
- (d) there has been a termination of any Private Native Forestry Code of Practice applying to the Southern region.

106.4 ~~NOT USED~~ ~~In accordance with clauses 46 and 47(a) establish and maintain a Forest Agreement covering the Southern region for the duration of this Agreement;~~

- 106.5 In accordance with clause 47(b), grant and maintain Implement and maintain an Integrated Forestry Operations Approval covering for the Southern region for the duration of this Agreement;
- 106.6 In accordance with clause 47(d), complete and publish Implement and periodically review the Regional ESFM Plans containing the Ecologically Sustainable Forest Management strategy for State forests in the Southern region made under the *Forestry Regulation 1999 2012* (NSW) under and the *Forestry Act 1916 2012* (NSW) by 31 December 2001;
- 106.7 In accordance with clause 47(g) implement the review and monitoring processes and develop the strategic and operational requirements of Sustainable Yield systems and processes using enhanced Forest Resource and Management Evaluation System (FRAMES) as described in Attachment 8 to enable the review of Sustainable Yield by 1 December 2006 Maintain a forest yield estimation system for State forest and periodically review the calculation of Sustainable Yield consistent with Attachment 11;
- 106.8 In accordance with clause 47(h), develop Maintain and implement environmental management systems in accordance with the principles outlined in Attachment 8 within five years.
- 106.9 In accordance with clause 56, produce a code of practice for timber harvesting of native forest on Private Lands by the first five-yearly review Maintain and implement a Private Native Forestry Code of Practice applying to the Southern region;
- 106.10 In accordance with clauses 76 to 79 maintain contracted supply for High Quality Large Logs. Discuss with and notify the Commonwealth on proposed changes of a significant nature to the Forest Management Framework.

107 The Commonwealth will:

- 107.1 Not prevent enterprises obtaining, using or exporting ~~the quantities of~~ timber, Woodchips ~~or~~ and Unprocessed Wood products sourced from the Southern region in accordance with this Agreement;
- 107.2 Maintain accreditation of New South Wales' Forest Management System for the Southern region as agreed to be amended in this Agreement as set out in clause 51 providing any changes to the system are consistent with the provisions of this Agreement. Recognise that the Forest Management Framework, as amended from time to time and as it applies to the Southern region, demonstrates continual improvement, for the purposes of ESFM and relevant provisions of this Agreement.

Compensation

108 The Parties agree that:

- 108.1 If to protect the Environment and Heritage Values in native forests and in connection therewith the protection of:

- (a) CAR Values; or
- (b) National Estate Values; or
- (c) World Heritage Values; or
- (d) Wild Rivers

the Commonwealth takes any Action during the period of this Agreement which is inconsistent with any provision of this Agreement and a foreseeable and probable consequence of which is to prevent or substantially limit:

- (e) the use of land which is not included within the CAR Reserve System for Forestry Operations which, immediately before the announcement of the proposed Commonwealth Action, are being undertaken or were intended to be undertaken at any time or the use of land which is not included within the CAR Reserve System or of land within that system but not within a Dedicated Reserve in which mineral exploration and mining is prohibited pursuant to a statutory licence, permit or authority permitting those Mining Operations or Extractive Operations which was in force immediately prior to the announcement of the proposed Commonwealth Action; or,
- (f) the sale or commercial use of Forest Products sourced from land which is not included within the CAR Reserve System or the first sale or first commercial use of Mining Products or Extractive Materials sourced from land which is not included within the CAR Reserve System or land within that system but not within a Dedicated Reserve in which mineral exploration and mining is prohibited for a purpose for which, immediately prior to the announcement of the proposed Commonwealth Action, they had been intended to be sold or used commercially at any time; or,
- (g) the construction on land which is not included within the CAR Reserve System of roads being built or intended to be built, immediately before the announcement of the proposed Commonwealth Action, where those roads' primary purpose is for the transportation of Forest Products sourced from land which is not included within the CAR Reserve System,

the Commonwealth will pay compensation to the State in accordance with the remaining provisions of clauses 108.2 to 108.20.

108.2 Subject to:

- (a) clauses 108.3, 108.4, 108.5, 108.6, 108.8, 108.9, 108.10, 108.11 and 108.12 the compensation to be paid by the Commonwealth to the State in accordance with clause 108.1 in relation to the prevention by Commonwealth Action of the use of land for Forestry Operations or prevention by Commonwealth Action of the sale or commercial

use of Forest Products is the amount of the reasonable loss or damage sustained by reason of that prevention, calculated as at the time at which the prevention referred to in clause 108.1 occurred, by any person in any of the following classes of person:

- (i) the Owner of the land or of the Forest Products on the land;
 - (ii) any person who, prior to the announcement of the proposed Commonwealth Action but not in anticipation of that Action, entered into a contract with the Owner of the land or of the Forest Products on the land or with any person mentioned in sub-paragraph (iii) below for the carrying out of Forestry Operations on the land; and
 - (iii) any person who, prior to the announcement of the proposed Commonwealth Action but not in anticipation of that Action, entered into a contract with the Owner of the land or of the Forest Products on the land to purchase the Forest Products on the land.
- (b) clauses 108.3, 108.4, 108.5, 108.6, 108.7, 108.8, 108.10, 108.11 and 108.12 the compensation to be paid by the Commonwealth to the State in accordance with clause 108.1 in relation to the prevention by Commonwealth Action of the use of land for Mining Operations or Extractive Operations or the first sale or first commercial use of Mining Products or Extractive Materials is the amount of the reasonable loss or damage sustained by reason of that prevention, calculated as at the time at which the prevention referred to in clause 108.1 occurred, by any person carrying on Mining Operations or Extractive Operations on the land pursuant to a statutory licence, permit or authority permitting those operations which was in force immediately prior to the announcement of the proposed Commonwealth Action.
- (c) clauses 108.3, 108.6, 108.8, 108.9, 108.11 and 108.12 the compensation to be paid by the Commonwealth to the State in accordance with clause 108.1 in relation to the prevention by Commonwealth Action of construction of a road is the amount of reasonable loss or damage sustained by reason of that prevention, calculated as at the time at which the prevention referred to in clause 108.1 occurred, by any person who, immediately before the announcement of the proposed Commonwealth Action, was contracted to construct that road.

108.3 No amount of compensation is payable in the event of any loss or damage being sustained which would have been so sustained regardless of the Commonwealth Action. No compensation is payable hereunder in respect of any additional areas included pursuant to this Agreement in the CAR Reserve System.

- 108.4 The State warrants that no claim will be made in respect of areas where Forestry Operations or Mining Operations or Extractive Operations would not have been permitted by this Agreement and that any claims will be certified by it as being or not being in respect of such areas and as having been assessed by the State in this regard.
- 108.5 The State warrants that no claim will be made in respect of Forest Products or Mining Products or Extractive Materials which would not have been available for sale or commercial use under this Agreement and that any claims will be certified by it as being or not being in respect of such Products and as having been assessed by the State in this regard.
- 108.6 The State undertakes to supply to the Commonwealth on request information, including as to areas protected by prescription, required by the Commonwealth for the purposes of considering claims under this clause.
- 108.7 To the extent that clause 108.2(b) relates to loss or damage in respect of an exploration licence or assessment lease, that clause is to be read as providing for compensation to be payable only:
- (a) in respect of the part of the area to which that licence or lease relates that is affected by the Commonwealth Action; and
 - (b) up to the loss in market value of that licence or lease resulting from the prevention of the Mining Operations or Extractive Operations.
- 108.8 Any claim made by the State hereunder is to be notified in writing within six months after the loss or damage is sustained.
- 108.9 For the purposes of clauses 108.1(e) and (g), the intention to conduct Forestry Operations, or the intention to construct roads is to be established on the basis of contracts, documentation of management history or other records establishing clear intent and in existence immediately prior to the announcement of the proposed Commonwealth Action.
- 108.10 For the purposes of clause 108.1(f), the purpose for which there was an intention to sell or use commercially is to be established on the basis of contracts, documentation of management history or other records establishing clear intent and in existence immediately prior to the announcement of the proposed Commonwealth Action.
- 108.11 No compensation is payable under clause 108.2 in relation to any loss or damage which the person who sustained the loss or damage might have avoided by taking reasonable steps in mitigation including by the making of alternative contractual arrangements which would have avoided or reduced that loss or damage.
- 108.12 clause 108.2 does not apply so as to entitle the State to recover compensation more than once in respect of the same loss or damage.

108.13 The initial procedure in relation to a claim for compensation under this clause is as follows:

- (a) a person who claims to have sustained loss or damage for which compensation is payable may lodge an initiating claim with the State;
- (b) on receiving a claim, the State must make a corresponding claim for compensation to the Commonwealth;
- (c) the State is to make the claim for compensation by a notice in writing to the Commonwealth which indicates the amount claimed, for whom the claim is made, the area to which it relates and gives detailed particulars of the basis for the claim, and of the manner in which it has been calculated;
- (d) where there is a dispute concerning a claim for compensation, or on or before the expiry of 30 days after the receipt of the claim, the Commonwealth notifies the State that it does not accept the amount claimed, then either Party may serve a notice of dispute under clause 10;
- (e) in the event that the amount of compensation payable in response to a claim has not been agreed in the dispute resolution process for which clauses 10 to 14 provide, or the Commonwealth fails to pay the agreed amount of compensation to the State within 60 days of agreement (for reasons other than lack of the necessary appropriation), the Parties hereby refer the claim to arbitration;
- (f) an arbitration under this Agreement is to be conducted in accordance with the provisions of the *Commercial Arbitration Act 1984* (NSW) which are, to the extent permitted by the *Judiciary Act 1903* (Cwlth) and the Commonwealth constitution, incorporated by reference into this Agreement.

108.14 The procedure in relation to any arbitration required by reason of the provisions of clause 108.13 is as follows:

- (a) The Parties must meet to appoint an arbitrator within seven days of an unsuccessful mediation.
- (b) If the Parties are unable to agree on the appointment of an arbitrator, either of them may refer the matter to the President of the Law Council of Australia, or equivalent officer of such body as in future may have the functions of the Law Council of Australia, with a request that that person appoint an arbitrator.
- (c) At an arbitration under this clause:
 - (1) the Parties are entitled to representation by a legal practitioner qualified to practice in any State or Territory of Australia;

- (ii) the arbitrator may order the Parties to discover any relevant documents prior to the hearing;
- (iii) the arbitrator may order the Parties to exchange proofs of evidence of witnesses (whether expert or not) prior to the hearing;
- (iv) the arbitrator may, in accordance with the *Commercial Arbitration Act 1984* (NSW), inform himself or herself, in relation to any matter in such manner as the arbitrator thinks fit; provided that if the arbitrator takes advice from any person who is not a Party to this Agreement as to the matters in issue, the arbitrator must provide the Parties with an opportunity to:
 - (1) make submissions on the matter in which the advice is to be taken;
 - (2) make submissions on the identity of the person from whom the advice is to be taken;
 - (3) make submission on the substance of any advice given before making any decision on the issue on which the advice is taken.

108.15 Unless the Commonwealth appeals the decision of the arbitrator under the *Commercial Arbitration Act 1984* (NSW), and subject to clause 108.18, the Commonwealth undertakes to pay the State the amount of any award made by an arbitrator under clause 108.14 as a debt due to the State, within 60 days of the award.

108.16 Except where the State is the person who sustained the relevant loss or damage, any payment of compensation made by the Commonwealth to the State in accordance with this clause will be paid to and received by the State as trustee for the person who sustained the relevant loss or damage.

108.17 Subject to clause 108.18(b), where the State receives monies as a trustee pursuant to clause 108.16, it will pay those monies to the person who sustained the relevant loss or damage within 30 days.

108.18 (a) Where the Commonwealth has agreed to pay compensation to the State under this clause, or an award of compensation has been made under clause 108.14 as a result of arbitration, and the Commonwealth claims that events have since taken place which have the result that the compensation so agreed or awarded no longer reflects the actual loss or damage that has been or will be sustained, the Commonwealth may by notice in writing to the State, decline to pay that compensation.

(b) If a notice under paragraph (a) is delivered after the State has received the compensation so agreed or awarded, but before the

State has paid it to the person who sustained the relevant loss or damage, the State will not pay the compensation to that person.

- (c) If a notice under paragraph (a) is delivered, the Parties will attempt to agree the amount of the compensation which the Commonwealth should pay, and -
 - (i) in default of agreement, will first seek to resolve the dispute by dispute resolution under clauses 10 to 14; and
 - (ii) in the event that the dispute is not so resolved, or the Commonwealth fails to pay the agreed amount of compensation to the State within 60 days of agreement (for reasons other than lack of the necessary appropriation), hereby refer the claim for compensation to arbitration in accordance with the *Commercial Arbitration Act 1984* (NSW).
- (d) Subject to paragraph (e) of this clause, where an arbitration takes place in accordance with sub-paragraph (c)(ii), clauses 108.14 and 108.15 of this Agreement apply to that arbitration and to any amount awarded in that arbitration.
- (e) If, following the observance of paragraph (c) of this clause, it is determined by agreement or award that the Commonwealth should pay a reduced amount of compensation to the State, the State will within 30 days of that determination -
 - (i) repay to the Commonwealth the amount by which the compensation paid to it by the Commonwealth is reduced; and
 - (ii) pay the balance of the compensation to the person who sustained the relevant loss or damage.
- (f) If, following the observance of paragraph (c) of this clause, it is determined by agreement or award that the amount of compensation previously paid to the State is correct the State will within 30 days of that determination pay to the person who sustained the relevant loss or damage the amount of the compensation previously paid to it by the Commonwealth.

108.19 Where the State:

- (a) has received monies as a trustee pursuant to clause 108.16; and
 - (b) has made all reasonable endeavours to pay the monies to the person who sustained the relevant loss or damage; and
 - (c) but has been unable to do so within six months of receiving payment
- the State shall repay to the Commonwealth at the expiry of that period the monies so received.

108.20 In this clause

- (a) "Action" means
 - (i) the commencement of legislation or subordinate legislation; and
 - (ii) administrative action which is taken pursuant to legislation or subordinate legislation, or otherwise than in accordance with such legislation.
- (b) "Owner" means
 - (i) in relation to land
 - (1) the owner of any estate or interest in that land, including the Crown in right of the State; and
 - (2) any statutory corporation which has the power to carry on Forestry Operations or Mining Operations or Extractive Operations, as the case may be, on the land for profit.
 - (ii) in relation to Forest Products or Mining Products or Extractive Materials, as the case may be, the owner of any interest in those products.

~~Employment and Industry Development Assistance~~

~~109 The Commonwealth and State Governments are committed to the provision of assistance, by way of the NSW Forest Industry Structural Adjustment Package, to native forest businesses and workers directly affected by restructuring of the NSW forest industry in accordance with the outcomes of this Agreement. The Commonwealth has committed \$60 million and the State Government \$60 million to the NSW FISAP to achieve the required level of restructuring and to assist in the creation of an ecologically sustainable, efficient and internationally competitive timber industry with a focus on value adding, investment growth, and job creation.~~
NOT USED

Termination

110 This Agreement may only be terminated by the Commonwealth:

- (a) where the dispute resolution procedures in clauses 10 to 14 have been observed and the State has been given a 90 day period of notice on:
 - (i) a failure by the State to comply with clause 66, being a failure to implement the CAR Reserve System as described in Attachment 1 and to manage and conserve the identified CAR Values; or
 - (ii) a failure to comply with clause 3433, 47(a), and 47(b) being a failure to grant by 30 June 2001 and maintain throughout the life of this Agreement a New South Wales Forest Agreement that covers the

Southern region and an IFOA that applies to the Southern region and that reflects the outcomes of this Agreement. The Commonwealth agrees not to terminate this Agreement because of a failure by New South Wales to maintain a Forest Agreement for the Southern region. However, the Parties acknowledge that if the State does not maintain a Forest Agreement covering the Southern region, termination of this Agreement by the Commonwealth would be authorised by s 7 of the *Regional Forest Agreements Act 2002* (Cth); or

- (iii) a failure to comply with clause 47(d), ~~being a failure to produce and publish by 31 December 2001 Regional ESFM Plans; or~~
- (iv) a failure to comply with clause 76 and the Sustainable Yield Systems and Processes described in Attachment 8; or
- (v) a failure to comply with clauses 47(h) and clause 56 being a failure to both develop and implement the environmental management systems in accordance with Attachment 8, and produce a Code of Practice for timber harvesting of native forest on Private Land.

other than a failure of a minor nature which is not one or part of a series of deliberate or reckless failures of a minor nature; and save that the above provisions do not apply if rectification is possible and has occurred before the end of the 90 day period; or

- (b) on a fundamental failure by the State to comply with the spirit of the Agreement after the observance of the dispute resolution procedures in clauses 10 to 14.

111 This Agreement may only be terminated by the State:

- (a) where the dispute resolution procedures in clauses 10 to 14 have been observed and the Commonwealth has been given a 90 day period of notice on:
 - (i) ~~NOT USED a failure by the Commonwealth to comply with the terms of any agreement on native forest hardwood timber industry assistance made pursuant to clause 109; or~~
 - (ii) a failure by the Commonwealth to comply with clause 108, being a failure to pay compensation due under that clause;

save that the above provisions do not apply if rectification is possible and has occurred before the end of the 90 day period; or

- (b) on a fundamental failure by the Commonwealth to comply with the spirit of the Agreement after the observance of the dispute resolution procedures in clauses 10 to 14.

112 This Agreement may be terminated with the consent of the Commonwealth and the State.

Notice of intention to review before termination by consent

113 A consent under clause 112 is of no effect, unless:

113.1 it is given at least 12 months after a notice of intention to review the operation of this Agreement is published in the Commonwealth *Gazette* and a national newspaper and a newspaper circulating in New South Wales stating that a joint review is being undertaken by the Parties because they intend to terminate the Agreement by consent; ~~and~~

113.2 The Parties have conducted the joint review as in accordance with this clause;-

113.3 The joint review must consider whether the operation of the Agreement has met the goals set out in Recitals A and B;-

113.4 Within eight months after the notice of intention to review is published under this clause, and after considering any submissions to the joint review, the Parties must make a report of the review publicly available; and-

113.5 If, under ~~clause 38~~ clauses 8D and 8E, a five-yearly review is to be conducted during the 12 month period after a notice of intention to review is published under this clause, and the joint review is conducted under this clause, the Parties may agree that the review under ~~clause 38~~ clauses 8D and 8E need not be undertaken.

IN WITNESS WHEREOF this Agreement has been signed for and on behalf of the Parties as at the day and year first above written.

SIGNED by

the HONOURABLE JOHN WINSTON HOWARD MP, Prime Minister

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for and on behalf of the Commonwealth of Australia

in the presence of:

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SIGNED by

the HONOURABLE BOB CARR MP, Premier

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for and on behalf of the State of New South Wales

in the presence of:

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ATTACHMENTS

- Attachment 1 **Comprehensive, Adequate and Representative (CAR) Reserve System – Southern Region.**
- Attachment 2 **Conservation Mechanisms on Private Land Conservation.**
- Attachment 3 **Threatened Flora, Fauna and Ecological Listed Species and Communities.**
- Attachment 4 **~~National Estate Values~~ NOT USED.**
- Attachment 5 **~~Milestones~~ NOT USED.**
- Attachment 6 **~~Public Reporting and Consultative Mechanisms~~ NOT USED.**
- Attachment 7 **Research Priorities.**
- Attachment 8 **Continual Improvements to of the NSW New South Wales' Forest Management Systems Framework.**
- Attachment 9 **Montreal Process Criteria for the Conservation and Sustainable Management of Temperate and Boreal Forests.**
- Attachment 10 **Managing Lands of Significance to Aboriginal People**
- Attachment 11 **~~Employment, Industry Development and Conservation Management~~ Sustainable Yield Systems and Processes.**
- Attachment 12 **~~Data Agreement~~ NOT USED.**
- Attachment 13 **Principles of Ecologically Sustainable Forest Management (ESFM).**

ATTACHMENT 1

(clauses 2, 42, 47, 55, 64, 65, 65A, 66, 70A(c), 95, 110(a)(i), Attachment 2, Attachment 8)

**COMPREHENSIVE, ADEQUATE AND REPRESENTATIVE (CAR)
RESERVE SYSTEM**

SOUTHERN REGION

- 1 Map 1 and this Attachment identify the CAR Reserve System on Public Land for the Southern region for the purpose of this Agreement, as amended from time to time.
- 2 The *National Forest Policy Statement* (NFPS) established that the CAR Reserve System will, in the first instance, be selected from Public Land. Provision is also made in the JANIS Reserve Criteria for inclusion of Private Land in the CAR Reserve System, with the agreement of landholders, where the Criteria cannot be met from Public Land.

PUBLIC LAND

- 3 In the Southern region, the CAR Reserve System on Public Land primarily comprises areas established for conservation purposes (eg National Parks and Nature Reserves) and areas reserved for conservation in State forest.

CAR RESERVE SYSTEM COMPONENTS AND PROTECTION MECHANISMS.

- 4 The CAR Reserve System on Public Land has the following three components:
 - *Dedicated Reserves.* This comprises reserves established through legislation for conservation purposes such as National Parks, Nature Reserves and Flora Reserves (Special Protection Zone, FMZ 1).
 - *Informal Reserves.* This comprises those parts of the Special Management Zone (FMZ 2) under the Forest Management Zoning system that are greater than 40ha, are more than 200m wide, or are directly adjacent to Dedicated Reserves. It also includes those areas dedicated as ~~Crown Reserves~~ State Conservation Areas under the provisions of the ~~Crown Lands Act 1989~~ National Parks and Wildlife Act 1974 (NSW) which are managed by the NSW National Parks and Wildlife Service. ~~Plans of Management for Crown Reserves will be prepared by 31 January 2006.~~
 - *Values ~~protected~~ Protected by Prescription.* These comprise those elements of habitat protected by Regional Prescriptions as ~~will be~~ detailed in the Integrated Forestry Operations Approval covering the Southern region and areas within the Harvesting Exclusions (FMZ 3A) and Special Prescription Zone (FMZ 3B) under the Forest Management Zoning system that, ~~due to the size or shape, do not meet the Informal~~

~~Reserve category outlined above are excluded from harvesting. They also include elements of the Special Management Zone (FMZ 2) that are less than 40ha and less than 200m wide. The Integrated Forestry Operations Approval complements the Dedicated and Informal Reserve network and includes additional levels of protection for of rare non-commercial forest ecosystems types, Old Growth forest, rainforest and threatened species in all areas that have been identified to be primarily managed for sustainable production.~~

- ~~5 NSW will finalise boundaries of the CAR Reserves with the exception of the Forest Management Zoning System by 30 June 2001. The Forest Management Zoning System will be finalised by 31 December 2001. The management intent of the CAR Reserve system as outlined on Map 1 will be implemented immediately upon the signing of this Agreement. Finalisation will include identifying suitable management boundaries. Wherever possible, these will follow easily identifiable features such as cadastre and roads and natural or ecological boundaries. Finalisation will also consider field verification of values being protected and appropriate boundaries mapped to protect the identified values. NOT USED~~
- ~~6 As at December 2017, the The Dedicated Reserve component of the CAR Reserve System covers 1,323,800 1,393,000 ha, the Informal Reserve component 64,700 26,000 ha and the prescriptive component 32,500 55,000 ha. Together the Dedicated Reserve and Informal Reserve components of the CAR Reserve System cover an area of approximately 1,390,000 1,419,000 ha (about 75 69% of the Public Land in the region or 31% of the entire region).~~
- ~~6A Levels of protection for Forest Ecosystems and Old Growth forest achieved in the Dedicated Reserve, Informal Reserve and the Values Protected by Prescription components of the CAR Reserve System are shown in Tables 1 and 2. The tabulated percentage area of these values in prescription includes elements of the Special Management Zone (FMZ 2) that are less than 40ha and less than 200m wide, as well as areas of Old Growth forest (and Forest Ecosystems within these areas) that will be managed by the Integrated Forestry Operations Approvals.~~
- ~~6B The IFOA provides for protection of environmental values in addition to those protected in FMZ 2, FMZ 3A, FMZ 3B, mapped areas under the IFOA, or other CAR Reserves and quantified in Tables 1 and 2. The protections under the IFOA are updated and modified from time to time as a result of the continual improvement process to improve the effectiveness and efficiency of these conditions.~~

Forest Management Zoning

- ~~7 New South Wales will, by 31 December 2001, produce a Regional ESFM Plan for the Southern region that includes Forest Management Zoning within State forests as described in the document *Forest Management Zoning in State Forests*, SFNSW 1999. Of Within the Forest Management~~

Zoning system, of particular significance for the conservation of Forest Ecosystems and Old Growth forest are ~~the~~:

- *Special Protection Zone (FMZ 1)*. These areas are dedicated and managed to maximise the protection of natural and cultural values. Timber harvesting, removal of Forest Products and materials, grazing by domestic stock, gravel/hard rock quarrying and mineral and petroleum exploration are not generally permitted within this zone.
 - *Special Management Zone (FMZ 2)*. These areas are established following public comment and are gazetted and managed for the protection of natural and cultural conservation values where it is not possible or practicable to include them in the Special Protection Zone. Activities not permitted in this zone are similar to the Special Protection Zone except that mineral and petroleum exploration are permitted. Any mining proposal following from exploration will require standard environmental impact assessment and development approval processes.
 - *Harvesting Exclusions Zone (FMZ 3A)*. These are areas where harvesting is excluded but other management and production activities preclude zoning as Special Protection Zone (FMZ1) or Special Management Zone (FMZ2). These may be:
 - i) Dedicated leasehold where lease conditions permit activities such as grazing and timber supply for lease fencing etc, and in some cases residency, or
 - ii) Areas identified as important by the Department of ~~Mineral Resources-Planning and Environment~~ where there are current or imminent petroleum and Mineral Exploration ~~mineral exploration~~ and/or Mining Operations ~~mining activities~~, or
 - iii) Other areas which are excluded from harvesting (eg. Net Harvestable Area (NHA) exclusions) but size, boundaries or management practicabilities preclude designation as FMZ 1 or FMZ 2.
 - *Special Prescription Zone (FMZ 3B)*. These areas are established for the protection and management of identified conservation values, whilst also allowing other management and production activities. These activities (which in some cases includes timber, Forest Product and materials extraction) are minimised in their design and implementation to maintain or enhance the values that the area is zoned to protect. A case by case assessment of these areas will be undertaken to determine which forestry activities can occur. The decision is dependent on the specific values involved
- 8 ~~NOT USED~~ ~~New South Wales agrees to establish all Dedicated Reserve and Informal Reserve components of the CAR Reserve System by 30 June 2001 and 31 December 2001 respectively.~~

Commonwealth Land

- 9 Informal Reserves on Commonwealth land total 1,320 hectares and are identified on Map 1.
- 10 The Commonwealth agrees to manage those areas of Commonwealth owned land identified in the Beecroft Weapons Range as CAR Informal Reserves and to take all reasonable steps for the protection of identified CAR ~~values~~ Values, on the following conditions:
- Condition 1. That the reserve boundaries encompass only those areas that actually contain the CAR Values.
 - Condition 2. That the reserves do not exclude Defence activities that would not compromise the long-term survival of the CAR Values.
 - Condition 3. That the establishment of the reserves are based on the development of Defence management arrangements (ie Defence Environmental Management Plans) rather than any modification to existing tenures which may be detrimental to Defence's usage of the training areas.
 - Condition 4. That Defence is the sole approving agency for the Defence Environmental Management Plans that prescribe the management regime for the reserves. Defence will consult with relevant experts, State and Commonwealth agencies on the appropriateness of the management regimes.
 - Condition 5. Defence will make environmental management plans for the Beecroft Weapons Range available to State and Local authorities and will cooperate with those authorities to make changes if they are required to protect CAR Values.
 - Condition 6. Defence will be provided advance notification of any proposed changes to reserve boundaries on Defence land and will be given 40 days to provide a submission on the feasibility of changes with respect to Defence use of the area.
 - Condition 7. The reserve boundaries will delineate the actual CAR Values. Defence will establish operational and environmental management buffer zones around the reserves based on particular land use activities that may occur adjacent to the reserves. The buffer zones will be identified in the Defence Environmental Management Plans. The buffer zones will be designed to permit appropriate levels of wildlife and conservation connectivity between isolated stands of the CAR identified forest areas.
 - ~~Condition 1. That the reserve does not exclude Defence activities that would not compromise the maintenance of the CAR values. Necessary Unexploded Ordinance management will not be impeded by any Informal Reserve declaration or this agreement.~~

- ~~Condition 2. That the establishment of the reserve is based on existing Defence management arrangements as prescribed in the Beecroft Peninsula Environmental Management Plan (1999) rather than any modification of existing tenures which may be detrimental to Defence's usage of the training areas.~~
- ~~Condition 3. That Defence is the sole approving agency for the Defence Environmental Management Plans that prescribe the management regime for the reserve. Defence will however consult with relevant State and Commonwealth agencies on the appropriateness of the management regimes.~~
- ~~Condition 4. Consultation on management by Defence of Defence activities in the training area will be achieved in the consultation process with State and Local authorities and other stakeholders in the review of the Environmental Management Plan for the Beecroft Weapons Range.~~
- ~~Condition 5. Public comment on changes to the reserve boundary will occur except in circumstances proscribed by national defence protocols.~~
- ~~Condition 6. The reserve boundary will delineate the actual CAR values. Defence will establish all operational and environmental management buffer zones around the reserve based on particular land use activities that may occur adjacent to the reserves. The buffers will be identified in the Defence Environmental Management Plans.~~

10A The Parties recognise that the 1999 Beecroft Peninsula Environmental Management Plan referred to above has been superseded by an Environmental Management System (EMS).

10B The EMS documents the biodiversity values of each site and prescribes management actions to ensure Defence activities do not adversely affect these values. As part of this, the Department works closely with state and local agencies to develop and implement components of the EMS, such as bushfire management, threatened species monitoring, catchment management, feral animal control and native fauna management.

10C The Department of Defence will continue to manage the environmental values of the Beecroft Weapons Range in general alignment with the seven conditions for the protection of the CAR Informal Reserves values outlined above.

- 11 The Department of Defence will identify this CAR Informal Reserve on Commonwealth land on operational and planning maps as part of the EMS.
- 12 ~~NOT USED. The CAR Informal Reserves on Commonwealth land will be included in future Environmental Management Plans prepared for the area.~~

Integrated Forestry Operations Approval

Environment and Heritage Values protected by prescription

13 ~~The Integrated Forestry Operations Approval covering the Southern region will be the principal vehicle by which Environment and Heritage Values that are impracticable to include in reserves can be conserved. The JANIS Reserve Criteria provide for the management of such values through prescriptions. The Integrated Forestry Operations Approval takes account of the extent of reserved habitat, whether the prescriptions are operationally feasible, and the relative conservation status of each species. For Environment and Heritage Values that are not included in reserves, the JANIS Reserve Criteria provide for the management of such values through prescriptions. Within the General Management Zone of the Forest Management Zoning system (FMZ 4), Forestry Operations and other activities are permitted. The principal vehicles by which Environment and Heritage Values will be managed within FMZ 4 are:~~

- The Integrated Forestry Operations Approval covering the Southern region will be the principal vehicle by which environment values are protected through prescription. The Integrated Forestry Operations Approval takes account of the extent of reserved habitat, and balances an operationally efficient timber industry with the need to protect native plants and animals, ecosystems, soils and water.
- Aboriginal and non-Aboriginal cultural heritage guidelines made in accordance with relevant legislation and amended from time to time, provide prescriptions for the management of heritage values that are impracticable to include in reserves in the Southern region.

~~IDENTIFIED~~ IDENTIFIED CAR VALUES AND THEIR PROTECTION AFFORDED THROUGH THE RFA

14 Levels of protection for Forest Ecosystems and Candidate Old Growth forest achieved in the CAR Reserve System are shown in Tables 1 and 2 of this Attachment as follows:

- Dedicated Reserves; as described in clause 4 of this Attachment,
- Informal Reserves; as described in clause 4 of this Attachment, and
- Values Protected by Prescription; includes the areas within the Harvesting Exclusions Zone (~~Zone FMZ 3A~~), and those areas of the Special Management Zone (~~Zone FMZ 2~~) that, due to the size or shape, do not meet the Informal Reserve category outlined above.

It should be noted that the ~~Special Prescription Zone (Zone 3B) and the IFOA~~ afford affords additional protection over that included in the table.

Table 1. Percentage Representative conservation (percentage reservation status as at 2001 and December 2017) of Forest and Non-Forest Ecosystems in the CAR Reserve System in the Southern region based on vegetation modelling to establish the pre-1750 extent of Forest Ecosystems in the Southern region^a.

Forest Ecosystems ^b	Area		Percent Remaining as at 2001	Status ^c as at 2001	Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at 2001				Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at December 2017 ^f			
	Pre 1750 (ha)	Current As at 2001 (ha)			Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total	Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total
1 Southern Coastal Hinterland Intermediate Altitude Shrub Dry Forest - <i>E. sieberi</i>	50,657	50,567	99.8	-	65.9	2.8	0.8	69.5	70	1	2	74
2 Hinterland Heath Shrub Dry Forest - <i>Corymbia gummifera</i> / <i>Syncarpia glomulifera</i>	103,514	86,242	83.3	-	36.3	0.8	3.4	40.4	36	1	4	41
3 Northern Hinterland Shrub Dry Forest - <i>Syncarpia glomulifera</i> / <i>E. scias</i>	16,237	16,215	99.9	-	87.6	0.1	0.1	87.8	88 [^]	0	1	89 [^]
4 Shoalhaven Gorge Dry Heathy Shrub Forest - <i>E. punctata</i> / <i>E. agglomerata</i>	17,823	17,822	100.0	-	73.7	2.4	0.0	76.1	75	0	0	75
5 Northern Coastal Lowlands Shrub/Grass Dry Forest - mixed tree species	15,789	8,846	56.0	-	9.0	6.5	0.6	16.2	9	1	9	19
7 Southern Coastal Hinterland Shrub/Tussock Grass Dry Forest - <i>E. sieberi</i>	20,364	20,355	100.0	-	28.7	4.2	1.7	34.5	29 [^]	4	4	36 [^]
8 Far Southern Coastal Shrub Dry Forest - <i>E. sieberi</i>	482	479	99.4	-	43.4	0.0	0.0	43.4	43 [^]	0	0	43 [^]
9 Coastal Lowlands Cycad/Shrub Dry Forest - <i>Corymbia maculata</i>	64,566	55,532	86.0	-	11.6	2.5	2.0	16.1	12	2	4	18
10 Southern Coastal Lowlands Shrub/Grass Dry Forest - <i>E. globoidea</i> / <i>E. longifolia</i>	19,448	17,634	90.7	-	15.7	3.3	2.8	21.8	16 [^]	3	4	23 [^]
11 Coastal Shrub/Grass Dry Forest - <i>E. botryoides</i> / <i>E. globoidea</i> / <i>Imperata cylindrica</i>	557	426	76.5	R	30.9	0.0	0.0	30.9	46	0	0	46

Forest Ecosystems ^b	Area		Percent Remaining as at 2001	Status ^c as at 2001	Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at 2001				Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at December 2017 ^f			
	Pre 1750 (ha)	Current As at 2001 (ha)			Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total	Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total
12 Coastal Hinterland (Buckenboursa) Shrub/Cycad Dry Forest - <i>Corymbia gummifera</i>	1,005	1,005	100.0	R	78.5	0.0	0.8	79.3	<u>81</u>	<u>0</u>	<u>1</u>	<u>82</u>
13 Southern Escarpment Foothills Rainshadow Dry Grass Forest - <i>E. agglomerata</i>	4,196	4,192	99.9	-	77.0	0.0	0.0	77.0	<u>77</u>	<u>0</u>	<u>0</u>	<u>77</u>
14 Northern Coastal Hinterland Shrub/Grass Dry Forest – <i>E. fibrosa/Corymbia maculata</i>	6,698	5,756	85.9	-	21.3	13.2	0.0	34.4	<u>33</u>	<u>0</u>	<u>0</u>	<u>33</u>
15 North East Tableland Dry Shrub Forest – <i>E. sieberi</i>	88,285	56,597	64.1	-	20.6	1.2	0.1	21.9	<u>24</u>	<u>1</u>	<u>0</u>	<u>25</u>
16 North East Tableland Dry Shrub/Tussock Grass Forest – <i>E. agglomerata</i>	21,786	15,506	71.2	-	34.5	5.4	0.0	39.9	<u>43</u>	<u>0</u>	<u>0</u>	<u>43</u>
17 Northern Sandstone Dry Shrub Forest - <i>E. punctata</i>	92	92	100.0	-	0.0	0.0	0.0	0.0	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
18 Southern Coastal Hinterland Shrub/Vine/Grass Moist Forest – <i>E. cypellocarpa/E. muelleriana</i>	51,037	50,316	98.6	-	54.4	2.1	0.9	57.4	<u>54</u>	<u>2</u>	<u>5</u>	<u>61</u>
19 Coastal Escarpment and Hinterland Shrub/Fern Dry Forest - <i>E. muelleriana</i>	69,525	68,666	98.8	-	55.7	2.9	1.3	59.9	<u>56</u>	<u>2</u>	<u>3</u>	<u>61</u>
20 Coastal Hinterland Gully Rainforest	2,976	2,976	100.0	-	40.0	1.1	1.9	43.0	<u>38</u>	<u>1</u>	<u>6</u>	<u>45</u>
21 Northern Coastal Hinterland Moist Shrub Forest - <i>C. maculata/E. pilularis</i>	90,346	69,988	77.5	-	23.7	1.7	1.6	27.0	<u>24</u>	<u>1</u>	<u>2</u>	<u>27</u>
24 Coastal Wet Heath Swamp Forest - <i>Casuarina glauca/Melaleuca ericifolia</i> *	13,182	6,119	46.4	V	11.8	0.8	0.0	12.7	<u>12</u>	<u>0</u>	<u>0</u>	<u>12</u>
25 South Coast Swamp Forest - <i>Casuarina glauca</i> *	18,097	3,792	21.0	V	5.2	1.3	0.2	6.6	<u>5</u>	<u>0</u>	<u>0</u>	<u>6</u>
27 Ecotonal Coastal Swamp Forest - <i>Casuarina glauca/E. botryoides</i> *	9,862	343	3.5	E	0.2	0.1	0.0	0.3	<u>0</u>	<u>0</u>	<u>0</u>	<u>1</u>
28 Coastal Sands Shrub/Fern Forest - <i>E. botryoides/Banksia serrata</i>	2,959	2,525	85.3	-	26.9	11.8	0.0	38.8	<u>27</u>	<u>3</u>	<u>3</u>	<u>33</u>

Forest Ecosystems ^b	Area		Percent Remaining as at 2001	Status ^c as at 2001	Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at 2001				Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at December 2017 ^f			
	Pre 1750 (ha)	Current As at 2001 (ha)			Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total	Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total
29 Northern Coastal Sands Shrub/Fern Forest - E. pilularis/Banksia serrata	14,168	10,838	76.5	-	29.4	1.3	0.5	31.2	29 [^]	0	3	32 [^]
32 Coastal Escarpment Rocky Shrub Dry Forest	44	44	100.0	R	100.0	0.0	0.0	100.0	100	0	0	100
34 Deua Ecotonal Shrub Forest - E. smithii/E. cypellocarpa/Astrotricha latifolia/Notelaea venosa	123	123	100.0	R	100.0	0.0	0.0	100.0	100 [^]	0	0	100 [^]
35 South Coast Acacia Scrubs - Acacia sylvestris	3,981	3,980	100.0	-	68.3	0.7	1.4	70.5	69	1	2	72
37 Scabby Range Dry Shrub Woodland - E. debeuzevillei/Leptospermum namadgiensis	271	271	100.0	R	98.9	0.0	0.0	98.9	99 [^]	0	0	99 [^]
38 Tableland Dry Heath Shrub/Herb/Grass Woodland - Calytrix tetragona (E. goniocalyx)	1,456	1,456	100.0	-	69.4	4.0	0.0	73.4	81	0	0	81
40 Coastal Hinterland (Deua NP) Dry Shrub Forest (rhyolite) - E. stenostoma	2,415	2,415	100.0	-	100.0	0.0	0.0	100.0	100 [^]	0	0	100 [^]
41 Rain Shadow (lower Snowy) Shrubland	705	705	100.0	R	54.3	0.0	0.0	54.3	56	0	0	56
43 Western Slopes Riparian Moist Sedge Woodland – E. camaldulensis *	20,916	1,589	7.6	E	0.0	0.0	0.0	0.0	0	0	0	0
47 Far Southern Hinterland Herb/Grass Moist Forest – E. maidenii/E. globoidea	496	85	17.1	-	10.3	0.0	0.0	10.3	15	0	0	15
48 Coastal Lowlands Riparian Herb/Grass Forest - various eucs	6,118	3,625	59.3	-	9.9	4.2	4.2	18.3	10 [^]	4	3	17 [^]
49 Southern Hinterland Shrub/Herb/Grass Riparian Forest - Angophora floribunda/E. elata/Acacia mearnsii	19,326	14,573	75.4	-	44.5	1.9	1.0	47.4	45 [^]	2	1	48 [^]
50 Southern Escarpment Foothills Herb/Grass Dry Forest- Angophora floribunda/E. globoidea	28,608	18,926	66.2	-	26.9	0.6	0.0	27.5	28	0	0	28

Forest Ecosystems ^b	Area		Percent Remaining as at 2001	Status ^c as at 2001	Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at 2001				Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at December 2017 ^f			
	Pre 1750 (ha)	Current As at 2001 (ha)			Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total	Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total
51 Araluen Acacia Herb/Grass Dry Forest - E. melliodora/E. maidenii	5,503	4,882	88.7	-	10.0	11.6	0.0	21.6	<u>24</u>	<u>0</u>	<u>0</u>	<u>24</u>
53 Riparian Acacia Shrub/Grass/Herb Forest - Casuarina cunninghamiana	6,769	5,242	77.4	-	16.4	1.1	0.5	18.0	<u>23</u>	<u>1</u>	<u>1</u>	<u>25</u>
55 Eastern Tableland Fern/Herb/Grass Moist Forest – E. fastigata	39,926	36,826	92.2	-	34.2	6.0	1.6	41.8	<u>36</u>	<u>4</u>	<u>2</u>	<u>42</u>
56 Tableland and Escarpment Moist Herb/Fern Grass Forest – E. radiata/E. viminalis/Viola spp	45,238	30,714	67.9	-	22.3	4.1	2.9	29.3	<u>26</u>	<u>1</u>	<u>1</u>	<u>29</u>
57 Southern Escarpment Shrub/Fern/Herb Moist Forest – E. cypellocarpa incl. E. fastigata & E. obliqua	44,238	37,166	84.0	-	61.8	3.0	0.8	65.6	<u>71</u>	<u>0</u>	<u>0</u>	<u>71</u>
58 Tableland and Escarpment Wet Layered Shrub Forest – E. fastigata/Olearia argophylla/ Dicksonia antarctica	20,580	19,184	93.2	-	78.0	1.8	0.7	80.5	<u>87</u>	<u>0</u>	<u>1</u>	<u>87</u>
59 Eastern Tableland and Escarpment Shrub/Fern Dry Forest - E. radiata/E. sieberi/Leucopogon lanceolatus	15,628	13,656	87.4	-	27.0	17.3	2.0	46.3	<u>44</u>	<u>4</u>	<u>0</u>	<u>48</u>
61 Southern Escarpment Edge Moist Shrub Forest - E. fraxinoides	3,271	3,259	99.6	-	88.4	3.7	0.0	92.1	<u>88</u>	<u>4</u>	<u>0</u>	<u>92</u>
62 Southern Escarpment Edge Moist Shrub/Fern Forest – E. fraxinoides/E. cypellocarpa	7,643	7,633	99.9	-	73.5	4.5	0.2	78.2	<u>75</u>	<u>4</u>	<u>0</u>	<u>79</u>
64 Southern East Tableland Edge Shrub/Grass Dry Forest - E. dalrympeana/E. radiata	1,592	1,103	69.3	R	44.2	2.0	15.5	61.6	<u>44</u>	<u>2</u>	<u>13</u>	<u>59</u>
65 Southern Escarpment Edge Moist Heath Forest– Oxylobium ellipticum	31	31	100.0	R	100.0	0.0	0.0	100.0	<u>100</u> [^]	<u>0</u> [^]	<u>0</u> [^]	<u>100</u> [^]
66 Eastern Tablelands Shrub/Grass Moist Forest - E. dalrympeana/ E. radiata/Poa sieberiana	22,140	5,832	26.3	V	17.1	0.4	1.1	18.6	<u>17</u>	<u>0</u>	<u>0</u>	<u>18</u>

Forest Ecosystems ^b	Area		Percent Remaining as at 2001	Status ^c as at 2001	Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at 2001				Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at December 2017 ^f			
	Pre 1750 (ha)	Current As at 2001 (ha)			Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total	Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total
68 North East Tablelands Shrub/Herb/Grass Dry Forest – E. pauciflora/E. viminalis/ Lomandra longifolia	10,607	9,442	89.0	-	6.4	0.2	0.2	6.8	<u>12</u>	<u>0</u>	<u>0</u>	<u>12</u>
70 Western Escarpment Dry Shrub Forest - E. dives/Xanthorhoea australis/Platylobium formosum	1,578	1,567	99.3	-	74.8	0.0	0.0	74.8	<u>76</u>	<u>0</u>	<u>0</u>	<u>76</u>
71 Western Tableland Dry Shrub Forest – E. macrorhyncha/ Leptospermum brevipes	1,487	769	51.7	V	31.3	0.0	17.6	48.9	<u>31</u> [^]	<u>0</u>	<u>18</u>	<u>49</u> [^]
72 Tablelands Dry Shrub Forest – E. dives/E. radiata/Bursaria lasiophylla	579	546	94.3	R	13.0	0.0	0.0	13.0	<u>13</u> [^]	<u>0</u>	<u>0</u>	<u>13</u> [^]
73 Eastern Tableland Dry Shrub/Grass Forest - E. pauciflora/E. viminalis/ Acacia dealbata/Themeda australis*	247,499	70,124	28.3	V	2.3	0.2	0.2	2.7	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
74 South Eastern Tablelands Dry Shrub/Grass/Herb Forest – E. bridgesiana/E. pauciflora/E. rubida/ Acaena novae-Zelandiae *	131,323	50,156	38.2	V	3.9	1.1	0.0	4.9	<u>5</u>	<u>0</u>	<u>0</u>	<u>5</u>
75 Tablelands Shrub/Tussock Grass Forest - E. dives/Chionochloa pallida	41,620	32,536	78.2	-	45.8	0.2	0.0	46.0	<u>46</u> [^]	<u>0</u>	<u>0</u>	<u>46</u> [^]
76 Tablelands Shrub/Grass Dry Forest - E. rubida/E. pauciflora/ Themeda australis *	109,717	38,752	35.3	-	8.3	0.0	0.0	8.3	<u>8</u>	<u>0</u>	<u>0</u>	<u>8</u>
77 Lower Snowy Dry Shrub/Tussock Grass Forest – E. goniocalyx/Chionochloa pallida	74,514	69,920	93.8	-	60.9	0.0	0.0	60.9	<u>61</u>	<u>0</u>	<u>0</u>	<u>61</u>
78 Lower Snowy Dry Shrub/Herb Woodland - E. albens/C. glauciphylla/A. deanei	37,242	37,242	100.0	-	92.0	0.0	0.0	92.0	<u>92</u>	<u>0</u>	<u>0</u>	<u>92</u>
79 Montane Dry Shrub/Tussock Grass Forest - E. nortonii/Cassinia longifolia/Chionochloa pallida	893	604	67.6	R	25.4	0.0	0.0	25.4	<u>28</u>	<u>0</u>	<u>0</u>	<u>28</u>

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	80 ACT Dry Shrub/Herb Forest – E. dives/E. bridgesiana/Cassinia longifolia/Hydrocotyle laxiflora *	438			4	0.9	R	0.0	0.0	0.0	0.0	<u>0</u>
81 Eastern Dry Shrub/Herb/Grass Forest - E. bridgesiana/E. dives/Bursaria spinosa/Poa sieberiana	11,882	8,487	71.4	-	0.0	0.0	0.0	0.0	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
82 Western Montane Acacia Fern/Herb Forest - E. viminalis/E. robertsonii/Cassinia aculeata/Pteridium esculentum	152,248	94,998	62.4	-	44.5	0.9	0.1	45.6	<u>45</u>	<u>1</u>	<u>1</u>	<u>47</u>
83 Montane Riparian Moist Shrub/Grass/Herb Forest – E. dalrympleana/E. robertsonii/ Acacia melanoxylon/Microlaena stipoides	973	945	97.1	V	44.8	0.0	0.0	44.8	<u>48</u>	<u>0</u>	<u>0</u>	<u>48</u>
85 Montane Riparian Moist Shrub/Sedge/Grass Forest – E. dalrympleana/E. viminalis/ Leptospermum lanigerum/Poa helmsii	669	669	100.0	R	97.8	0.0	0.0	97.8	<u>98</u>	<u>0</u>	<u>0</u>	<u>98</u>
86 Western Montane Moist Shrub Forest - E. delegatensis/E. pauciflora/Polyscias sambucifolia/Tasmania lanceolata	4,062	4,061	100.0	-	99.6	0.0	0.0	99.6	<u>100</u>	<u>0</u>	<u>0</u>	<u>100</u>
87 Western Escarpment Moist Shrub/Herb/Grass Forest – E. delegatensis/E. dalrympleana/ Derwentia derwentiana/Stellaria pungens	69,865	69,713	99.8	-	77.9	0.1	0.1	78.1	<u>78</u>	<u>0</u>	<u>2</u>	<u>80</u>
88 Western Escarpment Shrub/Grass Forest – E. chapmaniana/Daviesia latifolia	587	587	100.0	R	100.0	0.0	0.0	100.0	<u>100</u>	<u>0</u>	<u>0</u>	<u>100</u>
89 Eastern Tablelands Acacia/Herb/Grass Forest – E. dalrympleana/E. viminalis/ Acacia melanoxylon/Stellaria pungens	32,523	29,767	91.5	-	27.5	7.8	3.2	38.5	<u>35</u>	<u>2</u>	<u>2</u>	<u>39</u>

Forest Ecosystems ^b	Area		Percent Remaining as at 2001	Status ^c as at 2001	Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at 2001				Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at December 2017 ^f			
	Pre 1750 (ha)	Current As at 2001 (ha)			Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total	Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total
90 Northern Tablelands Acacia Herb/Grass Dry Forest – E. bridgesiana/Acacia dealbata/Hydrocotyle laxiflora *	7,173	1,347	18.8	V	2.0	0.5	0.0	2.5	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
91 Burrinjuck Acacia Dry Herb/Grass Forest - E. bridgesiana/ E. bicostata/Acacia dealbata/Poa sieberiana	5,349	4,424	82.7	-	27.2	0.0	2.4	29.6	<u>29</u>	<u>0</u>	<u>10</u>	<u>39</u>
92 Tablelands Acacia/Grass/Herb Dry Forest - E. bridgesiana/E. melliodora/Acacia mearnsii/Microlaena stipoides *	30,392	6,476	21.3	V	0.7	0.0	0.0	0.7	<u>1</u>	<u>0</u>	<u>0</u>	<u>1</u>
93 Western Tablelands Herb/Grass Dry Forest - E. robertsonii/ Microlaena stipoides	85,523	32,412	37.9	-	16.8	1.7	2.9	21.4	<u>17</u>	<u>2</u>	<u>4</u>	<u>23</u>
94 South-west Slopes Acacia Dry Herb/Grass Forest – E. bridgesiana/E. macrohyncha/ Acacia dealbata/Microlaena stipoides *	72,307	25,677	35.5	-	9.4	1.8	0.3	11.6	<u>11</u>	<u>0</u>	<u>2</u>	<u>13</u>
95 Tableland Acacia Moist Herb Forest - E. pauciflora/E. dalrympleana/Acacia dealbata/Helichrysum scorpiodes	46,834	36,549	78.0	-	34.9	2.1	0.2	37.2	<u>35</u> [^]	<u>2</u>	<u>0</u>	<u>38</u> [^]
96 Tableland Tussock Grass/Herb Forest - E. pauciflora/ E.dalrympleana/Poa sieberiana	320	318	99.4	R	99.4	0.0	0.0	99.4	<u>99</u> [^]	<u>0</u>	<u>0</u>	<u>99</u> [^]
97 Montane Acacia/Dry Shrub/Herb/Grass Forest – E. dalrympleana/E. pauciflora/ Acacia dealbata/Stellaria pungens	69,629	67,482	96.9	-	76.1	1.2	0.0	77.3	<u>76</u>	<u>1</u>	<u>0</u>	<u>77</u>
98 Western Montane Moist Shrub Forest - E. pauciflora/E. dalrympleana/Daviesia ulicifolia/Lomandra longifolia	74,891	70,756	94.5	-	66.7	0.1	0.0	66.8	<u>67</u>	<u>0</u>	<u>0</u>	<u>67</u>
99 Montane Dry Shrub/Herb/Grass Forest - E. pauciflora/Leucopogon hookeri/Stellaria pungens	10,178	10,172	99.9	-	94.4	0.0	0.0	94.4	<u>94</u> [^]	<u>0</u>	<u>0</u>	<u>94</u> [^]

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100 ACT Montane Dry Shrub/Grass Forest - E. pauciflora/ Acacia dealbata/Poa induta	5,730	5,567	97.2	-	14.5	0.0	0.0	14.5	15 [^]	0	0	15 [^]
101 Western Montane Dry Shrub/Herb/Grass Forest – E. dalrympleana/E. pauciflora/ Daviesia latifolia/Coprosma hirtella/Stellaria pungens	42,870	41,254	96.2	-	42.5	3.8	0.9	47.2	43	4	1	48
102 Western Montane Dry Fern/Grass Forest – E. dalrympleana/E. pauciflora/Poa sieberiana/Asperula scoparia	2,871	2,869	99.9	-	78.0	20.8	0.0	98.7	96	0	0	96
103 Western Montane Dry Fern/Grass Forest - E. dives/E. dalrympleana/E. robertsonii/ Pteridium esculentum/Poa sieberiana	71,732	49,332	68.8	-	39.0	3.2	0.5	42.7	40	2	1	43
104 Tableland Acacia/Herb/Grass Forest - E. robertsonii/E. dalrympleana/Acacia dealbata/ Platylodium formosum/Senecio sp.E	46,455	41,116	88.5	-	65.7	1.3	3.8	70.7	66	1	5	72
106 Montane Dry Shrub/Tussock Forest - E. robertsonii/E. dalrympleana/Platylodium formosum/Tetradlea bauerifolia	30,135	29,551	98.1	-	94.4	0.0	0.0	94.4	94	0	0	94
107 Central Tableland/ACT Montane Dry Shrub Forest - E. dalrympleana/E. dives/ Hibbertia obtusifolia	44,074	20,330	46.1	-	10.8	0.9	0.0	11.8	12	0	0	12
108 Western Tablelands Dry Herb/Grass Forest – E. macrorhyncha/E. dives/Hibbertia obtusifolia/Poa sieberiana	125,104	75,056	60.0	-	38.0	2.4	3.2	43.6	42	0	5	47

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109 Widespread Tablelands Dry Shrub/Tussock Grass Forest - E. dives/E. mannifera/E. macrorhyncha/ Hibbertia obtusifolia/Chionochloa pallida *	59,891	28,497	47.6	-	6.6	3.5	0.1	10.2	<u>10</u>	<u>0</u>	<u>0</u>	<u>10</u>
110 Tablelands Dry Shrub/Grass Forest - E. dives/E. mannifera/E. macrorhyncha/Poa sieberiana	22,106	18,393	83.2	-	35.5	2.9	0.4	38.8	<u>39</u>	<u>0</u>	<u>0</u>	<u>39</u>
112 Eastern Tablelands Dry Shrub Forest - E. sieberi/E. dives/ Brachyloma daphnoides/Poa sieberiana *	19,785	7,646	38.6	V	4.9	2.0	1.0	7.8	<u>7</u>	<u>0</u>	<u>0</u>	<u>7</u>
113 North East Tablelands Dry Shrub/Grass Forest - E. mannifera/ E. dives/Brachyloma daphnoides/ Dianella revoluta *	102,600	50,342	49.1	-	4.8	0.5	0.0	5.3	<u>9</u>	<u>0</u>	<u>0</u>	<u>9</u>
114 Tablelands Dry Shrub/Tussock Grass Forest - E. macrorhyncha/ E.rossii/E. goniocalyx/Chionochloa pallida *	55,641	25,018	45.0	-	6.5	1.0	0.0	7.5	<u>8</u>	<u>0</u>	<u>0</u>	<u>8</u>
115 South East Tablelands Dry Shrub/Tussock Grass Forest – E. rossii/E. mannifera/Pultenaea procumbens/Chionochloa pallida	60,833	59,766	98.2	-	7.8	4.6	0.0	12.4	<u>16</u>	<u>0</u>	<u>0</u>	<u>16</u>
116 Western Slopes Herb/Grass Woodland - E. blakelyi/Microlaena stipoides/Hydrocotyle laxiflora *	62,301	4,052	6.5	E	0.2	0.0	0.0	0.2	<u>0.2</u> [^]	<u>0</u>	<u>1</u>	<u>1</u>
117 Western Slopes Dry Grass Woodland - E. albens/Microlaena stipoides/Bothriochloa macra *	56,460	981	1.7	R	0.0	0.0	0.0	0.0	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
118 Western Slopes Dry Grass Forest - E. sideroxylon/E. blakelyi/ E. goniocalyx/Elymus scaber *	4,471	308	6.9	R	0.3	3.8	0.0	4.1	<u>4</u>	<u>0</u>	<u>0</u>	<u>4</u>
119 Western Tablelands Dry Shrub/Grass Forest - E. macrorhyncha/E. polyanthemus/ Hibbertia obtusifolia/Gonocarpus tetragynus *	136,181	36,151	26.5	V	6.0	2.5	0.2	8.7	<u>8</u>	<u>0</u>	<u>0</u>	<u>9</u>

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120 Western Slopes Shrub/Herb/Grass Dry Forest – E. macrorhyncha/E. albens/ Hydrocotyle laxiflora/Microlaena stipoides *	79,554	10,354	13.0	E	13	0.1	0.0	1.5	<u>1</u>	<u>0</u>	<u>0</u>	<u>1</u>
121 Western Slopes Grass/Herb Dry Forest - E. macrorhyncha/ E. goniocalyx/Gonocarpus tetragynus/Poa sieberiana	92,586	61,833	66.8	-	23.0	3.8	2.6	29.4	<u>28</u>	<u>0</u>	<u>5</u>	<u>32</u>
123 Montane Wet Heath/Bog - Baeckea utilis/Hakea micranthis	300	300	100.0	R	94.0	6.0	0.0	100.0	94 [^]	6 [^]	0 [^]	100 [^]
124 Western Montane Wet Heath/Herb Grass Woodland – E. pauciflora/Epacris breviflora	5,527	4,390	79.4	-	5.6	3.9	0.7	10.2	<u>6</u> [^]	<u>4</u>	<u>19</u>	<u>29</u> [^]
127 Sub-alpine Dry Shrub/Herb/Grass Woodland – E. debeuzevillei	187	187	100.0	R	99.5	0.0	0.0	99.5	<u>99.5</u> [^]	<u>0</u>	<u>0</u>	<u>99.5</u> [^]
128 Sub-alpine Dry Shrub/Herb Woodland - E. niphophila	45,966	45,894	99.8	-	89.6	0.0	0.0	89.6	<u>90</u> [^]	<u>0</u>	<u>0</u>	<u>90</u> [^]
130 Sub-alpine Shrub/Grass Woodland - E. niphophila	66,947	66,452	99.3	-	98.6	0.6	0.0	99.2	<u>99</u> [^]	<u>1</u>	<u>0</u>	<u>100</u> [^]
135 Southern Escarpment (Wadbilliga) Moist Heath	155	155	100.0	R	72.3	9.7	0.0	81.9	72 [^]	10 [^]	0 [^]	82 [^]
137 Coastal Escarpment Moist Shrub/Fern Forest - E. sieberi/E. piperita/Gleichenia dicarpa	15,361	14,476	94.2	-	74.8	0.4	7.4	82.6	<u>75</u> [^]	<u>0</u>	<u>7</u>	<u>83</u> [^]
138 Northern Plateau and Escarpment Heath Shrub Dry Forest - E. sieberi/E. consideniana	30,836	30,823	100.0	-	67.1	2.8	3.1	73.0	<u>70</u>	<u>2</u>	<u>4</u>	<u>76</u>
139 Northern Coastal Hinterland Heath Shrub Dry Forest – C. gummifera/E. sclerophylla	50,161	48,057	95.8	-	49.9	1.5	1.5	52.9	<u>53</u>	<u>1</u>	<u>2</u>	<u>55</u>
146 Tableland Dry Herb/Grass Woodland - E. pauciflora/E. stellulata/Asperula scoparia *	8,356	1,164	13.9	E	35	0.0	0.2	3.7	<u>4</u>	<u>0</u>	<u>0</u>	<u>4</u>

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148 Tableland Tussock Grassland /Sedgeland/ Woodland – Poa labillardieri *	13,757	3,218	23.4	R	0.2	0.0	0.1	0.3	0.2 [^]	0 [^]	0.1 [^]	0.3 [^]
151 Tableland Sedge/Grass Herbland - Themeda australis/Carex appressa *	15	0	0.0	R	0.0	0.0	0.0	0.0	0 [^]	0 [^]	0 [^]	0 [^]
153 Tablelands and Slopes Herb/Grassland/ Woodland - Themeda australis plus E. pauciflora/E. rubida*	20,387	156	0.8	R	0.0	0.0	0.0	0.0	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
154 Tableland Dry Grass Woodland - E.bridgesiana/Themeda australis *	41,041	15	0.0	R	0.0	0.0	0.0	0.0	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
160 Western Slopes Dry Grass Woodland - E. blakelyi/ E. melliodora/Danthonia racemosa *	204,413	3,646	1.8	R	0.0	0.0	0.0	0.0	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
161 Tablelands and Slopes Dry Herb/Grassland/ Woodland - E. melliodora/Danthonia racemosa *	21,526	556	2.6	R	0.0	0.0	0.0	0.0	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
162 Western Slopes Moist Herb/Sedge/Grass Woodland – E. blakelyi/Carex appressa *	399	150	37.6	R	0.0	0.0	0.0	0.0	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
164 Coastal Escarpment Cool Temperate Rainforest	1,050	1,049	99.9	R	88.2	0.0	1.4	89.6	<u>91</u>	<u>0</u>	<u>0</u>	<u>91</u>
165 Southern Escarpment Cool/Warm Temperate Rainforest	3,718	3,716	99.9	-	58.7	0.9	3.8	63.4	<u>63</u>	<u>0</u>	<u>14</u>	<u>77</u>
166 Central Coastal Hinterland and Lowland Warm Temperate Rainforest	7,939	7,926	99.8	-	68.6	0.9	3.3	72.8	<u>69</u>	<u>1</u>	<u>6</u>	<u>75</u>
167 Coastal Lowland Sub Tropical/Littoral Rainforest	636	585	92.0	R	41.3	2.8	0.0	44.1	<u>41[^]</u>	<u>0</u>	<u>0</u>	<u>41[^]</u>
168 Ecotonal Granite Dry Rainforest – Backhousia myrtifolia/ Acmena smithii/Angophora floribunda/Pittosporum undulatum/Doodia aspera	316	316	100.0	R	50.7	25.6	0.3	76.6	<u>62</u>	<u>14</u>	<u>1</u>	<u>77</u>

Forest Ecosystems ^b	Area		Percent Remaining as at 2001	Status ^c as at 2001	Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at 2001				Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at December 2017 ^f			
	Pre 1750 (ha)	Current As at 2001 (ha)			Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total	Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total
169 Coastal Hinterland Sub Tropical Warm Temperate Rainforest	10,477	7,825	74.7	-	26.2	0.3	0.0	26.4	<u>26</u> [^]	<u>0</u>	<u>0</u>	<u>26</u> [^]
170 Southern Coastal Hinterland Dry Gully Rainforest - Backhousia myrtifolia	7,249	7,244	99.9	-	41.5	4.6	1.4	47.4	<u>42</u> [^]	<u>4</u>	<u>10</u>	<u>55</u> [^]
171 Northern Coastal Shrub/Grass Forest - E. tereticornis *	23,038	3,512	15.2	E	7.5	0.0	0.0	7.6	<u>8</u> [^]	<u>0</u>	<u>0</u>	<u>8</u> [^]
172 Kosciuszko Western Escarpment Cool Temperate Rainforest	106	106	100.0	R	100.0	0.0	0.0	100.0	<u>100</u>	<u>0</u>	<u>0</u>	<u>100</u>
173 Northern Grass Herb Forest on Basalt *	5,283	164	3.1	R	0.0	0.0	0.0	0.0	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
174 Shoalhaven Gorge Forest – E. tereticornis / E. melliodora	13,529	13,473	99.6	-	46.2	8.4	0.0	54.6	<u>59</u>	<u>0</u>	<u>0</u>	<u>59</u>
175 Northern Coastal Lowlands Swamp Forest - E. robusta	465	459	98.7	R	19.8	3.9	0.0	23.7	<u>20</u> [^]	<u>5</u> [^]	<u>0</u>	<u>24</u> [^]
176 Morton Plateau Mallee Swamp Low Forest	40,175	40,155	100.0	-	92.1	0.3	0.0	92.4	<u>95</u>	<u>0</u>	<u>0</u>	<u>95</u>
177 Illawarra Lowland Sub-Tropical Rainforest *	9,153	1,674	18.3	V	0.0	0.0	0.0	0.0	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
178 Robertson Warm Temperate Rainforest *	301	215	71.4	R	0.3	0.0	0.0	0.3	<u>1</u>	<u>0</u>	<u>0</u>	<u>1</u>
179 Eastern Deua dry shrub Forest - Angophora costata	2,715	2,713	99.9	-	80.2	0.7	0.0	80.9	<u>80</u>	<u>0</u>	<u>1</u>	<u>81</u>
180 Cooma Dry grass Forest – E. viminalis-E.dives	1,134	1,134	100.0	-	0.0	0.0	0.0	0.0	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
181 North-eastern Tablelands Gully Fern Forest - E.elata / Calochlaena dubia	3,433	3,098	90.2	-	7.0	0.0	0.0	7.0	<u>7</u>	<u>6</u>	<u>0</u>	<u>13</u>
185 Mangrove Estuarine Low Forest	1,672	1,393	83.3	R	18.7	3.1	0.1	21.9	<u>19</u>	<u>1</u>	<u>0</u>	<u>21</u>
192 South West Slopes Tall Shrubland Low Forest - E.dwyeri-Acacia doratoxylon	1,696	1,689	99.6	-	41.3	4.8	0.0	46.0	<u>46</u>	<u>0</u>	<u>0</u>	<u>46</u>
196 South West Slopes Tall Shrubland Low Forest - E.dealbata	152	152	100.0	R	0.0	0.0	0.0	0.0	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>

Forest Ecosystems ^b	Area		Percent Remaining as at 2001	Status ^c as at 2001	Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at 2001				Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at December 2017 ^f			
	Pre 1750 (ha)	Current As at 2001 (ha)			Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total	Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total
2326 Coastal Dune Herb/Grassland & Southern Coastal Dune Scrub	3,151	2,335	74.1	V	23.1	0.2	0.0	23.3	23 [^]	0.2 [^]	0	23.3 [^]
129/133 Alpine Wet Herbfield & Sub-alpine Wet Herb / Grassland / Bog	49,876	49,794	99.8	-	95.6	0.1	0.0	95.7	96	0	0	96

Non-Forest Ecosystems ^b	Area		Percent Remaining as at 2001	Status ^c as at 2001	Percent of Non-Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at 2001				Percent of Non-Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at December 2017			
	Pre 1750 (ha)	Current As as 2001 (ha)			Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total	Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total
36 Montane / Sub-Alpine Dry Rocky Shrubland	2,830	2,828	99.9	-	96.6	0.4	0.0	97.0	97 [^]	0	0	97 [^]
69 Eastern Tablelands Damp Heath - Epacris microphylla/Schoenus apogon	66	63	95.5	R	69.7	0.0	0.0	69.7	70 [^]	6	0	76 [^]
125 Montane Wet Heath/Herb Grass - Hypolepsis japonica - Hydrocotyle peduncularis	50	50	100.0	R	38.0	2.0	0.0	40.0	38 [^]	2 [^]	0	40 [^]
126 Montane Wet Sedgeland - Carex gaudichaudiana	189	189	100.0	R	47.6	0.0	0.0	47.6	51	0	0	51
131 Sub-alpine Herbfield	35,106	32,815	93.5	-	93.1	0.0	0.0	93.1	93	0	0	93
134 Eastern Tablelands Dry Heath - Allocasuarina nana	3,635	3,635	100.0	-	33.8	2.1	0.0	36.0	41	0	0	41
140 Northern Coastal Tall Wet Heath	4,385	4,324	98.6	-	17.2	14.6	0.0	31.8	21	9	0	30
141 Northern Coast (and Escarpment) Wet Heath/Sedge	3,501	3,448	98.5	-	81.2	0.0	1.7	82.8	81 [^]	0	2	83 [^]
144 Northern Coast and Hinterland Moist Heath	1,042	1,042	100.0	R	77.8	0.0	0.0	77.8	78 [^]	2	1	80 [^]
147 Tablelands Moist Sedge/Herb/Grassland *	43,615	130	0.3	R	0.0	0.0	0.0	0.0	0	0	0	0
152 Tableland Herb/Grassland - Themeda australis *	5,785	2	0.0	R	0.0	0.0	0.0	0.0	0	0	0	0

Non-Forest Ecosystems ^b	Area		Percent Remaining as at 2001	Status ^c as at 2001	Percent of Non-Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at 2001				Percent of Non-Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at December 2017			
	Pre 1750 (ha)	Current As as 2001 (ha)			Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total	Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total
157 ACT/Monaro Dry Grassland – Bothriochloa macra/ Chrysocephalum apiculatum *	78,186	285	0.4	R	0.0	0.0	0.0	0.0	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
158 Monaro Dry Grassland – Austrostipa spp/ Danthonia ssp *	135,338	230	0.2	R	0.0	0.0	0.0	0.0	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
186 Mudflats/Saltmarshes	1,135	893	78.7	R	34.7	7.1	0.0	41.9	<u>36</u>	<u>0</u>	<u>0</u>	<u>36</u>
187 Coastal Headland Heathlands	792	414	52.3	R	15.5	0.1	0.0	15.6	<u>16[^]</u>	<u>0</u>	<u>0</u>	<u>16[^]</u>
188 Sand-dune Wetlands	535	373	69.7	R	20.7	0.0	0.0	20.7	<u>36</u>	<u>0</u>	<u>0</u>	<u>36</u>
189 Coastal Alluvial Valley Floor Wetlands	195	143	73.3	R	0.0	0.0	0.0	0.0	<u>1</u>	<u>0</u>	<u>1</u>	<u>2</u>
190 Rock	2,373	2,362	99.5	-	72.6	3.4	0.0	76.0	<u>74</u>	<u>2</u>	<u>0</u>	<u>76</u>
22/23 Southern Coastal Hind Dune/Headland Scrub & Southern Coastal Dune Scrub	2,005	1,226	61.1	R	30.6	1.2	0.0	31.8	<u>31[^]</u>	<u>0</u>	<u>0</u>	<u>31[^]</u>
123/126 Montane Wet Heath/Bog - Baeckea utilis & Montane Wet Sedgeland - Carex gaudichaudiana	2,484	2,296	92.4	-	46.4	1.5	8.9	56.9	<u>51</u>	<u>1</u>	<u>8</u>	<u>60</u>

NOTES ACCOMPANYING TABLE 1

- a. The figures shown in this table are based on modelled information mapped at a scale of 1:25 000 derived during the pre-1750 analysis of vegetation types in the Southern region, and are therefore only approximate.
- b. Forest Ecosystems are as defined in the documents *Forest Ecosystem Classification and Mapping for the Southern CRA Region* CRA Unit, Southern Zone National Parks and Wildlife Service.
- c. The status is based on: Rare (R) which has a total current area below 1000 hectares and a target of 100% of its current distribution. Endangered (E) which has < 10% remaining and a target of 100% of its current distribution. Vulnerable (V) which has between 10-30% remaining and a target of 60% of its current distribution. Some forest ecosystems were given their rare, endangered or vulnerable status due to other factors such as range of distribution, patch size and expert opinion on vulnerability. All other Forest Ecosystems have a target of 15% of their pre-1750 distribution.
- d. Informal Reserve includes Special Management Zones that are > 40ha and > 200m wide, or that are adjacent to Dedicated Reserves.
- e. Tabulated prescriptions include those elements of the Special Management Zone that, due to size or shape, do not meet the Informal Reserve Category outlined above, and the Harvesting Exclusions Zone.
- f. Source: compiled by ABARES from RFA data, including data from CRA reports, IFOAs, NPWS and FCNSW

* These Forest Ecosystems have been identified as priorities for protection on Private Land (see Attachment 2).

[^] The figure supplied by ABARES has been amended by DPI to address inconsistencies resulting from changes in spatial analysis systems and processes over time.

Table 2. Conservation of Old Growth forest in the CAR Reserve System in the Southern region^a:

Forest Ecosystem ^b	Area of Forest Ecosystem (ha)	Percent of Forest Ecosystem as Old Growth	Area Old Growth (ha)	Percent of Old Growth forest in the CAR Reserve System			
				Dedicated Reserve	Informal Reserve	Prescription ^d	Total
1-OG Southern Coastal Hinterland Intermediate Altitude Shrub Dry Forest – <i>E. sieberi</i>	50,567	36.2	18,295	84.0	2.3	0.3	86.7
2-OG Hinterland Heath Shrub Dry Forest – <i>Corymbia gummifera</i> / <i>Syncarpia glomulifera</i>	86,242	35.0	30,181	65.9	0.9	2.5	69.3
3-OG Northern Hinterland Shrub Dry Forest – <i>Syncarpia glomulifera</i> / <i>E. scias</i>	16,215	40.6	6,577	92.0	0.2	0.0	92.1
4-OG Shoalhaven Gorge Dry Heathy Shrub Forest – <i>E. punctata</i> / <i>E. agglomerata</i>	17,822	67.5	12,023	75.8	1.4	0.0	77.2
5-OG Northern Coastal Lowlands Shrub/Grass Dry Forest – mixed tree species	8,846	17.4	1,539	40.5	18.5	2.3	61.3
7-OG Southern Coastal Hinterland Shrub/Tussock Grass Dry Forest – <i>E. sieberi</i>	20,355	10.9	2,225	52.7	11.8	1.5	65.9
8-OG Far Southern Coastal Shrub Dry Forest – <i>E. sieberi</i>	479	9.4	45	46.7	0.0	0.0	46.7
9-OG Coastal Lowlands Cycad/Shrub Dry Forest – <i>Corymbia maculata</i>	55,532	15.4	8,559	29.6	7.7	4.6	41.9
10-OG Southern Coastal Lowlands Shrub/Grass Dry Forest – <i>E. globoidea</i> / <i>E. longifolia</i>	17,634	14.9	2,625	23.7	8.4	8.3	40.5
11-OG Coastal Shrub/Grass Dry Forest – <i>E. botryoides</i> / <i>E. globoidea</i> / <i>Imperata cylindrica</i>	426	14.1	60	63.3	0.0	0.0	63.3
12-OG Coastal Hinterland (Buckenbours) Shrub/Cycad Dry Forest – <i>Corymbia gummifera</i>	1,005	28.1	282	97.9	0.0	0.0	97.9
13-OG Southern Escarpment Foothills Rainshadow Dry Grass Forest – <i>E. agglomerata</i>	4,192	50.7	2,125	74.7	0.0	0.0	74.7
14-OG Northern Coastal Hinterland Shrub/Grass Dry Forest – <i>E. fibrosa</i> / <i>Corymbia maculata</i>	5,756	23.4	1,349	54.0	33.1	0.0	87.1
15-OG North East Tableland Dry Shrub Forest – <i>E. sieberi</i>	56,597	23.6	13,360	80.6	0.2	0.0	80.8
16-OG North East Tableland Dry Shrub/Tussock Grass Forest – <i>E. agglomerata</i>	15,506	40.8	6,331	75.3	9.2	0.0	84.5
18-OG Southern Coastal Hinterland Shrub/Vine/Grass Moist Forest – <i>E. eypellocarpa</i> / <i>E. muelleriana</i>	50,316	49.3	24,801	71.0	2.8	0.6	74.4
19-OG Coastal Escarpment and Hinterland Shrub/Fern Dry Forest – <i>E. muelleriana</i>	68,666	44.6	30,658	75.1	2.3	0.6	78.0
21-OG Northern Coastal Hinterland Moist Shrub Forest – <i>C. maculata</i> / <i>E. pilularis</i>	69,988	17.4	12,182	52.0	3.2	2.5	57.7
28-OG Coastal Sands Shrub/Fern Forest – <i>E. botryoides</i> / <i>Banksia serrata</i>	2,525	24.4	615	38.7	28.0	0.0	66.7
29-OG Northern Coastal Sands Shrub/Fern Forest – <i>E. pilularis</i> / <i>Banksia serrata</i>	10,838	19.2	2,085	69.0	1.4	0.9	71.2
35-OG South Coast Acacia Scrubs – <i>Acacia sylvestris</i>	3,980	0.4	16	100.0	0.0	0.0	100.0

Forest Ecosystem ^b	Area of Forest Ecosystem (ha)	Percent of Forest Ecosystem as Old Growth	Area Old Growth (ha)	Percent of Old Growth forest in the CAR Reserve System			
				Dedicated Reserve	Informal Reserve ^e	Prescription ^d	Total
40 OG Coastal Hinterland (Deua NP) Dry Shrub Forest (rhyolite) – <i>E. stenostoma</i>	2,828	0.0	0	0.0	0.0	0.0	0.0
43 OG Western Slopes Riparian Moist Sedge Woodland	1,456	0.3	4	0.0	0.0	0.0	0.0
47 OG Far Southern Hinterland Herb/Grass Moist Forest – <i>E. maidenii</i> / <i>E. globoidea</i>	2,415	39.5	955	100.0	0.0	0.0	100.0
48 OG Coastal Lowlands Riparian Herb/Grass Forest – various eucs	1,589	2.3	36	0.0	0.0	0.0	0.0
49 OG Southern Hinterland Shrub/Herb/Grass Riparian Forest – <i>Angophora floribunda</i> / <i>E. elata</i> / <i>Acacia mearnsii</i>	85	10.6	9	100.0	0.0	0.0	100.0
50 OG Southern Escarpment Foothills Herb/Grass Dry Forest – <i>Angophora floribunda</i> / <i>E. globoidea</i>	3,625	20.4	738	35.1	13.4	6.5	55.0
51 OG Araluen Acacia Herb/Grass Dry Forest – <i>E. melliodora</i> / <i>E. maidenii</i>	14,573	28.7	4,183	81.4	2.8	0.5	84.8
55 OG Eastern Tableland Fern/Herb/Grass Moist Forest – <i>E. fastigata</i>	18,926	35.0	6,630	57.8	1.9	0.0	59.7
56 OG Tableland and Escarpment Moist Herb/Fern Grass Forest – <i>E. radiata</i> / <i>E. viminalis</i> / <i>Viola</i> spp	4,882	29.8	1,456	32.6	10.9	0.0	43.5
57 OG Southern Escarpment Shrub/Fern/Herb Moist Forest – <i>E. cypellocarpa</i> incl. <i>E. fastigata</i> & <i>E. obliqua</i>	36,826	29.7	10,945	54.6	8.1	1.4	64.1
58 OG Tableland and Escarpment Wet Layered Shrub Forest – <i>E. fastigata</i> / <i>Olearia argophylla</i> / <i>Dicksonia antarctica</i>	30,714	32.0	9,828	47.2	7.5	6.3	61.1
59 OG Eastern Tableland and Escarpment Shrub/Fern Dry Forest – <i>E. radiata</i> / <i>E. sieberi</i> / <i>Leucopogon lanceolatus</i>	37,166	52.9	19,659	86.2	4.3	0.2	90.7
61 OG Southern Escarpment Edge Moist Shrub Forest – <i>E. fraxinoides</i>	19,184	55.8	10,702	90.9	1.7	0.3	93.0
62 OG Southern Escarpment Edge Moist Shrub/Fern Forest – <i>E. fraxinoides</i> / <i>E. cypellocarpa</i>	13,656	31.5	4,308	36.2	26.9	1.4	64.5
64 OG Southern East Tableland Edge Shrub/Grass Dry Forest – <i>E. dalrympeana</i> / <i>E. radiata</i>	3,259	23.1	754	94.4	1.1	0.0	95.5
66 OG Eastern Tablelands Shrub/Grass Moist Forest – <i>E. dalrympeana</i> / <i>E. radiata</i> / <i>Poa sieberiana</i>	7,633	26.6	2,028	81.6	4.2	0.1	85.8
68 OG North East Tablelands Shrub/Herb/Grass Dry Forest – <i>E. pauciflora</i> / <i>E. viminalis</i> / <i>Lomandra longifolia</i>	1,103	17.2	190	64.7	0.0	30.5	95.3
70 OG Western Escarpment Dry Shrub Forest – <i>E. ives</i> / <i>Xanthorrhoea australis</i> / <i>Platylobium formosum</i>	5,832	59.8	3,489	82.7	0.2	5.2	88.1
71 OG Western Tableland Dry Shrub Forest – <i>E. macrorhyncha</i> / <i>Leptospermum brevipes</i>	9,442	13.2	1,251	14.7	1.0	0.0	15.7
72 OG Tablelands Dry Shrub Forest – <i>E. dives</i> / <i>E. radiata</i> / <i>Bursaria lasiophylla</i>	1,567	35.8	561	74.2	0.0	0.0	74.2

Forest Ecosystem ^b	Area of Forest Ecosystem (ha)	Percent of Forest Ecosystem as Old Growth	Area Old Growth (ha)	Percent of Old Growth forest in the CAR Reserve System			
				Dedicated Reserve	Informal Reserve ^e	Prescription ^d	Total
73 OG Eastern Tableland Dry Shrub/Grass Forest – E. pauciflora/E. viminalis/ Acacia dealbata/Themeda australis	769	39.4	303	57.4	0.0	40.6	98.0
74 OG South Eastern Tablelands Dry Shrub/Grass/Herb Forest – E. bridgesiana/E. pauciflora/E. rubida/Acaena novae-zealandiae	546	37.0	202	49.5	0.0	0.0	49.5
75 OG Tablelands Shrub/Tussock Grass Forest – E. dives/Chionochloa pallida	70,124	11.0	7,690	15.5	3.2	1.8	20.5
76 OG Tablelands Shrub_Grass Dry Forest	50,156	25.4	12,756	29.2	7.1	0.0	36.3
77 OG Lower Snowy Dry Shrub Tussock Grass Forest	32,536	42.7	13,889	82.6	0.5	0.0	83.1
78 OG Lower Snowy Dry Shrub Herb Woodland	38,752	19.4	7,501	38.3	0.0	0.0	38.3
79 OG Montane Dry Shrub/Tussock Grass Forest – E. nortonii/Cassinia longifolia/Chionochloa pallida	69,920	39.9	27,902	89.0	0.0	0.0	89.0
81 OG Eastern Dry Shrub_Herb_Grass Forest	37,242	50.7	18,876	96.4	0.0	0.0	96.4
82 OG Western Montane Acacia Fern_Herb Forest	604	68.0	411	55.2	0.0	0.0	55.2
83 OG Montane Riparian Moist Shrub_Grass_Herb Forest	8,487	41.6	3,529	0.0	0.0	0.0	0.0
85 OG Montane Riparian Moist Shrub_Sedge_Grass Forest	94,998	28.0	26,644	88.3	1.8	0.0	90.1
86 OG Western Montane Moist Shrub Forest	945	33.5	317	52.7	0.0	0.0	52.7
87 OG Western Escarpment Moist Shrub_Herb_Grass Forest	669	58.6	392	99.2	0.0	0.0	99.2
88 OG Western Escarpment Shrub_Grass Forest	4,061	33.2	1,347	98.7	0.0	0.0	98.7
89 OG Eastern Tablelands Acacia/Herb/Grass Forest – E. dalrympleana/E. viminalis/ Acacia melanoxylon/ Stellaria pungens	69,713	13.6	9,502	95.1	0.0	0.0	95.1
90 OG Northern Tablelands Acacia Herb/Grass Dry Forest – E. bridgesiana/Acacia dealbata/Hydrocotyle laxiflora	587	33.0	194	100.0	0.0	0.0	100.0
91 OG Burrinjuck Acacia Dry Herb Grass Forest	29,767	34.6	10,308	36.7	9.2	4.4	50.4
92 OG Tablelands Acacia/Grass/Herb Dry Forest – E. bridgesiana/E. melliodora/Acacia mearnsii/Microlaena stipoides	1,347	7.0	94	62.8	8.5	0.0	71.3
93 OG Western Tablelands Herb_Grass Dry Forest	4,424	20.8	919	26.7	0.0	14.1	40.8
94 OG South-west Slopes Acacia Dry Herb_Grass Forest	6,476	6.3	410	8.3	0.0	0.0	8.3
95 OG Tableland Acacia Moist Herb Forest – E. pauciflora/E. dalrympleana/Acacia dealbata/Helichrysum scorpiodes	32,412	34.6	11,221	55.3	10.1	7.0	72.5
96 OG Tableland Tussock Grass/Herb Forest – E. pauciflora/E. dalrympleana/Poa sieberiana	25,677	24.7	6,342	48.9	11.6	3.4	63.9
97 OG Montane Acacia_Dry Shrub_Herb_Grass Forest	36,549	25.0	9,135	63.5	2.2	0.5	66.2
98 OG Western Montane Moist Shrub Forest	318	8.2	26	100.0	0.0	0.0	100.0

Forest Ecosystem ^b	Area of Forest Ecosystem (ha)	Percent of Forest Ecosystem as Old Growth	Area Old Growth (ha)	Percent of Old Growth forest in the CAR Reserve System			
				Dedicated Reserve	Informal Reserve ^e	Prescription ^d	Total
99 OG Montane Dry Shrub_Herb_Grass Forest	67,482	30.5	20,550	88.4	0.3	0.0	88.6
100 OG ACT Montane Dry Shrub_Grass Forest	70,756	28.7	20,334	84.7	0.2	0.0	84.9
101 OG Western Montane Dry Shrub_Herb_Grass Forest	10,172	63.7	6,479	95.9	0.0	0.0	95.9
102 OG Western Montane Dry Fern_Grass Forest	5,567	44.7	2,490	22.5	0.0	0.0	22.5
103 OG Western Montane Dry Fern_Grass Forest	41,254	16.6	6,838	87.5	0.2	0.1	87.7
104 OG Tableland Acacia/Herb/Grass Forest – E. robertsonii/E. dalrympleana/Acacia dealbata/Platylobium formosum/Senecio sp.E	2,869	49.5	1,421	86.8	12.4	0.0	99.2
106 OG Montane Dry Shrub_Tussock Forest	49,332	29.4	14,492	70.3	7.4	1.2	78.8
107 Central Tableland/ACT Montane Dry Shrub Forest – E. dalrympleana/E. dives/ Hibbertia obtusifolia	41,116	29.2	11,998	87.2	2.1	2.0	91.3
108 OG Western Tablelands Dry Herb_Grass Forest	29,551	28.5	8,412	97.1	0.0	0.0	97.1
109 OG Widespread Tablelands Dry Shrub/Tussock Grass Forest – E. dives/E. mannifera/E. macrorhyncha/ Hibbertia obtusifolia/Chionochloa pallida	20,330	29.0	5,892	44.2	2.1	0.0	46.2
110 OG Tablelands Dry Shrub/Grass Forest – E. dives/E. mannifera/E. macrorhyncha/Poa sieberiana	75,056	45.5	34,144	74.0	6.3	4.9	85.2
112 OG Eastern Tablelands Dry Shrub Forest – E. sieberi/E. dives/Brachyloma daphnoides/Poa sieberiana	28,497	30.8	8,765	33.0	13.5	0.6	47.1
113 OG North East Tablelands Dry Shrub/Grass Forest – E. mannifera/E. dives/Brachyloma daphnoides/Dianella revoluta	18,393	47.9	8,813	55.9	2.3	0.8	59.0
114 OG Tablelands Dry Shrub/Tussock Grass Forest – E. macrorhyncha/E. rossii/E. goniocalyx/Chionochloa pallida	7,646	14.3	1,097	43.3	4.8	2.2	50.3
115 OG South East Tablelands Dry Shrub/Tussock Grass Forest – E. rossii/E. mannifera/Pultenaea procumbens/Chionochloa pallida	50,342	18.8	9,468	35.1	3.8	0.0	38.9
116 OG Western Slopes Herb_Grass Woodland	25,018	22.0	5,492	26.5	1.9	0.0	28.4
118 OG Western Slopes Dry Grass Forest	59,766	35.9	21,471	9.0	8.3	0.0	17.3
119 OG Western Tablelands Dry Shrub_Grass Forest	4,052	11.6	469	11.9	0.0	0.0	11.9
120 OG Western Slopes Shrub_Herb_Grass Dry Forest	308	64.0	197	7.1	37.1	0.0	44.2
121 OG Western Slopes Grass_Herb Dry Forest	36,151	29.7	10,752	42.2	16.9	1.6	60.7
124 OG Western Montane Wet Heath/Herb Grass Woodland – E. pauciflora/Epaeris breviflora	10,354	11.6	1,198	38.1	7.5	0.0	45.6
128 OG Sub alpine Dry Shrub_Herb Woodland	61,833	40.8	25,258	50.7	9.9	5.5	66.2
130 OG Sub alpine Shrub_Grass Woodland	300	11.0	33	100.0	0.0	0.0	100.0

Forest Ecosystem ^b	Area of Forest Ecosystem (ha)	Percent of Forest Ecosystem as Old Growth	Area Old Growth (ha)	Percent of Old Growth forest in the CAR Reserve System			
				Dedicated Reserve	Informal Reserve ^e	Prescription ^d	Total
137 OG Coastal Escarpment Moist Shrub/Fern Forest – <i>E. sieberi</i> / <i>E. piperita</i> / <i>Gleichenia dicarpa</i>	4,390	2.8	125	44.0	3.2	0.0	47.2
138 OG Northern Plateau and Escarpment Heath Shrub Dry Forest – <i>E. sieberi</i> / <i>E. considiniana</i>	45,894	43.4	19,912	91.3	0.0	0.0	91.3
139 OG Northern Coastal Hinterland Heath Shrub Dry Forest – <i>C. gummifera</i> / <i>E. sclerophylla</i>	66,452	57.8	38,415	99.4	0.5	0.0	99.9
146 OG Tableland Dry Herb/Grass Woodland – <i>E. pauciflora</i> / <i>E. stellulata</i> / <i>Asperula scoparia</i>	32,815	0.1	42	100.0	0.0	0.0	100.0
160 OG Western Slopes Dry Grass Woodland – <i>E. blakelyi</i> / <i>E. melliodora</i> / <i>Danthonia racemosa</i>	14,476	38.3	5,544	91.4	0.0	2.1	93.5
171 OG Northern Coastal Shrub/Grass Forest – <i>E. tereticornis</i>	30,823	33.0	10,183	89.5	0.7	1.3	91.5
174 OG Shoalhaven Gorge Forest – <i>E. tereticornis</i> / <i>E. melliodora</i>	48,057	36.6	17,570	79.9	1.0	0.7	81.5
175 OG Northern Coastal Lowlands Swamp Forest – <i>E. robusta</i>	1,164	5.1	59	94.9	0.0	0.0	94.9
176 OG Morton Plateau Mallee Swamp Low Forest	130	1.5	2	0.0	0.0	0.0	0.0
179 OG Eastern Deua dry shrub Forest – <i>Angophora costata</i>	285	0.4	1	100.0	0.0	0.0	100.0
181 OG North-eastern Tablelands Gully Fern Forest – <i>E. elata</i> / <i>Calochlaena dubia</i>	230	11.3	26	50.0	0.0	0.0	50.0
192 OG South West Slopes Tall Shrubland Low Forest	3,646	4.3	157	21.0	20.4	0.0	41.4
129/133 OG Alpine Wet Herbfield & Sub-alpine Wet Herb / Grassland / Bog	3,512	19.1	671	99.0	0.1	0.0	99.1

NOTES ACCOMPANYING TABLE 2

- a. The figures shown in this table are based on modelled information mapped at a scale of 1:25 000 derived during the pre-1750 analysis of vegetation types in the Southern region, and are therefore only approximate.
- b. Old growth Forest Ecosystems were defined using a range of values characteristic of old growth, including aerial photographic interpretation and information on disturbance from logging and fire. Further information is available in the report *Old growth Forest Related Projects – Southern Region – A Project undertaken as part of the NSW Comprehensive Regional Assessments*, National Parks and Wildlife Service, 2001.
- c. Informal Reserve includes Special Management Zones that are > 40ha and > 200m wide, or that are adjacent to Dedicated Reserves.
- d. Tabulated prescriptions include those elements of the Special Management Zone that, due to the size or shape, do not meet the Informal Reserve Category outlined above, and the Harvesting Exclusions Zone.

Table 2. Representative conservation of Old Growth forest in the CAR Reserve System as at 2001 and December 2017 in the Southern region^a

<u>Forest Ecosystem^b</u>	<u>Area of Forest Ecosystem (ha)</u> As at 2001	<u>Percent of Forest Ecosystem as Old Growth</u> As at 2001	<u>Area Old Growth (ha)</u> As at 2001	<u>Percent of Old Growth forest in the CAR Reserve System as at 2001</u>				<u>Percent of Old Growth forest in the CAR Reserve System as at December 2017^c</u>			
				<u>Dedicated Reserve</u>	<u>Informal Reserve^c</u>	<u>Prescription^d</u>	<u>Total</u>	<u>Dedicated Reserve</u>	<u>Informal Reserve^c</u>	<u>Prescription^d</u>	<u>Total</u>
1 OG Southern Coastal Hinterland Intermediate Altitude Shrub Dry Forest - <i>E. sieberi</i>	50,567	36.2	18,295	84.0	2.3	0.3	86.7	88	0	1	90
2 OG Hinterland Heath Shrub Dry Forest - <i>Corymbia gummifera/Syncarpia glomulifera</i>	86,242	35.0	30,181	65.9	0.9	2.5	69.3	67	1	3	70
3 OG Northern Hinterland Shrub Dry Forest - <i>Syncarpia glomulifera/E. scias</i>	16,215	40.6	6,577	92.0	0.2	0.0	92.1	92	0	0	93
4 OG Shoalhaven Gorge Dry Heathy Shrub Forest – <i>E. punctata/E. agglomerata</i>	17,822	67.5	12,023	75.8	1.4	0.0	77.2	77	0	0	77
5 OG Northern Coastal Lowlands Shrub/Grass Dry Forest - mixed tree species	8,846	17.4	1,539	40.5	18.5	2.3	61.3	41 [^]	19 [^]	2 [^]	61 [^]
7 OG Southern Coastal Hinterland Shrub/Tussock Grass Dry Forest - <i>E. sieberi</i>	20,355	10.9	2,225	52.7	11.8	1.5	65.9	53 [^]	12 [^]	2	66 [^]
8 OG Far Southern Coastal Shrub Dry Forest - <i>E. sieberi</i>	479	9.4	45	46.7	0.0	0.0	46.7	48 [^]	0	0	48 [^]
9 OG Coastal Lowlands Cycad/Shrub Dry Forest - <i>Corymbia maculata</i>	55,532	15.4	8,559	29.6	7.7	4.6	41.9	30 [^]	8 [^]	6	44 [^]
10 OG Southern Coastal Lowlands Shrub/Grass Dry Forest - <i>E. globoidea/E. longifolia</i>	17,634	14.9	2,625	23.7	8.4	8.3	40.5	24 [^]	9	8 [^]	41 [^]
11 OG Coastal Shrub/Grass Dry Forest - <i>E. botryoides/E. globoidea/Imperata cylindrica</i>	426	14.1	60	63.3	0.0	0.0	63.3	65	0	15	80

Forest Ecosystem ^b	Area of Forest Ecosystem (ha)	Percent of Forest Ecosystem as Old Growth	Area Old Growth (ha)	Percent of Old Growth forest in the CAR Reserve System as at 2001				Percent of Old Growth forest in the CAR Reserve System as at December 2017 ^c			
	As at 2001	As at 2001	As at 2001	Dedicated Reserve	Informal Reserve ^c	Prescription ^d	Total	Dedicated Reserve	Informal Reserve ^c	Prescription ^d	Total
12 OG Coastal Hinterland (Buckenboursa) Shrub/Cycad Dry Forest - <i>Corymbia gummifera</i>	1,005	28.1	282	97.9	0.0	0.0	97.9	98 [^]	0	2 [^]	100 [^]
13 OG Southern Escarpment Foothills Rainshadow Dry Grass Forest - <i>E. agglomerata</i>	4,192	50.7	2,125	74.7	0.0	0.0	74.7	75	0	0	75 [^]
14 OG Northern Coastal Hinterland Shrub/Grass Dry Forest - <i>E. fibrosa/Corymbia maculata</i>	5,756	23.4	1,349	54.0	33.1	0.0	87.1	87	0	0	87
15 OG North East Tableland Dry Shrub Forest - <i>E. sieberi</i>	56,597	23.6	13,360	80.6	0.2	0.0	80.8	83	1	0	83
16 OG North East Tableland Dry Shrub/Tussock Grass Forest - <i>E. agglomerata</i>	15,506	40.8	6,331	75.3	9.2	0.0	84.5	88	0	0	88 [^]
18 OG Southern Coastal Hinterland Shrub/Vine/Grass Moist Forest - <i>E. cypellocarpa/E. muelleriana</i>	50,316	49.3	24,801	71.0	2.8	0.6	74.4	72	2	2	76
19 OG Coastal Escarpment and Hinterland Shrub/Fern Dry Forest - <i>E. muelleriana</i>	68,666	44.6	30,658	75.1	2.3	0.6	78.0	75	2	1	78
21 OG Northern Coastal Hinterland Moist Shrub Forest - <i>C. maculata/E. pilularis</i>	69,988	17.4	12,182	52.0	3.2	2.5	57.7	55	0	3	58
28 OG Coastal Sands Shrub/Fern Forest - <i>E. botryoides/Banksia serrata</i>	2,525	24.4	615	38.7	28.0	0.0	66.7	54	0	0	54
29 OG Northern Coastal Sands Shrub/Fern Forest - <i>E. pilularis/Banksia serrata</i>	10,838	19.2	2,085	69.0	1.4	0.9	71.2	71	0	1	72
35 OG South Coast Acacia Scrubs - <i>Acacia sylvestris</i>	3,980	0.4	16	100.0	0.0	0.0	100.0	100 [^]	0	0	100 [^]
38 OG Tableland Dry Heath Shrub/Herb/Grass Woodland - <i>Calytrix tetragona(E. goniocalyx)</i>	1,456	0.3	4	0.0	0.0	0.0	0.0	100	0	0	100

Forest Ecosystem ^b	Area of Forest Ecosystem (ha)	Percent of Forest Ecosystem as Old Growth	Area Old Growth (ha)	Percent of Old Growth forest in the CAR Reserve System as at 2001				Percent of Old Growth forest in the CAR Reserve System as at December 2017 ^c			
	As at 2001	As at 2001	As at 2001	Dedicated Reserve	Informal Reserve ^c	Prescription ^d	Total	Dedicated Reserve	Informal Reserve ^c	Prescription ^d	Total
40 OG Coastal Hinterland (Deua NP) Dry Shrub Forest (rhyolite) - <i>E. stenostoma</i>	2,415	39.5	955	100.0	0.0	0.0	100.0	100 [^]	0	0 [^]	100 [^]
43 OG Western Slopes Riparian Moist Sedge Woodland	1,589	2.3	36	0.0	0.0	0.0	0.0	0	0	0	0
47 OG Far Southern Hinterland Herb/Grass Moist Forest - <i>E. maidenii</i> / <i>E. globoidea</i>	85	10.6	9	100.0	0.0	0.0	100.0	100 [^]	0	0	100 [^]
48 OG Coastal Lowlands Riparian Herb/Grass Forest - various eucs	3,625	20.4	738	35.1	13.4	6.5	55.0	35 [^]	13	8	56 [^]
49 OG Southern Hinterland Shrub/Herb/Grass Riparian Forest - <i>Angophora floribunda</i> / <i>E. elata</i> / <i>Acacia mearnsii</i>	14,573	28.7	4,183	81.4	2.8	0.5	84.8	81	3	1	85 [^]
50 OG Southern Escarpment Foothills Herb/Grass Dry Forest- <i>Angophora floribunda</i> / <i>E. globoidea</i>	18,926	35.0	6,630	57.8	1.9	0.0	59.7	61	0	0	61
51 OG Araluen Acacia Herb/Grass Dry Forest - <i>E. melliodora</i> / <i>E. maidenii</i>	4,882	29.8	1,456	32.6	10.9	0.0	43.5	45	0	0	45
55 OG Eastern Tableland Fern/Herb/Grass Moist Forest - <i>E. fastigata</i>	36,826	29.7	10,945	54.6	8.1	1.4	64.1	55	7	2	64
56 OG Tableland and Escarpment Moist Herb/Fern Grass Forest - <i>E. radiata</i> / <i>E. viminalis</i> / <i>Viola spp</i>	30,714	32.0	9,828	47.2	7.5	6.3	61.1	54	2	4	61
57 OG Southern Escarpment Shrub/Fern/Herb Moist Forest - <i>E. cypelloarpa</i> incl. <i>E. fastigata</i> & <i>E. obliqua</i>	37,166	52.9	19,659	86.2	4.3	0.2	90.7	93	0	0	93
58 OG Tableland and Escarpment Wet Layered Shrub Forest - <i>E. fastigata</i> / <i>Olearia argophylla</i> / <i>Dicksonia antarctica</i>	19,184	55.8	10,702	90.9	1.7	0.3	93.0	96	0	0	96

Forest Ecosystem ^b	Area of Forest Ecosystem (ha)	Percent of Forest Ecosystem as Old Growth	Area Old Growth (ha)	Percent of Old Growth forest in the CAR Reserve System as at 2001				Percent of Old Growth forest in the CAR Reserve System as at December 2017 ^c			
	As at 2001	As at 2001	As at 2001	Dedicated Reserve	Informal Reserve ^c	Prescription ^d	Total	Dedicated Reserve	Informal Reserve ^c	Prescription ^d	Total
59 OG Eastern Tableland and Escarpment Shrub/Fern Dry Forest - <i>E. radiata</i> / <i>E. sieberi</i> / <i>Leucopogon lanceolatus</i>	13,656	31.5	4,308	36.2	26.9	1.4	64.5	58	9	0	67
61 OG Southern Escarpment Edge Moist Shrub Forest - <i>E. fraxinoides</i>	3,259	23.1	754	94.4	1.1	0.0	95.5	94	1	0	95
62 OG Southern Escarpment Edge Moist Shrub/Fern Forest - <i>E. fraxinoides</i> / <i>E. cypelloarpa</i>	7,633	26.6	2,028	81.6	4.2	0.1	85.8	83	4	0	87
64 OG Southern East Tableland Edge Shrub/Grass Dry Forest - <i>E. dalrympeana</i> / <i>E. radiata</i>	1,103	17.2	190	64.7	0.0	30.5	95.3	66	0	34 [^]	100 [^]
66 OG Eastern Tablelands Shrub/Grass Moist Forest - <i>E. dalrympeana</i> / <i>E. radiata</i> / <i>Poa sieberiana</i>	5,832	59.8	3,489	82.7	0.2	5.2	88.1	84	0	4 [^]	88 [^]
68 OG North East Tablelands Shrub/Herb/Grass Dry Forest - <i>E. pauciflora</i> / <i>E. viminalis</i> / <i>Lomandra longifolia</i>	9,442	13.2	1,251	14.7	1.0	0.0	15.7	20	0	0	20
70 OG Western Escarpment Dry Shrub Forest - <i>E. ives</i> / <i>Xanthorhoea australis</i> / <i>Platylobium formosum</i>	1,567	35.8	561	74.2	0.0	0.0	74.2	74	0	0	74
71 OG Western Tableland Dry Shrub Forest – <i>E. macrorhyncha</i> / <i>Leptospermum brevipes</i>	769	39.4	303	57.4	0.0	40.6	98.0	57 [^]	0	43 [^]	100 [^]
72 OG Tablelands Dry Shrub Forest - <i>E. dives</i> / <i>E. radiata</i> / <i>Bursaria lasiophylla</i>	546	37.0	202	49.5	0.0	0.0	49.5	50 [^]	0	0	50 [^]
73 OG Eastern Tableland Dry Shrub/Grass Forest - <i>E. pauciflora</i> / <i>E. viminalis</i> / <i>Acacia dealbata</i> / <i>Themeda australis</i>	70,124	11.0	7,690	15.5	3.2	1.8	20.5	20	0	2	21
74 OG South Eastern Tablelands Dry Shrub/Grass/Herb Forest - <i>E. bridgesiana</i> / <i>E. pauciflora</i> / <i>E. rubida</i> / <i>Acaena novae-zealandiae</i>	50,156	25.4	12,756	29.2	7.1	0.0	36.3	37	0	0	37

Forest Ecosystem ^b	Area of Forest Ecosystem (ha) As at 2001	Percent of Forest Ecosystem as Old Growth As at 2001	Area Old Growth (ha) As at 2001	Percent of Old Growth forest in the CAR Reserve System as at 2001				Percent of Old Growth forest in the CAR Reserve System as at December 2017 ^c			
				Dedicated Reserve	Informal Reserve ^c	Prescription ^d	Total	Dedicated Reserve	Informal Reserve ^c	Prescription ^d	Total
75 OG Tablelands Shrub/Tussock Grass Forest - <i>E. dives</i> / <i>Chionochloa pallida</i>	32,536	42.7	13,889	82.6	0.5	0.0	83.1	82	1	0	83
76 OG Tablelands Shrub Grass Dry Forest	38,752	19.4	7,501	38.3	0.0	0.0	38.3	38	0	0	38
77 OG Lower Snowy Dry Shrub Tussock Grass Forest	69,920	39.9	27,902	89.0	0.0	0.0	89.0	89	0	0	89
78 OG Lower Snowy Dry Shrub Herb Woodland	37,242	50.7	18,876	96.4	0.0	0.0	96.4	96	0	0	96
79 OG Montane Dry Shrub/Tussock Grass Forest - <i>E. nortonii</i> / <i>Cassinia longifolia</i> / <i>Chionochloa pallida</i>	604	68.0	411	55.2	0.0	0.0	55.2	58	0	0	58
81 OG Eastern Dry Shrub Herb Grass Forest	8,487	41.6	3,529	0.0	0.0	0.0	0.0	0	0	0	0
82 OG Western Montane Acacia Fern Herb Forest	94,998	28.0	26,644	88.3	1.8	0.0	90.1	88	2	1	91
83 OG Montane Riparian Moist Shrub Grass Herb Forest	945	33.5	317	52.7	0.0	0.0	52.7	54	0	0	54
85 OG Montane Riparian Moist Shrub Sedge Grass Forest	669	58.6	392	99.2	0.0	0.0	99.2	100 [^]	0	0	100 [^]
86 OG Western Montane Moist Shrub Forest	4,061	33.2	1,347	98.7	0.0	0.0	98.7	99	0	0	99
87 OG Western Escarpment Moist Shrub Herb Grass Forest	69,713	13.6	9,502	95.1	0.0	0.0	95.1	95	0	0	95
88 OG Western Escarpment Shrub Grass Forest	587	33.0	194	100.0	0.0	0.0	100.0	100 [^]	0	0	100 [^]
89 OG Eastern Tablelands Acacia/Herb/Grass Forest – <i>E. dalrympleana</i> / <i>E. viminalis</i> / <i>Acacia melanoxylon</i> / <i>Stellaria pungens</i>	29,767	34.6	10,308	36.7	9.2	4.4	50.4	48	1	4	53
90 OG Northern Tablelands Acacia Herb/Grass Dry Forest - <i>E. bridgesiana</i> / <i>Acacia dealbata</i> / <i>Hydrocotyle laxiflora</i>	1,347	7.0	94	62.8	8.5	0.0	71.3	71 [^]	0	0	71 [^]

Forest Ecosystem ^b	Area of Forest Ecosystem (ha)	Percent of Forest Ecosystem as Old Growth	Area Old Growth (ha)	Percent of Old Growth forest in the CAR Reserve System as at 2001				Percent of Old Growth forest in the CAR Reserve System as at December 2017 ^c			
	As at 2001	As at 2001	As at 2001	Dedicated Reserve	Informal Reserve ^c	Prescription ^d	Total	Dedicated Reserve	Informal Reserve ^c	Prescription ^d	Total
91 OG Burrinjuck Acacia Dry Herb Grass Forest	4,424	20.8	919	26.7	0.0	14.1	40.8	28	0	24	51
92 OG Tablelands Acacia/Grass/Herb Dry Forest - E. bridgesiana/E. melliodora/Acacia mearnsii/Microlaena stipoides	6,476	6.3	410	8.3	0.0	0.0	8.3	8	0	0	8
93 OG Western Tablelands Herb Grass Dry Forest	32,412	34.6	11,221	55.3	10.1	7.0	72.5	57	10	12	79
94 OG South - west Slopes Acacia Dry Herb Grass Forest	25,677	24.7	6,342	48.9	11.6	3.4	63.9	62	0	6	68
95 OG Tableland Acacia Moist Herb Forest - E. pauciflora/E. dalrympleana/Acacia dealbata/Helichrysum scorpioides	36,549	25.0	9,135	63.5	2.2	0.5	66.2	63	2	0	66
96 OG Tableland Tussock Grass/Herb Forest - E. pauciflora/E. dalrympleana/Poa sieberiana	318	8.2	26	100.0	0.0	0.0	100.0	100	0	0	100
97 OG Montane Acacia Dry Shrub Herb Grass Forest	67,482	30.5	20,550	88.4	0.3	0.0	88.6	88	0	0	88
98 OG Western Montane Moist Shrub Forest	70,756	28.7	20,334	84.7	0.2	0.0	84.9	85	0	0	85
99 OG Montane Dry Shrub Herb Grass Forest	10,172	63.7	6,479	95.9	0.0	0.0	95.9	96 [^]	0	0	96 [^]
100 OG ACT Montane Dry Shrub Grass Forest	5,567	44.7	2,490	22.5	0.0	0.0	22.5	23 [^]	0	0	23 [^]
101 OG Western Montane Dry Shrub Herb Grass Forest	41,254	16.6	6,838	87.5	0.2	0.1	87.7	88 [^]	0	0	88
102 OG Western Montane Dry Fern Grass Forest	2,869	49.5	1,421	86.8	12.4	0.0	99.2	99	0	0	99
103 OG Western Montane Dry Fern Grass Forest	49,332	29.4	14,492	70.3	7.4	1.2	78.8	73	5	2	79

<u>Forest Ecosystem^b</u>	<u>Area of Forest Ecosystem (ha)</u>	<u>Percent of Forest Ecosystem as Old Growth</u>	<u>Area Old Growth (ha)</u>	<u>Percent of Old Growth forest in the CAR Reserve System as at 2001</u>				<u>Percent of Old Growth forest in the CAR Reserve System as at December 2017^c</u>			
	<u>As at 2001</u>	<u>As at 2001</u>	<u>As at 2001</u>	<u>Dedicated Reserve</u>	<u>Informal Reserve^c</u>	<u>Prescription^d</u>	<u>Total</u>	<u>Dedicated Reserve</u>	<u>Informal Reserve^c</u>	<u>Prescription^d</u>	<u>Total</u>
104 OG Tableland Acacia/Herb/Grass Forest - <i>E. robertsonii</i> / <i>E. dalrympleana</i> /Acacia dealbata/ <i>Platylobium formosum</i> / <i>Senecio</i> sp.E	41,116	29.2	11,998	87.2	2.1	2.0	91.3	90	0	2	92
106 OG Montane Dry Shrub Tussock Forest	29,551	28.5	8,412	97.1	0.0	0.0	97.1	97	0	0	97
107 Central Tableland/ACT Montane Dry Shrub Forest - <i>E. dalrympleana</i> / <i>E. dives</i> / <i>Hibbertia obtusifolia</i>	20,330	29.0	5,892	44.2	2.1	0.0	46.2	46	0	0	46
108 OG Western Tablelands Dry Herb Grass Forest	75,056	45.5	34,144	74.0	6.3	4.9	85.2	82	0	8	89
109 OG Widespread Tablelands Dry Shrub/Tussock Grass Forest - <i>E. dives</i> / <i>E. mannifera</i> / <i>E. macrorhyncha</i> / <i>Hibbertia obtusifolia</i> / <i>Chionochloa pallida</i>	28,497	30.8	8,765	33.0	13.5	0.6	47.1	46	0	1	46
110 OG Tablelands Dry Shrub/Grass Forest - <i>E. dives</i> / <i>E. mannifera</i> / <i>E. macrorhyncha</i> / <i>Poa sieberiana</i>	18,393	47.9	8,813	55.9	2.3	0.8	59.0	59	0	1	59
112 OG Eastern Tablelands Dry Shrub Forest - <i>E. sieberi</i> / <i>E. dives</i> / <i>Brachyloma daphnoides</i> / <i>Poa sieberiana</i>	7,646	14.3	1,097	43.3	4.8	2.2	50.3	47	1	3	50
113 OG North East Tablelands Dry Shrub/Grass Forest - <i>E. mannifera</i> / <i>E. dives</i> / <i>Brachyloma daphnoides</i> / <i>Dianella revoluta</i>	50,342	18.8	9,468	35.1	3.8	0.0	38.9	53	0	0	53
114 OG Tablelands Dry Shrub/Tussock Grass Forest - <i>E. macrorhyncha</i> / <i>E. rossii</i> / <i>E. goniocalyx</i> / <i>Chionochloa pallida</i>	25,018	22.0	5,492	26.5	1.9	0.0	28.4	29	0	0	29

Forest Ecosystem ^b	Area of Forest Ecosystem (ha)	Percent of Forest Ecosystem as Old Growth	Area Old Growth (ha)	Percent of Old Growth forest in the CAR Reserve System as at 2001				Percent of Old Growth forest in the CAR Reserve System as at December 2017 ^c			
	As at 2001	As at 2001	As at 2001	Dedicated Reserve	Informal Reserve ^c	Prescription ^d	Total	Dedicated Reserve	Informal Reserve ^c	Prescription ^d	Total
115 OG South East Tablelands Dry Shrub/Tussock Grass Forest - <i>E. rossii</i> / <i>E. mannifera</i> / <i>Pultenaea procumbens</i> / <i>Chionochloa pallida</i>	59,766	35.9	21,471	9.0	8.3	0.0	17.3	19	0	0	19
116 OG Western Slopes Herb Grass Woodland	4,052	11.6	469	11.9	0.0	0.0	11.9	12	0	35	47
118 OG Western Slopes Dry Grass Forest	308	64.0	197	7.1	37.1	0.0	44.2	44	0	0	44
119 OG Western Tablelands Dry Shrub Grass Forest	36,151	29.7	10,752	42.2	16.9	1.6	60.7	58	2	3	62
120 OG Western Slopes Shrub Herb Grass Dry Forest	10,354	11.6	1,198	38.1	7.5	0.0	45.6	46 [^]	0	0	46 [^]
121 OG Western Slopes Grass Herb Dry Forest	61,833	40.8	25,258	50.7	9.9	5.5	66.2	63	0	9	72
123 OG Montane Wet Heath/Bog - <i>Baeckea utilis</i> / <i>Hakea micranthis</i>	300	11.0	33	100.0	0.0	0.0	100.0	100 [^]	0	0	100 [^]
124 OG Western Montane Wet Heath/Herb Grass Woodland - <i>E. pauciflora</i> / <i>Epacris breviflora</i>	4,390	2.8	125	44.0	3.2	0.0	47.2	44 [^]	3	0	47 [^]
128 OG Sub-alpine Dry Shrub Herb Woodland	45,894	43.4	19,912	91.3	0.0	0.0	91.3	91	0	0	91
130 OG Sub-alpine Shrub Grass Woodland	66,452	57.8	38,415	99.4	0.5	0.0	99.9	99	1	0	100
131 OG Sub-alpine Herbfield	32,815	0.1	42	100.0	0.0	0.0	100.0	100 [^]	0	0	100 [^]
137 OG Coastal Escarpment Moist Shrub/Fern Forest - <i>E. sieberi</i> / <i>E. piperita</i> / <i>Gleichenia dicarpa</i>	14,476	38.3	5,544	91.4	0.0	2.1	93.5	91	0	2	93
138 OG Northern Plateau and Escarpment Heath Shrub Dry Forest - <i>E. sieberi</i> / <i>E. considiniana</i>	30,823	33.0	10,183	89.5	0.7	1.3	91.5	92	1	1	94
139 OG Northern Coastal Hinterland Heath Shrub Dry Forest - <i>C. gummifera</i> / <i>E. sclerophylla</i>	48,057	36.6	17,570	79.9	1.0	0.7	81.5	85	0	1	86
146 OG Tableland Dry Herb/Grass Woodland - <i>E. pauciflora</i> / <i>E. stellulata</i> / <i>Asperula scoparia</i>	1,164	5.1	59	94.9	0.0	0.0	94.9	95	0	0	95

Forest Ecosystem ^b	Area of Forest Ecosystem (ha)	Percent of Forest Ecosystem as Old Growth	Area Old Growth (ha)	Percent of Old Growth forest in the CAR Reserve System as at 2001				Percent of Old Growth forest in the CAR Reserve System as at December 2017 ^c			
	As at 2001	As at 2001	As at 2001	Dedicated Reserve	Informal Reserve ^c	Prescription ^d	Total	Dedicated Reserve	Informal Reserve ^c	Prescription ^d	Total
160 OG Western Slopes Dry Grass Woodland - <i>E. blakelyi</i> / <i>E. melliodora</i> / <i>Danthonia racemosa</i>	130	1.5	2	0.0	0.0	0.0	0.0	0	0	0	0
147 OG Tablelands Moist Sedge/Herb/Grassland	285	0.4	1	100.0	0.0	0.0	100.0	100	0	0	100
157 OG ACT/Monaro Dry Grassland - <i>Bothriochloa macra</i> / <i>Chrysocephalum apiculatum</i>	230	11.3	26	50.0	0.0	0.0	50.0	50	0	0	50
158 OG Monaro Dry Grassland - <i>Austrostipa</i> spp/ <i>Danthonia</i> ssp	3,646	4.3	157	21.0	20.4	0.0	41.4	21	20	0	41
171 OG Northern Coastal Shrub/Grass Forest - <i>E. tereticornis</i>	3,512	19.1	671	99.0	0.1	0.0	99.1	99 [^]	0	0	99 [^]
174 OG Shoalhaven Gorge Forest - <i>E. tereticornis</i> / <i>E. melliodora</i>	13,473	60.0	8,023	N/A	N/A	N/A	N/A	84	0	0	84
175 OG Northern Coastal Lowlands Swamp Forest - <i>E. robusta</i>	459	12.0	57	N/A	N/A	N/A	N/A	37	28	0	65
176 OG Morton Plateau Mallee Swamp Low Forest	40,155	2.0	770	N/A	N/A	N/A	N/A	100	0	0	100
179 OG Eastern Deua dry shrub Forest - <i>Angophora costata</i>	2,713	73.0	1,985	N/A	N/A	N/A	N/A	97	0	0	97
181 OG North-eastern Tablelands Gully Fern Forest - <i>E. elata</i> / <i>Calochlaena dubia</i>	3,098	3.0	83	N/A	N/A	N/A	N/A	0	2	0	2
192 OG South West Slopes Tall Shrubland Low Forest	1,689	5.0	89	N/A	N/A	N/A	N/A	0	0	0	0
129/133 OG Alpine Wet Herbfield & Sub-alpine Wet Herb / Grassland / Bog	49,794	0.0	66	N/A	N/A	N/A	N/A	95	0	0	95

NOTES ACCOMPANYING TABLE 2

- a. The figures shown in this table are based on modelled information mapped at a scale of 1:25 000 derived during the pre-1750 analysis of vegetation types in the Southern region, and are therefore only approximate. NOTE: there figures provided in Southern RFA Attachment 1 Table 2 at signing for Old Growth Forest Ecosystem types with a number of 40 or greater was incorrect and the figures have been amended for the 2018 variation.

- b. Old growth Forest Ecosystems were defined using a range of values characteristic of old growth, including aerial photographic interpretation and information on disturbance from logging and fire. Further information is available in the report *Old-growth Forest Related Projects – Southern Region – A Project undertaken as part of the NSW Comprehensive Regional Assessments*, National Parks and Wildlife Service, 2001.
- c. Informal Reserve includes Special Management Zones that are > 40ha and > 200m wide, or that are adjacent to Dedicated Reserves.
- d. Tabulated prescriptions include those elements of the Special Management Zone that, due to the size or shape, do not meet the Informal Reserve Category outlined above, and the Harvesting Exclusions Zone.
- e. Source: compiled by ABARES from RFA data, including data from CRA reports, IFOAs, NPWS and FCNSW

^ The figure supplied by ABARES has been amended by DPI to address inconsistencies resulting from changes in spatial analysis systems and processes over time.

N/A – not available – percentage reservation at signing in 2001 is not available for this Old Growth forest type

Wilderness

- 15 93.2% of Wilderness, as defined in the JANIS Reserve Criteria (ie *National Wilderness Inventory* (Lesslie and Maslen 1995) minimum rating 12 in patches greater than 8000ha), in the Southern region is protected within Dedicated Reserves under this Agreement. Of the Wilderness outside Dedicated Reserves, two thirds is on freehold or leasehold land. Informal Reserves provide a level of additional protection for Wilderness.

Additional Protection for Forest Ecosystems

- 16 ~~The Forestry Operations are prohibited from rare non-commercial Forest Ecosystems by the Integrated Forestry Operations Approval applying to the Southern region will provide additional protection for Rare non-commercial Forest Types as in *Research Note No. 17 Forest Types in New South Wales* (Forestry Commission of New South Wales, Sydney 1989). Until such time as there is an Integrated Forestry Operations Approval covering the Southern region, Rare non-commercial Forest Ecosystems will be protected under the provisions of the licences issued to SFNSW and applying in the region at the time of signing this Agreement. These Rare-rare non-commercial Forest Ecosystems to be protected include:~~

- 24 Coastal Wet Heath Swamp Forest – *Casuarina glauca/Melaleuca ericifolia*
- 25 South Coast Swamp Forest Complex – *Casuarina glauca*
- 73 Eastern Tablelands Dry Shrub/Grass Forest
- 164 Coastal Escarpment Cool Temperate Rainforest
- 168 Ecotonal Granite Dry Rainforest – *Backhousia myrtifolia/Pittosporum undulatum/Angophora floribunda/Doodia aspera*
- 185 Mangrove Estuarine Low Forest

- 18A Forestry Operations are prohibited from Threatened Ecological Communities (TECs) are by the Integrated Forestry Operations Approval applicable to the Southern region.

Rainforest Protection

- 17 ~~The Integrated Forest Operations Approval applying to the Southern region will provide additional protection for rainforest, as defined by Research Note 17, FCNSW 1989 and the CRA Aerial Photograph Interpretation Project (CRAFTI). Additionally any area of land within 20m of the boundaries of warm temperate rainforest will be protected. Until such time as there is an Integrated Forestry Operations Approval applying to the Southern region, rainforest, including any area of land within 20m of warm temperate rainforest, will be protected under the provisions of the licences issued to SFNSW and applying in the region at the time of signing this Agreement. Forestry Operations are prohibited from all rainforest, including a 20m buffer around any areas identified as RN 17 forest types 10 to 20, by the Integrated Forestry Operations Approval applicable to the Southern region.~~

Old Growth forest

17A Forestry Operations are prohibited from all Old Growth forest in the Southern region by the Integrated Forestry Operations Approval.

Management of CAR Values

18 ~~Plans of Management plans~~ for the Dedicated Reserve and Informal Reserve elements of the CAR Reserve System will clearly identifying the CAR Values and the actions being taken in each reserve to appropriately manage and conserve those values ~~will be finalised by 31 January 2006.~~

19 As an integral component of managing CAR values New South Wales agrees to implement systematic and targeted fauna and flora surveys in Dedicated Reserves and Informal Reserves to complement surveys ~~carries~~ carried out under the IFOAs. The extent of survey work undertaken will be subject to available funding.

Protections on Public Land subject to Plantation authorisation

20 For Plantations on Public Land, the *Plantations and Reafforestation (Code) Regulation 2001* (NSW), contains standards for the protection of soil and water, Biodiversity, and places, objects or items of heritage significance.

ATTACHMENT 2
(clauses 55, 58, 65, 65A and Attachment 1)

CONSERVATION MECHANISMS ON PRIVATE LAND
CONSERVATION

- 1 Both Parties agree that CAR Values on Private Land are complementary to the CAR Reserve System identified on Public Land.
- 2 Both Parties agree that in complementing the CAR Reserve System on Public Land, conservation on Private Land can only be voluntary.
- 2A Both Parties recognise that for Private Land to be included in the CAR Reserve System, the conservation mechanism (as outlined in point 5) applied must be legally binding and in-perpetuity.
- 3 Both Parties agree that the following objectives should apply to the voluntary conservation of CAR Values on Private Land:
 - ~~to~~ seek to maximise protection of agreed CAR Values;
 - that the processes are clearly understood by the community;
 - that real partnerships are developed;
 - that the outcomes will provide benefits for all ~~Parties~~ parties; and
 - that actions must be strategic and integrated.
- 4 Both Parties agree that the most important elements in any mechanism designed to achieve voluntary conservation management on private forested land in the Southern region are:
 - effectiveness of the outcomes;
 - ownership of the process;
 - simplicity of the process;
 - clarity of roles of the participants;
 - certainty of the outcomes;
 - flexibility in the approaches adopted; and
 - equity between participants.
- 5 Both Parties agree that a range of conservation mechanisms are applicable to Private Land. These may include mechanisms which are legally binding and in-perpetuity, or non-legally binding and/or fixed term, such as:

- voluntary options under the Conservation Partners Program
 - ~~Voluntary Conservation Agreements;~~
 - landholder initiated agreements;
 - noncontractual voluntary agreements;
 - fee for service;
 - voluntary acquisition;
 - fixed term common law contract;
 - in perpetuity common law contract;
 - community grants;
 - property management plans;
 - voluntary land and water management plans; and
 - other mechanisms that may be developed to suit individual landholders or situations.
- 6 Both Parties agree that capacity building within the private landholder estate to support individual and community decision making are prerequisites to the voluntary processes outlined above.
- 7 Consistent with clause 58, priority Forest Ecosystems ~~for voluntary that~~ require conservation on Private Land have been listed and prioritised for the Southern region in Table 1 and 2.
- 8 ~~NSW will establish Regional Vegetation Committees in the Southern region and provide them with funding for the conservation of Forest Ecosystems that are rare or non-existent on Public Lands. The areas of priority Forest Ecosystems and Non-Forest Ecosystems in the CAR Reserve System on Private Land as at June 2016 are provided in Table 1A.~~

Table 1 Private ~~land~~ Land priorities for the Southern CAR Reserve System

Priority for voluntary protection of Forest Ecosystems <u>on Private Land</u>		
Very High Priority	High Priority	Moderate Priority
Forests		
161 Tablelands and Slopes Dry Herb/Grassland/ Woodland - E. melliodora/Danthonia racemosa	92 Tablelands Acacia/Grass/Herb Dry Forest - E. bridgesiana/E. melliodora/ Acacia mearnsii/Microlaena stipoides	90 Northern Tablelands Acacia Herb/Grass Dry Forest - E. bridgesiana/ Acacia dealbata/Hydrocotyle laxiflora
27 Ecotonal Coastal Swamp Forest - Casuarina glauca/E. botryoides	177 Illawarra Lowland Sub-Tropical Rainforest	94 South-west Slopes Acacia Dry Herb/Grass Forest - E. bridgesiana/ E. macrorhyncha/Acacia dealbata/ Microlaena stipoides
173 Northern Grass Herb Forest on Basalt	25 South Coast Swamp Forest - Casuarina glauca	113 North East Tablelands Dry Shrub/Grass Forest - E. mannifera/ E. dives/Brachyloma daphnoides/ Dianella revoluta

Priority for voluntary protection of Forest Ecosystems on Private Land		
Very High Priority	High Priority	Moderate Priority
Forests		
160 Western Slopes Dry Grass Woodland - E. blakelyi/E. melliodora/Danthonia racemosa	119 Western Tablelands Dry Shrub/Grass Forest - E. macrorhyncha/E. polyanthemos/Hibbertia obtusifolia/Gonocarpus tetragynus	109 Widespread Tablelands Dry Shrub/Tussock Grass Forest - E. dives/E. mannifera/E. macrorhyncha/Hibbertia obtusifolia/Chionochloa pallida
154 Tableland Dry Grass Woodland – E. bridgesiana/Themeda australis	73 Eastern Tableland Dry Shrub/Grass Forest – E. pauciflora/E. viminalis/Acacia dealbata/Themeda australis	114 Tablelands Dry Shrub/Tussock Grass Forest - E. macrorhyncha/E. rossii/E. goniocalyx/Chionochloa pallida
116 Western Slopes Herb/Grass Woodland - E. blakelyi/Microlaena stipoides/Hydrocotyle laxiflora	76 Tablelands Shrub/Grass Dry Forest – E. rubida/E. pauciflora/Themeda australis	80 ACT Dry Shrub/Herb Forest – E. dives/E. bridgesiana/Cassinia longifolia/Hydrocotyle laxiflora
162 Western Slopes Moist Herb/Sedge/Grass Woodland – E. blakelyi/Carex appressa	74 South Eastern Tablelands Dry Shrub/Grass/Herb Forest - E. bridgesiana/E. pauciflora/E. rubida/Acaena novae-zealandiae	
43 Western Slopes Riparian Moist Sedge Woodland - E. camaldulensis	24 Coastal Tall Wet Heath Swamp Forest - Casuarina glauca/Melaleuca ericifolia	
117 Western Slopes Dry Grass Woodland - E. albens/Microlaena stipoides/Bothriochloa macra	112 Eastern Tablelands Dry Shrub Forest - E. sieberi/E. dives/Brachyloma daphnoides/Poa sieberiana	
118 Western Slopes Dry Grass Forest – E. sideroxylon/E. blakelyi/E. goniocalyx/Elymus scaber		
120 Western Slopes Shrub/Herb/Grass Dry Forest - E. macrorhyncha/E. albens/Hydrocotyle laxiflora/Microlaena stipoides		
146 Tableland Dry Herb/Grass Woodland - E. pauciflora/E. stellulata/Asperula scoparia		
148 Tableland Tussock Grassland /Sedgeland/ Woodland - Poa labillardieri		
171 Northern Coastal Shrub/Grass Forest - E. tereticornis		
178 Robertson Warm Temperate Rainforest		

Non-Forests – Very High Priority	
152 Tableland Herb/Grassland - Themeda australis	157 ACT/Monaro Dry Grassland - Bothriochloa macra/Chrysocephalum apiculatum
158 Monaro Dry Grassland - Austrostipa spp/ Danthonia ssp	147 Tablelands Moist Sedge/Herb/Grassland

Notes Accompanying Table 1

- The Forest Ecosystems listed are presented in order of priority for voluntary protection on private land. They have been identified based on the following criteria:
 - Identification by an expert panel convened during the Southern CRA as forest ecosystems of concern on Private Land;
 - Very High Priority - Ecosystems with 100% target set and not met, that have extant occurrences on Private Land;
 - High Priority - Ecosystems with 60% target set and not met, that are ranked as vulnerable and are more than 40% cleared;
 - Medium Priority - Ecosystems with 15% target set and not met, that are more than 40% cleared.

Table 1A Area of priority Forest Ecosystems and Non-Forest Ecosystems in the Southern RFA region CAR Reserve System on Private Land as at June 2016

<u>Forest Ecosystem</u>	<u>Total Ecosystem Area (hectares)</u>	<u>Area in CAR Reserve System on Private Land (hectares)</u>	<u>Proportion in CAR Reserve System on Private Land as at 30 June 2016 (%)</u>
161 Tablelands and Slopes Dry Herb/Grass Woodland - E. melliodora/Danthonia racemosa	556	0	0

<u>Forest Ecosystem</u>	<u>Total Ecosystem Area (hectares)</u>	<u>Area in CAR Reserve System on Private Land (hectares)</u>	<u>Proportion in CAR Reserve System on Private Land as at 30 June 2016 (%)</u>
27 Ecotonal Coastal Swamp Forest - Casuarina glauca/E. botryoides	343	0	0
173 Northern Grass Herb Forest on Basalt	164	0	0
160 Western Slopes Dry Grass Woodland - E. blakelyi/E. melliodora/Danthonia racemosa	3,646	156	4
154 Tableland Dry Grass Woodland – E. bridgesiana/Themeda australis	15	0	0
116 Western Slopes Herb/Grass Woodland - E. blakelyi/Microlaena stipoides/Hydrocotyle laxiflora	4,052	239	6
162 Western Slopes Moist Herb/Sedge/Grass Woodland E. blakelyi/Carex appressa	150	0	0
43 Western Slopes Riparian Moist Sedge Woodland - E. camaldulensis	1,589	0	0
117 Western Slopes Dry Grass Woodland - E. albens/Microlaena stipoides/Bothriochloa macra	981	6	1
118 Western Slopes Dry Grass Forest – E. sideroxylon/E. blakelyi/ E. goniocalyx/Elymus scaber	308	0	0
120 Western Slopes Shrub/Herb/Grass Dry Forest - E. macrorhyncha/ E. albens/Hydrocotyle laxiflora/ Microlaena stipoides	10,354	963	9
146 Tableland Dry Herb/Grass Woodland - E. pauciflora/E. stellulata/ Asperula scoparia	1,164	0	0
148 Tableland Tussock Grassland /Sedgeland/ Woodland - Poa labillardieri	N/A	N/A	N/A
171 Northern Coastal Shrub/Grass Forest - E. tereticornis	3,512	4	0.1
178 Robertson Warm Temperate Rainforest	215	0	0
92 Tablelands Acacia/Grass/Herb Dry Forest - E. bridgesiana/E. melliodora/ Acacia mearnsii/Microlaena stipoides	6,476	0	0
177 Illawarra Lowland Sub-Tropical Rainforest	1,674	8	0
25 South Coast Swamp Forest - Casuarina glauca	3,792	21	1
119 Western Tablelands Dry Shrub/Grass Forest - E. macrorhyncha/ E. polyanthemos/Hibbertia obtusifolia/ Gonocarpus tetragynus	36,151	149	0.4
73 Eastern Tableland Dry Shrub/Grass Forest – E. pauciflora/E. viminalis/Acacia dealbata/ Themeda australis	70,124	121	0.2
76 Tablelands Shrub/Grass Dry Forest – E. rubida/E. pauciflora/Themeda australis	38,752	186	0.5
74 South Eastern Tablelands Dry Shrub/Grass/Herb Forest - E. bridgesiana/ E. pauciflora/E. rubida/ Acaena novae-zealandiae	50,156	1144	2
24 Coastal Tall Wet Heath Swamp Forest - Casuarina glauca/Melaleuca ericifolia	6,119	32	1
112 Eastern Tablelands Dry Shrub Forest - E. sieberi/E. dives/Brachyloma daphnoides/Poa sieberiana	7,646	298	4
90 Northern Tablelands Acacia Herb/Grass Dry Forest - E. bridgesiana/ Acacia dealbata/Hydrocotyle laxiflora	1,347	0	0
94 South-west Slopes Acacia Dry Herb/Grass Forest - E. bridgesiana/ E. macrorhyncha/Acacia dealbata/ Microlaena stipoides	25,677	105	0.4
113 North East Tablelands Dry Shrub/Grass Forest - E. mannifera/ E. dives/Brachyloma daphnoides/ Dianella revoluta	50,342	276	1
109 Widespread Tablelands Dry Shrub/Tussock Grass Forest - E. dives/E. mannifera/ E. macrorhyncha/Hibbertia obtusifolia/Chionochloa pallida	28,497	46	0.2
114 Tablelands Dry Shrub/Tussock Grass Forest - E. macrorhyncha/E.rossii/ E. goniocalyx/Chionochloa pallida	25,018	285	1
80 ACT Dry Shrub/Herb Forest – E. dives/E. bridgesiana/Cassinia longifolia/Hydrocotyle laxiflora	4	0	0

<u>Forest Ecosystem</u>	<u>Total Ecosystem Area (hectares)</u>	<u>Area in CAR Reserve System on Private Land (hectares)</u>	<u>Proportion in CAR Reserve System on Private Land as at 30 June 2016 (%)</u>
<u>Non-Forest Ecosystem</u>	<u>Total Ecosystem Area (hectares)</u>	<u>Area in CAR Reserve on Private Land (hectares)</u>	<u>Proportion in CAR reserve system on Private Land as at 30 June 2016 (%)</u>
152 Tableland Herb/Grassland - <i>Themeda australis</i>	N/A	N/A	N/A
158 Monaro Dry Grassland - <i>Austrostipa</i> spp/ <i>Danthonia</i> spp	N/A	N/A	N/A
157 ACT/Monaro Dry Grassland - <i>Bothriochloa macra</i> / <i>Chrysocephalum apiculatum</i>	N/A	N/A	N/A
147 Tablelands Moist Sedge/Herb/Grassland	N/A	N/A	N/A

Table 2 Private land priorities for the Southern CAR Reserve System – Unmapped Ecosystems

<u>Very High to High Priority</u>	
39 Tableland Herb/Grassland	153 Tablelands and Slopes Herb/Grassland/ Woodland - <i>Themeda australis</i> plus <i>E. pauciflora</i> / <i>E. rubida</i>
151 Tableland Sedge/Grass Herbland - <i>Themeda australis</i> / <i>Carex appressa</i>	194 North-east Riparian Forest - <i>E. amplifolia</i>

Notes Accompanying Table 2

The forest ecosystems listed in Table 2 were not mapped as part of the Forest Ecosystem Mapping project, and as such do not appear in the forest ecosystem layer or in the RFA Attachment 1 table. The forest ecosystems are distributed in small and scattered patches, which were not identifiable on a regional scale map. Field validation is likely to locate these forest ecosystems in the Southern RFA region. Wherever they are located they should be treated as a priority for protection on private land.

Rainforest Protection

- 9 Rainforest is protected from Forestry Operations in accordance with the Private Native Forestry Code of Practice.

Old Growth forest

- 10 Old Growth forest is protected from Forestry Operations in accordance with the Private Native Forestry Code of Practice.

Additional Protection for Forest Ecosystems

- 11 Under the Private Native Forestry Code of Practice, Forestry Operations in and adjacent to specified landscape features must comply with requirements to protect these features. This includes requirements to protect endangered ecological communities, endangered populations, vulnerable ecological communities, wetlands, heathland, rocky outcrops and steep slopes.
- 12 The Private Native Forestry Code of Practice contains standards for the protection of threatened ecological communities and threatened species.

Protections on Private Land subject to Plantation authorisation

- 13 For Plantations on Private Land, the *Plantations and Reafforestation (Code) Regulation 2001* (NSW), contains standards for the protection of soil and water, biodiversity, and places, objects or items of heritage significance.

**THREATENED FLORA, FAUNA LISTED SPECIES AND
ECOLOGICAL COMMUNITIES**

- 1 Both Parties recognise the range of mechanisms to conserve the habitat of ~~endangered and vulnerable flora and fauna~~ Listed Species and Communities in the Southern region. These include: (i) protection within the CAR Reserve System; (ii) protection of key habitat components using the Integrated Forestry Operations Approval; (iii) protection of key habitats such as rainforest, heaths, swamps and other wet communities, rocky outcrops and ~~rare~~ threatened ecological communities; and (iv) ~~the development of Recovery Plans~~ Biodiversity Conservation Programs for species, ~~populations~~ and communities listed under the ~~*Threatened Species Conservation Act 1995* (NSW)~~ *Biodiversity Conservation Act 2016* (NSW) and the development, maintenance and implementation of relevant Statutory Conservation Planning Documents under the *Fisheries Management Act 1994* (NSW) and for species, populations and communities listed under the EPBC Act. ~~*Environment Protection and Biodiversity Conservation Act 1999* (Cwlth)~~. Key species are protected by a combination of reservation and prescription.
- 2 ~~Current priorities~~ Priorities at the signing of the Southern RFA for developing Recovery Plans for threatened forest dependent fauna and flora for the next first five years of this Agreement are provided in Table 1. Parties note that the list at Table 1 is indicative only and ~~timeframes are dependent upon funding~~. These priorities may change and new priorities may arise in response to additional information, funding etc.
- 3 Where NSW Statutory Conservation Planning Documents ~~Recovery Plans~~ under the ~~*Threatened Species Conservation Act 1995*~~ *Biodiversity Conservation Act 2016* (NSW) or the *Fisheries Management Act 1994* (NSW) meet the requirements of the EPBC Act ~~*Environment Protection and Biodiversity Conservation Act 1999* (Cwlth)~~, the Commonwealth will consider adopting them under the EPBC Act.

Threatening Processes

- 4 ~~Threat Abatement Plans under the *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth) for Predation by the Feral Cat, Predation by the European Red Fox (*Vulpes vulpes*), Competition and Land Degradation by the European Rabbit, and Competition and Land Degradation by the Feral Goat, have been finalised and approved by the Minister. A priority for a Threat Abatement Plan under the Act is Dieback caused by the root rot fungus (*Phytophthora cinnamoni*). A Threat Abatement Plan under the *Threatened Species Conservation Act 1995* (NSW) for Predation by the European Red Fox is due for completion by 31 December 2001. Threatening Processes are those listed as a key threatening process under the *Biodiversity Conservation Act 2016*~~

(NSW), Fisheries Management Act 1994 (NSW) and the EPBC Act in recognition that the process adversely affects or may threaten the survival, abundance or evolutionary development of a native species or ecological community. Threatening Processes are managed under the Biodiversity Conservation Program or with Threat Abatement Plans under the EPBC Act or other coordinated programs across land tenure. Some Threatening Processes affecting Forests are mitigated by the settings in the Integrated Forestry Operations Approval applicable to the Eden region.

Table 1: Priority species for preparation of Recovery Plans (~~over next five years~~ as at 2001 and showing current status)

Scientific name	Common Name	NSW Status	National Status	Management stream under the NSW Biodiversity Conservation Program	Current status of national recovery plans and conservation advice	Completion Date
<i>Acacia bynoeana</i>	Bynoe Wattle	Vulnerable Endangered	Vulnerable	Data deficient	National recovery plan required.	National Plan by July 2005, State Plan by January 2006
<i>Acacia flocktoniae</i>	Flockton wattle	Vulnerable	Vulnerable	Site-managed	National recovery plan adopted 28 July 2010	National Plan by July 2005, State Plan by January 2006
<i>Acacia georgensis</i>	Dr. George's Bega Wattle	Vulnerable	Vulnerable	Keep Watch	National recovery plan not required. Conservation advice approved 29 April 2014.	National Plan by July 2005, State Plan by December 2001
<i>Acacia phasmoides</i>	Phantom Wattle	Vulnerable	Vulnerable	Site-managed	National recovery plan adopted 21 April 2011.	National Plan by July 2005, State Plan by January 2006
<i>Ammobium craspedioides</i>	Yass Daisy	Vulnerable	Vulnerable	Keep Watch	National recovery plan not required. Conservation advice approved 1 October 2008.	National Plan by July 2005, State Plan by December 2001
<i>Aprasia parapulchella</i>	Pink-tailed Legless Lizard	Vulnerable	Vulnerable	Landscape	National recovery plan required	National Plan by July 2005, State Plan by December 2001
<i>Boronia deanei</i>	Deane's Boronia	Vulnerable	Vulnerable	Site-managed	National recovery plan not required. Conservation advice approved 26 March 2008.	National Plan by July 2005, State Plan by January 2006
<i>Burhinus grallarius</i>	Bush Stone-curlew	Endangered	Not listed	Iconic	State recovery plan approved February 2006	State Plan by December 2001
<i>Burrhamys parvus</i>	Mountain Pygmy-possum	Vulnerable Endangered	Endangered	Iconic	State recovery plan approved May 2002 and national recovery plan required [^]	National Plan by July 2003, State Plan by December 2001
<i>Caladenia concolor</i>	Crimson Spider Orchid	Endangered	Not listed Vulnerable	Site-managed	National recovery plan adopted 18 August 2004.	State Plan by December 2001
<i>Caladenia tessellata</i>	Daddy Long-legs	Vulnerable Endangered	Vulnerable	Site-managed	National recovery plan adopted 13 August 2010.	National Plan by July 2005, State Plan by January 2006
<i>Callitris oblonga</i>	Pigmy Corang Cypress Pine	Vulnerable	Endangered Vulnerable	Site-managed	National recovery plan adopted 28 July 2010.	National Plan by July 2003, State Plan by December 2001
<i>Calotis glandulosa</i>	Mauve Burr-daisy	Vulnerable	Vulnerable	Site-managed		National Plan by July 2005, State Plan by January 2006
<i>Calyptorhynchus lathami</i>	Glossy Black-Cockatoo	Vulnerable	Not listed	Site-managed		State Plan by January 2006
<i>Chalinolobus dwyeri</i>	Large-eared Pied Bat	Vulnerable	Not listed Vulnerable	Data deficient	National recovery plan adopted 10 February 2012	State Plan by January 2006

Scientific name	Common Name	NSW Status	National Status	Management stream under the NSW Biodiversity Conservation Program	Current status of national recovery plans and conservation advice	Completion Date
<i>Charadrius rubricollis</i> <i>Thinornis rubricollis</i> <i>rubricollis</i> (formerly <i>Charadrius rubricollis</i>)	Hooded Plover	Endangered Critically endangered	Vulnerable	Site-managed	National recovery plan not required. Conservation advice approved 6 November 2014	National Plan by July 2005, State Plan by December 2001
<i>Correa baeuerlenii</i>	Chef's Cap Correa	Vulnerable	Vulnerable	Data deficient	National recovery plan not required. Conservation advice approved 1 October 2008.	National Plan by July 2005, State Plan by January 2006
<i>Cryptostylis hunteriana</i>	Leafless Tongue Orchid	Vulnerable	Vulnerable	Site-managed	National recovery plan not required. Conservation advice approved 3 July 2008.	National Plan by July 2005, State Plan by January 2006
<i>Cynanchum elegans</i>	White-flowered wax plant	Endangered	Endangered	Keep Watch	National recovery plan not required. Conservation advice approved 26 March 2008.	National Plan by July 2003, State Plan by December 2001
<i>Daphnandra</i> sp C (sp 1 Illawarra)	Illawarra socketwood	Endangered	Endangered	Site-managed	State recovery plan approved January 2005 and recovery plan adopted on 10 June 2005.	National Plan by July 2003, State Plan by December 2001
<i>Dasyornis brachypterus</i>	Eastern Bristlebird	Endangered	Endangered	Site-managed	National recovery plan adopted 30 January 2014	National Plan by July 2003, State Plan by December 2001
<i>Dasyurus maculatus</i>	Tiger Spotted-tailed Quoll	Vulnerable	Vulnerable Endangered	Landscape	National recovery plan required^	National Plan by July 2005, State Plan by January 2006
<i>Delma impar</i>	Striped Legless Lizard	Vulnerable	Vulnerable	Landscape	National recovery plan adopted 16 July 2000	National Plan by July 2005, State Plan by December 2001
<i>Discaria nitida</i>	Leafy Anchor Plant	Endangered	Not listed	Site-managed		State Plan by December 2001
<i>Diuris aequalis</i>	Buttercup Doubletail	Vulnerable Endangered	Vulnerable	Site-managed	National recovery plan not required. Conservation advice approved 26 March 2008.	National Plan by July 2005, State Plan by January 2006
<i>Eucalyptus aquatica</i>	Broad-leaved Sallee	Vulnerable	Vulnerable	Site-managed	National recovery plan not required. Conservation advice approved 3 July 2008.	National Plan by July 2005, State Plan by January 2006
<i>Eucalyptus kartzoffiana</i>	Araluen Gum	Vulnerable	Vulnerable	Site-managed	National recovery plan not required. Conservation advice approved 3 July 2008.	National Plan by July 2005, State Plan by January 2006
<i>Eucalyptus langleyi</i>	Albatross Mallee	Vulnerable	Vulnerable	Keep Watch	National recovery plan not required. Conservation advice approved 3 July 2008.	National Plan by July 2005, State Plan by January 2006
<i>Eucalyptus parvula</i>	Small-leaved Gum	Vulnerable Endangered	Vulnerable	Site-managed	National recovery plan not required. Conservation advice approved 3 July 2008.	National Plan by July 2005, State Plan by January 2006

Scientific name	Common Name	NSW Status	National Status	Management stream under the NSW Biodiversity Conservation Program	Current status of national recovery plans and conservation advice	Completion Date
<i>Eucalyptus pulverulenta</i>	Silver-leaved Gum	Vulnerable	Vulnerable	Site-managed	National recovery plan not required. Conservation advice approved 3 July 2008.	National Plan by July 2005, State Plan by January 2006
<i>Eucalyptus recurva</i>	Mongarlowe Mallee	Endangered Critically endangered	Endangered Critically endangered	Site-managed	Recovery plan adopted 24 June 2011.	National Plan by July 2003, State Plan by December 2001
<i>Eucalyptus saxatilis</i>	Suggan Buggan Mallee	Endangered	Not listed	Site-managed		State Plan by December 2001
<i>Eucalyptus sturgissiana</i>	Ettrema Mallee	Vulnerable	Not listed	Site-managed		State Plan by January 2006
<i>Falsistrellus tasmaniensis</i>	Great Eastern False Pipistrelle	Vulnerable	Not listed	Landscape		State Plan by January 2006
<i>Genoplesium plumosum</i>	Tallong Midge Orchid	Endangered Critically endangered	Endangered	Site-managed	State recovery plan approved May 2002 and national recovery plan adopted on 19 February 2004.	National Plan by July 2003, State Plan by December 2001
<i>Genoplesium vernalis vemale</i>	East Lynne midge-orchid	Vulnerable	Endangered Vulnerable	Keep Watch	National recovery plan adopted 19 February 2004.	National Plan by July 2003, State Plan by March 2003
<i>Gentiana bredboensis</i>	Bredbo Gentian	Vulnerable Critically endangered	Vulnerable	Site-managed	National recovery plan not required. Conservation advice approved 3 July 2008.	National Plan by July 2005, State Plan by January 2006
<i>Gentiana wingecarribeensis</i>	Wingecarribee Gentian	Endangered Critically endangered	Endangered	Site-managed	National recovery plan not required. Conservation advice approved 26 March 2008.	National Plan by July 2003, State Plan by December 2001
<i>Grevillea iaspicula</i>	Wee Jasper Grevillea	Vulnerable Critically endangered	Endangered	Site-managed	National recovery plan not required. Conservation advice approved 26 March 2008.	National Plan by July 2003, State Plan by December 2001
<i>Grevillea molyneuxii</i>	Tallowa Grevillea	Endangered Vulnerable	Endangered	Site-managed	National recovery plan not required. Conservation advice approved 26 March 2008.	National Plan by July 2003, State Plan by January 2001
<i>Grevillea rivularis</i>	Carrington Falls Grevillea	Endangered Critically endangered	Endangered	Site-managed	National recovery plan not required. Conservation advice approved 26 March 2008.	National Plan by July 2003, State Plan by December 2001
<i>Grevillea wilkinsonii</i>	Tumut Grevillea	Endangered	Endangered	Site-managed	State recovery plan approved July 2001 and national recovery plan adopted on 26 March 2002.	National and State Plan by January 2001
<i>Haloragis exalata exalata</i>	Square Raspwort	Vulnerable	Vulnerable	Keep Watch	National recovery plan not required. Conservation advice approved 29 April 2014.	National Plan by July 2005, State Plan by January 2006

Scientific name	Common Name	NSW Status	National Status	Management stream under the NSW Biodiversity Conservation Program	Current status of national recovery plans and conservation advice	Completion Date
<i>Heleioporus australiacus</i>	Giant Burrowing Frog	Vulnerable	Vulnerable	Landscape	National recovery plan required.	National Plan by July 2005, State Plan by January 2006
<i>Hoplocephalus bungaroides</i>	Broad Headed Snake	Endangered	Vulnerable	Site-managed	National recovery plan required.	National Plan by July 2005, State Plan by December 2001
<i>Irenephorsus trypherus</i>	Delicate Cress	Vulnerable Endangered	Endangered	Site-managed	State recovery plan approved January 2005 and national recovery plan adopted on 10 June 2005.	National Plan by July 2003, State Plan by January 2006
<i>Isodon obesulus obesulus</i>	Southern Brown Bandicoot (eastern)	Endangered	Not listed Endangered	Site-managed	State recovery plan approved November 2006. National recovery plan required.	State Plan by December 2001
<i>Kerivoula papuensis</i>	Golden-tipped Bat	Vulnerable	Not listed	Landscape		State Plan by January 2006
<i>Kunzea cambagei</i>	Cabbage Kunzea	Vulnerable	Vulnerable	Site-managed	National recovery plan not required. Conservation advice approved 3 July 2008.	National Plan by July 2005, State Plan by January 2006
<i>Lathamus discolor</i>	Swift Parrot	Endangered	Endangered Critically endangered	Landscape	National recovery plan adopted 10 February 2012.	National Plan complete, State Plan by December 2001
<i>Leptospermum thompsonii</i>	Monga Tea-tree	Vulnerable	Vulnerable	Keep Watch	National recovery plan not required. Conservation advice approved 1 October 2008.	National Plan by July 2005, State Plan by December 2001
<i>Litoria aurea</i>	Green and Golden Bell Frog	Endangered	Vulnerable	Iconic	National recovery plan required.	National Plan by July 2005, State Plan by December 2001
<i>Litoria booroolongensis</i>	Booroolong Frog	Endangered	Not listed Endangered	Site-managed	National recovery plan adopted 19 September 2012	State Plan by December 2001
<i>Lophoictinia isura</i>	Square-tailed Kite	Vulnerable	Not listed	Landscape		State Plan by January 2006
<i>Mastacomys fuscus</i>	Broad-toothed Rat	Vulnerable	Not listed Vulnerable	Site-managed		State Plan by December 2001
<i>Melaleuca biconvexa</i>	Biconvex Paperbark	Vulnerable	Vulnerable	Site-managed	National recovery plan not required. Conservation advice approved 26 March 2008.	National Plan by July 2005, State Plan by January 2006
<i>Micromyrtus minutiflora</i>	(a slender spreading shrub)	Vulnerable Endangered	Vulnerable	Site-managed	National recovery plan not required. Conservation advice approved 3 July 2008.	National Plan by July 2000, State Plan by January 2006
<i>Miniopterus schreibersii oceanensis</i>	Common Bent-wing Bat Eastern Bentwing-bat	Vulnerable	Not listed	Landscape		State Plan by January 2006
<i>Mixophyes balbus</i>	Stuttering Barred Frog	Vulnerable Endangered	Not listed Vulnerable	Landscape	Recovery plan adopted 10 February 2012	State Plan by December 2001

Scientific name	Common Name	NSW Status	National Status	Management stream under the NSW Biodiversity Conservation Program	Current status of national recovery plans and conservation advice	Completion Date
<i>Monotaxis macrophylla</i>	Large-leafed Monotaxis	Endangered	Not listed	Keep Watch		State Plan by December 2001
<i>Monotoca rotundifolia</i>	Trailing Monotoca	Endangered	Not listed	Data deficient		State Plan by December 2001
<i>Mormopterus norfolkensis</i>	Eastern Little Mastiff Freetail -bat	Vulnerable	Not listed	Landscape		State Plan by January 2006
<i>Myotis adversus macropus</i> (formerly <i>Myotis adversus</i>)	Large-footed Mouse-eared Bat Southern Myotis	Vulnerable	Not listed	Landscape		State Plan by January 2006
<i>Neophema pulchella</i>	Turquoise Parrot	Vulnerable	Not listed	Landscape		State Plan by January 2006
<i>Ninox connivens</i>	Barking Owl	Vulnerable	Not listed	Landscape		State Plan by December 2001
<i>Ninox strenua</i>	Powerful Owl	Vulnerable	Not listed	Landscape	State recovery plan approved October 2006	State Plan by December 2001
<i>Pachycephala olivacea</i>	Olive Whistler	Vulnerable	Not listed	Landscape		State Plan by January 2006
<i>Pedionomus torquatus</i>	Plains Wanderer	Endangered	Vulnerable Critically endangered	Site-managed	National recovery plan required^.	National Plan by July 2005, State Plan by December 2001
<i>Persicaria elatior</i>	Tall Knotweed	Vulnerable	Vulnerable	Site-managed	National recovery plan not required. Conservation advice approved 1 October 2008.	National Plan by July 2005, State Plan by January 2006
<i>Persoonia glaucescens</i>	Mittagong Geebung	Vulnerable Endangered	Vulnerable	Site-managed	National recovery plan not required. Conservation advice approved 26 March 2008.	National Plan by July 2005, State Plan by January 2006
<i>Petaurus australis</i>	Yellow-bellied Glider	Vulnerable	Not listed	Landscape	State recovery plan approved February 2003	State Plan by January 2006
<i>Petaurus norfolcensis</i>	Squirrel Glider	Vulnerable	Not listed	Landscape		State Plan by January 2006
<i>Petrogale penicillata</i>	Brush-tailed Rock Wallaby	Vulnerable Endangered	Vulnerable	Iconic	State recovery plan approved March 2008 and national recovery plan (made by Victoria) adopted 10 February 2012	National Plan by July 2005, State Plan by January 2006
<i>Petroica rodinogaster</i>	Pink Robin	Vulnerable	Not listed	Landscape		State Plan by January 2006
<i>Phascogale tapoatafa</i>	Brush-tailed Phascogale	Vulnerable	Not listed	Landscape		State Plan by January 2006
<i>Phascolarctos cinereus</i>	Koala	Vulnerable	Not listed Vulnerable	Iconic	State recovery plan approved November 2008. National recovery plan required.	State Plan by December 2001
<i>Phyllota humifusa</i>	Dwarf Phyllota	Vulnerable	Not listed Vulnerable	Data deficient	National recovery plan not required. Conservation advice approved 3 July 2008.	State Plan by January 2006

Scientific name	Common Name	NSW Status	National Status	Management stream under the NSW Biodiversity Conservation Program	Current status of national recovery plans and conservation advice	Completion Date
<i>Plinthanthesis rodwayi</i>	Budawangs Wallaby-grass-Grass	Vulnerable Endangered	Vulnerable	Site-managed	National recovery plan not required. Conservation advice approved 16 December 2008.	National Plan by July 2005, State Plan by January 2006
<i>Polytelis swainsonii</i>	Superb Parrot	Vulnerable	Vulnerable	Landscape	National recovery plan adopted 21 April 2011.	National Plan by July 2005, State Plan by January 2006
<i>Pomaderris cotoneaster</i>	Cotoneaster Pomaderris	Endangered	Endangered	Site-managed	National recovery plan adopted 13 August 2010.	National Plan by July 2003, State Plan by December 2001
<i>Pomaderris gilmourii var cana</i>	Grey Deua Pomaderris	Vulnerable	Vulnerable	Data deficient	National recovery plan not required. Conservation advice approved 3 July 2008.	National Plan by July 2005, State Plan by January 2006
<i>Pomaderris pallida</i>	Pale Pomaderris	Vulnerable	Vulnerable	Site-managed	National recovery plan not required. Conservation advice approved 1 October 2008.	National Plan by July 2005, State Plan by January 2006
<i>Pomaderris parrisiae</i>	Parris' Pomaderris	Endangered Vulnerable	Vulnerable	Site-managed	National recovery plan not required. Conservation advice approved 3 July 2008.	National Plan by July 2005, State Plan by December 2001
<i>Pomaderris sericea</i>	Silky Pomaderris	Vulnerable Endangered	Vulnerable	Data deficient	National recovery plan adopted 12 March 2010.	National Plan by July 2005, State Plan by January 2006
<i>Potorous tridactylus</i>	Long-nosed Potoroo	Vulnerable	Vulnerable	Site-managed	National recovery plan required.	National Plan by July 2005, State Plan by December 2001
<i>Prasophyllum affine</i>	Culburra Jervis Bay Leek Orchid	Endangered	Endangered	Site-managed	National recovery plan adopted 24 July 2012.	National Plan by July 2003, State Plan by December 2001
<i>Prasophyllum morgani</i> <i>retroflexum</i> (formerly <i>P. morgani</i>)	Cobungra Kiandra Leek Orchid	Vulnerable	Vulnerable	N/A	National recovery plan adopted 18 August 2004.	National Plan by July 2005, State Plan by January 2006
<i>Prasophyllum petilum</i>	Boorowa or Tarengo Leek Orchid	Endangered	Endangered	Site-managed	National recovery plan adopted 21 April 2011.	National Plan by July 2003, State Plan by December 2001
<i>Prasophyllum uroglossum</i>	Wingecarribee Leaf Orchid	Endangered	Endangered Not listed	Site-managed	National recovery plan not required. Conservation advice approved 3 July 2008.	National Plan by July 2003, State Plan by December 2001
<i>Prostanthera densa</i>	Villous Mint-bush	Vulnerable	Vulnerable	Site-managed	National recovery plan not required. Conservation advice approved 3 July 2008.	National Plan by July 2005, State Plan by January 2006
<i>Pseudomys fumeus</i>	Smoky Mouse	Endangered Critically endangered	Endangered	Site-managed	National recovery plan adopted 23 October 2008	National Plan by July 2003, State Plan by December 2001
<i>Pseudophryne australis</i>	Red-crowned Toadlet	Vulnerable	Not listed	Landscape		State Plan by January 2006

Scientific name	Common Name	NSW Status	National Status	Management stream under the NSW Biodiversity Conservation Program	Current status of national recovery plans and conservation advice	Completion Date
<i>Pseudophryne pengilleyi</i>	Northern Corroboree Frog	Vulnerable Critically endangered	Vulnerable Critically endangered	Iconic	National recovery plan adopted 19 September 2012	National Plan by July 2005, State Plan by December 2001
<i>Pterostylis gibbosa</i>	Pouched or Illawarra Greenhood	Endangered	Endangered	Site-managed	State recovery plan approved September 2002 and national recovery plan adopted on 19 February 2004.	National Plan by July 2003, State Plan by December 2001
<i>Pterostylis pulchella</i>	Waterfall Greenhood	Vulnerable	Vulnerable	Site-managed	National recovery plan not required. Conservation advice approved 3 July 2008.	National Plan by July 2005, State Plan by January 2006
<i>Pultenaea aristata</i>	Prickly Bush-pea	Vulnerable	Vulnerable	Keep Watch	National recovery plan not required. Conservation advice approved 26 March 2008.	National Plan by July 2005, State Plan by January 2006
<i>Pultenaea baeuerlenii</i>	Budawang Bush-pea	Vulnerable	Vulnerable	Site-managed	National recovery plan not required. Conservation advice approved 3 July 2008.	National Plan by July 2005, State Plan by January 2006
<i>Ranunculus anemoneus</i>	Anemone Buttercup	Vulnerable	Vulnerable	Keep Watch	State recovery plan approved July 2001 and national recovery plan adopted on 26 March 2002.	National Plan by July 2005, State Plan by January 2001
<i>Restio Baloskion longipes</i> (formerly <i>Restio longipes</i>)	Dense Cord-rush	Vulnerable	Vulnerable	Site-managed	National recovery plan not required. Conservation advice approved 26 March 2008.	National Plan by July 2005, State Plan by January 2006
<i>Commersonia prostrata</i> (formerly <i>Rulingia prostrata</i>)	Dwarf Kerrawang	Endangered	Endangered	Site-managed	National recovery plan adopted 12 March 2010.	National Plan by July 2003, State Plan by December 2001
<i>Rutidosia leirolepis</i>	Monaro Golden Daisy	Vulnerable	Vulnerable	Site-managed	National recovery plan not required. Conservation advice approved 1 October 2008.	National Plan by July 2005, State Plan by January 2006
<i>Rutidosia leptorrhynchoides</i>	Button Wrinklewort	Endangered	Endangered	Site-managed	National Recovery Plan adopted 22 March 2013.	National Plan complete, State Plan by December 2001
<i>Saccolaimus flaviventris</i>	Yellow-bellied Sheath-tail-bat	Vulnerable	Not listed	Landscape		State Plan by January 2006
<i>Scoteanax rueppellii</i>	Greater Broad-nosed Bat	Vulnerable	Not listed	Landscape		State Plan by January 2006
<i>Sminthopsis leucopus</i>	White-footed Dunnart	Vulnerable	Not listed	Landscape		State Plan by December 2002
<i>Swainsona recta</i>	Mountain Swainson-pea or Small Purple-pea	Endangered	Endangered	Site-managed	National recovery plan adopted 19 September 2012.	National Plan by July 2003, State Plan by December 2001

Scientific name	Common Name	NSW Status	National Status	Management stream under the NSW Biodiversity Conservation Program	Current status of national recovery plans and conservation advice	Completion Date
<i>Syzygium paniculatum</i>	Creek Satin Ash Magenta Lilly Pilly	Vulnerable Endangered	Vulnerable	Site-managed	National recovery plan adopted 24 July 2012.	National Plan by July 2005, State Plan by January 2006
<i>Thesium australe</i>	Austral Toad-flax	Vulnerable	Vulnerable	Keep Watch	National recovery plan not required. Conservation advice approved 17 December 2013.	National Plan by July 2005, State Plan by January 2006
<i>Triplarina nowraensis</i>	Nowra Heath Myrtle	Endangered	Endangered	Site-managed	National recovery plan adopted 10 February 2012.	National and State Plan by December 2004
<i>Tyto novaehollandiae</i>	Masked Owl	Vulnerable	Not listed	Landscape	State recovery plan approved October 2006	State Plan by December 2004
<i>Tyto tenebriosa</i>	Sooty Owl	Vulnerable	Not listed	Landscape	State recovery plan approved October 2006	State Plan by December 2004
<i>Varanus rosenbergi</i>	Heath Monitor Rosenberg's goanna	Vulnerable	Not listed	Landscape		State Plan by January 2006
<i>Westringia kydrensis</i>	Kydra Westringia	Endangered	Endangered	Site-managed	National recovery plan not required. Conservation advice approved 1 October 2008.	National Plan by July 2003, State Plan by December 2004
<i>Xanthomyza Phrygia</i> <i>Anthochaera phrygia</i> (formerly <i>Xanthomyza phrygia</i>)	Regent Honeyeater	Endangered Critically endangered	Endangered Critically endangered	Iconic	National recovery plan required^	National Plan by July 2003, State Plan by December 2004
<i>Zieria adenophora</i>	Araluen Zieria	Endangered Critically endangered	Endangered	Site-managed	National recovery plan adopted 26 March 2002.	National Plan by July 2003, State Plan by December 2004
<i>Zieria bauerlenii</i>	Bomaderry Zieria	Endangered	Endangered	Site-managed	National recovery plan adopted 21 April 2011.	National Plan by July 2003, State Plan by December 2004
<i>Zieria citriodora</i>	Lemon Zieria	Vulnerable Endangered	Vulnerable	Site-managed	National recovery plan adopted 21 April 2011.	National Plan by July 2005, State Plan by January 2006
<i>Zieria granulata</i>	Narrow-leaf or Illawarra Zieria	Endangered	Endangered	Site-managed	State recovery plan approved January 2005 and national recovery plan adopted on 10 June 2005.	National Plan by July 2003, State Plan by December 2004
<i>Zieria involucrata</i>	(a tall shrub)	Vulnerable Endangered	Vulnerable	Site-managed	State recovery plan approved January 2006 and national recovery plan adopted on 9 May 2007.	National Plan by July 2005, State Plan by January 2006
<i>Zieria murphyi</i>	Velvet Zieria	Vulnerable	Vulnerable	Site-managed	National recovery plan not required. Conservation advice approved 3 July 2008.	National Plan by July 2005, State Plan by January 2006

Scientific name	Common Name	NSW Status	National Status	<u>Management stream under the NSW Biodiversity Conservation Program</u>	<u>Current status of national recovery plans and conservation advice</u>	Completion Date
<i>Zieria tuberculata</i>	Warty Zieria	Vulnerable	Vulnerable	Site-managed	National recovery plan not required. Conservation advice approved 3 July 2008.	National Plan by July 2005, State Plan by January 2006

Table notes:

(1) **Site-managed:** species can be successfully secured in the wild by carrying out targeted management actions at specific sites

Landscape: generally distributed across large areas and subject to threats at landscape scale

Iconic: species which the community places a high value on and has particular expectations for conservation

Data deficient: there is insufficient knowledge available on the ecology, distribution and/or management requirements to enable a site-managed species project

Partnership: has less than 10% of its population/distribution occurring within NSW

Keep Watch: lower priority for investment in management

ATTACHMENT 4 NOT USED

NATIONAL ESTATE VALUES

Protection and management of National Estate values

- ~~1. Parties endorse the findings of the Commonwealth/NSW joint study of the National Estate in the Southern region (the Joint Study) and agree that National Estate values exist as documented in publicly available plots of GIS coverages and the document: *Identification, Assessment and Protection of National Estate Values in Southern NSW CRA Region* (Environment Australia 2000).~~
- ~~2. Parties recognise that the extensive and systematic information and regional framework provided by the Joint Study and this Agreement provide a unique regional context for National Estate values in the Southern region.~~
- ~~3. Parties agree that many of the National Estate values are adequately reserved in the CAR Reserve System (including its Dedicated Reserve, Informal Reserve and prescription elements). The State will protect in a regional context the full range of National Estate values on Public Land, through the application of the Forest Management System in accordance with this Agreement, and the implementation of the improvements agreed in Attachment 8.~~
- ~~4. Parties agree that National Estate values will be managed on the basis of the following principles:~~
 - ~~● Integrated regional management is the basis for effective conservation of National Estate values;~~
 - ~~● Protection decisions should be based on the extensiveness of each value within the region, taking into account its abundance, spatial and temporal distribution, spatial characteristics, variation and condition;~~
 - ~~● Protection decisions should not be based on individual expressions of the value in isolation;~~
 - ~~● Protection decisions should consider the sensitivity of each National Estate value to various types of disturbance, with sensitive natural values having adequate representation in the CAR Reserve System;~~
 - ~~● Management in all Public Land tenures should address National Estate values and make provision for their maintenance in management plans;~~
 - ~~● Protection of National Estate values is achieved by the CAR Reserve System and other legislated protection mechanisms and within State forests through statutory management plans and by active management; and~~

- ~~It is productive, effective and necessary to work with the community to manage heritage values.~~
5. ~~Parties agree that the management of cultural values, both Aboriginal and non Aboriginal, in the Southern region, be undertaken consistent with the guidelines in the *Protective Mechanisms for Cultural Heritage – Southern Region*. The above guidelines are based on the principles of *The Burra Charter (The Australian ICOMOS Charter for Places of Cultural Significance)* which provides the framework for the protection of cultural heritage sites and places. The Commonwealth acknowledges that the Cultural Heritage Guidelines attached to the *Integrated Forestry Operations Approval for the Upper North East Region* that will be attached to the Integrated Forestry Operations Approval covering the Southern region are consistent with the above documents.~~
 6. ~~Parties agree to maintain the databases of the values identified in the Joint Study and cooperate in relation to access to the data.~~
 7. ~~Parties agree that the sensitivity or resilience of each National Estate value, and the appropriate approach to the management of each value is indicated in Tables 1 and 2 and subject to Attachment 8.~~

Existing listings

8. ~~Parties note that the Australian Heritage Commission (the Commission) has agreed to update the Statements of Significance and condition and description statements for all existing listings to incorporate the results of the Joint Study. Both Parties note that existing National Estate places will remain in the Register of the National Estate where the results of the Joint Study confirm the presence of National Estate values.~~

Listings arising from the Joint Study

9. ~~Parties note that new listings recommended to the Commission will include National Estate values protected by reservation, reserve management prescription, site exclusion, consultation processes or other measures appropriate to the value, or which are robust and not affected by harvesting or other off reserve management regimes or activity.~~
10. ~~Parties note that the Commission will work in cooperation with New South Wales in delineating places for National Estate listing. The identification of these areas will be based on the following principles:~~
 - ~~New listings in Dedicated Reserves and Informal Reserves, the boundaries of which are unlikely to change, should be distinct places and may be based on any National Estate values;~~
 - ~~Listing of other National Estate places outside the CAR Reserve System will be based on robust values and those values that are protected by forest management prescription. Areas of contiguous values will be listed as a single National Estate place; and~~

- ~~Boundaries for listing National Estate places will be based on identified values and will follow the boundaries of Dedicated Reserves, Informal Reserves, natural topographic features, management boundaries and/or roads as appropriate.~~
- ~~11. For places arising from the Joint Study, only places identified by the above principles will be listed in the Register of the National Estate.~~
- ~~12. Parties note that the identification and assessment of cultural and natural National Estate values for the CRAs have been completed with the exception of Aboriginal heritage throughout the region and non-Aboriginal heritage places and values in some parts of the region as outlined in clause 14.~~
- ~~13. Parties note that the Commission will continue to consult with New South Wales and Aboriginal communities in an effort to finalise the identification and assessment of Aboriginal heritage places and values.~~
- ~~14. Parties note that at the time non-Aboriginal heritage was identified and assessed the boundaries of the Southern RFA region were configured as described in the State Forest map of the South CRA Region dated August 1997. Two small areas of the current Southern RFA region, one near Moss Vale in the coastal sub-region and the other to the north west of Holbrook, were not assessed for non-Aboriginal cultural heritage (social, aesthetic and historic values). Parties note that New South Wales, in consultation with the Commission, has agreed to undertake the identification and assessment of outstanding cultural heritage values in these remaining areas by 31 December 2001.~~
- ~~15. Parties note that in the Southern region some National Estate values were dealt with adequately through the assessment of other values. These values are well represented in the CAR Reserve System through the conservation of other National Estate values or of CAR values. These values include vegetation succession (A.2), and vegetation communities characteristic of their class (D.1). Some values, being localised, are covered by protection mechanisms agreed in the RFA. See Table 1 for further details. Other National Estate values were considered by experts not to be present in the region or were not above threshold for consideration as National Estate in any known sites in the region.~~

Future Listings

- ~~16. Parties note that the Commission does not intend to undertake any further regional studies of forests in the Southern region.~~
- ~~17. Parties note that the Commission confirms that, based on the Joint Study, there is no evidence to identify additional extensive National Estate values in the forested areas of the Southern region and that it therefore does not anticipate listing additional large places in the region.~~

- ~~18. Parties note that the Commission will refer future nominations to them. The Parties agree to work cooperatively and in a timely fashion in considering whether such nominations will be recommended to the Commission for listing. Both Parties are to compare the nominations with the existing agreed Southern region National Estate database, and to consider any new research or information provided.~~
- ~~19. Parties will jointly agree on any future recommendations to the Commission for listing. Parties note that the Commission will work cooperatively with New South Wales on the detail of any consequent listings that may arise.~~
- ~~20. Parties agree that all National Estate values will be considered in forest management decisions and note that the advice of the Commission will be sought in relation to proposed actions by the Commonwealth which are outside the scope of this Agreement and which might adversely affect National Estate values in the Southern region. This includes any proposed actions that may affect National Estate values in areas outside the CAR Reserve System and which have not been listed in the Register of the National Estate. Parties note that the Commission has agreed to take into account the undertakings in this Agreement in providing its advice, and will provide such advice in a regional context.~~
- ~~21. Parties note that the Commission may delegate preparation of section 30 advice with respect to National Estate in the Southern region to an appropriate official in a New South Wales Agency. This delegation would be limited to the Southern region, and those operations that affect those aspects of the forest estate documented in the CRA.~~

Table 1. SOUTHERN REGION – Protection of National Estate values on Public Land

Category 1: Values that are adequately protected at a regional level in the Dedicated Reserve or Informal Reserve components of the CAR Reserve System established under this Agreement.

National Estate values	Sensitivity ^a and resilience ^b to forestry activities covered by the RFA	Percentage of value on Public Land in reserves			Existing and/or off-reserve protection mechanisms	Additional agreed actions under the Southern RFA
		Dedicated Reserve	Informal Reserve	Total		
Wilderness (A.2, B.1)^c	High sensitivity to unnatural disturbance. Low resilience to forestry activities.	97.2	0.5	97.7	<i>Wilderness Act 1987.</i>	NPWS Environmental Management System.
Old Growth Forest and Rare Old Growth Forest (A.2 & B.1)^c	High sensitivity to logging, grazing, unnatural fire and other forestry activities. Low resilience to forestry activities. A2 Old Growth B1 (Rare) Old Growth – See Table 2 in Attachment 1(A) and 1(B)	Old Growth 90.0 Rare Old Growth 83.7	4.4 8.5	94.4 92.2	<i>Threatened Species Conservation Act 1995;</i> <i>Environmental Planning and Assessment Act 1979;</i> <i>National Parks and Wildlife Act 1974;</i> <i>Environment Protection and Biodiversity Conservation Act 1999;</i> <i>Native Vegetation Conservation Act 1997;</i>	Regional ESFM Plan; SFNSW Native Forest Management System; NPWS Environmental Management System. Integrated Forestry Operations Approvals, Forest Management Zoning; and Management Plans.
Natural Landscapes (A.2 & B.1)	High sensitivity to logging, grazing, unnatural fire and other forestry activities. Low resilience to forestry activities.	96.1	2.2	98.3	<i>Heritage Act 1977, Wilderness Act 1987.</i>	Regional ESFM Plan; SFNSW Native Forest Management System; NPWS Environmental Management System.
Undisturbed Catchments (A2 & B1)	High sensitivity to logging, grazing, unnatural fire and other forestry activities. Low resilience to forestry activities.	95.1	1.4	96.5	<i>Heritage Act 1977, Wilderness Act 1987.</i>	Regional ESFM Plan; Section 2.6 (Wild Rivers) of the New South Wales <i>Southern Region Forest Agreement</i> ; SFNSW Native Forest Management System; NPWS Environmental Management System.

Category 2: Values that are adequately protected at a regional level through the Dedicated Reserve or Informal Reserve components of the CAR Reserve System established under this Agreement and existing off reserve protection mechanisms

National Estate values	Sensitivity ^a and resilience ^b to forestry activities covered by the RFA	Percentage of value on Public Land in reserves			Existing off-reserve protection mechanisms	Additional agreed actions under the Southern RFA
		Dedicated Reserve	Informal Reserve	Total		
Flora and Fauna Refugia (A.1 & A.2) Significant Wetlands (D.1) ^d	High sensitivity to logging, grazing, unnatural fire and other forestry activities. Low resilience to forestry activities.	83.2	3.5	86.7	<i>Threatened Species Conservation Act 1995; Environmental Planning and Assessment Act 1979; National Parks and Wildlife Act 1974; Endangered Species Protection Act 1995.</i>	Regional ESFM Plan; SFNSW Native Forest Management System; NPWS Environmental Management System; NSW Biodiversity Strategy; Integrated Forestry Operations Approvals, Forest Management Zoning, and Management Plans
Rare Vegetation Communities (A.2, B.1)^e	High sensitivity to logging, grazing, unnatural fire and other forestry activities. Low resilience to forestry activities.	75.3	6.5	81.8	<i>Threatened Species Conservation Act 1995; Environmental Planning and Assessment Act 1979; National Parks and Wildlife Act 1974; Environment Protection and Biodiversity Conservation Act 1999; Native Vegetation Conservation Act 1997.</i>	Regional ESFM Plan; SFNSW Native Forest Management System; NPWS Environmental Management System; Integrated Forestry Operations Approvals, Forest Management Zoning, and Management Plans.
Centres of Endemism – Flora and fauna (A.1)	Value is dependent on individual species response. Species sensitive to logging, grazing, and unnatural fire are at particular risk.	Flora 87.2 Fauna 89.0	2.2 1.9	89.4 90.9	<i>Threatened Species Conservation Act 1995; Environmental Planning and Assessment Act 1979; National Parks and Wildlife Act 1974; Environment Protection and Biodiversity Conservation Act 1999.</i>	Regional ESFM Plan; SFNSW Native Forest Management System; NPWS Environmental Management System; NSW Biodiversity Strategy; Integrated Forestry Operations Approvals, Forest Management Zoning, and Management Plans.
Primitive and Relictual Species (A.1)	High sensitivity to logging, grazing, unnatural fire and other forestry activities. Low resilience to forestry activities.	Flora 85.9 Fauna 83.2	2.7 3.5	88.6 86.7	<i>Threatened Species Conservation Act 1995; Environmental Planning and Assessment Act 1979; National Parks and Wildlife Act 1974; Environment Protection and Biodiversity Conservation Act 1999.</i>	Regional ESFM Plan; SFNSW Native Forest Management System; NPWS Environmental Management System; NSW Biodiversity Strategy; Integrated Forestry Operations Approvals, Forest Management Zoning, and Management Plans.
Species with Disjunct Ranges (A.1)	Sensitivity and resilience varies depending on the species and habitat required. Species sensitive to logging, grazing, and unnatural fire are at particular risk.	Flora 81.1 Fauna 84.0	2.8 3.5	83.9 87.5	<i>Threatened Species Conservation Act 1995; Environmental Planning and Assessment Act 1979; National Parks and Wildlife Act 1974; Environment Protection and Biodiversity Conservation Act 1999.</i>	Regional ESFM Plan; SFNSW Native Forest Management System; NPWS Environmental Management System; NSW Biodiversity Strategy; Integrated Forestry Operations Approvals, Forest Management Zoning, and Management Plans.
Rare, Uncommon or Threatened Species (B.1)	Sensitivity and resilience varies depending on the species and habitat required. Species sensitive to logging, grazing, and unnatural fire are at particular risk.	Flora 85.2 Fauna 84.6	2.6 2.8	87.8 87.4	<i>Threatened Species Conservation Act 1995; Environmental Planning and Assessment Act 1979; National Parks and Wildlife Act 1974; Environment Protection and Biodiversity Conservation Act 1999.</i>	Regional ESFM Plan; SFNSW Native Forest Management System; NPWS Environmental Management System; NSW Biodiversity Strategy; Integrated Forestry Operations Approvals, Forest Management Zoning, and Management Plans.

National Estate values	Sensitivity ^a and resilience ^b to forestry activities covered by the RFA	Percentage of value on Public Land in reserves			Existing off-reserve protection mechanisms	Additional agreed actions under the Southern RFA
		Dedicated Reserve	Informal Reserve	Total		
Important Habitat (A.2) Migratory Species	Sensitivity and resilience varies depending on the species and habitat required. Species sensitive to logging, grazing and unnatural fire are at particular risk.	78.3	4.0	82.3	<i>Threatened Species Conservation Act 1995, Environmental Planning and Assessment Act 1979, National Parks and Wildlife Act 1974, Environment Protection and Biodiversity Conservation Act 1999, Convention on Wetlands (RAMSAR), China-Australia Migratory Birds Agreement (CAMBA), and Japan-Australia Migratory Birds Agreement (JAMBA).</i>	Regional ESFM Plan; SFNSW Native Forest Management System; NPWS Environmental Management System; NSW Biodiversity Strategy; Integrated Forestry Operations Approvals, Forest Management Zoning; and Management Plans.
Remnant Vegetation (A.2)	High sensitivity to logging, grazing, fire and other forestry activities. Low resilience to forestry activities.	56.7	6.7	63.4	<i>Threatened Species Conservation Act 1995, Environmental Planning and Assessment Act 1979, National Parks and Wildlife Act 1974, Environment Protection and Biodiversity Conservation Act 1999, Native Vegetation Conservation Act 1997, Protection of the Environment Operations Act 1997.</i>	Regional ESFM Plan; SFNSW Native Forest Management System; NPWS Environmental Management System; Integrated Forestry Operations Approvals, Forest Management Zoning, and Management Plans.
Species Richness (A.3)	High sensitivity to logging, grazing, unnatural fire and other forestry activities. Medium resilience to forestry activities.	Flora 85.2 Fauna 83.7	2.9 2.7	88.1 86.4	<i>Environmental Planning and Assessment Act 1979.</i>	Regional ESFM Plan; SFNSW Native Forest Management System; NPWS Environmental Management System; NSW Biodiversity Strategy; Integrated Forestry Operations Approvals, Forest Management Zoning, and Management Plans.
Species at the Limits of their Distribution Range (A.1)	Value is dependent on individual species response. Species sensitive to logging, grazing, and unnatural fire are at particular risk.	Flora 85.9 Fauna 82.5	2.4 3.1	88.3 85.6	<i>Threatened Species Conservation Act 1995, Environmental Planning and Assessment Act 1979, National Parks and Wildlife Act 1974, Environment Protection and Biodiversity Conservation Act 1999.</i>	Regional ESFM Plan; SFNSW Native Forest Management System; NPWS Environmental Management System; NSW Biodiversity Strategy; Integrated Forestry Operations Approvals, Forest Management Zoning, and Management Plans.
Historic Value (A.3, A.4, B 2, C.2, D.2, F.1, & H.1)	Sensitive to moderately sensitive dependent on the integrity of the site and extant fabric.	54.8	39.7	94.5	<i>Heritage Act 1977, National Parks and Wildlife Act 1974, Environmental Planning and Assessment Act 1979; Protective Mechanisms for Cultural Heritage—Southern Region; Forest Management Zones, Codes of Practice, and Forest Management Plans.</i>	Regional ESFM Plan; SFNSW Native Forest Management System; Joint NPWS/SFNSW Regional Recreation and Tourism Plans; NPWS Environmental Management System; Cultural Heritage Guidelines to be attached to the Integrated Forestry Operations Approvals.
Social / Community Heritage Value (G.1)	Sensitive to moderately sensitive dependent on nature of association.	88.3	3.3	91.6	<i>Heritage Act 1977, National Parks and Wildlife Act 1974; Protective Mechanisms for Cultural Heritage—Southern Region; Forest Management Zones, Codes of Practice, and Forest Management Plans.</i>	Regional ESFM Plan; Joint NPWS/SFNSW Regional Recreation and Tourism; NPWS Environmental Management System; Cultural Heritage Guidelines to be attached to the Integrated Forestry Operations Approvals.

National Estate values	Sensitivity ^a and resilience ^b to forestry activities covered by the RFA	Percentage of value on Public Land in reserves			Existing off-reserve protection mechanisms	Additional agreed actions under the Southern RFA
		Dedicated Reserve	Informal Reserve	Total		
Aesthetic Value (E.1)	Moderately sensitive dependent on the nature of the aesthetic experience and the type of feature.	43.8	7.7	51.5	<i>Heritage Act 1977;</i> <i>National Parks and Wildlife Act 1974;</i> <i>Protective Mechanisms for Cultural Heritage—Southern Region;</i> <i>Forest Management Zones, Codes of Practice, and Forest Management Plans.</i>	Regional ESFM Plan; SFNSW Native Forest Management System; Joint NPWS/SFNSW Regional Recreation and Tourism Plans; NPWS Environmental Management System. Cultural Heritage Guidelines to be attached to the Integrated Forestry Operations Approvals.
Research, Type Localities, Teaching and Benchmark Sites (C.1)	Sensitivity and resilience varies depending on the species and habitat required. Sites sensitive to logging, grazing, and unnatural fire are at particular risk.	92.5	0.0	92.5	<i>Threatened Species Conservation Act 1995;</i> <i>Crown Lands Act 1989;</i> <i>Heritage Act 1977;</i> <i>Environmental Planning and Assessment Act 1979;</i> <i>Native Vegetation Conservation Act 1997;</i> <i>Protection of the Environment Operations Act 1997.</i>	Regional ESFM Plan; SFNSW Native Forest Management System; NPWS Environmental Management System.
Geoconservation Values (A.1, A.2, A.3, B.1, C.1, C.2, D.1, H.1)	Values are generally not sensitive to most forest uses, however some surface values are sensitive to soil disturbance and fire.	82.7	7.6	90.3	<i>Crown Lands Act (1989);</i> <i>Heritage Act 1977;</i> <i>Environmental Planning and Assessment Act 1979;</i> <i>Native Vegetation Conservation Act 1997;</i> <i>Protection of the Environment Operations Act 1997.</i>	Regional ESFM Plan.

NOTES ACCOMPANYING TABLE 1

^aSensitivity—to disturbance, relates to extent of loss or diminution in a value due to the effects of disturbance.

^bResilience—relates to the extent of likely recovery of a diminished value, and to the time and management effort required to achieve this recovery.

^cJANIS values for which there were specific numerical targets.

^dCriteria in plain type-face are values which were assessed indirectly as part of the assessment of the criteria in bold type-face.

ATTACHMENT 5 NOT USED
(clause 37)

MILESTONES

clause	Action	Timeline
6	The Parties to determine the process for extending the Agreement for a further period.	As part of the third five-yearly review
0	NSW will have in place a Forest Agreement covering the Southern region and grant an Integrated Forestry Operations Approval applying to the Southern region.	By 30 June 2001
37	Parties to report annually on the achievement of milestones in this Agreement.	Annually for the first five years
40	The Parties to determine the mechanism for the five-year review.	Before the end of the five-year review period
41	Commonwealth will table the signed RFA in the Commonwealth Parliament.	Following signature
41	Commonwealth will table in the Commonwealth Parliament the annual reports of achievement of milestones for the first four years.	Annually
41	Commonwealth will table in the Commonwealth Parliament the first five yearly review on performance against milestones and commitments.	Following first five yearly review
47(e)	New South Wales to complete and publish plans of management for areas dedicated under the <i>National Parks and Wildlife Act 1974</i> (NSW).	By 31 January 2006
47(d)	New South Wales to complete and publish Regional ESFM Plans for State forests.	By 31 December 2001
47(e)	New South Wales to implement the Forest Management Zoning system for the Southern region.	By 31 December 2001
47(g)	New South Wales to implement the review and monitoring processes and develop the strategic and operational requirements of Sustainable Yield systems and processes to enable a review of Sustainable Yield.	By 1 December 2006.
47(h)	New South Wales to develop and implement environmental management systems.	By 30 April 2004
50	NSW to report on compliance of the Integrated Forestry Operations Approval applying to the Southern region and furnish the Commonwealth with a copy of these reports.	Annually

clause	Action	Timeline
52(d)	Both Parties to further develop, review, and if necessary revise Sustainability Indicators.	In time for the first five yearly review
56	New South Wales to produce a code of practice for Timber Harvesting of native forest on Private Lands.	By the first five-yearly review
57	NSW to complete Code of Practice for Plantations on Private Land.	By 30 June 2001
98	New South Wales to establish a Research Liaison Committee and publish a list of research priorities.	By 30 September 2001
100	New South Wales to prepare a Compendium of New South Wales Forest Research.	By the first five-yearly review
103	New South Wales and the Commonwealth to lodge archival copies of data.	By 30 June 2001
Att 1 Point 4	NSW to prepare Plans of Management for Crown Reserves.	By 31 January 2006
Att 1 Point 5	NSW will finalise boundaries of CAR reserve with the exception of the Forest Management Zoning System.	By 30 June 2001
Att 1 Point 5	NSW will finalise the Forest Management Zoning System.	By 31 December 2001
Att 1 Point 8	New South Wales to establish all Dedicated Reserve components of the CAR Reserve System.	By 30 June 2001
Att 1 Point 8	New South Wales to establish all Informal Reserve components of the CAR Reserve System.	By 31 December 2001
Att 3 point 4	NSW will complete the Threat Abatement Plan for the European Red Fox.	By 31 December 2001
Att 3 Table 1	New South Wales to develop Recovery Plans for species listed in Table 1.	Within five years of signing
Att 4 point 14	NSW will identify and assess cultural heritage values in areas excluded from CRA assessments.	By 31 December 2001
Att 6 Point 1(o)	New South Wales to publish a State of Parks report.	By 31 August 2001
Att 6 Point 2(b)	NSW will publish Eco Field Guides for Southern region.	By 31 December 2001
Att 6 Point 2(c)	New South Wales to document the basis for silvicultural practices and publish the <i>Native Forest Silviculture Manual</i> (SFNSW).	By 31 March 2001

clause	Action	Timeline
Att 6 Point 2(d)	New South Wales to document and publish a description of the NSW Forest Management System covering Public and Private Lands.	In time for the first five yearly review
Att 6 Point 2(e)	New South Wales to publish a description of the methods and results of calculating Sustainable Yield on Public Land.	By 1 December 2006
Att 6 Point 2(e)	New South Wales to publish independent audits of Sustainable Yield as outlined in Attachment 8.	For the second and subsequent five yearly reviews
Att 6 Point 2(f)	NSW will produce annual reports of progress for meeting targets in regional ESFM plans.	Annually
Att 6 Point 2(g)	NSW will report on the Forest Agreement covering the Southern region and on compliance with the IFOA applying to the Southern region	Annually
Att 6 Point 2(h)	New South Wales to table in each House of Parliament an annual report on the New South Wales <i>Southern Region Forest Agreement</i> in accordance with the <i>Forestry and National Park Estate Act 1998 (NSW)</i> which will include an ESFM report and the outcomes of compliance with any Integrated Forestry Operations Approval for the regions.	Annually
Att 8 Point 2(b)	NSW NPWS will develop an Environmental Management System for lands dedicated under the NPWS Act 1974.	By 30 April 2004
Att 8 Point 2(c)	SFNSW develop a native Forest Management System as an Environmental Management System.	By 30 April 2001
Att 8 Point 2(l)	New South Wales to incorporate provisions that address in an integrated fashion bush and other fires within Regional ESFM Plans and plans of management for areas dedicated under the <i>National Parks and Wildlife Act 1974 (NSW)</i>.	By the first five-yearly review
Att 8 Point 2(m)	New South Wales to incorporate within the Regional ESFM Plans and Plans of Management under the NPWS Act 1974 integrated feral animal and weed control programs.	By the first five-yearly review.
Att 8 Point 2(n)	New South Wales to establish a process, including public reporting, for regular audits of compliance and reviews of Codes of Practice, Eco Field Guides and Regional Prescriptions.	By 31 December 2002

clause	Action	Timeline
Att 8 Point 2(n)	New South Wales to undertake audits as described above.	By the first and subsequent five-yearly reviews of the Agreement
Att 8 Point 5	SFNSW will publish all FRAMES CRA reports for the Southern region.	By 30 September 2001
Att 8 Point 6(b)	NSW will develop a model to predict recruitment and maintenance of habitat trees.	By end 2010
Att 8 Point 6(d)	Report production of all timber products.	Annually
Att 8 Point 6(e)	Undertake additional FRAMES plot inventory measurements.	By the first five yearly review.
Att 8 Point 6(f)	Monitor FRAMES performance through comparison of actual versus predicted volumes.	Annually
Att 8 Point 7	NSW will establish and implement an ongoing FRAMES development program.	By 1 December 2006
Att 8 Point 8	NSW Agrees to Commission and publish an independent review of the enhanced FRAMES systems and processes applying to both the South Coast and Tumut sub regions.	By 1 December 2006
Att 11 Point 7	NSW will have long term wood supply contracts in place for South Coast and Tumut.	By 1 January 2001 and 1 January 2002 respectively

~~The milestones in this Attachment should be read in conjunction with the relevant clauses in the Agreement.~~

ATTACHMENT 6-NOT USED
(clauses 47 and 49)

PUBLIC REPORTING AND CONSULTATIVE MECHANISMS

Existing Commitments

- ~~1 The following processes currently include public reporting and consultative mechanisms relevant to forest management in the Southern region:~~
- ~~(a) preparation and amendment of Forest Agreements under the *Forestry and National Park Estate Act 1998* (NSW);~~
 - ~~(b) preparation and amendment of Regional ESFM Plans under the *Forestry Regulation 1999* (NSW) under the *Forestry Act 1916* (NSW);~~
 - ~~(c) preparation and amendment of plans of management under the *National Parks and Wildlife Act 1974* (NSW);~~
 - ~~(d) preparation and amendment of Integrated Forestry Operations Approvals under the *Forestry and National Park Estate Act 1998* (NSW);~~
 - ~~(e) preparation and review of Codes of Practice;~~
 - ~~(f) preparation, amendment and review of District Bushfire Management Committee plan of operations and Bush Fire Risk Management Plans (*Rural Fires Act 1997* (NSW));~~
 - ~~(g) activities associated with the implementation of the *Threatened Species Conservation Act 1995* (NSW);~~
 - ~~(h) public exhibition of identified wilderness and areas proposed for declaration under the *Wilderness Act 1987* (NSW);~~
 - ~~(i) nomination, preparation and possible contraventions of Recovery Plans and Threat Abatement Plans prepared under the *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth);~~
 - ~~(j) listing of places on the Register of the National Estate under the *Australian Heritage Commission Act 1975* (Cwlth);~~
 - ~~(k) publication of State of the Environment reports including reporting against performance measures, Sustainability Indicators, audits, public participation, research and reviews;~~
 - ~~(l) consultation with the Aboriginal community in relation to Aboriginal cultural heritage information;~~

- ~~(m) Catchment Management Boards;~~
- ~~(n) production of annual Environmental and Social Values Report at a statewide level on the progress and performance of State Forests of NSW in accordance with New South Wales *Forest Agreements* and the *Forestry and National Park Estate Act 1998* (NSW);~~
- ~~(o) publishing a New South Wales State of Parks report by 31 August 2001.~~

Additional reporting and consultative mechanisms

- 2 Additional reporting and consultative mechanisms to be implemented by the State include:
 - ~~(a) development of public participation mechanisms through the introduction of new partnerships (for example, the International Model Forest Network);~~
 - ~~(b) Publish Eco Field Guides for the Southern region by 31 December 2001;~~
 - ~~(c) Document the basis for silvicultural practices and publish the *Native Forest Silviculture Manual* (SFNSW) by the 31 March 2001.~~
 - ~~(d) documenting and publishing a description of the New South Wales Forest Management System covering Public and Private Lands in time for the first five yearly review.~~
 - ~~(e) publishing by 1 December 2006 a description of the methods and results of calculating Sustainable Yield on Public Land, and publishing in time for subsequent five yearly reviews independent audits of Sustainable Yield, as outlined in Attachment 8.~~
 - ~~(f) production of annual ESFM Reports on progress for meeting targets in Regional ESFM Plans and reporting on criteria, indicators and targets for the Southern region in accordance with clause 49 and the New South Wales Forest Agreements under the *Forestry and National Park Estate Act 1998* (NSW).~~
 - ~~(g) production of an annual report for the Forest Agreement covering the Southern region with respect to Ecologically Sustainable Forest Management in the region, and compliance with any Integrated Forestry Operations Approval applying to the region. As required by the *Forestry and National Park Estate Act 1998* (NSW).~~
 - ~~(h) from 2001 the New South Wales government will table in each House of Parliament an annual report on its Forest Agreement covering the Southern region which will include an ESFM report and the outcomes of compliance with any Integrated Forestry Operations Approval applying to the region.~~

RESEARCH PRIORITIES

- 1 The Parties agree to hold annual discussions on research themes, coordination and potential future directions.
 - 2 New South Wales will prepare for each five-yearly review, a compendium of New South Wales Forest research that will provide a bibliography of research in progress, as well as published and unpublished works.
 - 3 Research priorities for this Agreement will be updated in each five-yearly Progress Report and discussed at annual meetings.
 - 4 The Parties agree to include a summary of forest related research in each five-yearly Progress Report and include an update on current research themes.
 - 5 Current research themes include:
 - Forest ecology and sustainability, including flora, fauna, soil and water conservation;
 - Forest health and biosecurity;
 - Forest Products innovation and value adding;
 - Forest resource assessment and security;
 - Forest carbon, bioenergy and biofuels;
 - Climate change impacts and adaptive management;
 - Effectiveness of management prescriptions;
 - Socio-economic values of forest based industries;
 - Cultural values and cultural use;
 - Fire ecology;
 - Long-term water quality and quantity impacts associated with forestry operations; and
 - Matters of National Environmental Significance.
- ~~1 The major priority of future research in New South Wales will be an understanding of environmental impacts and the development of appropriate mechanisms to monitor and continually improve the sustainability of forest management practices. Accordingly, statewide research will continue on the following themes:~~

- ~~(a) silviculture;~~
- ~~(b) flora and fauna conservation;~~
- ~~(c) soil and water conservation;~~
- ~~(d) fire ecology;~~
- ~~(e) stem defect and wood quality in regrowth forests;~~
- ~~(f) climate change;~~
- ~~(g) biological inventory;~~
- ~~(h) value added end use;~~
- ~~(i) Sustainability Indicators; and~~
- ~~(j) Aboriginal and non-Aboriginal heritage.~~

CONTINUAL IMPROVEMENTS TO OF THE NEW SOUTH WALES' FOREST MANAGEMENT FRAMEWORK SYSTEMS

Systems covering public and private land

1. The Parties note that the terms of an Integrated Forestry Operations Approval will have primacy over other elements of the ~~SFNSW Native Forestry Corporation of NSW Hardwood Forest Management System~~. The Parties recognise that the ~~SFNSW Native Forestry Corporation of NSW Hardwood Forest Management System~~ (including ~~Codes of Practice, Eco-Field Guides, the Regional ESFM Plan, the order of works plan, the plan of operations, and harvesting plans~~), will be the mechanism for implementing the terms of the Integrated Forestry Operations Approval on State forest.
2. New South Wales will ~~further~~ implement, adapt and improve its Forest Management ~~Framework System~~ across forest management agencies and land tenures by:
 - (a) ~~NOT USED—developing consistent with this Agreement, a Regional ESFM Plan, a New South Wales Southern Region Forest Agreement, and an Integrated Forestry Operation Approval. They will collectively:~~
 - ~~• specify and describe the range of values and processes to be managed, including objectives and targets of management;~~
 - ~~• describe the links to Codes of Practice, Eco Field Guides and associated silvicultural prescriptions;~~
 - ~~• specify the wood supply commitments and their relationship to Sustainable Yield;~~
 - ~~• outline ongoing arrangements for monitoring activities specified in the ESFM plan and reporting against plan objectives and targets;~~
 - ~~• describe processes for regular reviews of the ESFM plans involving public consultation.~~
 - (b) NSW National Parks and Wildlife Service ~~developing~~ maintaining an ~~Environmental Management System~~ environmental management system (EMS) or equivalent management system demonstrating ESFM, ~~by 30 April 2004~~, for lands dedicated under the *National Parks and Wildlife Act 1974* (NSW) consistent with the following broad principles:
 - an appropriate environmental policy should be in place;
 - the environmental aspects arising from the organisation's past, existing or planned activities, products or services should be identified to determine the environmental impacts of significance;
 - relevant legislative and regulatory arrangements should be identified;

- priorities should be identified and appropriate environmental objectives and targets set;
 - a structure and program(s) to implement the policy and achieve objectives and targets should be established;
 - planning, monitoring, corrective action, auditing and review activities should be facilitated to ensure both that the policy is complied with and that the ~~environmental management system~~ EMS or equivalent management system remains appropriate;
 - the system should be capable of adapting to changing circumstances-
- (c) ~~State Forests of NSW developing, by 30 April 2001 a Native Forest Management System as an EMS, to a standard which would allow certification of the system under the ISO 14000 series. Forestry Corporation of NSW maintaining a Forestry Corporation of NSW Hardwood Forest Management System as an EMS and maintaining EMS certification under ISO14001 or a demonstrated equivalent environmental management system.~~
- (d) ~~Implementing the New South Wales Biodiversity Strategy, taking into account the issues raised during its public consultation phase or any subsequent biodiversity strategy which complements ESFM.~~
- (e) ~~Establishing Regional Vegetation Management Plans~~ Implementing a native vegetation regulatory map and regulatory framework under the *Local Land Services Act 2013* (NSW) which are coordinated together with other management plans, documents, and which allow for specific activities to occur under Codes of Practice that comply with Regulatory Instruments.
- (f) Improving the coordination and effective use of resources allocated to research for ESFM in New South Wales ~~consistent with clause 99.~~
- (g) Providing ongoing formal public participation processes to raise awareness and understanding of ESFM and how it can be achieved in New South Wales forests ~~through Attachment 6.~~
- (h) ~~Developing and implementing an~~ Implementing information management systems to facilitate the sharing of data for the use by all agencies, including local government, involved in the management of forested land.
- (i) Improving the cooperation and coordination between NSW Government agencies so as to achieve integrated management for conservation, wood production, and other values in Forests on both Public Land and Private Land both public and private forests.
- (j) Developing and implementing a ~~public education~~ community awareness programs to deal with ecologically sustainable management issues build understanding of ESFM and clearly relate these to management requirements for conservation and to the ~~codes of forest practice~~ Regulatory Instruments governing activities in both public and private forests.

- (j) A Improving administrative arrangements to ensure Ecologically Sustainable Forest Management on private forests including providing technical advice, extension services and research including assistance in the estimation of Sustainable Yield.
- (k) Maintaining and enhancing competency based training for field staff and forest operators staff or contractors undertaking Forestry Operations in flora and fauna identification and management, heritage management, soil and water protection, silvicultural training, inventory and management information systems, and Aboriginal cultural awareness and Aboriginal site identification and product segregation.
- (l) Incorporating, by the first five yearly review, within Regional ESFM Plans and plans of management under the *National Parks and Wildlife Act 1974* (NSW), provisions that address in an integrated fashion bush and other fires to ensure ecologically sustainable management of the forest estate. These plans will be consistent with the NSW Biodiversity Strategy and any Bush Fire Risk Management Plans. Integrating bush fire management, including hazard reduction burning activities, across tenure via co-ordinated Bush Fire Management Plans under the *Rural Fires Act 1997* (NSW).
- (m) Incorporating, by the first five yearly review, within Regional ESFM Plans and plans of management under the *National Parks and Wildlife Act 1974* (NSW), integrated feral animal and weed control programs. Integrating pest animal and weed control activities across tenure via Regional Strategic Pest Animal Management Plans and Regional Strategic Weed Management Plans, which have been developed to support regional implementation of the *Biosecurity Act 2015* (NSW) and NSW Biosecurity Strategy.
- (n) Establishing a process, including public reporting, for regular audits of compliance and reviews of Codes of Practice, Eco Field Guides and Regional Prescriptions by 31 December 2002 and undertake audits at first and subsequent five yearly reviews of the Agreement. This process is to be included in any environmental management system, including the SFNSW Native Forest Management System; Maintaining an Integrated Forestry Operations Approval under the *Forestry Act 2012* (NSW) applicable to the Southern region, noting that the Integrated Forestry Operations Approval will include the following:
- terms under which Forestry Operations may legally occur;
 - conservation for environment values to levels of achievement consistent with Attachments 1 and 3;
 - measures for biodiversity conservation, soil and water protection and threatened fish protection;
 - linkages to prescribed fire management arrangements; and

- (o) measures for the recording and collection of data to inform adaptive management and continual improvement of the Integrated Forestry Operations Approval.
- (p) Identifying areas in the Southern region for illustrating silvicultural practices and the suite of silvicultural regimes for use in field supervisor training and public education; and The Parties note that procedures for reviewing Integrated Forestry Operations Approvals are set out in the *Forestry Act 2012* (NSW).
- (q) The *Native Forest Silviculture Manual* (SFNSW) to be published by 31 March 2001 will outline the scientific basis for site specific silvicultural regimes and the silvicultural decisions and guidelines to where such regimes are to be applied. Parties note that a peer review process will form part of the public consultation process as identified in Attachment 6. Maintaining a Regional ESFM Plan or equivalent instrument which includes the ESFM strategy for the Southern region consistent with any Integrated Forestry Operation Approval applicable the Southern region, and statutory requirements, and including:
- Specification and description of the range of values and processes to be managed, including objectives and targets of management;
 - Descriptions of and links to Regulatory Instruments, standard operating procedures and guides or manuals;
 - Determination of Sustainable Yield;
 - Ongoing arrangements for monitoring activities specified in the plan and reporting against plan objectives and targets;
 - Process for regular reviews of the plan involving public consultation.

Systems on private land

3. ~~The State will improve administrative arrangements and cooperation and coordination by State agencies to facilitate the timber industry utilising private forest resources, including:~~
- ~~Arrangements to ensure Ecologically Sustainable Forest Management on private forests involving provision of technical advice, extension services, research and assistance in the estimation of Sustainable Yield.~~
 - ~~As a means of encouraging private forestry development, consistent with clause 45, the State will develop a regulatory framework that enables a more efficient and integrated approval process to allow for effective private forestry development.~~
 - ~~Codes of Practice for private native forests and private Plantations will be in place within five years and by 30 June 2001 respectively in accordance with clauses 56 and 57. The State will also provide advice regarding marketing and pricing.~~

- ~~NSW will ensure that under the *Native Vegetation Conservation Act 1997* (NSW) and consistent with clause 55 of this Agreement, regional vegetation management plans covering Private Lands form a basis for strategic regional planning of private native forestry. With appropriate public involvement, and consistent with the *Native Vegetation Conservation Act 1997* (NSW) the Regional Vegetation Management Committees will pursue planning policies that provide for appropriate long term, secure, management provisions for private native forests. The management plans should provide for harvesting for commercial wood production to be an “as of right” use where appropriate and subject to relevant Codes and Ecologically Sustainable Forest Management consideration.~~
 - ~~NSW will ensure that an integrated Code of Practice is developed for plantation activities across all tenures, under the *Plantations and Reafforestation Act 1999* (NSW) and that the environmental standards in the objects of this Act and its linkage with the *Native Vegetation Conservation Act 1997* (NSW) are maintained. Plantation establishment and reafforestation projects are authorised by the NSW Department for Land and Water Conservation (DLWC). Applications to establish a plantation that comply with the Code of Practice will be given approval by DLWC within 14 days. Existing Plantations can also continue to obtain certainty for the purposes of harvesting as per the *Timber Plantations (Harvest Guarantee) Act 1995* (NSW), and similar provisions included in the *Plantations and Reafforestation Act 1999* (NSW).~~
4. ~~Parties agree that a private forest inventory of southern NSW to determine the basis of yield of wood products from Private Land is required. Parties will use their best endeavours to promote an inventory of private forests, with the agreement of forest owner groups,~~

Development program for FRAMES

5. ~~SFNSW will publish all FRAMES CRA reports for the Southern region by 30 September 2001~~
6. ~~Consistent with the development of a statewide FRAMES system NSW agrees to:~~
- (a) ~~Continue to develop a suite of computational tools to help manage NSW forests at operational scales for a range of values including wood yield, growth stage, water quality and quantity, natural and cultural heritage and wildlife habitat.~~
 - (b) ~~Develop by the end of 2010, a model to predict recruitment and maintenance of habitat trees over time.~~
 - (c) ~~Determine, based on review, field based sampling and principles of sustainability, the range of silvicultural regimes and prescriptions that can be appropriately applied to each strata or forest type.~~
 - ~~Subject to clause 2(p), Parties agree that, site specific silvicultural regimes of light, medium and heavy Group Selection, and light, medium and heavy Single Tree Selection, and thinning, or combinations of these are appropriate to apply in the Southern region; and~~

- ~~Parties agree that, the FRAMES models will reflect these site specific silvicultural regimes.~~
- (d) ~~Report the annual production of all timber products.~~
- (e) ~~Undertake within the first five year period, additional inventory plot measurement consistent with FRAMES principles to improve the accuracy of volume estimates at the regional level.~~
- (f) ~~Monitor FRAMES performance through comparison of actual versus predicted volumes annually.~~
- (g) ~~Map, monitor and report on measures associated with silviculture that are carried out through clause 86 and the effect on Sustainable Yield.~~
7. ~~New South Wales will consult with the Commonwealth in the establishment of an ongoing FRAMES development program for the Southern region. It is expected that this program will be implemented by 1 December 2006 and will include the following elements:~~
- ~~improved inventory base and modifier models;~~
 - ~~review of the number and coverage of permanent growth plots to ensure they cover an appropriate range of sites, strata and silvicultural systems;~~
 - ~~improvement of biometric and quality progression models so as to increase confidence in yield projections;~~
 - ~~continued permanent growth plot measurement to update growth, mortality and recruitment models and development of new models to reflect changing silviculture (including thinning);~~
 - ~~development and implementation of a Native Forest Management Information System (MIS) that addresses silvicultural and harvesting planning and progressively improves estimates of net harvestable area, management history, silvicultural requirements of stands and operational feasibility. The system should also inform monitoring and reporting against Sustainability Indicators consistent with clause 48 of this Agreement to provide a basis for continual improvement in sustainable management of forest values;~~
 - ~~testing of simulation models against independent data sets and undertake sensitivity analysis to help inform error limits of Sustainable Yield;~~
 - ~~refinement of the FRAMES simulator and scheduler so that it selects and reports a range of silvicultural prescriptions and yield tables within strata, that reflect operational practices;~~
 - ~~development of a mechanism within FRAMES to report prediction on area harvested, residual stand characteristics, and silviculture and harvesting regimes;~~
 - ~~implementation of a process to take into account the risks of fire, differing regulatory arrangements and other potential impacts on Sustainable Yield;~~
 - ~~documentation of systems, processes, models and databases used in the calculation of Sustainable Yield;~~

- ~~processes for appropriate internal reviews and audits of Sustainable Yield as part of the SFNSW Native Forest Management System; and~~
- ~~monitoring, by SFNSW, of actual quality versus predicted quality of product removed over time.~~

Review and audits of Sustainable Yield on public land

8. ~~NSW agrees to the following:~~

- ~~commission and publish an independent review of the enhanced systems and process, models, information base, and assumptions which contribute to the FRAMES system applying to both the South Coast and Tumut sub regions of the Southern region by 1 December 2006;~~
- ~~undertake a review of Sustainable Yield every five years using enhanced FRAMES systems and information bases. The results of which will inform the annual volume which may be harvested from Southern region (or sub region) being mindful of achieving long term Sustainable Yield and optimising sustainable use objectives consistent with this Agreement; and~~
- ~~undertake independent audits of Sustainable Yield to be completed and published in time for each subsequent five yearly review.~~

**MONTREAL PROCESS CRITERIA FOR THE CONSERVATION AND
SUSTAINABLE MANAGEMENT OF TEMPERATE AND BOREAL
FORESTS**

- Criterion 1: Conservation of biological diversity
- Ecosystem diversity
 - Species diversity
 - Genetic diversity
- Criterion 2: Maintenance of productive capacity of forest ecosystems
- Criterion 3: Maintenance of ecosystem health and vitality
- Criterion 4: Conservation and maintenance of soil and water resources
- Criterion 5: Maintenance of forest contribution to global carbon cycles
- Criterion 6: Maintenance and enhancement of long term multiple socio-economic benefits to meet the needs of societies
- Production and consumption
 - Recreation and tourism
 - Investment in the forest sector
 - Cultural, social and spiritual needs and values
 - Employment and community needs
- Criterion 7: Legal, institutional and economic framework for forest conservation and sustainable management

A framework for development of these criteria and indicators is described in the document, *A Framework of Regional (Sub-National) Level Criteria and Indicators of Sustainable Forest Management in Australia*, (Department of Primary Industries and Energy 1998) *Australia's Sustainable Forest Management Framework of Criteria and Indicators 2008-Policy Guidelines* (Commonwealth of Australia, 2008).

MANAGING LANDS OF SIGNIFICANCE TO ABORIGINAL PEOPLE

1 New South Wales agrees to continue to manage CAR Reserve System Reserves and State forest on ~~public land~~ Public Land with significance to Aboriginal people according to the following principles:

- ~~It is recognised by both the Commonwealth and State Government that the sum of the cultural heritage of the Aboriginal people of New South Wales is not confined to archaeological sites and artefacts but may include natural values such as flora, fauna and landforms.~~
- It is appreciated by both Parties that the Aboriginal people of NSW have a spiritual, social, cultural and economic relationship with their traditional lands and waters, sky, ceremonial and viewing corridors and songlines, including natural values such as flora, fauna and landforms.
- The Parties recognise that the cultural heritage of the Aboriginal peoples of NSW is a living cultural heritage, and intrinsic to their well-being.
- The Parties recognise that the cultural heritage of the Aboriginal peoples of NSW comprises both intangible elements (such as beliefs, knowledge and practices) and tangible elements (such as objects, landforms, and ancestral remains).
- The Parties recognise ~~are aware of~~ the aspirations Aboriginal people have in regards to ownership and/or management of traditional lands, and the rights of Aboriginal Land Councils under the *Aboriginal Land Rights Act 1983* (NSW) for certain Crown lands to be returned to Aboriginal peoples, and are committed to a working relationship with Aboriginal communities for co-operative management of Government managed lands as agreed which may include lands managed by NSW National Parks and Wildlife Service and State Forests of NSW.
- Both Parties appreciate that the *Native Title Act 1993* (Cth) provides opportunities for Aboriginal people to make application to the Federal Court for their native title rights to be determined and to negotiate Indigenous Land Use Agreements with the NSW Government for the management of public lands in their native title area.
- The Parties recognise the rights Aboriginal people have in regards to management of traditional lands, and are committed to a working relationship with Aboriginal communities for co-operative design of relevant strategies and policies and co-operative management of Government managed lands as agreed, which may include lands managed by NSW National Parks and Wildlife Service and the Forestry Corporation of NSW.

- An integral part of this commitment to co-operative management is the transmission of culture to provide opportunity ~~increase in opportunities~~ for local Aboriginal people to ~~gain valuable land management~~ access training and subsequent to gain employment, ~~where possible~~, to ensure that Aboriginal people can ~~continue to strategically manage~~ effectively participate in the management of their traditional country, ~~where that country includes Forests on Public Land.~~
 - The New South Wales Government has provided for Aboriginal people to own lands reserved under the *National Parks and Wildlife Act 1974* (NSW) that are of cultural significance to them through the *National Parks and Wildlife Amendment (Aboriginal Ownership) Act 1996* (NSW). Both Parties ~~appreciate~~ acknowledge that there are National Parks and reserves within the Southern region that may meet the terms of the ~~Act~~ *National Parks and Wildlife Act 1974* (NSW), and actively advocate the assessment of the Southern region for this purpose.
 - Both Parties support initiatives between Government agencies (both State and Local) and Aboriginal communities, that will both strategically manage and preserve New South Wales' rich cultural heritage, and ensure that ~~all development~~ the maintenance and enhancement of the CAR Reserve System ~~appropriately~~ considers Aboriginal interests and values.
 - The Parties will, with Aboriginal stakeholders, identify funding opportunities to support Aboriginal participation in forest management, in particular any Forest Estate areas identified as of special significance to Aboriginal people in the Southern region, for example Working on Country and Indigenous Protected Area programs.
 - Aboriginal parties will be invited to participate in any new partnership arrangement evolved out of this Agreement for the management of the CAR Reserves Reserve System.
 - The Parties recognise that ~~Aboriginal people may~~ Traditional Owners under the Native Title Act 1993 (Cth) have the ~~opportunity to obtain or maintain right to~~ access to and use certain Government managed lands for the purposes of cultural practice-recreational, as well as traditional values and uses, and ceremonial purposes, and that opportunities may exist for the commercial development of areas of cultural/economic significance. This includes access to Forest Products.
 - The NSW Government recognises that opportunities exist for Aboriginal people in the commercial development of areas of economic significance or in the commercial use of Forest Products, and agrees to respond to requests from the Aboriginal community to develop these opportunities, for example through existing training and mentoring programs.
- 2 The Parties agree to use best endeavours to meet and exceed government Aboriginal employment and procurement targets in the Southern RFA region, particularly in relation to public Forests and cultural heritage management.

SUSTAINABLE YIELD SYSTEMS AND PROCESSES

**EMPLOYMENT, INDUSTRY DEVELOPMENT AND CONSERVATION
MANAGEMENT**

- 1 The Parties agree that Sustainable Yield calculations and the method and processes used, are important in realising ESFM on the State forest and Crown-timber land estate.
- 2 The Parties agree that FRAMES provides a sound basis for volume allocations at the strategic level and will be used to estimate Sustainable Yield. Further information on FRAMES and its history and implementation can be found in the document *Forest Resource and Management Evaluation System (FRAMES) – A Report on its Development and Implementation to 30 June 2016* (FCNSW).
- 3 New South Wales will review and update Sustainable Yield calculations from State forest at least once every five-year review period, or more frequently on an as needs basis. Sustainable Yield calculations will be based on modelling with the goal of yielding the maximum non-declining yield of High Quality Logs over a minimum period of 100 years.
- 4 New South Wales will commission an independent audit of Sustainable Yield calculations at least once every five-yearly review period having regard to the elements in item 7.
- 5 New South Wales will make publicly available the independent audit of Sustainable Yield calculations by publication on the website of the relevant department or agency. Sustainable Yield calculations will address relevant Forest Products for the Southern region, which may include High Quality Logs, Low Quality Logs, Pulpwood and Other Wood Products.
- 6 Any changes in volume allocations to the timber and forest-based industries will be based on Sustainable Yield and be consistent with modelling using FRAMES or an equivalent system.
- 7 New South Wales will maintain a continual improvement program for FRAMES including the following elements:
 - Establishing processes for appropriate internal reviews and audits of Sustainable Yield as part of the Forestry Corporation of NSW Hardwood Forest Management System.
 - Document and review systems, processes, models and databases used in the calculation of Sustainable Yield specifically:
 - growth models and growth model inputs;
 - inventory plot currency and measurement;

- spatial inputs that determine the modelled net harvest area;
- silviculture, product recovery, yield tables and modelling assumptions to ensure that the modelled outputs reflect current practices and actual yields;
- resource risk management aspects and mitigations (e.g. changes to the model due to resource loss through fire, changes to legislation or Regulatory Instruments that alter access to the resource and invalidate current modelling assumptions, or other impacts associated with climate change); and
- monitor and publish a reconciliation of predicted versus actual Forest Products yields in the third and fifth years of every five-year period.

EMPLOYMENT, INDUSTRY DEVELOPMENT AND CONSERVATION MANAGEMENT

The Parties recognise the Regional Forest Agreement provides a more certain operating environment for forest based industry sectors and agree to facilitate timber industry development as a means of generating wealth and employment in the Southern region.

- 2 Both industry specific and macro economic government programs and measures, including those directed at ensuring an efficient and practical regulatory environment, will facilitate industry development in the Southern RFA region.
- 3 The Parties recognise that sustainable recreational use and conservation of the new reserves will require sustained investment in development and maintenance of visitor facilities/infrastructure to enhance visitor experiences and carry out conservation protection programs.

Wood and wood products industry

- 4 The Southern region's hardwood sawmilling sector's traditional activities related to the recovery of industrial and structural grade products. Industry is increasing its production of higher value products, particularly in the Tumut Sub Region.
- 5 Some firms have established long term customers for such products as specialist packaging applications and an increasing proportion of timber processed in the Region's two sub regions is being directed into non industrial or structural markets. However, in general, there remains significant potential for greater value adding of the timber resources processed.
- 6 As with other areas of NSW the sector has faced a reduction in its historic resource base, in terms of both the volume of timber and species mix. This, associated with a gradual shift to utilisation of a younger and faster grown resource, will present both opportunities and a requirement for change.
- 7 This Agreement delivers added security for resource access. Consistent with the commitments in this Agreement NSW agrees to provide 20 year wood supply agreements to operators utilising high quality large sawlogs. NSW agrees to prepare these agreements to take effect from 1 January 2001 for the South Coast Sub Region and as early as possible, but no later than 1 January 2002, for the Tumut Sub Region.

- 8 ~~In addition the State will provide greater security to non quota customers in recognition of the significance of this sector and its inter relationship to the supply of high quality large sawlogs.~~
- 9 ~~The Parties recognise that market signals should be the principal driver of new forest industry investment. However, in recognition of the structural adjustment the timber industry is experiencing, some direct government involvement is warranted.~~
- 10 ~~The joint Commonwealth State Forest Industry Structural Adjustment Package (FISAP) will be the primary vehicle for government assistance for eligible new investment proposals. A Memorandum of Understanding between the two governments will establish the basis for the operation of the program.~~

Forest Industry Structural Adjustment Package (FISAP)

- 11 ~~FISAP program funding is, subject to eligibility criteria being met, available for industry development in the hardwood sector, especially for those projects providing for higher value adding of the available resource. The FISAP program has evolved with the RFA process such that much more priority is now directed towards industry development projects. However, provision remains for assistance to industry employees and business owners adversely affected by the impact of government decisions directly related to the RFA process.~~
- 12 ~~FISAP industry development assistance funding supplements considerable investment on the part of applicants. The Parties are aware that industry participants in the Southern region have undertaken preliminary investment planning and that such planning will be progressed following the signing of this Agreement. There is one proposal for the establishment of a treatment plant as well as others for improvement to drying and dressing capabilities.~~
- 13 ~~In addition to the FISAP program both governments will seek to facilitate industry development and employment creation through the range of other government programs implemented under the respective jurisdictions.~~

NSW Hardwood Timber Industry Development Strategy

- 14 ~~Under the FISAP program the governments commissioned a study, *NSW Hardwood Timber Industry Development Strategy* (Fortech, February 2000), 'the strategy study' to establish an industry development strategy for the NSW native hardwood industry. The long term vision on which the strategy is based is centred around a sawmilling and further processing industry producing value added products and consisting of progressive and innovative operators that use the latest available technologies to achieve profitability in competitive markets. The study concluded this vision would be best achieved by maximising value adding, as well as utilisation, in modern high technology mills.~~
- 15 ~~One of the primary objectives for the study was to assist in determining funding priorities for the allocation of funds under the FISAP program.~~
- 16 ~~While the study had a statewide focus, the key findings can be applied to the Southern region. In terms of industry development opportunities, the study~~

concluded these could be achieved through targeting specialised product markets and drawing on the comparative advantages of the special strength, durability and appearance characteristics of NSW hardwoods. The domestic market is considered to offer the best market opportunities, while new export opportunities are also expected to arise for niche products.

- 17 The further development of dried, dressed and further processed products are held to offer the greatest potential for further development of the hardwood industry in NSW. Specialty markets cited include those for lintels, stair treads, flooring and specialty joinery. Although these products can utilise both quota and non quota logs, a stable quota dependent industry is essential for the development of these markets.
- 18 The study noted the greater need for this area of development was on the South Coast, with good progress being made in the north of the state. At the same time, the study acknowledged the relative lack of resource security for the Southern region was a consideration and that the RFA would provide a more stable investment climate.
- 19 Strong demand is expected to prevail for selected green sawn products, particularly large section material or products requiring high strength applications. The study noted such products are capable of being sold at margins greater than some dried and further processed products, particularly from specialist mills focused on higher quality logs.
- 20 Potential also exists in the South Coast sub-region for greater utilisation of logs for poles, piles and girders. While the study noted demand for these products had fallen over the past decade, there appears to be a swing back from substitute products for poles in particular. A CRA study, *Industry Initiatives Study – Southern Region* (SFNSW, BIS Shrapnel Forestry Group and Dames and Moore 2000) indicated that the area was well placed to serve the Sydney and Victorian pole markets, provided the spotted gum sourced from the sub-region is preservative treated.
- 21 For a range of reasons, including the scale of operations required and forecast market conditions, the industry initiatives study also concluded there appears to be limited scope for new investments in Medium Density Fibreboard, Oriented Strand Board or pulp or paper manufacturing. Bioenergy production was identified as having the best potential for investment in processing residues beyond existing woodchip export operations. However, its relative competitive disadvantage against traditional power sources was noted.
- 22 Further research and development in new technology and markets is also a clear requirement for the future development of the hardwood industry in NSW.
- 23 A key challenge for the processing industry is to value add logs that are essentially of lower average quality than those that have generally been available in the past. The Parties acknowledge both government and industry have a role to play in this adjustment process.

Value adding Criteria

- 24 Twenty year Wood Supply Agreements are the basis of supply for most premium

~~sawlogs available from State Forests of NSW. These agreements are structured to provide agreement holders with resource security with provision for extension of the term, subject to the agreement holders meeting value adding performance criteria.~~

- ~~25 An individual processor's value adding performance will be assessed on the basis of both quantitative and qualitative criteria.~~
- ~~26 The quantitative component of the assessment will be based on an adjusted financial value adding ratio, based on the value of processed timber and timber based products sold by the firm, and the value of logs and timber purchased as inputs. This 'ratio model' will not in itself determine the threshold score for an 'acceptable' level of value adding but will provide a comparative ranking of the value adding performance based on the ratios that are calculated.~~
- ~~27 The qualitative criteria include an assessment of the firm's performance in business planning; product development and innovation; utilisation of government assistance programs to enhance performance; investment in new plant and technology; market research and product promotion; waste and residue utilisation and training.~~
- ~~28 The 'ratio model' has been developed in consultation with industry and the NSW Minister for Forestry will make an assessment of the qualitative and quantitative criteria. Final determinations for extensions to Wood Supply Agreements will be made by the Minister prior to 31 December 2001.~~
- ~~29 As per clause 78 of this Agreement, the Wood Supply Agreements in clause 77 will incorporate requirements for improved efficiency and increased processing to increase the value of products produced by the holders of the agreements from the timber supplied under the agreements (commonly referred to as "value adding" requirements).~~

Softwood Industry

- ~~30 The softwood industry has a significant presence in the Southern region, based around substantial *Pinus* plantation resources in the Tumut sub region where it is estimated the industry employs some 1,300 people. While the existing industry across NSW is undergoing some rationalisation at present the Parties recognise that the softwood industry will continue to be a significant contributor to the economies of the Southern region.~~
- ~~31 The Visy Industries kraft pulpwood development at Tumut will increase the industry's presence in the region. Both Parties have agreed to measures to facilitate the establishment of the Visy Industries development at Tumut and its first stage is expected to be operational in the third quarter of 2001. Up to 400 people are expected to be employed during its construction phase and over 120 people directly on an ongoing basis.~~
- ~~32 A study undertaken as part of the CRA process, *Identification of Plantation Expansion Opportunities in New South Wales, Southern NSW CRA Region* (Bureau of Rural Sciences, State Forests of NSW and Australian Bureau of Resource and Agricultural Economics, 2000), indicates there is substantial cleared private land~~

economically suitable for expansion of the existing softwood industry within the Southern region (approximately 10,000 to 80,000 hectares in Tumut and 7,000 to 17,000 hectares in the South Coast sub-region).

- 33 ~~The Visy Industries development includes an agreement to establish a further 30,000 hectares of softwood plantations in the Tumut area.~~

Other Forest Based Industries

- 34 ~~The Parties recognise the forests of the Southern region sustain a range of forest-based industries, apart from hardwood harvesting and processing.~~

- 35 ~~The study, *Forestry Based Industry Development Opportunities – Southern CRA Region* (The Proteus Management Group Pty Ltd, December 1999) commissioned as part of the Comprehensive Regional Assessment process identified a range of development opportunities associated with other industries. These were broadly categorised as related to:~~

- ~~● timber resources, including residues, and processing;~~
- ~~● non timber forest produce;~~
- ~~● Aboriginal and Heritage Tourism and Education; and,~~
- ~~● forest based recreation.~~

- 36 ~~The study included an assessment of a range of potential opportunities identified by the consultants and stakeholders. Different ‘screens’, for example market factors, resource availability and employment generating capacity were applied to provide an indication of priorities for further assessment. Constraints were also identified.~~

- 37 ~~This information is available for the use of commercial interests and government agencies including regional development organisations.~~

Residue Utilisation

- 38 ~~A more recent study, *Alternative Uses for Hardwood Residues from the Southern NSW RFA Region* (URS Forestry, for the Department of Agriculture, Fisheries and Forestry, September 2000), focussed on market opportunities for hardwood residue resources in the Southern region. The study identified a range of uses for hardwood forest and sawmill residues.~~

- 39 ~~The study found that, in the short term, the woodchip export market offered higher prices than other markets considered in the study. However, the study noted the market pressures would constrain this market’s outlook in the medium to longer term.~~

- 40 ~~Among a range of other market opportunities identified, the study concluded the greatest scope for alternative uses of hardwood residues from the region lay in the establishment of new markets such as charcoal and activated carbon. These products would take advantage of the fibre characteristics of species not suited to pulp and paper manufacture. Another opportunity identified as having high potential for~~

residue utilisation is bioenergy, although the study concluded the relative cost of power from such facilities suggested this would be a medium term prospect. A biomass plant in association with the softwood industry in the Tumut sub-region could also be viable in the longer term.

Employment Initiatives

Employment in Aboriginal Heritage and Conservation Management

41 The NPWS will fund the employment of 91 positions for conservation and Aboriginal heritage management of the new Southern reserves. Four of these positions are identified as Aboriginal Cultural Heritage Officers.

Aboriginal Cultural Heritage Program

42 This project will fund assessment of Aboriginal cultural heritage on State forest in the Southern RFA region. Two cultural heritage officers employed by State Forests will foster a close working partnership between the Aboriginal community and the NSW Government's forestry program.

43 The cultural heritage officers' tasks will centre on identifying, assessing significance, and giving greater protection of sites. They will consult on protection mechanisms for these sites with Aboriginal communities and management agencies.

44 This project will also encourage increased participation of the local Aboriginal community in forest management decisions.

Funding level: \$150,000 per annum for 5 years

Funding source: NSW Consolidated Fund

Employment impact: 2 positions for 5 years

Management of Informal Reserves on State Forest Estate

45 An important component of the Regional Forest Agreement is the protection of conservation values within informal reserves established within the State forest estate. These areas are Forest Management Zoned 2 or 3A and are unavailable for timber harvesting.

46 Under the Forest Agreement and IFOA, management plans for these areas are required and rehabilitation works such as road closure, exclusion of grazing, weed control and additional feral animal control programs etc may be required. As these areas contribute to the CAR Reserve System it is important that appropriate active management occurs. The NSW government will provide the necessary funding for informal and prescriptive reserve management within the Southern RFA Region.

Funding level: \$350,000 per annum

Funding source: NSW Consolidated Fund

Employment impact: The equivalent of 3 positions full time.

Conservation Management Funding for National Parks and Wildlife Service

47 Recurrent funding for the management of additions to the National Parks estate as follows:

Year	Approved to date (\$'000)
2000/2001	5,003
2001/2002	9,860
2002/2003	9,145
2003/2004 and ongoing	9,145 ongoing
Total	33,183

Pest Management

48 During the CRA process, experts identified feral animal control as a key tool in the long term conservation of critical fauna species on both reserves and timber producing forested lands.

49 A State Forests of NSW project funds feral animal management on State forest in the Southern RFA Region.

50 Funding will assist feral animal control in three areas:

- improved ground baiting techniques;
- expansion of program to currently uncontrolled areas;
- research into the impacts of feral cats.

Funding level: \$70,000 per annum for 5 years

Funding source: NSW Consolidated Fund

Employment impact: 1 position for five years

51 The NPWS will implement a pest management planning, assessment and monitoring program

- A range of appropriate best practice methods will be used to control key vertebrate pests which impact on park neighbours and native species.
- Noxious weed programs will target species of economic and environmental significance. Similar to the vertebrate pest work, the weed control programs are aimed at meeting NPWS responsibilities to its neighbours and protecting biodiversity on park.

Fire Management Planning

- 52 ~~The NPWS will prepare reserve fire management plans which develop and implement programs that effectively monitor and protect biodiversity outcomes and plan for community protection.~~

Hazard Reduction & Asset Protection

- 53 ~~Fuel management programs will be undertaken across NPWS reserves in line with Risk Management Plans and Reserve Fire Management Plans. Fuel management programs will generally be carried out by the prescribed application of fire which often requires the use of helicopters (aerial ignition).~~

Fire Trail Maintenance

- 54 ~~This program of ongoing works will include the maintenance of drainage structures, surface grading, bridge repair and repair of creek crossings.~~

Silviculture Improvement Program

- 55 ~~This project aims to improve the medium and long term High Quality Large Log supply from State forests in the Southern RFA Region by using thinning and culling silvicultural techniques.~~

- 56 ~~The RFA modelled wood supply provides an even flow of High Quality Large Logs. Ensuring a supply of high quality large logs is an important factor in ensuring long term sustainability of all forest products from timber production forests. Silvicultural improvement is a valuable tool in ensuring the continuing supply of high quality large logs from Southern RFA forests by concentrating growth in the better quality trees in the forest and by ensuring successful regeneration following harvesting.~~

- 57 ~~A program of silvicultural improvement will restore productivity to degraded timber stands capable of improved sawlog growth, and release young, potentially merchantable trees otherwise inhibited by non merchantable overstore.~~

- 58 ~~State forest areas eligible for this treatment include:~~

- ~~• forest requiring a regeneration event by creation or extension of canopy gaps;
or~~
- ~~• areas of advanced forest regrowth requiring release from inhibiting over storey;
and~~
- ~~• having environmental attributes indicative of average, or better, forest productivity.~~

- 59 ~~Trained field crews will treat to varying degree about 20,000 hectares of State forest.~~

~~**Funding level:** A \$4m program averaging about \$670k per annum over 6 financial years.~~

~~**Funding source:** NSW Consolidated Fund \$1.5 m
NSW FISAP \$1.25 m
Commonwealth FISAP \$1.25 m~~

Employment impact: — 15.5 full time positions

Purchase of Private Property Program

60 This project increases the area of forest in the Southern RFA region from which sawlog yield can be accessed by purchasing private property or timber rights, both for standing timber and for the planting of new forest. This is a significant program in ensuring the long term sustainability of sawlog supply.

61 This program involves purchase of suitable properties, or the timber rights on them, for:

- existing native forest timber currently, or soon to be, of commercial size; and
- plantation establishment and joint venture schemes.

Funding level: — Land purchase — \$4.76m

— Plantation establishment — \$240k

Funding source: — NSW Consolidated Fund — \$5m

Employment impact: — Additional employment will be generated in plantation establishment and maintenance, site preparation and land management.

62 Funding has also been allocated from the NSW Government Environment Trust Fund for the voluntary purchase of private lands to:

- Assist towards meeting conservation targets not already met on the formal dedicated reserve system and improve the management boundaries of these reserves including the purchase of inholdings. **Funding level:** \$1.2 million.

Asset Maintenance

63 Bridge Maintenance

- Bridges that will be incorporated into the new NPWS parks are often of a low standard timber construction. Following engineering inspection many will require the replacement of major structural components.

64 Visitor facilities and infrastructure maintenance

- A range of visitor facilities have been transferred to NPWS management. Examples include lookouts, several high profile roadside rest areas, walking tracks and camping areas. Cyclical maintenance programs will be implemented to ensure facilities meet appropriate safety standards and to facilitate sustainable use.

Capital Works

65 Capital works programs will be implemented by the NPWS to enhance visitor experiences in the new national parks. Works will include — lookout and walking track construction, camping area development and interpretation facilities. Capital works funding for the management of additions to the National Parks estate as follows.

Year	Approved to date (\$'000)
2000/2001	795
2001/2002	625
2002/2003	895
2003/2004 and ongoing	290
Total	2,605

DATA AGREEMENT

Purpose

- ~~A This Data Agreement between the Commonwealth and New South Wales relates to the Data collected, developed for, and used in, the development, implementation and monitoring of the Regional Forest Agreements for New South Wales.~~
- ~~B This Data Agreement specifies access, ownership, custodianship, updating and archiving arrangements for the Data for all four RFA regions within New South Wales.~~
- ~~C Separate Schedules will be added to the Data Agreement following completion of each RFA. These Schedules, which address the Data specific to each RFA region, and which will be completed on the dates specified in clause 4.6, are as follows:~~
- ~~• Eden Region (Schedule 1);~~
 - ~~• Upper North East Region (Schedule 2);~~
 - ~~• Lower North East Region (Schedule 3), and~~
 - ~~• Southern Region (Schedule 4).~~

~~Schedules will identify the name, custodian, ownership and access including for reports and software.~~

1. Definitions and Interpretation

- ~~1.1 Unless otherwise stated to the contrary, the definitions contained in the Agreement will also apply to this Data Agreement.~~
- ~~1.2 A reference to a clause means a clause of this Data Agreement, unless specified to the contrary.~~
- ~~1.3 The following additional definitions will apply to this Data Agreement:~~

<i>Access Category:</i>	means a category of access for an item of Data as indicated in a Schedule. The Access Categories are Restricted Data, Licensed Data and Unrestricted Data.
<i>Archived Data:</i>	means all Data used to develop the Agreement, and which must be archived in accordance with clause 4.
<i>Assessment Data:</i>	means all Comprehensive Regional Assessment and integration project outputs and products including reports, required to complete the NSW Regional Forest Agreements (as determined by the Joint Steering Committee).
<i>Custodian:</i>	means a custodian of Data, or component of that Data, is an individual or organisation having the responsibility to ensure that the Data is collected, maintained and distributed according to this Data Agreement.

<i>Data:</i>	means all Source Data, Derived Data, Assessment Data, and models listed in the Schedules.
<i>Data Agreement</i>	means these clauses 1-9 (inclusive) and all Schedules.
<i>Data Archive:</i>	means a secure repository for Archived Data which meets the standards required by clause 4.
<i>Derived Data:</i>	includes Data which is obtained by analysis, modelling, aggregation or other complex manipulation of Data. A derived Data set can have either Source Data or other derived Data sets as inputs to its creation.
<i>Existing Data:</i>	means Data and/or Data sets that existed in either Commonwealth agencies or NSW State agencies prior to commencement of Comprehensive Regional Assessments or integration projects.
<i>Jointly Owned Data:</i>	means Data jointly funded by the Parties to inform the development of or implementation of these RFAs and identified as jointly owned in the Schedules.
<i>Licence:</i>	means a document which authorises the use of Data or a number of Data sets for specified purposes, and specifies any restrictions on the use of Data.
<i>Licensed Data:</i>	means Data designated in a Schedule as Licensed.
<i>Metadata:</i>	means information about Data or Data sets including descriptions or specifications of Source Data or derived information. Metadata are to be recorded in a standard format or as agreed documentation.
<i>New Data:</i>	Data that has been created after the signing of an RFA.
<i>Owner:</i>	the individual(s), organisation(s) or jurisdiction(s) that holds the intellectual property rights over a particular set of information or Data.
<i>Unrestricted Data:</i>	means Data designated in a Schedule as being Unrestricted.
<i>Restricted Data:</i>	means Data which is considered sensitive by an Owner and which is designated in a Schedule as being Restricted. Restricted Data includes any Data to which confidentiality and limitation on use conditions apply.
<i>RFA Purpose:</i>	includes purposes relating to updating, implementation, review, monitoring or reporting of RFAs and includes provision of advice to government Ministers in relation to RFAs, and fulfilling statutory requirements with respect to RFAs.
<i>Schedule:</i>	means a Schedule to this Data Agreement as amended from time to time.

~~*Singly Owned Data:* means Data which is identified as being singly owned in the Schedules to the Data Agreement and includes Data where the RFA process has funded only the enhancement of, or minor additions to, Existing Data.~~

~~*Source Data:* means Data which is not obtainable from other Data or derivable by combining other Data sets.~~

~~*Third Party Data:* means Data owned by a third party that was used for RFA Purposes and is identified in the Schedules to the Data Agreement as Third Party Data.~~

~~1. Schedules~~

~~The Parties agree that each Schedule, in respect of each item of Data listed there, includes:~~

- ~~(a) the title of the Data and/or identifier for the Data;~~
- ~~(b) the Owner;~~
- ~~(c) the Custodian;~~
- ~~(d) the Access Category; and~~
- ~~(e) the Ownership Type;~~

~~2. Ownership Types~~

~~2.1 Jointly Owned Data~~

~~2.1.1 Subject to this clause 2.1 and clause 3, and where confidentiality provisions do not apply, Jointly Owned Data may be used by either Party for any purpose.~~

~~2.1.2 Where confidentiality obligations limit access to or use of Jointly Owned Data, Parties must comply with those confidentiality obligations. Any Data subject to confidentiality obligations must be clearly identified as Restricted in the Schedules.~~

~~2.1.3 Custodianship of, and access to, Jointly Owned Data shall be as described in clause 3.~~

~~2.2 Singly Owned Data~~

~~2.2.1 The Parties agree that subject to this clause 2.2 and clause 3, Singly Owned Data identified in the Schedule can be used for RFA Purposes by either Party subject to any confidentiality or use provisions that limits its usage beyond that specifically agreed. Such Data will only be used in a manner that respects all rights of ownership, confidentiality and copyright of the Data Owner and Licence conditions. Use of Singly Owned Data for other purposes requires the prior written permission of the Owner.~~

~~2.2.2 Where confidentiality obligations or limitations on use are imposed, a Party who is not the Owner may only use Singly Owned Data for purposes other than RFA Purposes under Licence~~

~~2.2.3 Access to Singly Owned Data by third parties will generally be through arrangement with the Data Custodian except as provided for in the Data Agreement and Schedules. Parties to this Data Agreement that are not the Owner will not provide Singly Owned Data to a third party without the prior permission of the Owner.~~

~~2.2.4 The Custodian of Singly Owned Data will be responsible for providing access to such Data in accordance with its Access Category identified in the Schedules to the Data Agreement and described in clause 3 of this Data Agreement.~~

~~2.2.5 Access arrangements imposed by an Owner shall apply to Existing Data unless otherwise agreed by the Parties.~~

~~2.3 Third Party Data~~

~~Third Party Data will be used in accordance with any Licence arrangements agreed with the Owner.~~

~~3. Access Arrangements~~

~~a) Subject to clause 2, all Data identified in the Schedules may be used by Parties (including the Governments' officers, employees, agents contractors, sub-contractors or consultants) for RFA Purposes consistent with the access provisions which apply to the Data's Access Category relevant to the access category as outlined below.~~

~~b) Where confidentiality or limitations on use apply in respect of Singly Owned Data and Jointly Owned Data, such Data must only be used in accordance with the relevant Licence conditions.~~

~~e) Access to Third Party Data will only be possible where explicitly permitted under the terms of a Licence agreement with the Owner.~~

~~d) There are three categories that have been agreed for access to Data by Parties:~~

~~i) Restricted~~

~~ii) Licensed~~

~~iii) Unrestricted~~

~~3.1 Restricted Data~~

~~Restricted Data is Data which is considered sensitive by a Data Owner and is available to the other Party or third parties only by agreement of the Owner on a case by case basis. This includes Data for which confidentiality and use provisions apply.~~

~~3.2 Licensed Data~~

~~3.2.1 Licensed Data may be provided to third parties by means of a Licence with the relevant Data Custodian.~~

~~3.2.2 Licensed Data may be used by third parties as agreed on a case by case basis subject to the conditions of the Licence.~~

~~3.3 Unrestricted Data~~

~~3.3.1 Subject to this clause 3.3.2, Unrestricted Data is available to the public without restriction in respect to the purposes for its use.~~

~~3.3.2 Unrestricted Data and products may be used by third parties for unrestricted use provided that the copyright interests of the Owner are protected. Any party making available Unrestricted Data must require third parties to include on any reproduction of Unrestricted Data the following statement:~~

~~Copyright © [insert name of copyright owner] [insert year of creation].~~

~~3.4 Data Management Arrangements~~

~~3.4.1 The Parties agree to the custodianship, management, maintenance, access and use according to whether data is classified as 'Restricted', 'Licensed' or 'Unrestricted' as detailed above and in the Schedules. The classification of each Data set will be agreed on a case by case basis for all Data used for development of the RFA and as outlined in the Schedules to be added to this Data Agreement.~~

~~3.4.2 The Parties will agree on the Data Custodian to manage, maintain and release the Data as outlined in the Schedules to this Data Agreement. The Data Custodian will maintain a register of all Data transfers for Data classified as Restricted or Licensed that will be available to either Party.~~

~~3.4.3 Over time, Data may be reclassified from one access category to another, subject to the approval of the Data Owner, agreement by the Parties and the notification of the Custodian of this reclassification.~~

~~4. Data Archive~~

~~4.1 The intention and purpose of the Data Archive is to ensure that baseline Data is available for undertaking RFA reviews.~~

~~4.2 Access to Archived Data shall be consistent with this Data Agreement.~~

~~4.3 The Parties will ensure that, subject to clause 4.5, all Singly Owned Data, Jointly Owned Data and Third Party Owned Data including Assessment Reports, Source Data and Derived Data identified in the Schedules to the Data Agreement will be included in the Data Archive unless confidentiality provisions prevent this.~~

~~4.4 The Data Archive shall include copies of all Data, models and software in the Schedules, Metadata, and documentation of models or modelling tools, required for the purposes of meeting Regional Forest Agreement obligations and undertaking assessments for RFA Purposes.~~

~~4.5 Copies of the full Data Archive shall be held at one State location and two Commonwealth locations. Where this is prevented due to commercial,~~

~~confidentiality, copyright or previous contractual arrangements that Data must nevertheless be archived by the Custodian in a manner satisfactory to both Parties. Remote archiving of Data should be avoided wherever possible.~~

~~4.6 The Custodian identified in the Schedules to this Data Agreement shall provide copies of the Data, Metadata and other documentation for the Data Archive by the following dates:~~

~~(a) Eden Region (Schedule 1) by 30 April 2000;~~

~~(b) Upper North East Region (Schedule 2) by 30 June 2000;~~

~~(c) Lower North East Region (Schedule 3) by 30 June 2000, and~~

~~(d) Southern Region (Schedule 4) by 30 June 2001.~~

~~4.7 The manager of the NSW copy of the RFA Data Archive will be the Department of Urban Affairs and Planning. The managers of the Commonwealth copies of the RFA Data Archive will be Environment Australia Department of Environment and Heritage, and Department of Agriculture, Fisheries and Forests (Bureau of Rural Sciences).~~

~~4.8 Maintenance of the Data Archive will be the responsibility of an appropriate nominee at each of the three Data Archive sites. All archiving of Data and other information must provide appropriate security and must ensure the continuing recoverability of Archived Data (preferably by CD ROM) and must include Metadata and/or other relevant supporting documentation to enable use of that Data and other information.~~

~~4.9 The Parties shall have access to all Archived Data in the Data Archive as baseline Data for RFA review purposes.~~

~~4.10 The Archived Data Archive must not be changed, amended or altered unless this is necessary to correct an error occurring during the archiving process, in which case all Data Archive Managers and Parties must be notified and the error must be rectified by the Custodian.~~

~~5. Metadata~~

~~5.1 All Singly Owned Data and Jointly Owned Data identified in the Schedule shall be described by standard Metadata. Standard Metadata will be freely exchanged between Parties and third parties.~~

~~5.2 The Australia New Zealand Land Information Council (ANZLIC) metadata standards as supplemented for the NSW CRA/RFA process (see CRA Data Manual – A report undertaken for the NSW CRA/RFA Steering Committee, May 1998) will be used to describe all Source Data, Existing Data and Derived Data. Metadata for a given Data set is the responsibility of the Custodian for that Data set.~~

~~5.3 The ANZLIC (1996) metadata standard has been adopted as the metadata standard for the NSW CRA/RFA. (Reference: ANZLIC Guidelines: Core Metadata Elements: Version 1 – Metadata for high level land and geographic data directories in Australia and New Zealand. ANZLIC 1996.)~~

~~5.4 The Parties will ensure that the custodian for each Data set will provide the Metadata statements to the Australia Spatial Data Directory (ASDD) consistent with jurisdictional practices.~~

~~6. Data updates~~

~~6.1 The Parties agree to provide appropriate mutual access to updated and modified Assessment Data that is not subject to confidentiality obligations and restrictions on use for the purposes of RFA review and monitoring. Any significant upgrades to, or modification of, the Assessment Data must be reported to the other Party on request.~~

~~6.2 If significantly upgraded versions of Jointly Owned Data are developed in the course of the normal business of either Party, they will be Singly Owned Data and provided to the other Party as required for RFA Purposes in accordance with this Data Agreement.~~

~~6.3 If upgraded versions are developed for RFA Purposes and the upgrade was jointly funded, the new versions of Data will be Jointly Owned Data unless otherwise agreed and will be provided to the other Party at no cost.~~

~~6.4 CRA Data yet to be completed and listed as 'work in progress' in the Schedules to this agreement will, on completion, be provided to the other Party consistent with the Ownership Type and Access Categories subsequently agreed between the Parties and identified in the Schedule.~~

~~6.5 The Parties recognise that access to New Data may be required for the purposes of RFA reviews. Immediately prior to any RFA review the Parties shall determine which New Data is appropriate for review purposes, and negotiate access to that New Data through the Custodian.~~

~~6.6 The Custodian of any 'work in progress' (as identified on the Schedules) shall notify both Parties upon the completion of those Data sets. Thereafter, access to that Data shall be through the Custodian, in accordance with the appropriate sections of this Data Agreement.~~

~~7. Participant Stakeholder Access to Assessment Data Post RFA Signing~~

~~On request, a copy of Licensed and Unrestricted Assessment Data, as archived, will be issued to participant stakeholders subject to the provisions of a Licence issued by the Department of Urban Affairs and Planning.~~

~~8. Data Access by Third Parties.~~

~~Data access by non RFA participants will be addressed on a case by case basis consistent with the appropriate sections of this Data Agreement and shall be granted through the relevant Custodian.~~

~~9. Contacts~~

~~Correspondence concerning this Data Agreement should be marked to the attention of the GIS Manager for Regional Forest Agreements in the relevant agency as set out below.~~

~~Resources and Conservation Division
Department of Urban Affairs and Planning
GPO Box 3927
Sydney NSW 2001~~

~~Department of Agriculture, Fisheries and Forestry – Bureau of Rural Sciences
PO Box E11
BARTON ACT 2600~~

~~Environment Australia, Department of Environment and Heritage
GPO Box 787
CANBERRA ACT 2610~~

**PRINCIPLES OF ECOLOGICALLY SUSTAINABLE FOREST
MANAGEMENT (ESFM)**

Principle 1: Maintain or increase the full suite of forest values for present and future generations across the NSW native forest estate

- The principle of intergenerational equity (that in meeting the needs of the present generation, the ability of the future generations to meet their own needs is not compromised) is embodied in this principle.
- Ensure that ESFM at the regional and smaller scales is implemented by ecologically appropriate planning and operational practices, and that ESFM targets are set and indicators of performance are monitored.
- Ensure the long-term maintenance of the full range of values of the NSW existing forest estate. The intention is to maintain or increase not only the full range of values, but also the magnitude or level at which those values are maintained or increased.
- Encourage the increased production of plantation-grown timber and the social and economic benefits flowing from this increased production to supplement the wood supply from native forests.

Aims for values include

A Biodiversity

- Biological diversity of forests at the ecosystem, species and genetic levels where biological diversity includes natural patterns of ecosystems, species and gene pools in time and space.
- Address the requirements of vulnerable species.
- Assist with the recovery of threatened species and maintain the full range of ecological communities at viable levels.
- Protect landscape values through the careful planning of operations and the reservation of appropriate patches and corridors of vegetation.

B The productive capacity and sustainability of forest ecosystems

- Maintain ecological processes within forests (such as the formation of soil, energy flows and the carbon, nutrient and water cycles, fauna and flora communities and their interactions).
- Maintain or increase the ability of forest ecosystems to produce biomass whether utilised by society or as part of nutrient and energy cycles.

- Ensure the rate of removal of any forest products is consistent with ecologically sustainable levels.
- Ensure the deleterious effects of activities/disturbances which threaten forests, forest health or forest values are minimised.

C Forest ecosystem health and vitality

- Reduce or avoid threats to forest ecosystems from introduced diseases, exotic plants and animals, unnatural regimes of fire or flooding, wind shear, land clearing and urbanisation.
- Promote good environmental practice in relation to pest management.
- Ensure the deleterious effects of activities/disturbances within forests, their scale and intensity, including their cumulative effects are minimised.
- Restore and maintain the suite of attributes (ecological condition, species composition and structure of native forests) where forest health and vitality have been degraded.

D Soil and water

- Maintain the chemical and biological functions of soils by protecting soils from unnatural nutrient losses, exposure, degradation and loss.
- Maintain the physical integrity of soils by protecting soils from erosion, mass movement, instability, compaction, pulverisation and loss.
- Protect water quality (physical, chemical, biological) by measures controlling disturbance resulting from forest activities.
- Identify and maintain at appropriate levels, water yield and flow duration in catchments.

E Positive contribution of forests to global geochemical cycles

- Maintain the positive contribution of forests to the global geochemical cycle (includes climate, air and water quality and deposition).

F Long-term social and economic benefits

- Maintain and enhance, on an ecologically sustainable basis, production of wood and wood products, including value adding, investment and resource security.
- Provided it is ecologically sustainable, set, maintain or enhance the level of use of non-wood products and uses, including bee-keeping, grazing, mining, recreation and tourism, reliable water supply.

- Maintain and enhance, on an ecologically sustainable basis, the provision of employment and community needs such as economic diversification, investment skills, education, jobs stability, training and Indigenous needs.
- Encourage the establishment and use of plantation forests on existing cleared land to expand social and economic values.
- Maintain and enhance the intangible social welfare benefits which forests provide.

G Natural and cultural heritage values

- Protect social, natural and cultural heritage values and sites, including aesthetic, landscape, historic, cultural, educational, scenic, spiritual and scientific values, including Indigenous values and sites.

Principle 2 Ensure public participation, access to information, accountability and transparency in the delivery of ESFM.

- Ensure public participation in decision-making processes at local, regional and State and Federal levels.
- Ensure comprehensive, timely and reasonable public access to information.
- Ensure transparency, openness and accountability in decision making processes and performance.

Principle 3 Ensure legislation, policies, institutional framework, codes, standards and practices related to forest management require and provide incentives for ecologically sustainable management of the native forest estate.

- Establish a process for shared management and administration, recognising the customary and traditional rights of Indigenous people, and the interests of private land-holders and other stakeholders in an area's management.

Principle 4 Apply precautionary principles for prevention of environmental degradation

The incorporation of the precautionary principle into decision making has been endorsed by State and Commonwealth Governments (Commonwealth of Australia 1992 p. 49, IGAE 1992) and is defined as *'where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. In the application of the precautionary principle, public and private decisions should be guided by:*

- *careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment; and*
- *an assessment of the risk-weighted consequences of various options.'*

Principle 5 Apply best available knowledge and adaptive management processes

ESFM would utilise the concept of adaptive management and ~~continuous~~ continual improvement based on best science and expert advice and targeted research on critical gaps in knowledge, monitoring or evaluation.

ANNEXURE 2 CLEAN VERSION OF THE AMENDED REGIONAL FOREST AGREEMENT

REGIONAL FOREST AGREEMENT

for

SOUTHERN

NEW SOUTH WALES

between

THE COMMONWEALTH OF AUSTRALIA

&

THE STATE OF NEW SOUTH WALES

April 2001 (includes 2018 VARIATION)

Southern Regional Forest Agreement

THIS AGREEMENT is made on the 24th day of April 2001

BETWEEN

THE STATE OF NEW SOUTH WALES, (“New South Wales” or “the State”), and
THE COMMONWEALTH OF AUSTRALIA (“the Commonwealth”).

Recitals

WHEREAS:

Purpose of Agreement

- A. This Regional Forest Agreement (RFA) establishes the framework for the management of the forests of the Southern region. Parties are committed to ensuring the Agreement is durable and the commitments are delivered to ensure effective conservation, sustainable forest management and industry stability outcomes.
- B. This Agreement is a Regional Forest Agreement, for the purposes of the *Export Control Act 1982* (Cth), the *Regional Forest Agreements Act 2002* (Cth) and the *Environment Protection and Biodiversity Conservation Act 1999* (Cth). As such the Agreement:
- (a) identifies areas in the region that the Parties believe are required for the purposes of a Comprehensive, Adequate and Representative Reserve System, and provides for the conservation of those areas; and
 - (b) provides for the ecologically sustainable management and use of forested areas in the region; and
 - (c) is for the purpose of providing long-term stability of forests and forest industries; and
 - (d) has regard to studies and projects carried out in relation to all of the following matters that are relevant to the region:
 - (i) environmental values, including Old Growth, Wilderness, endangered species, National Estate Values and World Heritage Values;
 - (ii) Indigenous heritage values;
 - (iii) economic values of forested areas and forest industries;
 - (iv) social values (including community needs); and
 - (v) principles of Ecologically Sustainable Forest Management.

- C. This Agreement is divided into Parts. Part 1 applies to the whole Agreement. Part 2 is not intended to create legally binding relations. Part 3 is intended to create legally binding relations. The Attachments are not intended to create legally binding relations except to the extent that this is necessary to give effect to Part 3.

NOW IT IS AGREED as follows:

PART 1

Interpretation

- 1 This Agreement is to be interpreted, unless the contrary intention appears, with reference to the definitions and general provisions specified in clauses 2 and 3.

Definitions and General Provisions

- 2 In this Agreement unless the contrary intention appears:

“Aboriginal” for the purposes of this agreement means the First Peoples of NSW;

“Agreement” means all parts of this Agreement between the Commonwealth of Australia and the State of New South Wales and includes the Attachments to this Agreement;

“Australian World Heritage Intergovernmental Agreement” means the Australian World Heritage Intergovernmental Agreement, as agreed by the Commonwealth, the States and the Territories, as amended from time to time;

“Biodiversity” means biodiversity as defined in the JANIS Report;

“Commonwealth Heritage Management Principles” has the same meaning as “Commonwealth Heritage management principles” in section 341Y of the EPBC Act;

“Commonwealth Heritage Place” has the same meaning as “Commonwealth Heritage place” in section 341C(3) of the EPBC Act;

“Commonwealth Heritage Values” has the same meaning as “Commonwealth Heritage values” in section 341D of the EPBC Act;

“Comprehensive Adequate and Representative Reserve System” or **“CAR Reserve System”** means areas under any of the following categories of land tenure - as described in the JANIS Report - Dedicated Reserves, Informal Reserves and other areas on Public Land protected by Regional Prescriptions (eg under any Integrated Forestry Operation Approval applicable to the Southern region), and areas of Private Land where the CAR Values are protected under secure management arrangement by agreement with private landholders. This reserve system is based on the principles of comprehensiveness, adequacy and representativeness;

“CAR Values” means the conservation values as described by the JANIS Reserve Criteria;

“Competition Principles Agreement” means the agreement of the same name updated by the Council of Australian Governments in 2007;

“Comprehensive Regional Assessment” or **“CRA”** means the assessment process carried out pursuant to Attachment 1 of the NSW RFAs Scoping Agreement for New South Wales Regional Forest Agreements between the Commonwealth of Australia and the State of New South Wales;

“Crown Land” means land that is vested in the Crown or was acquired under the Closer Settlements Acts as in force before their repeal, not in either case being:

- (a) land dedicated for a public purpose; or
- (b) land that has been sold or lawfully contracted to be sold and in respect of which the purchase price or other consideration for the sale has been received by the Crown.

“Dedicated Reserve” means a formal reserve equivalent to International Union for the Conservation of Nature and Natural Resources (IUCN) Protected Area Management Categories I, II, III, or IV as defined by the IUCN Commission for National Parks and Protected Areas (1994). The status of Dedicated Reserves is secure, requiring action by the New South Wales Parliament or in accordance with New South Wales legislation for reservation or revocation. In New South Wales, Dedicated Reserves include, but are not limited to, parks under the *National Parks and Wildlife Act 1974* (NSW) and flora reserves under the *Forestry Act 2012* (NSW), and areas mapped as Special Protection Zone (FMZ 1), under the NSW Forest Management Zoning system;

“Ecologically Sustainable Forest Management” or **“ESFM”** means forest management and use in accordance with the specific objectives and policies for ecologically sustainable development as detailed in the *National Forest Policy Statement* and as further described in Attachment 13;

“Environment and Heritage Values” means values assessed as part of the CRA. These included Biodiversity, Forest Ecosystems, Old Growth forests, Wilderness, endangered species, National Estate Values, World Heritage Values and Indigenous heritage values;

“EPBC Act” means the *Environment Protection and Biodiversity Conservation Act 1999* (Cth); **“Extractive Material”** means sand, gravel, clay, soil, turf, rock, stone or similar substances, not being a Mineral, as defined in this Agreement;

“Extractive Operation” means the winning of Extractive Material, or, an industry or undertaking (not including Mining), which depends for its operations on the winning of Extractive Material from the land upon which it is carried on;

“Five-yearly Review Scoping Agreement” means a scoping agreement between the Commonwealth of Australia and the State of New South Wales for each five-yearly review, including any agreed priorities, procedures and funding arrangements for the conduct of the five-yearly review;

“Forest” means: a Forest Ecosystem listed in Table 1 of Attachment 1; the land on which a Forest Ecosystem listed in Table 1 of Attachment 1 occurs; or a

Plantation of trees for timber production. The carrying out of Forestry Operations on an area does not prevent it from remaining a Forest;

“Forest Agreement” means a Forest Agreement as defined in the *Forestry Act 2012* (NSW);

“Forest Ecosystem” means, for the purposes of the Agreement, a forest ecosystem as defined in the JANIS Report. Forest Ecosystems in the Southern region are listed in Attachment 1 of this Agreement;

“Forest Estate” means all Forests growing on Public Land or Private Land;

“Forest Management” means the management and administration of all Forests including State forest, national parks, other conservation reserves or Crown land, private native forest and Plantations;

“Forest Management Framework” means the New South Wales suite of legislation, regulations, other regulatory instruments and guidance. The elements of the framework are described in the report entitled ‘*Overview of the New South Wales Forest Management Framework*’ as published by the NSW Government and as amended from time to time;

“Forest Management Zoning” or “FMZ” is a land classification system which sets out, in map format, management intent across State forest. It is based on the “Components of the CAR System” in the JANIS Report, to clearly differentiate between those areas of State forest which are specifically set aside for conservation purposes (and utilising statutory protection in some cases) and those areas which are available for timber harvesting and other activities. The system is described in the document *Managing our forests sustainably: Forest Management Zoning in NSW State Forests*, State Forests of NSW [1999] and as amended from time to time;

“Forestry Corporation of NSW” or “FCNSW” means the Forestry Corporation of NSW, a State Owned Corporation under the *State Owned Corporations Act 1989* (NSW);

“Forestry Corporation of NSW Hardwood Forest Management System” means the system of policies, processes and procedures used by Forestry Corporation of NSW to ensure forest activities achieve ESFM, including a system of monitoring, audit and management review that allows for continual improvement and adaptive management and maintaining EMS certification under ISO 14001 or a demonstrated equivalent environmental management system;

“Forestry Operations” means:

- (a) logging operations, namely, the cutting and removal of timber from land for the purpose of timber production;
- (b) forest products operations, namely, the harvesting of Forest Products that are of economic value;

- (c) on-going forest management operations, namely, activities relating to the management of land for timber production such as thinning, bush fire hazard reduction and other silvicultural activities; and
- (d) transport of Forest Products;

“Forest Products” means timber and forest products as defined in the *Forestry Act 2012* (NSW);

“Forest Resource and Management Evaluation System” or “FRAMES” means the Forestry Corporation of NSW statewide forest resource inventory, growth modelling, simulation and harvest scheduling system for New South Wales’ public hardwood forest resource;

“Harvesting Exclusions Zone” or “FMZ 3A” means the zone of the name ‘Zone 3A – Harvest Exclusions’ under the NSW Forest Management Zoning system;

“High Quality Logs” means logs which are suitable for high-value solid log products such as poles, piles and girders as well as logs suited for processing into sawn timber or veneer;

“Indigenous” means the Aboriginal and Torres Strait Islander peoples of Australia. ‘Indigenous’ is used in this document to mirror its use in Commonwealth legislation. Otherwise ‘Aboriginal’ is used to refer to the First Peoples of NSW.

“Informal Reserve” means a reserve that contains and is managed for Environment and Heritage Values which contribute to the CAR Reserve System and meets the principles for Informal Reserves as described in the JANIS Report. In New South Wales, it includes, but is not limited to, areas mapped as Special Management Zone (FMZ 2), which meet the size and design criteria for Informal Reserves, under the NSW Forest Management Zoning system;

“Integrated Forestry Operations Approval” or “IFOA” means an Integrated Forestry Operations Approval as defined in the *Forestry Act 2012* (NSW);

“ISO 14001” means *AS/NZS ISO 14001: 2015, Environmental Management Systems: Requirements with guidance for use*, Standards Australia (as amended from time to time);

“JANIS Report” means the report by the Joint Australian and New Zealand Environment and Conservation Council (ANZECC) / Ministerial Council on Forestry, Fisheries and Aquaculture (MCFFA) National Forests Policy Statement Implementation Sub-committee, titled *Nationally Agreed Criteria for the Establishment of a Comprehensive, Adequate and Representative Reserve System for Forests in Australia*, published by the Commonwealth of Australia in 1997;

“JANIS Reserve Criteria” or “Criteria” means the criteria as described in the JANIS Report for establishing the CAR Reserve System addressing

Biodiversity, Old Growth forest and Wilderness, taking account of reserve design and management and social and economic considerations;

“Listed Species and Communities” means species and communities listed in accordance with Part 13 of the EPBC Act, *Biodiversity Conservation Act 2016* (NSW) or *Fisheries Management Act 1994* (NSW), including threatened and endangered species, threatened ecological communities, migratory species and other listed categories (or equivalent);

“Low Quality Logs” means undersize or defective log sections that do not meet a high quality specification but are still suitable for processing into sawn timber or veneer;

“Matters of National Environmental Significance” for the purpose of this Agreement means those matters protected by Part 3 of the EPBC Act as matters of national environmental significance, including:

- (a) World Heritage Values of declared World Heritage Places;
- (b) National Heritage Values of National Heritage Places;
- (c) ecological character of Ramsar Wetlands;
- (d) listed species and communities in the EPBC Act (excluding those categories referred to in paragraphs 178(1)(a) and (f), and paragraph 181(1)(c) of the EPBC Act);

“Mineral” means any substance prescribed by the regulations of the *Mining Act 1992* (NSW) as a mineral, or petroleum as prescribed under the *Petroleum (Onshore) Act 1991* (NSW), and includes coal, oil shale and petroleum but does not include uranium;

“Mineral Exploration” means prospecting under an authority or other title under either the *Mining Act 1992* (NSW) or the *Petroleum (Onshore) Act 1991* (NSW);

“Mining” means mining under an authority or other title under the *Mining Act 1992* (NSW) and includes production of petroleum under the *Petroleum (Onshore) Act 1991* (NSW);

“Mining Operations” means operations or works carried out in the course of Mining, or Mineral Exploration;

“Montreal Process Criteria” means the Montreal Process criteria for the conservation and sustainable management of temperate and boreal forests;

“Montreal Process Implementation Group for Australia” or **“MIG”** means the Montreal Process Implementation Group established by the Commonwealth and all State and Territory Governments;

“National Estate” means those places as defined under section 4 of the repealed *Australian Heritage Commission Act 1975* (Cth);

“National Estate Values” means values attributed by the former Australian Heritage Commission to National Estate places;

“National Forest Policy Statement” or **“NFPS”** means the *National Forest Policy Statement 1992* endorsed by the Commonwealth and all State and Territory Governments;

“National Heritage Management Principles” has the same meaning as “National Heritage management principles” in section 324Y of the EPBC Act;

“National Heritage Place” has the same meaning as “National Heritage place” in section 324C(3) of the EPBC Act;

“National Heritage Values” has the same meaning as “National Heritage values” in section 324D of the EPBC Act;

“NSW National Parks and Wildlife Service” or **“NPWS”** means the New South Wales National Parks and Wildlife Service;

“NSW RFAs Scoping Agreement” means the Scoping Agreement for New South Wales Regional Forest Agreements between the Commonwealth and the State of New South Wales signed on 25 January 1996;

“Old Growth forest” means old growth forest as defined in the JANIS Report;

“Other Wood Products” means timber that is not processed as a high quality, low quality or Pulpwood log, including firewood, biomaterial and fencing products;

“Owner” means:

- (a) in relation to land:
 - (i) the owner of any estate or interest in that land, including the Crown in right of the State; and
 - (ii) any statutory corporation which has the power to carry on Forestry Operations or Mining Operations as the case may be, on the land;
- (b) in relation to Forest Products or Mining products, as the case may be, the owner of any interest in those products.

“Parties” means the State of New South Wales and the Commonwealth of Australia;

“Party” means a Party to this Agreement;

“Plantations” means intensively managed stands of trees of either native or exotic species, created by the regular placement of seedlings or seed, but not principally for the purpose of the production of food or any other farm produce other than timber;

“Private Land” means lands other than Public Land and land owned or leased by the Commonwealth;

“Progress Report” means a report prepared by the Parties on the performance of this Agreement for each five-yearly review;

“Public Land” means lands of the New South Wales Crown;

“Pulpwood” means logs cut and prepared primarily for the manufacture of wood pulp;

“Ramsar Convention” means the Convention on Wetlands of International Importance Especially as Waterfowl Habitat;

“Ramsar Wetlands” means those places defined under section 17 of the EPBC Act;

“Recovery Plan” means a recovery plan made or adopted under the EPBC Act, or an equivalent instrument made under the *Biodiversity Conservation Act 2016* (NSW), or the *Fisheries Management Act 1994* (NSW);

“Regional ESFM Plan” means a plan covering State forests in the region that has the status of a management plan under the *Forestry Act 2012* (NSW) and meeting additional requirements under the *Forestry Regulation 2012* (NSW);

“Regional Forest Agreement” or **“RFA”** means a Regional Forest Agreement within the meaning of the *Regional Forest Agreements Act 2002* (Cth);

“Regional Prescriptions” means those prescriptions within the Forest Management Framework that are applicable to Forestry Operations in the Southern region. These prescriptions include but are not limited to silvicultural prescriptions and environment protection measures covered by Regulatory Instruments, Forest Management Zoning, and Aboriginal and non-Aboriginal cultural heritage guidelines;

“Regulatory Instruments” means the State’s suite of statutory and regulatory tools used to achieve ESFM for forestry operations currently in place (or as amended from time to time), including, but not limited to:

- Integrated Forestry Operations Approval applicable to the Southern region under the *Forestry Act 2012* (NSW);
- Forestry Regulation 2012 made under the *Forestry Act 2012* (NSW);
- *Plantations and Reafforestation (Code) Regulation 2001* made under the *Plantations and Reafforestation Act 1999* (NSW);

- Private Native Forestry Code of Practice for Southern NSW, 2008;
- Additional, new or amended Regulatory Instruments as released from time to time by the NSW Government;

“**Sawlog**” means logs which are suitable for processing into sawn timber;

“**Special Management Zone**” or “**FMZ 2**” means the zone of the name ‘Zone 2 – Special Management’ as described under the NSW Forest Management Zoning system;

“**Special Prescription Zone**” or “**FMZ 3B**” means the zone of the name ‘Zone 3B – Special Prescription’ as described under the NSW Forest Management Zoning system;

“**Special Protection Zone**” or “**FMZ 1**”, means the zone of the name ‘Zone 1 – Special Protection’ as described under the NSW Forest Management Zoning system;

“**State forest**” means land dedicated as State forest under the *Forestry Act 2012* (NSW);

“**Statutory Conservation Planning Document**” means a conservation advice, recovery plan, threat abatement plan or wildlife conservation plan made or adopted in accordance with the EPBC Act, or equivalent instruments or programs under the *Biodiversity Conservation Act 2016* (NSW) or the *Fisheries Management Act 1994* (NSW);

“**Sustainability Indicators**” means qualitative or quantitative measures, at the regional (sub-national) level developed to assess the criteria for sustainable forest management, as described in *Ecologically Sustainable Forest Management Criteria and Indicators for the NSW Forest Agreement regions* (EPA 2017), and as amended from time to time;

“**Sustainable Yield**” means the long term estimated wood yield from forests that can be maintained from a given region in perpetuity under a given management strategy and suite of sustainable use objectives, as determined using the processes described in Attachment 11, and as amended from time to time;

“**Threat Abatement Plan**” means a threat abatement plan made or adopted under the EPBC Act;

“**Threatening Process**” means a threatening process listed as a key threatening process under the *Biodiversity Conservation Act 2016* (NSW), *Fisheries Management Act 1994* (NSW) and the EPBC Act in recognition that the process adversely affects or may threaten the survival, abundance or evolutionary development of a native species or ecological community;

“**Values Protected by Prescription**” means *values protected by prescription* as defined in the JANIS Report and includes areas in the Forest Management

Zoning system including those areas in FMZ 2 that do not meet Informal Reserve criteria, FMZ 3A, FMZ 3B and other mapped areas under the IFOA applicable to the Southern region;

“**Wilderness**” means wilderness as defined in the JANIS Report;

“**Wilderness Values**” means the values of the same name as defined in the JANIS Report and the NSW RFAs Scoping Agreement between NSW and the Commonwealth;

“**Wild Rivers**” means a water course, water course network, or a connected network of water bodies, of natural origin and exhibiting natural flow (perennial, intermittent or episodic) in which the biological, hydrological and geomorphological processes associated with the river flow; and the biological, hydrological and geomorphological processes in those parts of the catchment with which the river is intimately linked; have not been significantly altered by modern or colonial society;

“**Woodchips and Unprocessed Wood**” means goods that are prescribed goods under the *Export Control (Hardwood Wood Chips) Regulations 1996* (Cth) or the *Export Control (Unprocessed Wood) Regulations* (Cth), or would be prescribed goods under those regulations if not for the *Export Control (Regional Forest Agreements) Regulations* (Cth);

“**World Heritage List**” means the list kept under that title under Article 11 of the Convention Concerning the Protection of the World Cultural and Natural Heritage; “**World Heritage Nomination**” means the submission by the Commonwealth of a nominated area to the UNESCO World Heritage Committee for assessment as a World Heritage area consistent with section 314 of the EPBC Act and the World Heritage Operational Guidelines for the Implementation of the World Heritage Convention;

“**World Heritage Place**” means a property on the World Heritage List;

“**World Heritage Values**” has the same meaning as in section 12(3) of the EPBC Act.

- 3 In this Agreement unless the contrary intention appears:
- (a) a reference to a clause or Attachment is a reference to a clause or Attachment to this Agreement and a reference to this Agreement includes a reference to an Attachment;
 - (b) a reference to this Agreement or another instrument is a reference to this Agreement or that other instrument as amended or varied from time to time;
 - (c) a reference to a statute or ordinance includes any consolidations, amendments, re-enactments or replacements thereof and also includes regulations and other instruments made under them;
 - (d) a reference to a code or other instrument includes any consolidations or amendments thereof;

- (e) a word importing the singular includes the plural and vice versa, a word importing a gender includes each other gender and a reference to a person includes an individual, firm, body corporate, association (whether incorporated or not), government, governmental or semi-governmental body, local authority or agency;
- (f) a reference to an act, matter or thing includes the whole or any part of that act, matter or thing and a reference to a group of acts, matters, things or persons includes each act, matter, thing or person in that group;
- (g) where any terms and conditions are added to an Attachment of this Agreement it is agreed that those terms and conditions will form part of this Agreement;
- (h) headings are inserted for convenience and do not affect the interpretation of this Agreement.

Definition of the Region

- 4 The area covered by this Agreement is the Southern RFA region as shown in Map 1 accompanying this Agreement.

Duration of Agreement

- 5 This Agreement takes effect on 24 April 2001 and, unless earlier terminated in accordance with clauses 110, 111, 112 or 113, will remain in force until 26 August 2039, or until a later date pursuant to clause 6A and 6B.
- 6 The process for extending the Agreement for a further period will be determined jointly by the Parties as part of the third five-yearly review.
- 6A Subject to clause 6B, upon the satisfactory completion of each five-yearly review in accordance with clause 8M, the Agreement will be extended for a further five years.
- 6B The extension of this Agreement under clause 6A will occur upon the satisfactory completion of the five-yearly review due to commence in 2024 and thereafter upon the satisfactory completion of each subsequent five-yearly review until this Agreement is terminated by the Parties or subsequent extensions of this Agreement are withdrawn in accordance with clause 14C.

Basis of Agreement – National Forest Policy Statement

- 7 The Parties confirm their commitment to the goals, objectives and implementation of the *National Forest Policy Statement (NFPS)* by:
 - (a) Implementing Ecologically Sustainable Forest Management (ESFM);
 - (b) Establishing and maintaining the Comprehensive, Adequate and Representative (CAR) Reserve System;
 - (c) Supporting an internationally competitive wood production and wood products industry through facilitating efficient and sustainable wood

production, and wood products industries, based on maximising value-adding opportunities and efficient use of wood resources; and

- (d) Promoting the conservation and management of the private Forest Estate.

Changes to the Agreement

- 8 This Agreement may only be amended with the consent, in writing, of both Parties. Parties agree to work cooperatively to address any differences between them as to the interpretation or implementation of the Agreement.

Monitoring the Agreement

General monitoring

- 8A. The implementation of this Agreement is monitored through the five-yearly reviews and the annual meetings between the Parties in the periods between the five-yearly reviews. Further:

- (a) The Parties agree to maintain open communication on matters relating to the implementation of this Agreement, including raising and responding to issues at any time.
- (b) The Parties agree that for efficiency and consistency with prior practices, the timing of monitoring and reporting of the North East and Southern RFAs will be aligned with the Eden RFA and will complement NSW and national forest reporting.
- (c) The Parties agree that the assessment process, the consultation undertaken in early 2018 and the results of the monitoring of Sustainability Indicators in *A report on progress with implementation of the New South Wales Regional Forest Agreements: Second and third five-yearly reviews July 2004 – June 2014*, November 2017 constitute the five-yearly review that was due in 2019.
- (d) The next five-yearly review required by this Agreement will commence in 2024.
- (e) New South Wales agrees to develop and maintain a coordinated Monitoring, Evaluation and Reporting Plan, including the identification of research priorities, within the broader Forest Management Framework across relevant forest management tenures and to support RFA outcomes reporting for ESFM.

Annual meetings

- 8B. The Parties agree to hold annual officials-level, bi-lateral meetings in the years between each five-yearly review to monitor the implementation of the Agreement and discuss any matters or issues that arise.
- 8C An online statement will be made publicly available on the outcomes of the meeting.

Five-yearly reviews

Five-yearly review

- 8D. A review of the performance of this Agreement is to commence during the last year of each five year period during the term of the Agreement (the five-yearly review) with the release of the Five-yearly Review Scoping Agreement.
- 8E. The purpose of the five-yearly review is to examine New South Wales' Forest Management to demonstrate Ecologically Sustainable Forest Management, including to:
- (a) demonstrate adaptive Forest Management in accordance with the RFA;
 - (b) demonstrate how the Parties have provided for the protection of Matters of National Environmental Significance, including identifying trends and the status of Matters of National Environmental Significance, in accordance with the RFA;
 - (c) demonstrate how relevant Statutory Conservation Planning Documents have been implemented as part of the Forest Management Framework;
 - (d) demonstrate how social and economic benefits of forestry and other forest uses are being achieved;
 - (e) evaluate current and future research priorities across the Forest Estate; and
 - (f) assess the extent to which key findings and/or recommendations for preceding five-yearly reviews have been addressed.
- 8F. The Parties will prepare a Progress Report addressing the items listed at clause 8E including across key environmental, social and economic indicators (Sustainability Indicators). As such, the Progress Report will be a key source of information in the five-yearly reviews under this Agreement.

Conduct of five-yearly review

- 8G. Five-yearly reviews are to be conducted by an independent person or body jointly appointed by the Parties.
- 8H. In conducting the five-yearly review, the independent person or body will:
- (a) take into account public comments;
 - (b) use and take into account the relevant Progress Report;
 - (c) use and take into account the document titled '*Overview of the New South Wales Forest Management Framework*', as updated from time to time;
 - (d) develop and submit to the Parties a report detailing the five-yearly review process and its findings and recommendations, within three months of commencement.
- 8I. In accordance with subsection 10(6) of the *Regional Forest Agreements Act 2002* (Cth), the Commonwealth Minister responsible for forestry will table the report provided under paragraph 8H (d) in each House of the Parliament within 15 sitting days of that House after the report is provided to the Minister.

- 8J. The Parties will consider the five-yearly review recommendations and publish a joint government response to the recommendations within six months of receiving the review report.
- 8K. The Parties will make a determination of satisfactory performance under this Agreement in the joint government response. If satisfactory performance is not determined, the Parties will include in the joint government response a list of remedial actions and when they will be delivered. The subsequent five-yearly review process will assess whether remedial actions have been delivered.
- 8L. The purpose of the five-yearly review process under this Agreement is not to re-negotiate the Agreement.

Satisfactory completion of 5 yearly review

- 8M. A five-yearly review will be satisfactorily completed upon the public release of the joint government response to the review report, which is to include identified remedial actions pursuant to clause 8K. The five-year extension pursuant to clauses 6A and 6B will then take effect, unless the joint government response identifies that there are outstanding remedial actions from a previous five-yearly review that have not been delivered to the satisfaction of both Parties, in which case the five-year extension will not take effect until a supplementary joint government response demonstrating the completion of the outstanding remedial actions has been released.

Requirement for an audit

- 8N. Either Party may initiate an audit, if in the opinion of the initiating Party, there has been, or is likely to be, an adverse finding or outcome relating to this Agreement, whether or not the outcome relates to non-compliance or likely non-compliance with the Agreement.
- 8O. Before an audit process commences, the initiating Party must notify and consult with the other Party on the following:
- (a) the initiating Party's reason for initiating the audit or review;
 - (b) the scope and criteria for the audit, and
 - (c) the appointment of an independent auditor.
- 8P. An audit may include:
- (a) an examination of the operation of this Agreement over a particular period of time; or
 - (b) preparation of an audit report which addresses the criteria specified by the initiating Party.
- 8Q. An audit should be conducted in the most efficient and effective manner possible to address the opinion of and concerns identified by the initiating Party.
- 8R. The Parties agree to cooperate fully in any audit.
- 8S. The initiating Party may publish any report produced under clause 8P(b), provided the initiating Party, prior to publication:
- (a) notifies the other Party of the intent to publish the report;

- (b) provides the other Party with a copy of a draft of the final report; and
- (c) provides the other Party with 20 business days to respond to the draft of the final report.

8T The costs of an audit will be borne by the initiating Party.

Dispute Resolution

9 The Parties agree that if a dispute arises between the Parties regarding this Agreement it must be resolved expeditiously in accordance with the provisions of clauses 10 to 14.

10 When a dispute arises, a Party may serve a notice on the other specifying:

- (a) the nature and substance of the matter or issue in dispute;
- (b) that it is a dispute to be resolved in accordance with clauses 10 to 14.

11 If a notice is served under clause 10 the Parties must attempt to settle the dispute within 14 days. At the expiration of that 14 days and, if agreed, any additional period the Parties must appoint a mediator to conduct a mediation concerning the matter or issue in dispute.

12 If the dispute is not settled under clause 11 and the Parties fail to appoint a mediator, either of them may request the President of the Law Council of Australia, or the equivalent officer of such body as in future may have the functions of the Law Council of Australia, to nominate a mediator to conduct the mediation.

13 The costs of a mediator appointed under clauses 11 or 12 are to be shared equally between the Parties.

14 Each of the Parties agrees to use its best endeavours to resolve the dispute through mediation.

Withdrawal from extension process

14A. If there is no resolution or agreement on a dispute in accordance with clauses 9 to 14 (including the failure of mediation), either the Commonwealth Minister responsible for forestry (in consultation with the Commonwealth Minister responsible for the environment) or New South Wales Minister(s) responsible for the environment and/or forestry may send to the other Party and publish a written notice of its intention, unless the dispute is resolved, to withdraw from the extension process in clause 6A and 6B.

14B. Any notice under clause 14A above must specify the time period in which the other Party must address the dispute.

14C. If, at the end of the specified time period, the dispute has not been resolved, the Commonwealth Minister responsible for forestry (in consultation with the Commonwealth Minister for the environment) or the New South Wales Minister(s) responsible for the environment and/or forestry may write to the other Party's

government giving notice confirming the effective date of withdrawal from the extension process in clause 6A and 6B.

- 14D. In the event either Party withdraws from the extension process in clause 6A and 6B, negotiation of any subsequent extension to this Agreement will only be considered following the satisfactory completion of the penultimate five-yearly review (that is, the five-yearly review prior to the final five years of the Agreement's duration).
- 14E. In the event the Parties subsequently extend this Agreement subject to clause 14D and pursuant to clause 8M, the extension process in clause 6A and 6B will not apply to the extended Agreement unless otherwise agreed by the Parties.

Notices

- 15 Any notice or other communication to be given or made pursuant to this Agreement shall be in writing and addressed as the case may be as follows:

THE STATE

The Secretary
Department of Premier and Cabinet
52 Martin Place
SYDNEY NSW 2000

THE COMMONWEALTH

The Secretary
Department of Agriculture and Water
Resources
18 Marcus Clarke Street
CANBERRA ACT 2600

PART 2

- 16 This Part is not intended to create legally binding relations and provisions in Part 1 in so far as they relate to Part 2 are also not binding. Where there are references in this Part to obligations which are referred to in Part 3 and are intended to be legally binding, they are only included in Part 2 insofar as they provide context and for the sake of completeness so that the whole scheme which the Parties wish to implement is set out in this Part. The inclusion of references to these legally binding obligations in Part 2 does not derogate from the Parties intent that they be legally binding in Part 3.

FUNCTIONING OF THE AGREEMENT

- 17 NOT USED

Relationship to Statutory Obligations

- 18 This Agreement cannot impose on either Party or a third party any obligation that is inconsistent with Australia's international obligations, or a law of the Commonwealth or of New South Wales.
- 19 Neither Party will seek to use existing or future legislation to undermine or impede this Agreement.
- 20 NOT USED
- 21 NOT USED
- 22 NOT USED
- 23 NOT USED
- 24 NOT USED
- 25 NOT USED
- 26 The Commonwealth notes that its obligations under the EPBC Act to promote protection of Listed Species and Communities will involve ongoing cooperative work with New South Wales agencies concerning the Southern region.

Matters of National Environmental Significance

- 26A New South Wales will use best endeavours to ensure that the Forest Management Framework provides for the protection of Matters of National Environmental Significance.
- 26B The Parties agree that research, monitoring, reporting, evaluation and the communication of findings are important to support decision making with regard to Matters of National Environmental Significance.

- 26C New South Wales will use best endeavours to continue to improve research, monitoring, reporting, evaluation and communication mechanisms as part of its adaptive Forest Management Framework in accordance with clause 44.
- 26D The Parties agree that the monitoring, audit, reporting and review processes set out in this Agreement provides an assurance that the Forest Management Framework takes into account the protection of Matters of National Environmental Significance.

Listed Species and Communities, including threatened flora and fauna

- 26E New South Wales will use best endeavours to ensure that the Forest Management Framework provides for the protection of Listed Species and Communities.
- 26F The Parties, recognising that priorities can change in light of new information, will continue to consult on the priorities for:
- (a) Listed Species and Communities, Forest Ecosystems, and Threatening Processes (further information at Attachment 3);
 - (b) the preparation of all Statutory Conservation Planning Documents relevant to this Agreement; and
 - (c) research on Listed Species and Communities, Forest Ecosystems, and Threatening Processes.
- 26G New South Wales will use best endeavours to ensure that any new or altered actions in the Forest Management Framework are developed and implemented over the term of the Agreement for Listed Species and Communities to:
- (a) provide for the maintenance of the relevant species;
 - (b) have a sound scientific basis;
 - (c) give consideration to relevant determinations made by the New South Wales Threatened Species Scientific Committee or Fisheries Scientific Committee;
 - (d) be consistent with relevant Statutory Conservation Planning Documents; and
 - (e) take note of public comment.
- 26H New South Wales will use best endeavours to ensure that the State's Statutory Conservation Planning Documents and Regulatory Instruments that include management actions, prescriptions or protections for Listed Species and Communities in accordance with the Forest Management Framework, will:
- (a) be maintained, implemented and updated on an as needs basis to provide ongoing protection for Listed Species and Communities;
 - (b) be made publicly accessible.

World Heritage Places

- 27 The Parties acknowledge that the World Heritage Values of a property included in the World Heritage List are protected by Part 3 of the EPBC Act, as the exemption to the application of Part 3 for Forestry Operations does not apply to a World Heritage Place pursuant to section 42 of the EPBC Act.
- 28 NOT USED
- 29 The Parties agree to participate in the assessment of any future World Heritage Places consistent with the Australian World Heritage Intergovernmental Agreement.
- 30 The Parties agree that any World Heritage Nominations involving any part of the Forest Estate in the Southern region will be from areas within the Dedicated Reserve elements of the CAR Reserve System.
- 31 NOT USED

National Heritage Places

- 31A. New South Wales will use best endeavours to ensure that the Forest Management Framework provides for the protection of National Heritage Values of National Heritage Places in accordance with National Heritage Management Principles.

Commonwealth Heritage Places

- 31B. New South Wales will use best endeavours to ensure that the Forest Management Framework provides for the protection of Commonwealth Heritage Values through the management of Commonwealth Heritage Places in accordance with Commonwealth Heritage Management Principles.

Ramsar Wetlands

- 31C. The Parties acknowledge that the Forest Management Framework provides for the protection of the ecological character of Ramsar Wetlands, in accordance with Australia's obligations under the Ramsar Convention, by:
- (a) the application of Part 3 of the EPBC Act, as the exemption to the application of Part 3 of the EPBC Act for Forestry Operations does not apply to Ramsar Wetlands pursuant to section 42 of the EPBC Act;
 - (b) management of Ramsar Wetlands, including having regard to Ramsar Wetland information sheets and Ramsar Wetland ecological character descriptions; and
 - (c) management of the relevant threatened ecological communities listed in Schedule 2 of the *Biodiversity Conservation Act 2016* (NSW), and/or listed under the *Fisheries Management Act 1994* (NSW).

- 32 NOT USED

Export controls

- 33 Parties note that no controls under the *Export Control Act 1982* (Cth) or any other export control law within the meaning of the *Regional Forest Agreements Act 2002* (Cth) will apply to Woodchips and Unprocessed Wood sourced from the Southern region while this Agreement is in place.

Integrated Forestry Operations Approval applicable to the Southern region

- 34 New South Wales confirms that relevant Regulatory Instruments, such as the Integrated Forestry Operations Approval applicable to the Southern region, are parts of the New South Wales Forest Management Framework and are means by which New South Wales will implement obligations arising from this Agreement.
- 35 NOT USED
- 36 NOT USED
- 37 NOT USED
- 38 NOT USED
- 39 NOT USED
- 40 NOT USED
- 41 NOT USED

ECOLOGICALLY SUSTAINABLE FOREST MANAGEMENT (ESFM)

- 42 The Parties agree that ESFM is an objective which requires a long term commitment to continual improvement and that the key elements for achieving it are:
- (a) The establishment and maintenance of the CAR Reserve System;
 - (b) Efficient and sustainable wood production and wood products industries based on maximising value-adding opportunities and efficient use of wood resources; and
 - (c) An integrated, complementary and strategic Forest Management Framework capable of responding to new information, including climate change risks and adaptation responses.
- 43 The Parties recognise that the NSW Forest Management Framework is designed to produce effective outcomes for fauna, flora, soil and water conservation, and heritage values on State forests and provides a sound basis for implementation and continual improvement of such to achieve ESFM.
- 44 New South Wales confirms its commitment to the ongoing implementation and achievement of ESFM on both Public Land and Private Land through the continued

implementation and improvements to its Forest Management Framework and adaptive management in accordance with the ESFM principles in Attachment 13.

Monitoring and reporting on Ecologically Sustainable Forest Management

45 The Parties recognise that:

- (a) the Forest Management Framework is enhanced by adaptive management and continuing mechanisms to monitor, report and review the sustainability of forest management policies and practices;
- (b) fostering stakeholder understanding of ESFM in NSW is important; and
- (c) a range of processes and instruments exist which provide for public participation and consultation, as outlined in the summary document titled '*Overview of the New South Wales Forest Management Framework*'.

46 NOT USED

47 New South Wales undertakes to:

- (a) Review and update the summary document titled '*Overview of the New South Wales Forest Management Framework*', which describes the Forest Management Framework at a given point in time, as a minimum for each five-yearly review period;
- (b) grant by 30 June 2001 and maintain for the duration of this Agreement an Integrated Forestry Operations Approval covering the Southern region, consistent with Attachments 1, 3 and 8;
- (c) use best endeavours to ensure that plans of management are developed and implemented for Dedicated Reserves under the *National Parks and Wildlife Act 1974* (NSW) and for flora reserves under the *Forestry Act 2012* (NSW) ensuring review and revision on a regular basis;
- (d) implement the Regional ESFM Plan applicable to the Southern region (currently the *Forest Management Plan for the Coastal Forests of NSW* (FCNSW 2016)) – or an equivalent instrument – ensuring review and revision on a regular basis;
- (e) ensure that the Forest Management Zoning system for the Southern region is maintained, implemented and reviewed on a regular basis;
- (f) manage cultural values, both Aboriginal and non-Aboriginal, in the Southern region, in accordance with guidelines developed by New South Wales to meet the requirements in the EPBC Act, *National Parks and Wildlife Act 1974* (NSW) and the *Heritage Act 1977* (NSW), as amended from time to time;

- (g) manage availability of timber resources for the State forest estate in accordance with Sustainable Yield estimates calculated using FRAMES or an equivalent, including to:
 - (i) take account of climate risks and adaptation responses;
 - (ii) ensure that FRAMES or an equivalent for the Southern region is maintained and continually improved and provide periodic reviews of wood product yields as documented in Attachment 11;
 - (iii) undertake and make publicly available an independent review of Sustainable Yield estimates for the Southern region during each five-yearly review period;
- (h) Maintain and implement a management system for public Forests that meets the criteria for an environmental management system meeting the requirements of ISO 14001 and demonstrates ESFM;
- (i) Identify and integrate relevant climate risks and adaptation responses into the monitoring, evaluation and reporting requirements in Regional ESFM Plans and plans of management under the *National Parks and Wildlife Act 1974* (NSW);
- (j) Ensure that there is a transparent, systematic and credible process for investigating alleged environmental incidents reported by members of the public in relation to Forestry Operations on Public and Private Land and that information about regulatory actions are made publicly available where appropriate; and
- (k) Establish and maintain a coordinated forum for stakeholder engagement.

Sustainability Indicators

- 47A Pursuant to clause 8F, the State will continue to publicly report on the results of monitoring of Sustainability Indicators every five years to align with and inform the five-yearly reviews required under this Agreement and reporting will be under the headings of the Montreal Process Criteria in Attachment 9.
- 48 The Parties recognise that the document Ecologically Sustainable Forest Management Criteria and Indicators for the NSW Forest Agreement regions (EPA 2017) is consistent with Australia's Sustainable Forest Management Framework of Criteria and Indicators 2008 – Policy Guidelines (Commonwealth of Australia 2008) developed by the Montreal Implementation Group for Australia (MIG).
- 49 New South Wales agrees to review and revise its Sustainability Indicators to align with any relevant review of Sustainability Indicators at a national level.
- 50 NOT USED
- 51 NOT USED

52 NOT USED

Private Land

53 The Parties reaffirm their commitments made in the *National Forest Policy Statement (1992)* to the conservation and management of the private Forest Estate. The Parties note that Forestry Operations on Private Land in New South Wales are undertaken in accordance with the Private Native Forestry Code of Practice. The Parties note that New South Wales has provisions under the *Local Land Services Act 2013* (NSW) for native vegetation retention controls to regulate the clearance of native forest on Private Land.

54 The Parties recognise the Private Native Forestry Code of Practice, applying to Forestry Operations on Private Land in the Southern region, which requires Forestry Operations to be consistent with ESFM practices.

55 CAR Values which are priorities for the CAR Reserve System and which occur on Private Land will be dealt with by the principles and mechanisms outlined in Attachments 1 and 2. Parties agree the values listed at Attachment 2 can be managed consistently with the JANIS Reserve Criteria through a range of mechanisms, with the consent of the Private Land Owner, as specified in Attachment 2. Priorities for protection of Forest Ecosystems as at 2001 are given in Tables 1 and 2 of Attachment 2.

55A The Parties recognise the importance to the CAR Reserve System of Environment and Heritage Values on Private Land and the State agrees to continue to support processes that will facilitate the voluntary participation by Private Land Owners to protect CAR Values on Private Land. All conservation mechanisms for the establishment of the Private Land component of the CAR Reserve System will be voluntary.

56 NOT USED

57 NOT USED

58 New South Wales confirms that the CAR Reserve System is being maintained and implemented through this Agreement, including Attachment 2, and that conservation levels achieved will not subsequently be used as a basis for preventing timber harvesting in accordance with the Private Native Forestry Code of Practice applying to the Southern region being carried out on Private Lands. Consistent with clause 18 this is not to be interpreted as preventing voluntary conservation measures and mechanisms to protect CAR Values on Private Land.

58A The Parties will use best endeavours to ensure any changes to the Regional Prescriptions applied to Private Land will not subsequently lead to a net deterioration in Environment and Heritage Values on Private Land.

58B The Parties recognise that Values Protected by Prescription on Private Land will be protected during Forestry Operations by adherence to Regulatory

Instruments including the Private Native Forestry Code of Practice applying to the Southern region.

59 NOT USED

60 NOT USED

61 NOT USED

62 NOT USED

63 NOT USED

THE CAR RESERVE SYSTEM

64 The Parties agree that the CAR Reserve System has been established and progressively added to for the purpose of ensuring the long-term conservation and protection of the values defined by the JANIS Reserve Criteria. The CAR Reserve System includes the land identified in Attachment 1.

64A The Parties agree that the CAR Reserve System will continue to support the long-term conservation and protection of Environment and Heritage Values, including Listed Species and Communities.

65 Parties agree that the CAR Reserve System as identified on Map 1 and presented in Attachment 1 and Attachment 2, and as amended from time to time, satisfies the JANIS Reserve Criteria. Each element of the CAR Reserve System, with the exception of Commonwealth owned or leased land, will be administered in accordance with New South Wales legislation.

65A The Parties agree that the CAR Reserve System established in accordance with this Agreement (including as it has been progressively added to and as further defined in Attachment 1 and Attachment 2), comprises:

- (a) Dedicated Reserves; and
- (b) Informal Reserves; and
- (c) areas with CAR Values Protected by Prescription; and
- (d) Private Land with CAR Values protected under secure management arrangement by agreement with Private Land Owners.

Action to manage the CAR Reserve System on public land

66 New South Wales agrees to implement, manage and conserve the Southern region CAR Reserve System described in Attachment 1 and identified on Map 1 with the exception of Commonwealth owned or leased land.

66A The State will manage and conserve the Dedicated Reserve and Informal Reserve elements of the CAR Reserve System consistent with its obligations in relation to the relevant statutory principles and values of reservation set out in Part 4,

Division 2 of the *National Parks and Wildlife Act 1974* (NSW), or obligations under the *Forestry Act 2012* (NSW).

67 NOT USED

68 Parties agree that through the acquisition of Private Land (by voluntary sale), transfer of lands of the Crown, or transfer of land from an existing reserve tenure to one of higher conservation protection status, enhancements to the CAR Reserve System could occur. Both Parties agree to use best endeavours such that enhancements to the CAR Reserve System will not impede access to State forest lands .

69 In the incorporation into the CAR Reserve System of lands of the Crown over which a licence or occupational permit is held NSW will:

- confirm the presence of CAR Values needed for reservation;
- through consultation, take into consideration any existing interests in the land of the licence or permit holder;
- ensure where practicable that suitable transition arrangements apply; and
- ensure that practical and legal access remains available where such access to adjacent private, licensed or leased land currently crosses or falls within land to be added to the CAR Reserve System under this Agreement.

70 The Parties agree to ensure changes to the CAR Reserve System will:

- a) only occur in accordance with this Agreement;
- b) be made publicly available; and
- c) not lead to deterioration in the representation or protection of identified CAR Values to below levels established by this Agreement in 2001, noting that minor changes to the levels of representation or protection of identified CAR Values may occur as a result of actions that are in accordance with this Agreement.

70A New South Wales will:

- (a) discuss with and notify the Commonwealth of any proposed changes to the CAR Reserve System that will significantly impact Forestry Operations, wood supply to industry, or change the Sustainable Yield of the region by more than one per cent;
- (b) not make any changes to the CAR Reserve System that would reduce the total percentage for each Forest Ecosystem, non-forest ecosystem or Old Growth forest below the targets set in the JANIS Report, noting that minor changes may occur as a result of actions that are in accordance with this Agreement; and

- (c) use best endeavours to not reduce the Dedicated Reserve component of the CAR Reserve System to below the level of protection as at December 2017 as contained in Attachment 1 Clause 6 to this Agreement noting that minor changes may occur as a result of actions that are in accordance with this Agreement.

70B The State will maintain public records indicating the location, extent and purpose of any amendment to those elements of the CAR Reserve System in Informal Reserves or Values Protected by Prescription categories and the net impact that any amendments have on CAR Values.

Environment and Heritage Values

Protection of Environment and Heritage Values

71 Parties agree to maintain the levels of protection of Environment and Heritage Values in a regional context; however, minor changes to the levels of protection of individual values may occur as a result of changes to the CAR Reserve System in State forest.

71A The Parties agree that the CAR Reserve System, established in accordance with this Agreement, and the application of the NSW Forest Management Framework, protects Environment and Heritage Values.

Climate change

71B The State agrees to manage its Forests in accordance with the NFPS objectives and policies as they relate to climate change, adaptation and carbon.

71C The Parties acknowledge:

- (a) climate change is driving more extreme weather events that will impact on Forest Management, including biodiversity and Listed Species and Communities, resource availability, and risk management for projected increases in frequency and magnitude of hazards including fire, floods, storms, sea level rise and heatwaves;
- (b) integrating climate change adaptation into Forest Management is required to build resilience and manage climate risks and meet the objectives of ESFM; and
- (c) the need to manage Forests to maintain or enhance the contribution of all elements of the Forest Estate to the effective management of carbon within the carbon cycle.

Environmental processes within forests

71C The State agrees to manage its Forests in accordance with the NFPS objectives and policies as they relate to water supply and catchment management and implement forest management practices that seek to:

- (a) ensure the availability of reliable, high-quality water supplies from forested land and to protect catchment values;

- (b) minimise soil compaction and soil disturbance to encourage healthy forest growth and minimise downstream impacts.

INDUSTRY STABILITY

- 72 The Parties agree that State forest outside the CAR Reserve System is available for timber harvesting in accordance with this Agreement and the laws of New South Wales.
- 73 The Parties will use best endeavours to ensure that any changes to the total area of State forest or areas excluded from timber harvesting or Regional Prescriptions applied to State forest will not lead to a net deterioration in the capacity to supply wood from the Southern region.
- 74 In recognition of the contribution of timber and forest-based industries to the New South Wales' economy, the Parties intend that this Agreement will support future growth and development of New South Wales' industries associated with forests and timber products specifically through:
- (a) certainty of resource access for the timber and forest-based industries;
 - (b) encouraging increased production of Plantation-grown timber to supplement wood supply from native forests;
 - (c) facilitating timber and forest-based industries growth and development, in areas such as:
 - skills retention and workforce development;
 - research, innovation and extension;
 - strategic marketing, communications and education;
 - essential and strategic infrastructure;
 - resource management and access; and
 - regulatory modernisation;
 - (d) providing for other forest based industries, including:
 - security of access to the Mining industry by continuing to recognise defined land tenures which allow for Mineral Exploration and Mining subject to the requirements of State and Commonwealth legislation; and
 - facilitating economic opportunities for tourism and recreation.
- 75 As part of providing greater security of access to forest resources, the Commonwealth will not prevent enterprises obtaining, using or exporting the quantities of timber, Woodchips and Unprocessed Wood products sourced from the Southern region in accordance with this Agreement.
- 76 New South Wales agrees to make available to timber and forest-based industries, Forest Products at volumes no greater than Sustainable Yields for the Southern region, as amended from time to time and determined in accordance with Attachment 11.

77 New South Wales will implement Sustainable Yield in accordance Attachment 11 to this Agreement.

77A NSW will ensure Sustainable Yield is calculated and managed consistent with the ESFM principles at Attachment 13.

78 New South Wales agrees that the timber volumes made available under this Agreement will be reviewed using the processes described in clause 47(g) and in accordance with the provisions of this Agreement. Any additional sustainable timber volumes identified in this way will be made available to industry provided this is consistent with this Agreement, including the provisions relating to Ecologically Sustainable Forest Management, and that there are no adverse environmental effects, including deleterious effects on CAR Values or Matters of National Environmental Significance.

79 NOT USED

80 NOT USED

81 NOT USED

82 NOT USED

83 NOT USED

84 Wherever possible New South Wales will enhance silvicultural programs and reforestation works to improve the productive capacity of State forests.

85 NOT USED

86 NOT USED

87 NOT USED

88 NOT USED

89 NOT USED

ABORIGINAL CULTURE AND HERITAGE

90 New South Wales agrees to maintain, implement and regularly review guidelines and other measures to ensure the appropriate management of Aboriginal heritage including the maintenance of traditional historic uses and values, and to facilitate ongoing involvement of Aboriginal people in the management of natural and cultural values of relevant forested land of the Southern region. The principles to be applied are at Attachment 10.

90A The Parties agree that the Forest Management Framework provides a framework for the protection of Aboriginal heritage values that aligns with the NSW legislative framework for Aboriginal cultural heritage management, including in relation to consultation and ongoing involvement with Aboriginal

people and managing the impacts of forestry operations on Aboriginal cultural heritage values.

90B The Parties commit to ongoing Aboriginal involvement in forest management and as required by the Aboriginal Cultural Heritage Advisory Committee (or any successor) in relation to protection of significant sites and places.

91 This Agreement is not intended to influence either current or future Native Title claims in any way. The Parties acknowledge that if any implementation of this Agreement affects any native title rights and interests such implementation must be in accordance with the *Native Title Act 1993* (Cth).

91A The Parties recognise that Aboriginal Land Councils in NSW can claim land vested in the Crown to compensate Aboriginal persons for historic dispossession of land and to support their social and economic development under the *Aboriginal Land Rights Act 1983* (NSW). Under section 36AA of the *Aboriginal Land Rights Act 1983* (NSW), Aboriginal Land Councils can also negotiate Aboriginal Land Agreements. The Parties agree that during the life of this Agreement its provisions do not restrict the rights of Aboriginal Land Councils to make land claims or have existing land claims determined over land the subject of this Agreement, or negotiate rights to use and enjoy such land as part of an Aboriginal Land Agreement under the *Aboriginal Land Rights Act 1983* (NSW).

91B In acknowledging the ongoing aspirations of Aboriginal persons to future ownership and/or roles in the management of Crown lands, the State agrees, so far as possible, not to transfer Public Land the subject of this Agreement to any other entity or authority unless:

(a) if the land includes land for which a claim has been made under the *Aboriginal Land Rights Act 1983* (NSW), written consent for the transfer of the land has been given by:

(i) the Local Aboriginal Land Council for the Local Aboriginal Land Council area (as defined in that Act) in which the land is located, and

(ii) where the claim is made by the New South Wales Aboriginal Land Council, the New South Wales Aboriginal Land Council, and

(b) in any other case the State will, so far as possible, ensure that notice of its intent to transfer the land is given to the NSW Aboriginal Land Council, and to the Local Aboriginal Land Council within whose constituted area the land is situated.

91C The Parties recognise the *United Nations Declaration on the Rights of Indigenous Peoples*, including the right for the Aboriginal people of New South Wales to practise and revitalise their cultural traditions and customs. This includes the right to maintain, protect and develop their cultural traditions and customs.

PLANTATIONS

92 The Parties note that export controls on the export of Woodchips and Unprocessed Wood sourced from New South Wales Plantations have been removed in accordance with the *Export Control Act 1982* (Cth).

92A The Parties encourage the establishment and use of Plantation forests on existing essentially cleared land to generate social and economic values.

OTHER FOREST USES

93 Parties agree that Forest uses other than timber production will be determined in accordance with New South Wales legislation with due regard for protection of Environment and Heritage Values. In some limited circumstances that do not relate to the substance of this Agreement (for example foreign investment approval, export controls for non-forest products and major infrastructure developments) Commonwealth legislative provisions may also apply.

Mineral Exploration and Mining Operations

94 Parties recognise that under the *National Parks and Wildlife Act 1974* (NSW), issuing of new Mineral Exploration and Mining titles is not permitted (except by Act of Parliament) in national parks or historic sites, nature reserves, state game reserves, karst conservation reserves, Aboriginal areas and regional parks.

95 The Parties agree that Mining Operations are permitted within parts of the CAR Reserve System, to the extent permitted by relevant State or Commonwealth legislation. In addition to any requirements for the protection of Matters of National Environmental Significance under the EPBC Act, a condition of Mining Operations in Informal Reserves and areas with Values Protected by Prescription is that: CAR Values that are compatible with those Mining Operations be maintained; and for CAR Values not compatible with those Mining Operations, conservation be provided for elsewhere. Where a Mining Operation is not compatible with that part of the CAR Reserve System described as Values Protected by Prescription in Attachment 1, the State will use best endeavours to ensure that conservation of these values is provided for elsewhere.

96 New South Wales will ensure that any proposed Mining Operations will be subject to environmental impact assessment (including species impact statements where required) under the provisions of the *Environmental Planning and Assessment Act 1979* (NSW). Mining Operations will be subject to the *Mining Act 1992* (NSW), the *Petroleum (Onshore) Act 1991* (NSW), the *Protection of the Environment Operations Act 1997* (NSW), and the EPBC Act. Mining will be in accordance with an approved Mining Operations Plan and Annual Environmental Management Reports. Rehabilitation of any sites disturbed by Mining Operations will be carried out in accordance with the provisions of the relevant statutes (including the *Environmental Planning and Assessment Act 1979* (NSW) and the *Mining Act 1992* (NSW)).

COMPETITION PRINCIPLES

97 Parties recognise that under the Competition Principles Agreement, as amended from time to time, Governments aim to achieve more transparency and greater efficiency in Government owned business enterprises. The Commonwealth agrees that the day to day pricing and allocation arrangements for Forest Products from public Forests are matters for New South Wales. New South Wales confirms its commitment to the pricing and allocation principles set out in the *National Forest Policy Statement* and the application of competitive neutrality principles.

RESEARCH

98 The Parties agree that continuing research in a range of areas is vital to ensure that all aspects of Forest Management remain up to date with the latest information and technological developments. Parties have outlined themes for further research in Attachment 7.

99 The Parties agree to hold discussions on research themes and coordination as part of annual meetings pursuant clause 8B.

100 New South Wales will prepare for each five-yearly review, a compendium of New South Wales Forest research that will provide a bibliography of research in progress as well as published and unpublished works.

100A The Parties agree to document relevant Forest research undertaken in each reporting period and to update research themes in each five-yearly Progress Report.

101 Parties agree to consult each other in the development of joint research projects that may affect the Agreement and note that the subject themes and priorities may change throughout the duration of the Agreement.

102 Parties agree to make publicly available, wherever possible, research reports relevant to this Agreement.

DATA

103 NOT USED

104 The Parties recognise that the implementation and monitoring of this Agreement depends on appropriate mutual access to and availability of relevant information owned and held by each of them. The Parties agree to manage and provide access to data, including models used to develop and implement this Agreement.

104B The Parties commit to a policy of open access to information and agree that all data held by each of them that is used for ongoing implementation and monitoring of this Agreement is published under the least restrictive AusGOAL endorsed licences (including Creative Commons) unless otherwise agreed, or where data is confidential or otherwise restricted.

PART 3

Nature of Obligations under this Part

105 It is the intention of the Parties that this Part is to create legally enforceable rights and obligations. It is also their intention that, in the event that any provision of this Part exceeds the power of either Party or is unenforceable for any other reason, that provision is to be read as not intending to create legally enforceable rights and obligations.

Forest Management

106 New South Wales will for the duration of the Agreement:

106.1 NOT USED;

106.2 Report annually to the New South Wales Parliament on compliance with any Integrated Forestry Operations Approval applying to the Southern region as required by the *Forestry Act 2012* (NSW);

106.3 Notify the Commonwealth within 14 days that:

- (a) a copy of the annual reports on the Integrated Forestry Operations Approval applying to the Southern region is available on a relevant State government website;
- (b) a copy of any Integrated Forestry Operations Approval applying to the Southern region, and any amendments to that document is available on a relevant State government website;
- (c) there has been a termination, suspension or revocation of any Integrated Forestry Operations Approval applying to the Southern region; or
- (d) there has been a termination of any Private Native Forestry Code of Practice applying to the Southern region.

106.4 NOT USED;

106.5 Implement and maintain an Integrated Forestry Operations Approval for the Southern region;

106.6 Implement and periodically review the Regional ESFM Plan containing the Ecologically Sustainable Forest Management strategy for State forests in the Southern region made under the *Forestry Regulation 2012* (NSW) and the *Forestry Act 2012* (NSW);

106.7 Maintain a forest yield estimation system for State forest and periodically review the calculation of Sustainable Yield consistent with Attachment 11;

106.8 Maintain and implement environmental management systems in accordance with the principles outlined in Attachment 8.

106.9 Maintain and implement a Private Native Forestry Code of Practice applying to the Southern region;

106.10 Discuss with and notify the Commonwealth on proposed changes of a significant nature to the Forest Management Framework.

107 The Commonwealth will:

107.1 Not prevent enterprises obtaining, using or exporting timber, Woodchips and Unprocessed Wood products sourced from the Southern region in accordance with this Agreement;

107.2 Recognise that the Forest Management Framework, as amended from time to time and as it applies to the Southern region, demonstrates continual improvement, for the purposes of ESFM and relevant provisions of this Agreement.

Compensation

108 The Parties agree that:

108.1 If to protect the Environment and Heritage Values in native forests and in connection therewith the protection of:

- (a) CAR Values; or
- (b) National Estate Values; or
- (c) World Heritage Values; or
- (d) Wild Rivers

the Commonwealth takes any Action during the period of this Agreement which is inconsistent with any provision of this Agreement and a foreseeable and probable consequence of which is to prevent or substantially limit:

- (e) the use of land which is not included within the CAR Reserve System for Forestry Operations which, immediately before the announcement of the proposed Commonwealth Action, are being undertaken or were intended to be undertaken at any time or the use of land which is not included within the CAR Reserve System or of land within that system but not within a Dedicated Reserve in which mineral exploration and mining is prohibited pursuant to a statutory licence, permit or authority permitting those Mining Operations or Extractive Operations which was in force immediately prior to the announcement of the proposed Commonwealth Action; or,
- (f) the sale or commercial use of Forest Products sourced from land which is not included within the CAR Reserve System or the first sale or first commercial use of Mining Products or Extractive Materials sourced from land which is not included within the CAR Reserve System or land within that system but not within a Dedicated Reserve in which mineral exploration and mining is prohibited for a purpose for which, immediately

prior to the announcement of the proposed Commonwealth Action, they had been intended to be sold or used commercially at any time; or,

- (g) the construction on land which is not included within the CAR Reserve System of roads being built or intended to be built, immediately before the announcement of the proposed Commonwealth Action, where those roads' primary purpose is for the transportation of Forest Products sourced from land which is not included within the CAR Reserve System,

the Commonwealth will pay compensation to the State in accordance with the remaining provisions of clauses 108.2 to 108.20.

108.2 Subject to:

- (a) clauses 108.3, 108.4, 108.5, 108.6, 108.8, 108.9, 108.10, 108.11 and 108.12 the compensation to be paid by the Commonwealth to the State in accordance with clause 108.1 in relation to the prevention by Commonwealth Action of the use of land for Forestry Operations or prevention by Commonwealth Action of the sale or commercial use of Forest Products is the amount of the reasonable loss or damage sustained by reason of that prevention, calculated as at the time at which the prevention referred to in clause 108.1 occurred, by any person in any of the following classes of person:
 - (i) the Owner of the land or of the Forest Products on the land;
 - (ii) any person who, prior to the announcement of the proposed Commonwealth Action but not in anticipation of that Action, entered into a contract with the Owner of the land or of the Forest Products on the land or with any person mentioned in sub-paragraph (iii) below for the carrying out of Forestry Operations on the land; and
 - (iii) any person who, prior to the announcement of the proposed Commonwealth Action but not in anticipation of that Action, entered into a contract with the Owner of the land or of the Forest Products on the land to purchase the Forest Products on the land.
- (b) clauses 108.3, 108.4, 108.5, 108.6, 108.7, 108.8, 108.10, 108.11 and 108.12 the compensation to be paid by the Commonwealth to the State in accordance with clause 108.1 in relation to the prevention by Commonwealth Action of the use of land for Mining Operations or Extractive Operations or the first sale or first commercial use of Mining Products or Extractive Materials is the amount of the reasonable loss or damage sustained by reason of that prevention, calculated as at the time at which the prevention referred to in clause 108.1 occurred, by any person carrying on Mining Operations or Extractive Operations on the land pursuant to a statutory licence, permit or authority permitting those operations which was in force immediately prior to the announcement of the proposed Commonwealth Action.

(c) clauses 108.3, 108.6, 108.8, 108.9, 108.11 and 108.12 the compensation to be paid by the Commonwealth to the State in accordance with clause 108.1 in relation to the prevention by Commonwealth Action of construction of a road is the amount of reasonable loss or damage sustained by reason of that prevention, calculated as at the time at which the prevention referred to in clause 108.1 occurred, by any person who, immediately before the announcement of the proposed Commonwealth Action, was contracted to construct that road.

108.3 No amount of compensation is payable in the event of any loss or damage being sustained which would have been so sustained regardless of the Commonwealth Action. No compensation is payable hereunder in respect of any additional areas included pursuant to this Agreement in the CAR Reserve System.

108.4 The State warrants that no claim will be made in respect of areas where Forestry Operations or Mining Operations or Extractive Operations would not have been permitted by this Agreement and that any claims will be certified by it as being or not being in respect of such areas and as having been assessed by the State in this regard.

108.5 The State warrants that no claim will be made in respect of Forest Products or Mining Products or Extractive Materials which would not have been available for sale or commercial use under this Agreement and that any claims will be certified by it as being or not being in respect of such Products and as having been assessed by the State in this regard.

108.6 The State undertakes to supply to the Commonwealth on request information, including as to areas protected by prescription, required by the Commonwealth for the purposes of considering claims under this clause.

108.7 To the extent that clause 108.2(b) relates to loss or damage in respect of an exploration licence or assessment lease, that clause is to be read as providing for compensation to be payable only:

- (a) in respect of the part of the area to which that licence or lease relates that is affected by the Commonwealth Action; and
- (b) up to the loss in market value of that licence or lease resulting from the prevention of the Mining Operations or Extractive Operations.

108.8 Any claim made by the State hereunder is to be notified in writing within six months after the loss or damage is sustained.

108.9 For the purposes of clauses 108.1(e) and (g), the intention to conduct Forestry Operations, or the intention to construct roads is to be established on the basis of contracts, documentation of management history or other records establishing clear intent and in existence immediately prior to the announcement of the proposed Commonwealth Action.

108.10 For the purposes of clause 108.1(f), the purpose for which there was an intention to sell or use commercially is to be established on the basis of

contracts, documentation of management history or other records establishing clear intent and in existence immediately prior to the announcement of the proposed Commonwealth Action.

108.11 No compensation is payable under clause 108.2 in relation to any loss or damage which the person who sustained the loss or damage might have avoided by taking reasonable steps in mitigation including by the making of alternative contractual arrangements which would have avoided or reduced that loss or damage.

108.12 clause 108.2 does not apply so as to entitle the State to recover compensation more than once in respect of the same loss or damage.

108.13 The initial procedure in relation to a claim for compensation under this clause is as follows:

- (a) a person who claims to have sustained loss or damage for which compensation is payable may lodge an initiating claim with the State;
- (b) on receiving a claim, the State must make a corresponding claim for compensation to the Commonwealth;
- (c) the State is to make the claim for compensation by a notice in writing to the Commonwealth which indicates the amount claimed, for whom the claim is made, the area to which it relates and gives detailed particulars of the basis for the claim, and of the manner in which it has been calculated;
- (d) where there is a dispute concerning a claim for compensation, or on or before the expiry of 30 days after the receipt of the claim, the Commonwealth notifies the State that it does not accept the amount claimed, then either Party may serve a notice of dispute under clause 10;
- (e) in the event that the amount of compensation payable in response to a claim has not been agreed in the dispute resolution process for which clauses 10 to 14 provide, or the Commonwealth fails to pay the agreed amount of compensation to the State within 60 days of agreement (for reasons other than lack of the necessary appropriation), the Parties hereby refer the claim to arbitration;
- (f) an arbitration under this Agreement is to be conducted in accordance with the provisions of the *Commercial Arbitration Act 1984* (NSW) which are, to the extent permitted by the *Judiciary Act 1903* (Cwlth) and the Commonwealth constitution, incorporated by reference into this Agreement.

108.14 The procedure in relation to any arbitration required by reason of the provisions of clause 108.13 is as follows:

- (a) The Parties must meet to appoint an arbitrator within seven days of an unsuccessful mediation.

- (b) If the Parties are unable to agree on the appointment of an arbitrator, either of them may refer the matter to the President of the Law Council of Australia, or equivalent officer of such body as in future may have the functions of the Law Council of Australia, with a request that that person appoint an arbitrator.
- (c) At an arbitration under this clause:
 - (i) the Parties are entitled to representation by a legal practitioner qualified to practice in any State or Territory of Australia;
 - (ii) the arbitrator may order the Parties to discover any relevant documents prior to the hearing;
 - (iii) the arbitrator may order the Parties to exchange proofs of evidence of witnesses (whether expert or not) prior to the hearing;
 - (iv) the arbitrator may, in accordance with the *Commercial Arbitration Act 1984* (NSW), inform himself or herself, in relation to any matter in such manner as the arbitrator thinks fit; provided that if the arbitrator takes advice from any person who is not a Party to this Agreement as to the matters in issue, the arbitrator must provide the Parties with an opportunity to:
 - (1) make submissions on the matter in which the advice is to be taken;
 - (2) make submissions on the identity of the person from whom the advice is to be taken;
 - (3) make submission on the substance of any advice given before making any decision on the issue on which the advice is taken.

108.15 Unless the Commonwealth appeals the decision of the arbitrator under the *Commercial Arbitration Act 1984* (NSW), and subject to clause 108.18, the Commonwealth undertakes to pay the State the amount of any award made by an arbitrator under clause 108.14 as a debt due to the State, within 60 days of the award.

108.16 Except where the State is the person who sustained the relevant loss or damage, any payment of compensation made by the Commonwealth to the State in accordance with this clause will be paid to and received by the State as trustee for the person who sustained the relevant loss or damage.

108.17 Subject to clause 108.18(b), where the State receives monies as a trustee pursuant to clause 108.16, it will pay those monies to the person who sustained the relevant loss or damage within 30 days.

108.18 (a) Where the Commonwealth has agreed to pay compensation to the State under this clause, or an award of compensation has been made under clause 108.14 as a result of arbitration, and the Commonwealth claims that events have

since taken place which have the result that the compensation so agreed or awarded no longer reflects the actual loss or damage that has been or will be sustained, the Commonwealth may by notice in writing to the State, decline to pay that compensation.

- (b) If a notice under paragraph (a) is delivered after the State has received the compensation so agreed or awarded, but before the State has paid it to the person who sustained the relevant loss or damage, the State will not pay the compensation to that person.
- (c) If a notice under paragraph (a) is delivered, the Parties will attempt to agree the amount of the compensation which the Commonwealth should pay, and
 -
 - (i) in default of agreement, will first seek to resolve the dispute by dispute resolution under clauses 10 to 14; and
 - (ii) in the event that the dispute is not so resolved, or the Commonwealth fails to pay the agreed amount of compensation to the State within 60 days of agreement (for reasons other than lack of the necessary appropriation), hereby refer the claim for compensation to arbitration in accordance with the *Commercial Arbitration Act 1984* (NSW).
- (d) Subject to paragraph (e) of this clause, where an arbitration takes place in accordance with sub-paragraph (c)(ii), clauses 108.14 and 108.15 of this Agreement apply to that arbitration and to any amount awarded in that arbitration.
- (e) If, following the observance of paragraph (c) of this clause, it is determined by agreement or award that the Commonwealth should pay a reduced amount of compensation to the State, the State will within 30 days of that determination -
 - (i) repay to the Commonwealth the amount by which the compensation paid to it by the Commonwealth is reduced; and
 - (ii) pay the balance of the compensation to the person who sustained the relevant loss or damage.
- (f) If, following the observance of paragraph (c) of this clause, it is determined by agreement or award that the amount of compensation previously paid to the State is correct the State will within 30 days of that determination pay to the person who sustained the relevant loss or damage the amount of the compensation previously paid to it by the Commonwealth.

108.19 Where the State:

- (a) has received monies as a trustee pursuant to clause 108.16; and
- (b) has made all reasonable endeavours to pay the monies to the person who sustained the relevant loss or damage; and

(c) but has been unable to do so within six months of receiving payment

the State shall repay to the Commonwealth at the expiry of that period the monies so received.

108.20 In this clause

(a) "Action" means

- (i) the commencement of legislation or subordinate legislation; and
- (ii) administrative action which is taken pursuant to legislation or subordinate legislation, or otherwise than in accordance with such legislation.

(b) "Owner" means

- (i) in relation to land
 - (1) the owner of any estate or interest in that land, including the Crown in right of the State; and
 - (2) any statutory corporation which has the power to carry on Forestry Operations or Mining Operations or Extractive Operations, as the case may be, on the land for profit.
- (ii) in relation to Forest Products or Mining Products or Extractive Materials, as the case may be, the owner of any interest in those products.

109 NOT USED

Termination

110 This Agreement may only be terminated by the Commonwealth:

- (a) where the dispute resolution procedures in clauses 10 to 14 have been observed and the State has been given a 90 day period of notice on:
 - (i) a failure by the State to comply with clause 66, being a failure to implement the CAR Reserve System as described in Attachment 1 and to manage and conserve the identified CAR Values; or
 - (ii) a failure to comply with clause 34, 47(a), and 47(b) being a failure to grant by 30 June 2001 and maintain throughout the life of this Agreement a New South Wales Forest Agreement that covers the Southern region and an IFOA that applies to the Southern region and that reflects the outcomes of this Agreement. The Commonwealth agrees not to terminate this Agreement because of a failure by New South Wales to maintain a Forest Agreement for the Southern region. However, the Parties acknowledge that if the State does not maintain a Forest Agreement covering the Southern region, termination of this

Agreement by the Commonwealth would be authorised by s 7 of the *Regional Forest Agreements Act 2002* (Cth); or

- (iii) a failure to comply with clause 47(d); or
- (iv) a failure to comply with clause 76 and the Sustainable Yield Systems and Processes described in Attachment 8; or
- (v) a failure to comply with clauses 47(h) and clause 56 being a failure to both develop and implement the environmental management systems in accordance with Attachment 8, and produce a Code of Practice for timber harvesting of native forest on Private Land.

other than a failure of a minor nature which is not one or part of a series of deliberate or reckless failures of a minor nature; and save that the above provisions do not apply if rectification is possible and has occurred before the end of the 90 day period; or

- (b) on a fundamental failure by the State to comply with the spirit of the Agreement after the observance of the dispute resolution procedures in clauses 10 to 14.

111 This Agreement may only be terminated by the State:

- (a) where the dispute resolution procedures in clauses 10 to 14 have been observed and the Commonwealth has been given a 90 day period of notice on:
 - (i) NOT USED;
 - (ii) a failure by the Commonwealth to comply with clause 108, being a failure to pay compensation due under that clause;

save that the above provisions do not apply if rectification is possible and has occurred before the end of the 90 day period; or

- (b) on a fundamental failure by the Commonwealth to comply with the spirit of the Agreement after the observance of the dispute resolution procedures in clauses 10 to 14.

112 This Agreement may be terminated with the consent of the Commonwealth and the State.

Notice of intention to review before termination by consent

113 A consent under clause 112 is of no effect, unless:

- 113.1 it is given at least 12 months after a notice of intention to review the operation of this Agreement is published in the Commonwealth *Gazette* and a national newspaper and a newspaper circulating in New South Wales stating that a joint review is being undertaken by the Parties because they intend to terminate the Agreement by consent;

113.2 The Parties have conducted the joint review as in accordance with this clause;

113.3 The joint review must consider whether the operation of the Agreement has met the goals set out in Recitals A and B;

113.4 Within eight months after the notice of intention to review is published under this clause, and after considering any submissions to the joint review, the Parties must make a report of the review publicly available; and

113.5 If, under clauses 8D and 8E, a five-yearly review is to be conducted during the 12 month period after a notice of intention to review is published under this clause, and the joint review is conducted under this clause, the Parties may agree that the review under clauses 8D and 8E need not be undertaken.

IN WITNESS WHEREOF this Agreement has been signed for and on behalf of the Parties as at the day and year first above written.

SIGNED by

the HONOURABLE JOHN WINSTON HOWARD MP, Prime Minister

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for and on behalf of the Commonwealth of Australia

in the presence of:

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SIGNED by

the HONOURABLE BOB CARR MP, Premier

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for and on behalf of the State of New South Wales

in the presence of:

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ATTACHMENTS

Attachment 1	Comprehensive, Adequate and Representative (CAR) Reserve System – Southern Region.
Attachment 2	Conservation Mechanisms on Private Land.
Attachment 3	Listed Species and Communities.
Attachment 4	NOT USED.
Attachment 5	NOT USED.
Attachment 6	NOT USED.
Attachment 7	Research Priorities.
Attachment 8	Continual Improvement of the New South Wales' Forest Management Framework.
Attachment 9	Montreal Process Criteria for the Conservation and Sustainable Management of Temperate and Boreal Forests.
Attachment 10	Managing Lands of Significance to Aboriginal People
Attachment 11	Sustainable Yield Systems and Processes.
Attachment 12	NOT USED.
Attachment 13	Principles of Ecologically Sustainable Forest Management (ESFM).

**COMPREHENSIVE, ADEQUATE AND REPRESENTATIVE (CAR)
RESERVE SYSTEM**

SOUTHERN REGION

- 1 Map 1 and this Attachment identify the CAR Reserve System on Public Land for the Southern region for the purpose of this Agreement, as amended from time to time.
- 2 The *National Forest Policy Statement* (NFPS) established that the CAR Reserve System will, in the first instance, be selected from Public Land. Provision is also made in the JANIS Reserve Criteria for inclusion of Private Land in the CAR Reserve System, with the agreement of landholders, where the Criteria cannot be met from Public Land.

PUBLIC LAND

- 3 In the Southern region, the CAR Reserve System on Public Land primarily comprises areas established for conservation purposes (eg National Parks and Nature Reserves) and areas reserved for conservation in State forest.

CAR RESERVE SYSTEM COMPONENTS AND PROTECTION MECHANISMS.

- 4 The CAR Reserve System on Public Land has the following three components:
 - *Dedicated Reserves.* This comprises reserves established through legislation for conservation purposes such as National Parks, Nature Reserves and Flora Reserves (Special Protection Zone, FMZ 1).
 - *Informal Reserves.* This comprises those parts of the Special Management Zone (FMZ 2) under the Forest Management Zoning system that are greater than 40ha, are more than 200m wide, or are directly adjacent to Dedicated Reserves. It also includes those areas dedicated as State Conservation Areas under the provisions of the *National Parks and Wildlife Act 1974* (NSW) which are managed by the NSW National Parks and Wildlife Service. *Values Protected by Prescription.* These comprise those elements of habitat protected by Regional Prescriptions as detailed in the Integrated Forestry Operations Approval covering the Southern region and areas within the Harvesting Exclusions (FMZ 3A) and Special Prescription Zone (FMZ 3B) under the Forest Management Zoning system that are excluded from harvesting. They also include elements of the Special Management Zone (FMZ 2) that are less than 40ha and less than 200m wide. The Integrated Forestry Operations Approval complements the Dedicated and Informal Reserve network and includes protection of rare non-

commercial forest types, Old Growth forest, rainforest and threatened species in all areas that have been identified to be primarily managed for sustainable production.

- 5 NOT USED
- 6 As at December 2017, the Dedicated Reserve component of the CAR Reserve System covers 1,393,000 ha, the Informal Reserve component 26,000 ha and the prescriptive component 55,000 ha. Together the Dedicated Reserve and Informal Reserve components of the CAR Reserve System cover an area of approximately 1,419,000 ha (about 69% of the Public Land in the region or 31% of the entire region).
- 6A Levels of protection for Forest Ecosystems and Old Growth forest achieved in the Dedicated Reserve, Informal Reserve and the Values Protected by Prescription components of the CAR Reserve System are shown in Tables 1 and 2. The tabulated percentage area of these values in prescription includes elements of the Special Management Zone (FMZ 2) that are less than 40ha and less than 200m wide, as well as areas of Old Growth forest (and Forest Ecosystems within these areas) that will be managed by the Integrated Forestry Operations Approval .
- 6B The IFOA provides for protection of environmental values in addition to those protected in FMZ 2, FMZ 3A, FMZ 3B, mapped areas under the IFOA, or other CAR Reserves and quantified in Tables 1 and 2. The protections under the IFOA are updated and modified from time to time as a result of the continual improvement process to improve the effectiveness and efficiency of these conditions.

Forest Management Zoning

- 7 Within the Forest Management Zoning system, of particular significance for the conservation of Forest Ecosystems and Old Growth forest are :
 - *Special Protection Zone (FMZ 1)*. These areas are dedicated and managed to maximise the protection of natural and cultural values. Timber harvesting, removal of Forest Products and materials, grazing by domestic stock, gravel/hard rock quarrying and mineral and petroleum exploration are not generally permitted within this zone.
 - *Special Management Zone (FMZ 2)*. These areas are established following public comment and are gazetted and managed for the protection of natural and cultural conservation values where it is not possible or practicable to include them in the Special Protection Zone. Activities not permitted in this zone are similar to the Special Protection Zone except that mineral and petroleum exploration are permitted. Any mining proposal following from exploration will require standard environmental impact assessment and development approval processes.
 - *Harvesting Exclusions Zone (FMZ 3A)*. These are areas where harvesting is excluded but other management and production activities

preclude zoning as Special Protection Zone (FMZ1) or Special Management Zone (FMZ2). These may be:

- i) Dedicated leasehold where lease conditions permit activities such as grazing and timber supply for lease fencing etc, and in some cases residency, or
 - ii) Areas identified as important by the Department of Planning and Environment where there are current or imminent petroleum and Mineral Exploration and/or Mining Operations , or
 - iii) Other areas which are excluded from harvesting (eg. Net Harvestable Area (NHA) exclusions) but size, boundaries or management practicabilities preclude designation as FMZ 1 or FMZ 2.
- *Special Prescription Zone (FMZ 3B)*. These areas are established for the protection and management of identified conservation values, whilst also allowing other management and production activities. These activities (which in some cases includes timber, Forest Product and materials extraction) are minimised in their design and implementation to maintain or enhance the values that the area is zoned to protect. A case by case assessment of these areas will be undertaken to determine which forestry activities can occur. The decision is dependent on the specific values involved

8 NOT USED

Commonwealth Land

9 Informal Reserves on Commonwealth land total 1,320 hectares and are identified on Map 1.

10 The Commonwealth agrees to manage those areas of Commonwealth owned land identified in the Beecroft Weapons Range as CAR Informal Reserves and to take all reasonable steps for the protection of identified CAR Values, on the following conditions:

- Condition 1. That the reserve boundaries encompass only those areas that actually contain the CAR Values.
- Condition 2. That the reserves do not exclude Defence activities that would not compromise the long-term survival of the CAR Values.
- Condition 3. That the establishment of the reserves are based on the development of Defence management arrangements (ie Defence Environmental Management Plans) rather than any modification to existing tenures which may be detrimental to Defence's usage of the training areas.

- Condition 4. That Defence is the sole approving agency for the Defence Environmental Management Plans that prescribe the management regime for the reserves. Defence will consult with relevant experts, State and Commonwealth agencies on the appropriateness of the management regimes.
- Condition 5. Defence will make environmental management plans for the Beecroft Weapons Range available to State and Local authorities and will cooperate with those authorities to make changes if they are required to protect CAR Values.
- Condition 6. Defence will be provided advance notification of any proposed changes to reserve boundaries on Defence land and will be given 40 days to provide a submission on the feasibility of changes with respect to Defence use of the area.
- Condition 7. The reserve boundaries will delineate the actual CAR Values. Defence will establish operational and environmental management buffer zones around the reserves based on particular land use activities that may occur adjacent to the reserves. The buffer zones will be identified in the Defence Environmental Management Plans. The buffer zones will be designed to permit appropriate levels of wildlife and conservation connectivity between isolated stands of the CAR identified forest areas.

10A The Parties recognise that the 1999 Beecroft Peninsula Environmental Management Plan referred to above has been superseded by an Environmental Management System (EMS).

10B The EMS documents the biodiversity values of each site and prescribes management actions to ensure Defence activities do not adversely affect these values. As part of this, the Department works closely with state and local agencies to develop and implement components of the EMS, such as bushfire management, threatened species monitoring, catchment management, feral animal control and native fauna management.

10C The Department of Defence will continue to manage the environmental values of the Beecroft Weapons Range in general alignment with the seven conditions for the protection of the CAR Informal Reserves values outlined above.

11 The Department of Defence will identify this CAR Informal Reserve on Commonwealth land on operational and planning maps as part of the EMS.

12 NOT USED

Environment and Heritage Values protected by prescription

13 For Environment and Heritage Values that are not included in reserves, the JANIS Reserve Criteria provide for the management of such values through prescriptions. Within the General Management Zone of the Forest Management

Zoning system (FMZ 4), Forestry Operations and other activities are permitted. The principal vehicles by which Environment and Heritage Values will be managed within FMZ 4 are:

- The Integrated Forestry Operations Approval covering the Southern region will be the principal vehicle by which environment values are protected through prescription. The Integrated Forestry Operations Approval takes account of the extent of reserved habitat, and balances an operationally efficient timber industry with the need to protect native plants and animals, ecosystems, soils and water.
- Aboriginal and non-Aboriginal cultural heritage guidelines made in accordance with relevant legislation and amended from time to time, provide prescriptions for the management of heritage values that are impracticable to include in reserves in the Southern region.

IDENTIFIED CAR VALUES AND THEIR PROTECTION AFFORDED THROUGH THE RFA

14 Levels of protection for Forest Ecosystems and Candidate Old Growth forest achieved in the CAR Reserve System are shown in Tables 1 and 2 of this Attachment as follows:

- Dedicated Reserves; as described in clause 4 of this Attachment,
- Informal Reserves; as described in clause 4 of this Attachment, and
- Values Protected by Prescription; includes the areas within the Harvesting Exclusions Zone (FMZ 3A), and those areas of the Special Management Zone (FMZ 2) that, due to the size or shape, do not meet the Informal Reserve category outlined above.

It should be noted that the IFOA affords additional protection over that included in the table.

Table 1. Representative conservation (percentage reservation status as at 2001 and December 2017) of Forest and Non-Forest Ecosystems in the CAR Reserve System in the Southern region based on vegetation modelling to establish the pre-1750 extent of Forest Ecosystems in the Southern region^a.

Forest Ecosystems ^b	Area		Percent Remaining as at 2001	Status ^c as at 2001	Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at 2001				Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at December 2017 ^f			
	Pre 1750 (ha)	As at 2001 (ha)			Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total	Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total
1 Southern Coastal Hinterland Intermediate Altitude Shrub Dry Forest - <i>E. sieberi</i>	50,657	50,567	99.8	-	65.9	2.8	0.8	69.5	70	1	2	74
2 Hinterland Heath Shrub Dry Forest - <i>Corymbia gummifera</i> / <i>Syncarpia glomulifera</i>	103,514	86,242	83.3	-	36.3	0.8	3.4	40.4	36	1	4	41
3 Northern Hinterland Shrub Dry Forest - <i>Syncarpia glomulifera</i> / <i>E. scias</i>	16,237	16,215	99.9	-	87.6	0.1	0.1	87.8	88 [^]	0	1	89 [^]
4 Shoalhaven Gorge Dry Heathy Shrub Forest - <i>E. punctata</i> / <i>E. agglomerata</i>	17,823	17,822	100.0	-	73.7	2.4	0.0	76.1	75	0	0	75
5 Northern Coastal Lowlands Shrub/Grass Dry Forest - mixed tree species	15,789	8,846	56.0	-	9.0	6.5	0.6	16.2	9	1	9	19
7 Southern Coastal Hinterland Shrub/Tussock Grass Dry Forest - <i>E. sieberi</i>	20,364	20,355	100.0	-	28.7	4.2	1.7	34.5	29 [^]	4	4	36 [^]
8 Far Southern Coastal Shrub Dry Forest - <i>E. sieberi</i>	482	479	99.4	-	43.4	0.0	0.0	43.4	43 [^]	0	0	43 [^]
9 Coastal Lowlands Cycad/Shrub Dry Forest - <i>Corymbia maculata</i>	64,566	55,532	86.0	-	11.6	2.5	2.0	16.1	12	2	4	18
10 Southern Coastal Lowlands Shrub/Grass Dry Forest - <i>E. globoidea</i> / <i>E. longifolia</i>	19,448	17,634	90.7	-	15.7	3.3	2.8	21.8	16 [^]	3	4	23 [^]
11 Coastal Shrub/Grass Dry Forest - <i>E. botryoides</i> / <i>E. globoidea</i> / <i>Imperata cylindrica</i>	557	426	76.5	R	30.9	0.0	0.0	30.9	46	0	0	46
12 Coastal Hinterland (Buckenboursa) Shrub/Cycad Dry Forest - <i>Corymbia gummifera</i>	1,005	1,005	100.0	R	78.5	0.0	0.8	79.3	81	0	1	82

Forest Ecosystems ^b	Area		Percent Remaining as at 2001	Status ^c as at 2001	Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at 2001				Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at December 2017 ^f			
	Pre 1750 (ha)	As at 2001 (ha)			Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total	Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total
13 Southern Escarpment Foothills Rainshadow Dry Grass Forest - E. agglomerata	4,196	4,192	99.9	-	77.0	0.0	0.0	77.0	77	0	0	77
14 Northern Coastal Hinterland Shrub/Grass Dry Forest – E. fibrosa/Corymbia maculata	6,698	5,756	85.9	-	21.3	13.2	0.0	34.4	33	0	0	33
15 North East Tableland Dry Shrub Forest – E. sieberi	88,285	56,597	64.1	-	20.6	1.2	0.1	21.9	24	1	0	25
16 North East Tableland Dry Shrub/Tussock Grass Forest – E. agglomerata	21,786	15,506	71.2	-	34.5	5.4	0.0	39.9	43	0	0	43
17 Northern Sandstone Dry Shrub Forest - E. punctata	92	92	100.0	-	0.0	0.0	0.0	0.0	0	0	0	0
18 Southern Coastal Hinterland Shrub/Vine/Grass Moist Forest – E. cypellocarpa/E. muelleriana	51,037	50,316	98.6	-	54.4	2.1	0.9	57.4	54	2	5	61
19 Coastal Escarpment and Hinterland Shrub/Fern Dry Forest - E. muelleriana	69,525	68,666	98.8	-	55.7	2.9	1.3	59.9	56	2	3	61
20 Coastal Hinterland Gully Rainforest	2,976	2,976	100.0	-	40.0	1.1	1.9	43.0	38	1	6	45
21 Northern Coastal Hinterland Moist Shrub Forest - C. maculata/ E. pilularis	90,346	69,988	77.5	-	23.7	1.7	1.6	27.0	24	1	2	27
24 Coastal Wet Heath Swamp Forest - Casuarina glauca/ Melaleuca ericifolia *	13,182	6,119	46.4	V	11.8	0.8	0.0	12.7	12	0	0	12
25 South Coast Swamp Forest - Casuarina glauca *	18,097	3,792	21.0	V	5.2	1.3	0.2	6.6	5	0	0	6
27 Ecotonal Coastal Swamp Forest - Casuarina glauca/E. botryoides *	9,862	343	3.5	E	0.2	0.1	0.0	0.3	0	0	0	1
28 Coastal Sands Shrub/Fern Forest - E. botryoides/Banksia serrata	2,959	2,525	85.3	-	26.9	11.8	0.0	38.8	27	3	3	33
29 Northern Coastal Sands Shrub/Fern Forest - E. pilularis/ Banksia serrata	14,168	10,838	76.5	-	29.4	1.3	0.5	31.2	29 [^]	0	3	32 [^]
32 Coastal Escarpment Rocky Shrub Dry Forest	44	44	100.0	R	100.0	0.0	0.0	100.0	100	0	0	100

Forest Ecosystems ^b	Area		Percent Remaining as at 2001	Status ^c as at 2001	Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at 2001				Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at December 2017 ^f			
	Pre 1750 (ha)	As at 2001 (ha)			Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total	Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total
34 Deua Ecotonal Shrub Forest - E. smithii/E. cypellocarpa/Astrotricha latifolia/Notelaea venosa	123	123	100.0	R	100.0	0.0	0.0	100.0	100 [^]	0	0	100 [^]
35 South Coast Acacia Scrubs - Acacia sylvestris	3,981	3,980	100.0	-	68.3	0.7	1.4	70.5	69	1	2	72
37 Scabby Range Dry Shrub Woodland - E. debeuzevillei/Leptospermum namadgiensis	271	271	100.0	R	98.9	0.0	0.0	98.9	99 [^]	0	0	99 [^]
38 Tableland Dry Heath Shrub/Herb/Grass Woodland - Calytrix tetragona (E. goniocalyx)	1,456	1,456	100.0	-	69.4	4.0	0.0	73.4	81	0	0	81
40 Coastal Hinterland (Deua NP) Dry Shrub Forest (rhyolite) - E. stenostoma	2,415	2,415	100.0	-	100.0	0.0	0.0	100.0	100 [^]	0	0	100 [^]
41 Rain Shadow (lower Snowy) Shrubland	705	705	100.0	R	54.3	0.0	0.0	54.3	56	0	0	56
43 Western Slopes Riparian Moist Sedge Woodland – E. camaldulensis *	20,916	1,589	7.6	E	0.0	0.0	0.0	0.0	0	0	0	0
47 Far Southern Hinterland Herb/Grass Moist Forest – E. maidenii/E. globoidea	496	85	17.1	-	10.3	0.0	0.0	10.3	15	0	0	15
48 Coastal Lowlands Riparian Herb/Grass Forest - various eucs	6,118	3,625	59.3	-	9.9	4.2	4.2	18.3	10 [^]	4	3	17 [^]
49 Southern Hinterland Shrub/Herb/Grass Riparian Forest - Angophora floribunda/E. elata/Acacia mearnsii	19,326	14,573	75.4	-	44.5	1.9	1.0	47.4	45 [^]	2	1	48 [^]
50 Southern Escarpment Foothills Herb/Grass Dry Forest- Angophora floribunda/E. globoidea	28,608	18,926	66.2	-	26.9	0.6	0.0	27.5	28	0	0	28
51 Araluen Acacia Herb/Grass Dry Forest - E. melliodora/E. maidenii	5,503	4,882	88.7	-	10.0	11.6	0.0	21.6	24	0	0	24
53 Riparian Acacia Shrub/Grass/Herb Forest - Casuarina cunninghamiana	6,769	5,242	77.4	-	16.4	1.1	0.5	18.0	23	1	1	25

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	Pre 1750 (ha)	As at 2001 (ha)			Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total	Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total
55 Eastern Tableland Fern/Herb/Grass Moist Forest – E. fastigata	39,926	36,826	92.2	-	34.2	6.0	1.6	41.8	36	4	2	42
56 Tableland and Escarpment Moist Herb/Fern Grass Forest – E. radiata/E. viminalis/Viola spp	45,238	30,714	67.9	-	22.3	4.1	2.9	29.3	26	1	1	29
57 Southern Escarpment Shrub/Fern/Herb Moist Forest – E. cypellocarpa incl. E. fastigata & E. obliqua	44,238	37,166	84.0	-	61.8	3.0	0.8	65.6	71	0	0	71
58 Tableland and Escarpment Wet Layered Shrub Forest – E. fastigata/Olearia argophylla/ Dicksonia antarctica	20,580	19,184	93.2	-	78.0	1.8	0.7	80.5	87	0	1	87
59 Eastern Tableland and Escarpment Shrub/Fern Dry Forest - E. radiata/E. sieberi/Leucopogon lanceolatus	15,628	13,656	87.4	-	27.0	17.3	2.0	46.3	44	4	0	48
61 Southern Escarpment Edge Moist Shrub Forest - E. fraxinoides	3,271	3,259	99.6	-	88.4	3.7	0.0	92.1	88	4	0	92
62 Southern Escarpment Edge Moist Shrub/Fern Forest – E. fraxinoides/E. cypellocarpa	7,643	7,633	99.9	-	73.5	4.5	0.2	78.2	75	4	0	79
64 Southern East Tableland Edge Shrub/Grass Dry Forest - E. dalrympeana/E. radiata	1,592	1,103	69.3	R	44.2	2.0	15.5	61.6	44	2	13	59
65 Southern Escarpment Edge Moist Heath Forest– Oxylobium ellipticum	31	31	100.0	R	100.0	0.0	0.0	100.0	100 [^]	0 [^]	0 [^]	100 [^]
66 Eastern Tablelands Shrub/Grass Moist Forest - E. dalrympleana/ E. radiata/Poa sieberiana	22,140	5,832	26.3	V	17.1	0.4	1.1	18.6	17	0	0	18
68 North East Tablelands Shrub/Herb/Grass Dry Forest – E. pauciflora/E. viminalis/ Lomandra longifolia	10,607	9,442	89.0	-	6.4	0.2	0.2	6.8	12	0	0	12

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	Pre 1750 (ha)	As at 2001 (ha)			Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total	Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total
70 Western Escarpment Dry Shrub Forest - E. dives/Xanthorhoea australis/Platylobium formosum	1,578	1,567	99.3	-	74.8	0.0	0.0	74.8	76	0	0	76
71 Western Tableland Dry Shrub Forest – E. macrorhyncha/ Leptospermum brevipes	1,487	769	51.7	V	31.3	0.0	17.6	48.9	31 [^]	0	18	49 [^]
72 Tablelands Dry Shrub Forest – E. dives/E. radiata/Bursaria lasiophylla	579	546	94.3	R	13.0	0.0	0.0	13.0	13 [^]	0	0	13 [^]
73 Eastern Tableland Dry Shrub/Grass Forest - E. pauciflora/E. viminalis/ Acacia dealbata/Themeda australis*	247,499	70,124	28.3	V	2.3	0.2	0.2	2.7	3	0	0	3
74 South Eastern Tablelands Dry Shrub/Grass/Herb Forest – E. bridgesiana/E. pauciflora/E. rubida/ Acaena novae-Zelandiae *	131,323	50,156	38.2	V	3.9	1.1	0.0	4.9	5	0	0	5
75 Tablelands Shrub/Tussock Grass Forest - E. dives/Chionochloa pallida	41,620	32,536	78.2	-	45.8	0.2	0.0	46.0	46 [^]	0	0	46 [^]
76 Tablelands Shrub/Grass Dry Forest - E. rubida/E. pauciflora/ Themeda australis *	109,717	38,752	35.3	-	8.3	0.0	0.0	8.3	8	0	0	8
77 Lower Snowy Dry Shrub/Tussock Grass Forest – E. goniocalyx/Chionochloa pallida	74,514	69,920	93.8	-	60.9	0.0	0.0	60.9	61	0	0	61
78 Lower Snowy Dry Shrub/Herb Woodland - E. albens/C. glauciphylla/A. deanei	37,242	37,242	100.0	-	92.0	0.0	0.0	92.0	92	0	0	92
79 Montane Dry Shrub/Tussock Grass Forest - E. nortonii/Cassinia longifolia/Chionochloa pallida	893	604	67.6	R	25.4	0.0	0.0	25.4	28	0	0	28
80 ACT Dry Shrub/Herb Forest – E. dives/E. bridgesiana/Cassinia longifolia/Hydrocotyle laxiflora *	438	4	0.9	R	0.0	0.0	0.0	0.0	0	0	0	0
81 Eastern Dry Shrub/Herb/Grass Forest - E. bridgesiana/E. dives/ Bursaria spinosa/Poa sieberiana	11,882	8,487	71.4	-	0.0	0.0	0.0	0.0	0	0	0	0

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	Pre 1750 (ha)	As at 2001 (ha)			Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total	Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total
82 Western Montane Acacia Fern/Herb Forest - <i>E. viminalis</i> / <i>E. robertsonii</i> / <i>Cassinia aculeata</i> / <i>Pteridium esculentum</i>	152,248	94,998	62.4	-	44.5	0.9	0.1	45.6	45	1	1	47
83 Montane Riparian Moist Shrub/Grass/Herb Forest – <i>E. dalrympleana</i> / <i>E. robertsonii</i> / <i>Acacia melanoxylon</i> / <i>Microlaena stipoides</i>	973	945	97.1	V	44.8	0.0	0.0	44.8	48	0	0	48
85 Montane Riparian Moist Shrub/Sedge/Grass Forest – <i>E. dalrympleana</i> / <i>E. viminalis</i> / <i>Leptospermum lanigerum</i> / <i>Poa helmsii</i>	669	669	100.0	R	97.8	0.0	0.0	97.8	98	0	0	98
86 Western Montane Moist Shrub Forest - <i>E. delegatensis</i> / <i>E. pauciflora</i> / <i>Polyscias sambucifolia</i> / <i>Tasmania lanceolata</i>	4,062	4,061	100.0	-	99.6	0.0	0.0	99.6	100	0	0	100
87 Western Escarpment Moist Shrub/Herb/Grass Forest – <i>E. delegatensis</i> / <i>E. dalrympleana</i> / <i>Derwentia derwentiana</i> / <i>Stellaria pungens</i>	69,865	69,713	99.8	-	77.9	0.1	0.1	78.1	78	0	2	80
88 Western Escarpment Shrub/Grass Forest – <i>E. chapmaniana</i> / <i>Daviesia latifolia</i>	587	587	100.0	R	100.0	0.0	0.0	100.0	100	0	0	100
89 Eastern Tablelands Acacia/Herb/Grass Forest – <i>E. dalrympleana</i> / <i>E. viminalis</i> / <i>Acacia melanoxylon</i> / <i>Stellaria pungens</i>	32,523	29,767	91.5	-	27.5	7.8	3.2	38.5	35	2	2	39
90 Northern Tablelands Acacia Herb/Grass Dry Forest – <i>E. bridgesiana</i> / <i>Acacia dealbata</i> / <i>Hydrocotyle laxiflora</i> *	7,173	1,347	18.8	V	2.0	0.5	0.0	2.5	3	0	0	3
91 Burrinjuck Acacia Dry Herb/Grass Forest - <i>E. bridgesiana</i> / <i>E. bicostata</i> / <i>Acacia dealbata</i> / <i>Poa sieberiana</i>	5,349	4,424	82.7	-	27.2	0.0	2.4	29.6	29	0	10	39

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	Pre 1750 (ha)	As at 2001 (ha)			Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total	Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total
92 Tablelands Acacia/Grass/Herb Dry Forest - E. bridgesiana/E. melliodora/Acacia mearnsii/Microlaena stipoides *	30,392	6,476	21.3	V	0.7	0.0	0.0	0.7	1	0	0	1
93 Western Tablelands Herb/Grass Dry Forest - E. robertsonii/Microlaena stipoides	85,523	32,412	37.9	-	16.8	1.7	2.9	21.4	17	2	4	23
94 South-west Slopes Acacia Dry Herb/Grass Forest – E. bridgesiana/E. macrorhyncha/Acacia dealbata/Microlaena stipoides *	72,307	25,677	35.5	-	9.4	1.8	0.3	11.6	11	0	2	13
95 Tableland Acacia Moist Herb Forest - E. pauciflora/E. dalrympleana/Acacia dealbata/Helichrysum scorpiodes	46,834	36,549	78.0	-	34.9	2.1	0.2	37.2	35 [^]	2	0	38 [^]
96 Tableland Tussock Grass/Herb Forest - E. pauciflora/E.dalrympleana/Poa sieberiana	320	318	99.4	R	99.4	0.0	0.0	99.4	99 [^]	0	0	99 [^]
97 Montane Acacia/Dry Shrub/Herb/Grass Forest – E. dalrympleana/E. pauciflora/ Acacia dealbata/Stellaria pungens	69,629	67,482	96.9	-	76.1	1.2	0.0	77.3	76	1	0	77
98 Western Montane Moist Shrub Forest - E. pauciflora/E. dalrympleana/Daviesia ulicifolia/Lomandra longifolia	74,891	70,756	94.5	-	66.7	0.1	0.0	66.8	67	0	0	67
99 Montane Dry Shrub/Herb/Grass Forest - E. pauciflora/Leucopogon hookeri/Stellaria pungens	10,178	10,172	99.9	-	94.4	0.0	0.0	94.4	94 [^]	0	0	94 [^]
100 ACT Montane Dry Shrub/Grass Forest - E. pauciflora/ Acacia dealbata/Poa induta	5,730	5,567	97.2	-	14.5	0.0	0.0	14.5	15 [^]	0	0	15 [^]
101 Western Montane Dry Shrub/Herb/Grass Forest – E. dalrympleana/E. pauciflora/Daviesia latifolia/Coprosma hirtella/Stellaria pungens	42,870	41,254	96.2	-	42.5	3.8	0.9	47.2	43	4	1	48

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102 Western Montane Dry Fern/Grass Forest – E. dalrympleana/E. pauciflora/Poa sieberiana/Asperula scoparia	2,871	2,869	99.9	-	78.0	20.8	0.0	98.7	96	0	0	96
103 Western Montane Dry Fern/Grass Forest - E. dives/E. dalrympleana/E. robertsonii/Pteridium esculentum/Poa sieberiana	71,732	49,332	68.8	-	39.0	3.2	0.5	42.7	40	2	1	43
104 Tableland Acacia/Herb/Grass Forest - E. robertsonii/E. dalrympleana/Acacia dealbata/Platylobium formosum/Senecio sp.E	46,455	41,116	88.5	-	65.7	1.3	3.8	70.7	66	1	5	72
106 Montane Dry Shrub/Tussock Forest - E. robertsonii/E. dalrympleana/Platylobium formosum/Tetratheca bauerifolia	30,135	29,551	98.1	-	94.4	0.0	0.0	94.4	94	0	0	94
107 Central Tableland/ACT Montane Dry Shrub Forest - E. dalrympleana/E. dives/ Hibbertia obtusifolia	44,074	20,330	46.1	-	10.8	0.9	0.0	11.8	12	0	0	12
108 Western Tablelands Dry Herb/Grass Forest – E. macrorhyncha/E. dives/Hibbertia obtusifolia/Poa sieberiana	125,104	75,056	60.0	-	38.0	2.4	3.2	43.6	42	0	5	47
109 Widespread Tablelands Dry Shrub/Tussock Grass Forest - E. dives/E. mannifera/E. macrorhyncha/ Hibbertia obtusifolia/Chionochloa pallida *	59,891	28,497	47.6	-	6.6	3.5	0.1	10.2	10	0	0	10
110 Tablelands Dry Shrub/Grass Forest - E. dives/E. mannifera/E. macrorhyncha/Poa sieberiana	22,106	18,393	83.2	-	35.5	2.9	0.4	38.8	39	0	0	39
112 Eastern Tablelands Dry Shrub Forest - E. sieberi/E. dives/Brachyloma daphnoides/Poa sieberiana *	19,785	7,646	38.6	V	4.9	2.0	1.0	7.8	7	0	0	7

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	113 North East Tablelands Dry Shrub/Grass Forest - E. mannifera/ E. dives/Brachyloma daphnoides/ Dianella revoluta *	102,600			50,342	49.1	-	4.8	0.5	0.0	5.3	9
114 Tablelands Dry Shrub/Tussock Grass Forest - E. macrorhyncha/ E.rossii/E. goniocalyx/Chionochloa pallida *	55,641	25,018	45.0	-	6.5	1.0	0.0	7.5	8	0	0	8
115 South East Tablelands Dry Shrub/Tussock Grass Forest – E. rossii/E. mannifera/Pultenaea procumbens/Chionochloa pallida	60,833	59,766	98.2	-	7.8	4.6	0.0	12.4	16	0	0	16
116 Western Slopes Herb/Grass Woodland - E. blakelyi/Microlaena stipoides/Hydrocotyle laxiflora *	62,301	4,052	6.5	E	0.2	0.0	0.0	0.2	0.2 [^]	0	1	1
117 Western Slopes Dry Grass Woodland - E. albens/Microlaena stipoides/Bothriochloa macra *	56,460	981	1.7	R	0.0	0.0	0.0	0.0	0	0	0	0
118 Western Slopes Dry Grass Forest - E. sideroxylon/E. blakelyi/ E. goniocalyx/Elymus scaber *	4,471	308	6.9	R	0.3	3.8	0.0	4.1	4	0	0	4
119 Western Tablelands Dry Shrub/Grass Forest - E. macrorhyncha/E. polyanthemus/ Hibbertia obtusifolia/Gonocarpus tetragynus *	136,181	36,151	26.5	V	6.0	2.5	0.2	8.7	8	0	0	9
120 Western Slopes Shrub/Herb/Grass Dry Forest – E. macrorhyncha/E. albens/ Hydrocotyle laxiflora/Microlaena stipoides *	79,554	10,354	13.0	E	1.3	0.1	0.0	1.5	1	0	0	1
121 Western Slopes Grass/Herb Dry Forest - E. macrorhyncha/ E. goniocalyx/Gonocarpus tetragynus/Poa sieberiana	92,586	61,833	66.8	-	23.0	3.8	2.6	29.4	28	0	5	32
123 Montane Wet Heath/Bog - Baeckea utilis/Hakea micranthis	300	300	100.0	R	94.0	6.0	0.0	100.0	94 [^]	6 [^]	0 [^]	100 [^]

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124 Western Montane Wet Heath/Herb Grass Woodland – E. pauciflora/Epacris breviflora	5,527	4,390	79.4	-	5.6	3.9	0.7	10.2	6 [^]	4	19	29 [^]
127 Sub-alpine Dry Shrub/Herb/Grass Woodland – E. debeuzevillei	187	187	100.0	R	99.5	0.0	0.0	99.5	99.5 [^]	0	0	99.5 [^]
128 Sub-alpine Dry Shrub/Herb Woodland - E. niphophila	45,966	45,894	99.8	-	89.6	0.0	0.0	89.6	90 [^]	0	0	90 [^]
130 Sub-alpine Shrub/Grass Woodland - E. niphophila	66,947	66,452	99.3	-	98.6	0.6	0.0	99.2	99 [^]	1	0	100 [^]
135 Southern Escarpment (Wadbilliga) Moist Heath	155	155	100.0	R	72.3	9.7	0.0	81.9	72 [^]	10 [^]	0 [^]	82 [^]
137 Coastal Escarpment Moist Shrub/Fern Forest - E. sieberi/E. piperita/Gleichenia dicarpa	15,361	14,476	94.2	-	74.8	0.4	7.4	82.6	75 [^]	0	7	83 [^]
138 Northern Plateau and Escarpment Heath Shrub Dry Forest - E. sieberi/E. consideniana	30,836	30,823	100.0	-	67.1	2.8	3.1	73.0	70	2	4	76
139 Northern Coastal Hinterland Heath Shrub Dry Forest – C. gummifera/E. sclerophylla	50,161	48,057	95.8	-	49.9	1.5	1.5	52.9	53	1	2	55
146 Tableland Dry Herb/Grass Woodland - E. pauciflora/E. stellulata/Asperula scoparia *	8,356	1,164	13.9	E	3.5	0.0	0.2	3.7	4	0	0	4
148 Tableland Tussock Grassland /Sedgeland/ Woodland – Poa labillardieri *	13,757	3,218	23.4	R	0.2	0.0	0.1	0.3	0.2 [^]	0 [^]	0.1 [^]	0.3 [^]
151 Tableland Sedge/Grass Herbland - Themeda australis/Carex appressa *	15	0	0.0	R	0.0	0.0	0.0	0.0	0 [^]	0 [^]	0 [^]	0 [^]
153 Tablelands and Slopes Herb/Grassland/ Woodland - Themeda australis plus E. pauciflora/E. rubida*	20,387	156	0.8	R	0.0	0.0	0.0	0.0	0	0	0	0
154 Tableland Dry Grass Woodland - E. bridgesiana/Themeda australis *	41,041	15	0.0	R	0.0	0.0	0.0	0.0	0	0	0	0

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160 Western Slopes Dry Grass Woodland - E. blakelyi/ E. melliodora/Danthonia racemosa *	204,413	3,646	1.8	R	0.0	0.0	0.0	0.0	0	0	0	0
161 Tablelands and Slopes Dry Herb/Grassland/ Woodland - E. melliodora/Danthonia racemosa *	21,526	556	2.6	R	0.0	0.0	0.0	0.0	0	0	0	0
162 Western Slopes Moist Herb/Sedge/Grass Woodland – E. blakelyi/Carex appressa *	399	150	37.6	R	0.0	0.0	0.0	0.0	0	0	0	0
164 Coastal Escarpment Cool Temperate Rainforest	1,050	1,049	99.9	R	88.2	0.0	1.4	89.6	91	0	0	91
165 Southern Escarpment Cool/Warm Temperate Rainforest	3,718	3,716	99.9	-	58.7	0.9	3.8	63.4	63	0	14	77
166 Central Coastal Hinterland and Lowland Warm Temperate Rainforest	7,939	7,926	99.8	-	68.6	0.9	3.3	72.8	69	1	6	75
167 Coastal Lowland Sub Tropical/Littoral Rainforest	636	585	92.0	R	41.3	2.8	0.0	44.1	41 [^]	0	0	41 [^]
168 Ecotonal Granite Dry Rainforest – Backhousia myrtifolia/ Acmena smithii/Angophora floribunda/Pittosporum undulatum/Doodia aspera	316	316	100.0	R	50.7	25.6	0.3	76.6	62	14	1	77
169 Coastal Hinterland Sub Tropical Warm Temperate Rainforest	10,477	7,825	74.7	-	26.2	0.3	0.0	26.4	26 [^]	0	0	26 [^]
170 Southern Coastal Hinterland Dry Gully Rainforest - Backhousia myrtifolia	7,249	7,244	99.9	-	41.5	4.6	1.4	47.4	42 [^]	4	10	55 [^]
171 Northern Coastal Shrub/Grass Forest - E. tereticornis *	23,038	3,512	15.2	E	7.5	0.0	0.0	7.6	8 [^]	0	0	8 [^]
172 Kosciuszko Western Escarpment Cool Temperate Rainforest	106	106	100.0	R	100.0	0.0	0.0	100.0	100	0	0	100
173 Northern Grass Herb Forest on Basalt *	5,283	164	3.1	R	0.0	0.0	0.0	0.0	0	0	0	0
174 Shoalhaven Gorge Forest – E. tereticornis / E. melliodora	13,529	13,473	99.6	-	46.2	8.4	0.0	54.6	59	0	0	59

Forest Ecosystems ^b	Area		Percent Remaining as at 2001	Status ^c as at 2001	Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at 2001				Percent of Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at December 2017 ^f			
	Pre 1750 (ha)	As at 2001 (ha)			Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total	Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total
175 Northern Coastal Lowlands Swamp Forest - E. robusta	465	459	98.7	R	19.8	3.9	0.0	23.7	20 [^]	5 [^]	0	24 [^]
176 Morton Plateau Mallee Swamp Low Forest	40,175	40,155	100.0	-	92.1	0.3	0.0	92.4	95	0	0	95
177 Illawarra Lowland Sub-Tropical Rainforest *	9,153	1,674	18.3	V	0.0	0.0	0.0	0.0	0	0	0	0
178 Robertson Warm Temperate Rainforest *	301	215	71.4	R	0.3	0.0	0.0	0.3	1	0	0	1
179 Eastern Deua dry shrub Forest - Angophora costata	2,715	2,713	99.9	-	80.2	0.7	0.0	80.9	80	0	1	81
180 Cooma Dry grass Forest – E. viminalis-E.dives	1,134	1,134	100.0	-	0.0	0.0	0.0	0.0	0	0	0	0
181 North-eastern Tablelands Gully Fern Forest - E.elata / Calochlaena dubia	3,433	3,098	90.2	-	7.0	0.0	0.0	7.0	7	6	0	13
185 Mangrove Estuarine Low Forest	1,672	1,393	83.3	R	18.7	3.1	0.1	21.9	19	1	0	21
192 South West Slopes Tall Shrubland Low Forest - E.dwyeri-Acacia doratoxylon	1,696	1,689	99.6	-	41.3	4.8	0.0	46.0	46	0	0	46
196 South West Slopes Tall Shrubland Low Forest - E.dealbata	152	152	100.0	R	0.0	0.0	0.0	0.0	0	0	0	0
2326 Coastal Dune Herb/Grassland & Southern Coastal Dune Scrub	3,151	2,335	74.1	V	23.1	0.2	0.0	23.3	23 [^]	0.2 [^]	0	23.3 [^]
129/133 Alpine Wet Herbfield & Sub-alpine Wet Herb / Grassland / Bog	49,876	49,794	99.8	-	95.6	0.1	0.0	95.7	96	0	0	96

Non-Forest Ecosystems ^b	Area		Percent Remaining as at 2001	Status ^c as at 2001	Percent of Non-Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at 2001				Percent of Non-Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at December 2017			
	Pre 1750 (ha)	As 2001 (ha)			Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total	Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total
36 Montane / Sub-Alpine Dry Rocky Shrubland	2,830	2,828	99.9	-	96.6	0.4	0.0	97.0	97 [^]	0	0	97 [^]
69 Eastern Tablelands Damp Heath - Epacris microphylla/Schoenus apogon	66	63	95.5	R	69.7	0.0	0.0	69.7	70 [^]	6	0	76 [^]

Non-Forest Ecosystems ^b	Area		Percent Remaining as at 2001	Status ^c as at 2001	Percent of Non-Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at 2001				Percent of Non-Forest Ecosystem (pre-1750) extent in the CAR Reserve System as at December 2017			
	Pre 1750 (ha)	As 2001 (ha)			Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total	Dedicated Reserves	Informal Reserve ^d	Prescription ^e	Total
	125 Montane Wet Heath/Herb Grass – Hypolepsis japonica - Hydrocotyle peduncularis	50			50	100.0	R	38.0	2.0	0.0	40.0	38 [^]
126 Montane Wet Sedgeland - Carex gaudichaudiana	189	189	100.0	R	47.6	0.0	0.0	47.6	51	0	0	51
131 Sub-alpine Herbfield	35,106	32,815	93.5	-	93.1	0.0	0.0	93.1	93	0	0	93
134 Eastern Tablelands Dry Heath - Allocasuarina nana	3,635	3,635	100.0	-	33.8	2.1	0.0	36.0	41	0	0	41
140 Northern Coastal Tall Wet Heath	4,385	4,324	98.6	-	17.2	14.6	0.0	31.8	21	9	0	30
141 Northern Coast (and Escarpment) Wet Heath/Sedge	3,501	3,448	98.5	-	81.2	0.0	1.7	82.8	81 [^]	0	2	83 [^]
144 Northern Coast and Hinterland Moist Heath	1,042	1,042	100.0	R	77.8	0.0	0.0	77.8	78 [^]	2	1	80 [^]
147 Tablelands Moist Sedge/Herb/Grassland *	43,615	130	0.3	R	0.0	0.0	0.0	0.0	0	0	0	0
152 Tableland Herb/Grassland - Themeda australis *	5,785	2	0.0	R	0.0	0.0	0.0	0.0	0	0	0	0
157 ACT/Monaro Dry Grassland – Bothriochloa macra/ Chrysocephalum apiculatum *	78,186	285	0.4	R	0.0	0.0	0.0	0.0	0	0	0	0
158 Monaro Dry Grassland – Austrostipa spp/ Danthonia ssp *	135,338	230	0.2	R	0.0	0.0	0.0	0.0	0	0	0	0
186 Mudflats/Saltmarshes	1,135	893	78.7	R	34.7	7.1	0.0	41.9	36	0	0	36
187 Coastal Headland Heathlands	792	414	52.3	R	15.5	0.1	0.0	15.6	16 [^]	0	0	16 [^]
188 Sand-dune Wetlands	535	373	69.7	R	20.7	0.0	0.0	20.7	36	0	0	36
189 Coastal Alluvial Valley Floor Wetlands	195	143	73.3	R	0.0	0.0	0.0	0.0	1	0	1	2
190 Rock	2,373	2,362	99.5	-	72.6	3.4	0.0	76.0	74	2	0	76
22/23 Southern Coastal Hind Dune/Headland Scrub & Southern Coastal Dune Scrub	2,005	1,226	61.1	R	30.6	1.2	0.0	31.8	31 [^]	0	0	31 [^]
123/126 Montane Wet Heath/Bog - Baeckea utilis & Montane Wet Sedgeland - Carex gaudichaudiana	2,484	2,296	92.4	-	46.4	1.5	8.9	56.9	51	1	8	60

NOTES ACCOMPANYING TABLE 1

- a. The figures shown in this table are based on modelled information mapped at a scale of 1:25 000 derived during the pre-1750 analysis of vegetation types in the Southern region, and are therefore only approximate.
- b. Forest Ecosystems are as defined in the documents *Forest Ecosystem Classification and Mapping for the Southern CRA Region* CRA Unit, Southern Zone National Parks and Wildlife Service.
- c. The status is based on: Rare (R) which has a total current area below 1000 hectares and a target of 100% of its current distribution. Endangered (E) which has < 10% remaining and a target of 100% of its current distribution. Vulnerable (V) which has between 10-30% remaining and a target of 60% of its current distribution. Some forest ecosystems were given their rare, endangered or vulnerable status due to other factors such as range of distribution, patch size and expert opinion on vulnerability. All other Forest Ecosystems have a target of 15% of their pre-1750 distribution.
- d. Informal Reserve includes Special Management Zones that are > 40ha and > 200m wide, or that are adjacent to Dedicated Reserves.
- e. Tabulated prescriptions include those elements of the Special Management Zone that, due to size or shape, do not meet the Informal Reserve Category outlined above, and the Harvesting Exclusions Zone.
- f. Source: compiled by ABARES from RFA data, including data from CRA reports, IFOAs, NPWS and FCNSW
- * These Forest Ecosystems have been identified as priorities for protection on Private Land (see Attachment 2).
- ^ The figure supplied by ABARES has been amended by DPI to address inconsistencies resulting from changes in spatial analysis systems and processes over time.

Table 2. Representative conservation of Old Growth forest in the CAR Reserve System as at 2001 and December 2017 in the Southern region^a

Forest Ecosystem ^b	Area of Forest Ecosystem (ha) As at 2001	Percent of Forest Ecosystem as Old Growth As at 2001	Area Old Growth (ha) As at 2001	Percent of Old Growth forest in the CAR Reserve System as at 2001				Percent of Old Growth forest in the CAR Reserve System as at December 2017 ^c			
				Dedicated Reserve	Informal Reserve ^c	Prescription ^d	Total	Dedicated Reserve	Informal Reserve ^c	Prescription ^d	Total
1 OG Southern Coastal Hinterland Intermediate Altitude Shrub Dry Forest - <i>E. sieberi</i>	50,567	36.2	18,295	84.0	2.3	0.3	86.7	88	0	1	90
2 OG Hinterland Heath Shrub Dry Forest - <i>Corymbia gummifera/Syncarpia glomulifera</i>	86,242	35.0	30,181	65.9	0.9	2.5	69.3	67	1	3	70
3 OG Northern Hinterland Shrub Dry Forest - <i>Syncarpia glomulifera/E. scias</i>	16,215	40.6	6,577	92.0	0.2	0.0	92.1	92	0	0	93
4 OG Shoalhaven Gorge Dry Heathy Shrub Forest – <i>E. punctata/E. agglomerata</i>	17,822	67.5	12,023	75.8	1.4	0.0	77.2	77	0	0	77
5 OG Northern Coastal Lowlands Shrub/Grass Dry Forest - mixed tree species	8,846	17.4	1,539	40.5	18.5	2.3	61.3	41 [^]	19 [^]	2 [^]	61 [^]
7 OG Southern Coastal Hinterland Shrub/Tussock Grass Dry Forest - <i>E. sieberi</i>	20,355	10.9	2,225	52.7	11.8	1.5	65.9	53 [^]	12 [^]	2	66 [^]
8 OG Far Southern Coastal Shrub Dry Forest - <i>E. sieberi</i>	479	9.4	45	46.7	0.0	0.0	46.7	48 [^]	0	0	48 [^]
9 OG Coastal Lowlands Cycad/Shrub Dry Forest - <i>Corymbia maculata</i>	55,532	15.4	8,559	29.6	7.7	4.6	41.9	30 [^]	8 [^]	6	44 [^]
10 OG Southern Coastal Lowlands Shrub/Grass Dry Forest - <i>E. globoidea/E. longifolia</i>	17,634	14.9	2,625	23.7	8.4	8.3	40.5	24 [^]	9	8 [^]	41 [^]
11 OG Coastal Shrub/Grass Dry Forest - <i>E. botryoides/E. globoidea/Imperata cylindrica</i>	426	14.1	60	63.3	0.0	0.0	63.3	65	0	15	80

Forest Ecosystem ^b	Area of Forest Ecosystem (ha) As at 2001	Percent of Forest Ecosystem as Old Growth As at 2001	Area Old Growth (ha) As at 2001	Percent of Old Growth forest in the CAR Reserve System as at 2001				Percent of Old Growth forest in the CAR Reserve System as at December 2017 ^e			
				Dedicated Reserve	Informal Reserve ^c	Prescription ^d	Total	Dedicated Reserve	Informal Reserve ^c	Prescription ^d	Total
12 OG Coastal Hinterland (Buckenboursa) Shrub/Cycad Dry Forest - <i>Corymbia gummifera</i>	1,005	28.1	282	97.9	0.0	0.0	97.9	98 [^]	0	2 [^]	100 [^]
13 OG Southern Escarpment Foothills Rainshadow Dry Grass Forest - <i>E. agglomerata</i>	4,192	50.7	2,125	74.7	0.0	0.0	74.7	75	0	0	75 [^]
14 OG Northern Coastal Hinterland Shrub/Grass Dry Forest - <i>E. fibrosa/Corymbia maculata</i>	5,756	23.4	1,349	54.0	33.1	0.0	87.1	87	0	0	87
15 OG North East Tableland Dry Shrub Forest – <i>E. sieberi</i>	56,597	23.6	13,360	80.6	0.2	0.0	80.8	83	1	0	83
16 OG North East Tableland Dry Shrub/Tussock Grass Forest - <i>E. agglomerata</i>	15,506	40.8	6,331	75.3	9.2	0.0	84.5	88	0	0	88 [^]
18 OG Southern Coastal Hinterland Shrub/Vine/Grass Moist Forest - <i>E. cypellocarpa/E. muelleriana</i>	50,316	49.3	24,801	71.0	2.8	0.6	74.4	72	2	2	76
19 OG Coastal Escarpment and Hinterland Shrub/Fern Dry Forest - <i>E. muelleriana</i>	68,666	44.6	30,658	75.1	2.3	0.6	78.0	75	2	1	78
21 OG Northern Coastal Hinterland Moist Shrub Forest - <i>C. maculata/E. pilularis</i>	69,988	17.4	12,182	52.0	3.2	2.5	57.7	55	0	3	58
28 OG Coastal Sands Shrub/Fern Forest - <i>E. botryoides/Banksia serrata</i>	2,525	24.4	615	38.7	28.0	0.0	66.7	54	0	0	54
29 OG Northern Coastal Sands Shrub/Fern Forest - <i>E. pilularis/Banksia serrata</i>	10,838	19.2	2,085	69.0	1.4	0.9	71.2	71	0	1	72
35 OG South Coast Acacia Scrubs - <i>Acacia sylvestris</i>	3,980	0.4	16	100.0	0.0	0.0	100.0	100 [^]	0	0	100 [^]
38 OG Tableland Dry Heath Shrub/Herb/Grass Woodland - <i>Calytrix tetragona(E.goniocalyx)</i>	1,456	0.3	4	0.0	0.0	0.0	0.0	100	0	0	100

Forest Ecosystem ^b	Area of Forest Ecosystem (ha) As at 2001	Percent of Forest Ecosystem as Old Growth As at 2001	Area Old Growth (ha) As at 2001	Percent of Old Growth forest in the CAR Reserve System as at 2001				Percent of Old Growth forest in the CAR Reserve System as at December 2017 ^e			
				Dedicated Reserve	Informal Reserve ^c	Prescription ^d	Total	Dedicated Reserve	Informal Reserve ^c	Prescription ^d	Total
40 OG Coastal Hinterland (Deua NP) Dry Shrub Forest (rhyolite) - <i>E. stenostoma</i>	2,415	39.5	955	100.0	0.0	0.0	100.0	100 [^]	0	0 [^]	100 [^]
43 OG Western Slopes Riparian Moist Sedge Woodland	1,589	2.3	36	0.0	0.0	0.0	0.0	0	0	0	0
47 OG Far Southern Hinterland Herb/Grass Moist Forest - <i>E. maidenii</i> / <i>E. globoidea</i>	85	10.6	9	100.0	0.0	0.0	100.0	100 [^]	0	0	100 [^]
48 OG Coastal Lowlands Riparian Herb/Grass Forest - various eucs	3,625	20.4	738	35.1	13.4	6.5	55.0	35 [^]	13	8	56 [^]
49 OG Southern Hinterland Shrub/Herb/Grass Riparian Forest - <i>Angophora floribunda</i> / <i>E. elata</i> / <i>Acacia mearnsii</i>	14,573	28.7	4,183	81.4	2.8	0.5	84.8	81	3	1	85 [^]
50 OG Southern Escarpment Foothills Herb/Grass Dry Forest- <i>Angophora floribunda</i> / <i>E. globoidea</i>	18,926	35.0	6,630	57.8	1.9	0.0	59.7	61	0	0	61
51 OG Araluen Acacia Herb/Grass Dry Forest - <i>E. melliodora</i> / <i>E. maidenii</i>	4,882	29.8	1,456	32.6	10.9	0.0	43.5	45	0	0	45
55 OG Eastern Tableland Fern/Herb/Grass Moist Forest - <i>E. fastigata</i>	36,826	29.7	10,945	54.6	8.1	1.4	64.1	55	7	2	64
56 OG Tableland and Escarpment Moist Herb/Fern Grass Forest - <i>E. radiata</i> / <i>E. viminalis</i> / <i>Viola</i> spp	30,714	32.0	9,828	47.2	7.5	6.3	61.1	54	2	4	61
57 OG Southern Escarpment Shrub/Fern/Herb Moist Forest - <i>E. cypelloarpa</i> incl. <i>E. fastigata</i> & <i>E. obliqua</i>	37,166	52.9	19,659	86.2	4.3	0.2	90.7	93	0	0	93
58 OG Tableland and Escarpment Wet Layered Shrub Forest - <i>E. fastigata</i> / <i>Olearia argophylla</i> / <i>Dicksonia antarctica</i>	19,184	55.8	10,702	90.9	1.7	0.3	93.0	96	0	0	96

Forest Ecosystem ^b	Area of Forest Ecosystem (ha) As at 2001	Percent of Forest Ecosystem as Old Growth As at 2001	Area Old Growth (ha) As at 2001	Percent of Old Growth forest in the CAR Reserve System as at 2001				Percent of Old Growth forest in the CAR Reserve System as at December 2017 ^c			
				Dedicated Reserve	Informal Reserve ^c	Prescription ^d	Total	Dedicated Reserve	Informal Reserve ^c	Prescription ^d	Total
59 OG Eastern Tableland and Escarpment Shrub/Fern Dry Forest - <i>E. radiata</i> / <i>E. sieberi</i> / <i>Leucopogon lanceolatus</i>	13,656	31.5	4,308	36.2	26.9	1.4	64.5	58	9	0	67
61 OG Southern Escarpment Edge Moist Shrub Forest - <i>E. fraxinoides</i>	3,259	23.1	754	94.4	1.1	0.0	95.5	94	1	0	95
62 OG Southern Escarpment Edge Moist Shrub/Fern Forest - <i>E. fraxinoides</i> / <i>E. cypellocarpa</i>	7,633	26.6	2,028	81.6	4.2	0.1	85.8	83	4	0	87
64 OG Southern East Tableland Edge Shrub/Grass Dry Forest - <i>E. dalrympeana</i> / <i>E. radiata</i>	1,103	17.2	190	64.7	0.0	30.5	95.3	66	0	34 [^]	100 [^]
66 OG Eastern Tablelands Shrub/Grass Moist Forest - <i>E. dalrympleana</i> / <i>E. radiata</i> / <i>Poa sieberiana</i>	5,832	59.8	3,489	82.7	0.2	5.2	88.1	84	0	4 [^]	88 [^]
68 OG North East Tablelands Shrub/Herb/Grass Dry Forest - <i>E. pauciflora</i> / <i>E. viminalis</i> / <i>Lomandra longifolia</i>	9,442	13.2	1,251	14.7	1.0	0.0	15.7	20	0	0	20
70 OG Western Escarpment Dry Shrub Forest - <i>E. ives</i> / <i>Xanthorhoea australis</i> / <i>Platylobium formosum</i>	1,567	35.8	561	74.2	0.0	0.0	74.2	74	0	0	74
71 OG Western Tableland Dry Shrub Forest – <i>E. macrorhyncha</i> / <i>Leptospermum brevipes</i>	769	39.4	303	57.4	0.0	40.6	98.0	57 [^]	0	43 [^]	100 [^]
72 OG Tablelands Dry Shrub Forest - <i>E. dives</i> / <i>E. radiata</i> / <i>Bursaria lasiophylla</i>	546	37.0	202	49.5	0.0	0.0	49.5	50 [^]	0	0	50 [^]
73 OG Eastern Tableland Dry Shrub/Grass Forest - <i>E. pauciflora</i> / <i>E. viminalis</i> / <i>Acacia dealbata</i> / <i>Themeda australis</i>	70,124	11.0	7,690	15.5	3.2	1.8	20.5	20	0	2	21
74 OG South Eastern Tablelands Dry Shrub/Grass/Herb Forest - <i>E. bridgesiana</i> / <i>E. pauciflora</i> / <i>E. rubida</i> / <i>Acaena novae-zealandiae</i>	50,156	25.4	12,756	29.2	7.1	0.0	36.3	37	0	0	37

Forest Ecosystem ^b	Area of Forest Ecosystem (ha) As at 2001	Percent of Forest Ecosystem as Old Growth As at 2001	Area Old Growth (ha) As at 2001	Percent of Old Growth forest in the CAR Reserve System as at 2001				Percent of Old Growth forest in the CAR Reserve System as at December 2017 ^e			
				Dedicated Reserve	Informal Reserve ^c	Prescription ^d	Total	Dedicated Reserve	Informal Reserve ^c	Prescription ^d	Total
75 OG Tablelands Shrub/Tussock Grass Forest - <i>E. dives</i> / <i>Chionochloa pallida</i>	32,536	42.7	13,889	82.6	0.5	0.0	83.1	82	1	0	83
76 OG Tablelands Shrub_Grass Dry Forest	38,752	19.4	7,501	38.3	0.0	0.0	38.3	38	0	0	38
77 OG Lower Snowy Dry Shrub_Tussock Grass Forest	69,920	39.9	27,902	89.0	0.0	0.0	89.0	89	0	0	89
78 OG Lower Snowy Dry Shrub_Herb Woodland	37,242	50.7	18,876	96.4	0.0	0.0	96.4	96	0	0	96
79 OG Montane Dry Shrub/Tussock Grass Forest - <i>E. nortonii</i> / <i>Cassinia longifolia</i> / <i>Chionochloa pallida</i>	604	68.0	411	55.2	0.0	0.0	55.2	58	0	0	58
81 OG Eastern Dry Shrub_Herb_Grass Forest	8,487	41.6	3,529	0.0	0.0	0.0	0.0	0	0	0	0
82 OG Western Montane Acacia Fern_Herb Forest	94,998	28.0	26,644	88.3	1.8	0.0	90.1	88	2	1	91
83 OG Montane Riparian Moist Shrub_Grass_Herb Forest	945	33.5	317	52.7	0.0	0.0	52.7	54	0	0	54
85 OG Montane Riparian Moist Shrub_Sedge_Grass Forest	669	58.6	392	99.2	0.0	0.0	99.2	100 [^]	0	0	100 [^]
86 OG Western Montane Moist Shrub Forest	4,061	33.2	1,347	98.7	0.0	0.0	98.7	99	0	0	99
87 OG Western Escarpment Moist Shrub_Herb_Grass Forest	69,713	13.6	9,502	95.1	0.0	0.0	95.1	95	0	0	95
88 OG Western Escarpment Shrub_Grass Forest	587	33.0	194	100.0	0.0	0.0	100.0	100 [^]	0	0	100 [^]
89 OG Eastern Tablelands Acacia/Herb/Grass Forest – <i>E. dalrympleana</i> / <i>E. viminalis</i> / <i>Acacia melanoxylon</i> / <i>Stellaria pungens</i>	29,767	34.6	10,308	36.7	9.2	4.4	50.4	48	1	4	53
90 OG Northern Tablelands Acacia Herb/Grass Dry Forest - <i>E. bridgesiana</i> / <i>Acacia dealbata</i> / <i>Hydrocotyle laxiflora</i>	1,347	7.0	94	62.8	8.5	0.0	71.3	71 [^]	0	0	71 [^]

Forest Ecosystem ^b	Area of Forest Ecosystem (ha)	Percent of Forest Ecosystem as Old Growth	Area Old Growth (ha)	Percent of Old Growth forest in the CAR Reserve System as at 2001				Percent of Old Growth forest in the CAR Reserve System as at December 2017 ^e			
	As at 2001	As at 2001	As at 2001	Dedicated Reserve	Informal Reserve ^c	Prescription ^d	Total	Dedicated Reserve	Informal Reserve ^c	Prescription ^d	Total
91 OG Burrinjuck Acacia Dry Herb Grass Forest	4,424	20.8	919	26.7	0.0	14.1	40.8	28	0	24	51
92 OG Tablelands Acacia/Grass/Herb Dry Forest - E. bridgesiana/E. melliodora/Acacia mearnsii/Microlaena stipoides	6,476	6.3	410	8.3	0.0	0.0	8.3	8	0	0	8
93 OG Western Tablelands Herb Grass Dry Forest	32,412	34.6	11,221	55.3	10.1	7.0	72.5	57	10	12	79
94 OG South - west Slopes Acacia Dry Herb Grass Forest	25,677	24.7	6,342	48.9	11.6	3.4	63.9	62	0	6	68
95 OG Tableland Acacia Moist Herb Forest - E. pauciflora/E. dalrympleana/Acacia dealbata/Helichrysum scorpiodes	36,549	25.0	9,135	63.5	2.2	0.5	66.2	63	2	0	66
96 OG Tableland Tussock Grass/Herb Forest - E. pauciflora/E. dalrympleana/Poa sieberiana	318	8.2	26	100.0	0.0	0.0	100.0	100	0	0	100
97 OG Montane Acacia_Dry Shrub_Herb_Grass Forest	67,482	30.5	20,550	88.4	0.3	0.0	88.6	88	0	0	88
98 OG Western Montane Moist Shrub Forest	70,756	28.7	20,334	84.7	0.2	0.0	84.9	85	0	0	85
99 OG Montane Dry Shrub_Herb_Grass Forest	10,172	63.7	6,479	95.9	0.0	0.0	95.9	96 [^]	0	0	96 [^]
100 OG ACT Montane Dry Shrub_Grass Forest	5,567	44.7	2,490	22.5	0.0	0.0	22.5	23 [^]	0	0	23 [^]
101 OG Western Montane Dry Shrub_Herb_Grass Forest	41,254	16.6	6,838	87.5	0.2	0.1	87.7	88 [^]	0	0	88
102 OG Western Montane Dry Fern Grass Forest	2,869	49.5	1,421	86.8	12.4	0.0	99.2	99	0	0	99
103 OG Western Montane Dry Fern Grass Forest	49,332	29.4	14,492	70.3	7.4	1.2	78.8	73	5	2	79

Forest Ecosystem ^b	Area of Forest Ecosystem (ha) As at 2001	Percent of Forest Ecosystem as Old Growth As at 2001	Area Old Growth (ha) As at 2001	Percent of Old Growth forest in the CAR Reserve System as at 2001				Percent of Old Growth forest in the CAR Reserve System as at December 2017 ^e			
				Dedicated Reserve	Informal Reserve ^c	Prescription ^d	Total	Dedicated Reserve	Informal Reserve ^c	Prescription ^d	Total
104 OG Tableland Acacia/Herb/Grass Forest - E. robertsonii/E. dalrympleana/Acacia dealbata/Platylobium formosum/Senecio sp.E	41,116	29.2	11,998	87.2	2.1	2.0	91.3	90	0	2	92
106 OG Montane Dry Shrub Tussock Forest	29,551	28.5	8,412	97.1	0.0	0.0	97.1	97	0	0	97
107 Central Tableland/ACT Montane Dry Shrub Forest - E. dalrympleana/E. dives/ Hibbertia obtusifolia	20,330	29.0	5,892	44.2	2.1	0.0	46.2	46	0	0	46
108 OG Western Tablelands Dry Herb Grass Forest	75,056	45.5	34,144	74.0	6.3	4.9	85.2	82	0	8	89
109 OG Widespread Tablelands Dry Shrub/Tussock Grass Forest - E. dives/E. mannifera/E. macrorhyncha/ Hibbertia obtusifolia/Chionochloa pallida	28,497	30.8	8,765	33.0	13.5	0.6	47.1	46	0	1	46
110 OG Tablelands Dry Shrub/Grass Forest - E. dives/E. mannifera/E. macrorhyncha/Poa sieberiana	18,393	47.9	8,813	55.9	2.3	0.8	59.0	59	0	1	59
112 OG Eastern Tablelands Dry Shrub Forest - E. sieberi/E. dives/Brachyloma daphnoides/Poa sieberiana	7,646	14.3	1,097	43.3	4.8	2.2	50.3	47	1	3	50
113 OG North East Tablelands Dry Shrub/Grass Forest - E. mannifera/E. dives/Brachyloma daphnoides/Dianella revoluta	50,342	18.8	9,468	35.1	3.8	0.0	38.9	53	0	0	53
114 OG Tablelands Dry Shrub/Tussock Grass Forest - E. macrorhyncha/E. rossii/E. goniocalyx/Chionochloa pallida	25,018	22.0	5,492	26.5	1.9	0.0	28.4	29	0	0	29

Forest Ecosystem ^b	Area of Forest Ecosystem (ha) As at 2001	Percent of Forest Ecosystem as Old Growth As at 2001	Area Old Growth (ha) As at 2001	Percent of Old Growth forest in the CAR Reserve System as at 2001				Percent of Old Growth forest in the CAR Reserve System as at December 2017 ^e			
				Dedicated Reserve	Informal Reserve ^c	Prescription ^d	Total	Dedicated Reserve	Informal Reserve ^c	Prescription ^d	Total
115 OG South East Tablelands Dry Shrub/Tussock Grass Forest - <i>E. rossii</i> / <i>E. mannifera</i> / <i>Pultenaea procumbens</i> / <i>Chionochloa pallida</i>	59,766	35.9	21,471	9.0	8.3	0.0	17.3	19	0	0	19
116 OG Western Slopes Herb_Grass Woodland	4,052	11.6	469	11.9	0.0	0.0	11.9	12	0	35	47
118 OG Western Slopes Dry Grass Forest	308	64.0	197	7.1	37.1	0.0	44.2	44	0	0	44
119 OG Western Tablelands Dry Shrub Grass Forest	36,151	29.7	10,752	42.2	16.9	1.6	60.7	58	2	3	62
120 OG Western Slopes Shrub Herb Grass Dry Forest	10,354	11.6	1,198	38.1	7.5	0.0	45.6	46 [^]	0	0	46 [^]
121 OG Western Slopes Grass_Herb Dry Forest	61,833	40.8	25,258	50.7	9.9	5.5	66.2	63	0	9	72
123 OG Montane Wet Heath/Bog - <i>Baeckea utilis</i> / <i>Hakea micranthis</i>	300	11.0	33	100.0	0.0	0.0	100.0	100 [^]	0	0	100 [^]
124 OG Western Montane Wet Heath/Herb Grass Woodland - <i>E. pauciflora</i> / <i>Epacris breviflora</i>	4,390	2.8	125	44.0	3.2	0.0	47.2	44 [^]	3	0	47 [^]
128 OG Sub-alpine Dry Shrub Herb Woodland	45,894	43.4	19,912	91.3	0.0	0.0	91.3	91	0	0	91
130 OG Sub-alpine Shrub_Grass Woodland	66,452	57.8	38,415	99.4	0.5	0.0	99.9	99	1	0	100
131 OG Sub-alpine Herbfield	32,815	0.1	42	100.0	0.0	0.0	100.0	100 [^]	0	0	100 [^]
137 OG Coastal Escarpment Moist Shrub/Fern Forest - <i>E. sieberi</i> / <i>E. piperita</i> / <i>Gleichenia dicarpa</i>	14,476	38.3	5,544	91.4	0.0	2.1	93.5	91	0	2	93
138 OG Northern Plateau and Escarpment Heath Shrub Dry Forest - <i>E. sieberi</i> / <i>E. considiniana</i>	30,823	33.0	10,183	89.5	0.7	1.3	91.5	92	1	1	94
139 OG Northern Coastal Hinterland Heath Shrub Dry Forest - <i>C. gummifera</i> / <i>E. sclerophylla</i>	48,057	36.6	17,570	79.9	1.0	0.7	81.5	85	0	1	86
146 OG Tableland Dry Herb/Grass Woodland - <i>E. pauciflora</i> / <i>E. stellulata</i> / <i>Asperula scoparia</i>	1,164	5.1	59	94.9	0.0	0.0	94.9	95	0	0	95

Forest Ecosystem ^b	Area of Forest Ecosystem (ha) As at 2001	Percent of Forest Ecosystem as Old Growth As at 2001	Area Old Growth (ha) As at 2001	Percent of Old Growth forest in the CAR Reserve System as at 2001				Percent of Old Growth forest in the CAR Reserve System as at December 2017 ^c			
				Dedicated Reserve	Informal Reserve ^c	Prescription ^d	Total	Dedicated Reserve	Informal Reserve ^c	Prescription ^d	Total
160 OG Western Slopes Dry Grass Woodland - E. blakelyi/E. melliodora/Danthonia racemosa	130	1.5	2	0.0	0.0	0.0	0.0	0	0	0	0
147 OG Tablelands Moist Sedge/Herb/Grassland	285	0.4	1	100.0	0.0	0.0	100.0	100	0	0	100
157 OG ACT/Monaro Dry Grassland - Bothriochloa macra/Chrysocephalum apiculatum	230	11.3	26	50.0	0.0	0.0	50.0	50	0	0	50
158 OG Monaro Dry Grassland - Austrostipa spp/ Danthonia ssp	3,646	4.3	157	21.0	20.4	0.0	41.4	21	20	0	41
171 OG Northern Coastal Shrub/Grass Forest - E. tereticornis	3,512	19.1	671	99.0	0.1	0.0	99.1	99 [^]	0	0	99 [^]
174 OG Shoalhaven Gorge Forest - E. tereticornis / E. melliodora	13,473	60.0	8,023	N/A	N/A	N/A	N/A	84	0	0	84
175 OG Northern Coastal Lowlands Swamp Forest - E. robusta	459	12.0	57	N/A	N/A	N/A	N/A	37	28	0	65
176 OG Morton Plateau Mallee Swamp Low Forest	40,155	2.0	770	N/A	N/A	N/A	N/A	100	0	0	100
179 OG Eastern Deua dry shrub Forest - Angophora costata	2,713	73.0	1,985	N/A	N/A	N/A	N/A	97	0	0	97
181 OG North-eastern Tablelands Gully Fern Forest - E. elata / Calochlaena dubia	3,098	3.0	83	N/A	N/A	N/A	N/A	0	2	0	2
192 OG South West Slopes Tall Shrubland Low Forest	1,689	5.0	89	N/A	N/A	N/A	N/A	0	0	0	0
129/133 OG Alpine Wet Herbfield & Sub-alpine Wet Herb / Grassland / Bog	49,794	0.0	66	N/A	N/A	N/A	N/A	95	0	0	95

NOTES ACCOMPANYING TABLE 2

- a. The figures shown in this table are based on modelled information mapped at a scale of 1:25 000 derived during the pre-1750 analysis of vegetation types in the Southern region, and are therefore only approximate. NOTE: there figures provided in Southern RFA Attachment 1 Table 2 at signing for Old Growth Forest Ecosystem types with a number of 40 or greater was incorrect and the figures have been amended for the 2018 variation.

- b. Old growth Forest Ecosystems were defined using a range of values characteristic of old growth, including aerial photographic interpretation and information on disturbance from logging and fire. Further information is available in the report *Old-growth Forest Related Projects – Southern Region – A Project undertaken as part of the NSW Comprehensive Regional Assessments*, National Parks and Wildlife Service, 2001.
- c. Informal Reserve includes Special Management Zones that are > 40ha and > 200m wide, or that are adjacent to Dedicated Reserves.
- d. Tabulated prescriptions include those elements of the Special Management Zone that, due to the size or shape, do not meet the Informal Reserve Category outlined above, and the Harvesting Exclusions Zone.
- e. Source: compiled by ABARES from RFA data, including data from CRA reports, IFOAs, NPWS and FCNSW

^ The figure supplied by ABARES has been amended by DPI to address inconsistencies resulting from changes in spatial analysis systems and processes over time.

N/A – not available – percentage reservation at signing in 2001 is not available for this Old Growth forest type

Wilderness

- 15 93.2% of Wilderness, as defined in the JANIS Reserve Criteria (ie *National Wilderness Inventory* (Lesslie and Maslen 1995) minimum rating 12 in patches greater than 8000ha), in the Southern region is protected within Dedicated Reserves under this Agreement. Of the Wilderness outside Dedicated Reserves, two thirds is on freehold or leasehold land. Informal Reserves provide a level of additional protection for Wilderness.

Additional Protection for Forest Ecosystems

- 16 Forestry Operations are prohibited from rare non-commercial Forest Ecosystems by the Integrated Forestry Operations Approval applying to the Southern region. These rare non-commercial Forest Ecosystems include:
- 24 Coastal Wet Heath Swamp Forest – *Casuarina glauca/Melaleuca ericifolia*
 - 25 South Coast Swamp Forest Complex – *Casuarina glauca*
 - 73 Eastern Tablelands Dry Shrub/Grass Forest
 - 164 Coastal Escarpment Cool Temperate Rainforest
 - 168 Ecotonal Granite Dry Rainforest – *Backhousia myrtifolia/Pittosporum undulatum/Angophora floribunda/Doodia aspera*
 - 185 Mangrove Estuarine Low Forest
- 18A Forestry Operations are prohibited from Threatened Ecological Communities (TECs) are by the Integrated Forestry Operations Approval applicable to the Southern region.

Rainforest Protection

- 17 Forestry Operations are prohibited from all rainforest, including a 20m buffer around any areas identified as RN 17 forest types 10 to 20, by the Integrated Forestry Operations Approval applicable to the Southern region.

Old Growth forest

- 17A Forestry Operations are prohibited from all Old Growth forest in the Southern region by the Integrated Forestry Operations Approval.

Management of CAR Values

- 18 Management plans for the Dedicated Reserve and Informal Reserve elements of the CAR Reserve System will clearly identify the CAR Values and the actions being taken in each reserve to appropriately manage and conserve those values.
- 19 As an integral component of managing CAR values New South Wales agrees to implement systematic and targeted fauna and flora surveys in Dedicated Reserves and Informal Reserves to complement surveys carried out under the IFOAs. The extent of survey work undertaken will be subject to available funding.

Protections on Public Land subject to Plantation authorisation

- 20 For Plantations on Public Land, the *Plantations and Reafforestation (Code) Regulation 2001* (NSW), contains standards for the protection of soil and water, Biodiversity, and places, objects or items of heritage significance.

ATTACHMENT 2
(clauses 55, 58, 65, 65A and Attachment 1)

CONSERVATION MECHANISMS ON PRIVATE LAND

- 1 Both Parties agree that CAR Values on Private Land are complementary to the CAR Reserve System identified on Public Land.
- 2 Both Parties agree that in complementing the CAR Reserve System on Public Land, conservation on Private Land can only be voluntary.
- 2A Both Parties recognise that for Private Land to be included in the CAR Reserve System, the conservation mechanism (as outlined in point 5) applied must be legally binding and in-perpetuity.
- 3 Both Parties agree that the following objectives should apply to the voluntary conservation of CAR Values on Private Land:
 - seek to maximise protection of agreed CAR Values;
 - that the processes are clearly understood by the community;
 - that real partnerships are developed;
 - that the outcomes will provide benefits for all parties; and
 - that actions must be strategic and integrated.
- 4 Both Parties agree that the most important elements in any mechanism designed to achieve voluntary conservation management on private forested land in the Southern region are:
 - effectiveness of the outcomes;
 - ownership of the process;
 - simplicity of the process;
 - clarity of roles of the participants;
 - certainty of the outcomes;
 - flexibility in the approaches adopted; and
 - equity between participants.
- 5 Both Parties agree that a range of conservation mechanisms are applicable to Private Land. These may include mechanisms which are legally binding and in-perpetuity, or non-legally binding and/or fixed term, such as:

- voluntary options under the Conservation Partners Program;
 - landholder initiated agreements;
 - noncontractual voluntary agreements;
 - fee for service;
 - voluntary acquisition;
 - fixed term common law contract;
 - in perpetuity common law contract;
 - community grants;
 - property management plans;
 - voluntary land and water management plans; and
 - other mechanisms that may be developed to suit individual landholders or situations.
- 6 Both Parties agree that capacity building within the private landholder estate to support individual and community decision making are prerequisites to the voluntary processes outlined above.
- 7 Consistent with clause 57, priority Forest Ecosystems that require conservation on Private Land have been listed and prioritised for the Southern region in Table 1 and 2.

8 The areas of priority Forest Ecosystems and Non-Forest Ecosystems in the CAR Reserve System on Private Land as at June 2016 are provided in Table 1A.

Table 1 Private Land priorities for the Southern CAR Reserve System

Priority for voluntary protection of Forest Ecosystems on Private Land		
Very High Priority	High Priority	Moderate Priority
Forests		
161 Tablelands and Slopes Dry Herb/Grassland/ Woodland - E. melliodora/Danthonia racemosa	92 Tablelands Acacia/Grass/Herb Dry Forest - E. bridgesiana/E. melliodora/ Acacia meamsii/Microlaena stipoides	90 Northern Tablelands Acacia Herb/Grass Dry Forest - E. bridgesiana/ Acacia dealbata/Hydrocotyle laxiflora
27 Ecotonal Coastal Swamp Forest - Casuarina glauca/E. botryoides	177 Illawarra Lowland Sub-Tropical Rainforest	94 South-west Slopes Acacia Dry Herb/Grass Forest - E. bridgesiana/ E. macrorhyncha/Acacia dealbata/ Microlaena stipoides
173 Northern Grass Herb Forest on Basalt	25 South Coast Swamp Forest - Casuarina glauca	113 North East Tablelands Dry Shrub/Grass Forest - E. mannifera/ E. dives/Brachyloma daphnoides/ Dianella revoluta
160 Western Slopes Dry Grass Woodland - E. blakelyi/E. melliodora/Danthonia racemosa	119 Western Tablelands Dry Shrub/Grass Forest - E. macrorhyncha/ E. polyanthemos/Hibbertia obtusifolia/ Gonocarpus tetragynus	109 Widespread Tablelands Dry Shrub/Tussock Grass Forest - E. dives/E. mannifera/ E. macrorhyncha/Hibbertia obtusifolia/Chionochloa pallida

Priority for voluntary protection of Forest Ecosystems on Private Land		
Very High Priority	High Priority	Moderate Priority
Forests		
154 Tableland Dry Grass Woodland – E. bridgesiana/Themeda australis	73 Eastern Tableland Dry Shrub/Grass Forest – E. pauciflora/E. viminalis/Acacia dealbata/Themeda australis	114 Tablelands Dry Shrub/Tussock Grass Forest - E.macroryncha/E.rossii/E. goniocalyx/Chionochloa pallida
116 Western Slopes Herb/Grass Woodland - E. blakelyi/Microlaena stipoides/Hydrocotyle laxiflora	76 Tablelands Shrub/Grass Dry Forest – E. rubida/E. pauciflora/Themeda australis	80 ACT Dry Shrub/Herb Forest – E. dives/E. bridgesiana/Cassinia longifolia/Hydrocotyle laxiflora
162 Western Slopes Moist Herb/Sedge/Grass Woodland – E. blakelyi/Carex appressa	74 South Eastern Tablelands Dry Shrub/Grass/Herb Forest - E. bridgesiana/E. pauciflora/E. rubida/Acaena novae-zealandiae	
43 Western Slopes Riparian Moist Sedge Woodland - E. camaldulensis	24 Coastal Tall Wet Heath Swamp Forest - Casuarina glauca/Melaleuca ericifolia	
117 Western Slopes Dry Grass Woodland - E. albens/Microlaena stipoides/Bothriochloa macra	112 Eastern Tablelands Dry Shrub Forest - E. sieberi/E. dives/Brachyloma daphnoides/Poa sieberiana	
118 Western Slopes Dry Grass Forest – E. sideroxylon/E. blakelyi/E. goniocalyx/Elymus scaber		
120 Western Slopes Shrub/Herb/Grass Dry Forest - E. macrorhyncha/E. albens/Hydrocotyle laxiflora/Microlaena stipoides		
146 Tableland Dry Herb/Grass Woodland - E. pauciflora/E. stellulata/Asperula scoparia		
148 Tableland Tussock Grassland /Sedgeland/ Woodland - Poa labillardieri		
171 Northern Coastal Shrub/Grass Forest - E. tereticornis		
178 Robertson Warm Temperate Rainforest		

Non-Forests – Very High Priority	
152 Tableland Herb/Grassland - Themeda australis	157 ACT/Monaro Dry Grassland - Bothriochloa macra/Chrysocephalum apiculatum
158 Monaro Dry Grassland - Austrostipa spp/ Danthonia ssp	147 Tablelands Moist Sedge/Herb/Grassland

Notes Accompanying Table 1

- The Forest Ecosystems listed are presented in order of priority for voluntary protection on private land. They have been identified based on the following criteria:
 - Identification by an expert panel convened during the Southern CRA as forest ecosystems of concern on Private Land;
 - Very High Priority - Ecosystems with 100% target set and not met, that have extant occurrences on Private Land;
 - High Priority - Ecosystems with 60% target set and not met, that are ranked as vulnerable and are more than 40% cleared;
 - Medium Priority - Ecosystems with 15% target set and not met, that are more than 40% cleared.

Table 1A Area of priority Forest Ecosystems and Non-Forest Ecosystems in the Southern RFA region CAR Reserve System on Private Land as at June 2016

Forest Ecosystem	Total Ecosystem Area (hectares)	Area in CAR Reserve System on Private Land (hectares)	Proportion in CAR Reserve System on Private Land as at 30 June 2016 (%)
161 Tablelands and Slopes Dry Herb/Grass Woodland - E. melliodora/Danthonia racemosa	556	0	0
27 Ecotonal Coastal Swamp Forest - Casuarina glauca/E. botryoides	343	0	0
173 Northern Grass Herb Forest on Basalt	164	0	0
160 Western Slopes Dry Grass Woodland - E. blakelyi/E. melliodora/Danthonia racemosa	3,646	156	4

Forest Ecosystem	Total Ecosystem Area (hectares)	Area in CAR Reserve System on Private Land (hectares)	Proportion in CAR Reserve System on Private Land as at 30 June 2016 (%)
154 Tableland Dry Grass Woodland – E. bridgesiana/Themeda australis	15	0	0
116 Western Slopes Herb/Grass Woodland - E. blakelyi/Microlaena stipoides/Hydrocotyle laxiflora	4,052	239	6
162 Western Slopes Moist Herb/Sedge/Grass Woodland E. blakelyi/Carex appressa	150	0	0
43 Western Slopes Riparian Moist Sedge Woodland - E. camaldulensis	1,589	0	0
117 Western Slopes Dry Grass Woodland - E.albens/Microlaena stipoides/Bothriochloa macra	981	6	1
118 Western Slopes Dry Grass Forest – E. sideroxylon/E. blakelyi/ E. goniocalyx/Elymus scaber	308	0	0
120 Western Slopes Shrub/Herb/Grass Dry Forest - E. macrorhyncha/ E. albens/Hydrocotyle laxiflora/ Microlaena stipoides	10,354	963	9
146 Tableland Dry Herb/Grass Woodland - E. pauciflora/E. stellulata/ Asperula scoparia	1,164	0	0
148 Tableland Tussock Grassland /Sedgeland/ Woodland - Poa labillardieri	N/A	N/A	N/A
171 Northern Coastal Shrub/Grass Forest - E. tereticornis	3,512	4	0.1
178 Robertson Warm Temperate Rainforest	215	0	0
92 Tablelands Acacia/Grass/Herb Dry Forest - E. bridgesiana/E. melliodora/ Acacia mearnsii/Microlaena stipoides	6,476	0	0
177 Illawarra Lowland Sub-Tropical Rainforest	1,674	8	0
25 South Coast Swamp Forest - Casuarina glauca	3,792	21	1
119 Western Tablelands Dry Shrub/Grass Forest - E. macrorhyncha/ E. polyanthemos/Hibbertia obtusifolia/ Gonocarpus tetragynus	36,151	149	0.4
73 Eastern Tableland Dry Shrub/Grass Forest – E. pauciflora/E. viminalis/Acacia dealbata/ Themeda australis	70,124	121	0.2
76 Tablelands Shrub/Grass Dry Forest – E. rubida/E. pauciflora/Themeda australis	38,752	186	0.5
74 South Eastern Tablelands Dry Shrub/Grass/Herb Forest - E. bridgesiana/ E. pauciflora/E. rubida/ Acaena novae-zealandiae	50,156	1144	2
24 Coastal Tall Wet Heath Swamp Forest - Casuarina glauca/Melaleuca ericifolia	6,119	32	1
112 Eastern Tablelands Dry Shrub Forest - E. sieberi/E. dives/Brachyloma daphnoides/Poa sieberiana	7,646	298	4
90 Northern Tablelands Acacia Herb/Grass Dry Forest - E. bridgesiana/ Acacia dealbata/Hydrocotyle laxiflora	1,347	0	0
94 South-west Slopes Acacia Dry Herb/Grass Forest - E. bridgesiana/ E. macrorhyncha/Acacia dealbata/ Microlaena stipoides	25,677	105	0.4
113 North East Tablelands Dry Shrub/Grass Forest - E. mannifera/ E. dives/Brachyloma daphnoides/ Dianella revoluta	50,342	276	1
109 Widespread Tablelands Dry Shrub/Tussock Grass Forest - E. dives/E. mannifera/ E. macrorhyncha/Hibbertia obtusifolia/Chionochloa pallida	28,497	46	0.2
114 Tablelands Dry Shrub/Tussock Grass Forest - E. macrorhyncha/E.rossii/ E. goniocalyx/Chionochloa pallida	25,018	285	1
80 ACT Dry Shrub/Herb Forest – E. dives/E. bridgesiana/Cassinia longifolia/Hydrocotyle laxiflora	4	0	0
Non-Forest Ecosystem	Total Ecosystem Area (hectares)	Area in CAR Reserve on Private Land (hectares)	Proportion in CAR reserve system on Private Land as at 30 June 2016 (%)

Forest Ecosystem	Total Ecosystem Area (hectares)	Area in CAR Reserve System on Private Land (hectares)	Proportion in CAR Reserve System on Private Land as at 30 June 2016 (%)
152 Tableland Herb/Grassland - Themeda australis	N/A	N/A	N/A
158 Monaro Dry Grassland - Austrostipa spp/ Danthonia ssp	N/A	N/A	N/A
157 ACT/Monaro Dry Grassland - Bothriochloa macra/Chrysocephalum apiculatum	N/A	N/A	N/A
147 Tablelands Moist Sedge/Herb/Grassland	N/A	N/A	N/A

Table 2 Private land priorities for the Southern CAR Reserve System – Unmapped Ecosystems

Very High to High Priority	
39 Tableland Herb/Grassland	153 Tablelands and Slopes Herb/Grassland/ Woodland - Themeda australis plus E. pauciflora/E. rubida
151 Tableland Sedge/Grass Herbland - Themeda australis/Carex appressa	194 North-east Riparian Forest - E. amplifolia

Notes Accompanying Table 2

The forest ecosystems listed in Table 2 were not mapped as part of the Forest Ecosystem Mapping project, and as such do not appear in the forest ecosystem layer or in the RFA Attachment 1 table. The forest ecosystems are distributed in small and scattered patches, which were not identifiable on a regional scale map. Field validation is likely to locate these forest ecosystems in the Southern RFA region. Wherever they are located they should be treated as a priority for protection on private land.

Rainforest Protection

9 Rainforest is protected from Forestry Operations in accordance with the Private Native Forestry Code of Practice.

Old Growth forest

10 Old Growth forest is protected from Forestry Operations in accordance with the Private Native Forestry Code of Practice.

Additional Protection for Forest Ecosystems

11 Under the Private Native Forestry Code of Practice, Forestry Operations in and adjacent to specified landscape features must comply with requirements to protect these features. This includes requirements to protect endangered ecological communities, endangered populations, vulnerable ecological communities, wetlands, heathland, rocky outcrops and steep slopes.

12 The Private Native Forestry Code of Practice contains standards for the protection of threatened ecological communities and threatened species.

Protections on Private Land subject to Plantation authorisation

13 For Plantations on Private Land, the *Plantations and Reafforestation (Code) Regulation 2001* (NSW), contains standards for the protection of soil and water, biodiversity, and places, objects or items of heritage significance.

LISTED SPECIES AND COMMUNITIES

- 1 Both Parties recognise the range of mechanisms to conserve the habitat of Listed Species and Communities in the Southern region. These include: (i) protection within the CAR Reserve System; (ii) protection of key habitat components using the Integrated Forestry Operations Approval; (iii) protection of key habitats such as rainforest, heaths, swamps and other wet communities, rocky outcrops and threatened ecological communities; and (iv) Biodiversity Conservation Programs for species and communities listed under the *Biodiversity Conservation Act 2016* (NSW) and the development, maintenance and implementation of relevant Statutory Conservation Planning Documents under the *Fisheries Management Act 1994* (NSW) and for species, populations and communities listed under the EPBC Act. . Key species are protected by a combination of reservation and prescription.
- 2 Priorities at the signing of the Southern RFA for developing Recovery Plans for threatened forest dependent fauna and flora for the first five years of this Agreement are provided in Table 1. Parties note that the list at Table 1 is indicative only. These priorities may change and new priorities may arise in response to additional information, funding etc.
- 3 Where NSW Statutory Conservation Planning Documents under the *Biodiversity Conservation Act 2016* (NSW) or the *Fisheries Management Act 1994* (NSW) meet the requirements of the EPBC Act, the Commonwealth will consider adopting them under the EPBC Act.

Threatening Processes

- 4 Threatening Processes are those listed as a key threatening process under the *Biodiversity Conservation Act 2016* (NSW), *Fisheries Management Act 1994* (NSW) and the EPBC Act in recognition that the process adversely affects or may threaten the survival, abundance or evolutionary development of a native species or ecological community. Threatening Processes are managed under the Biodiversity Conservation Program or with Threat Abatement Plans under the EPBC Act or other coordinated programs across land tenure. Some Threatening Processes affecting Forests are mitigated by the settings in the Integrated Forestry Operations Approval applicable to the Eden region.

Table 1: Priority species for preparation of Recovery Plans (as at 2001 and showing current status)

Scientific name	Common Name	NSW Status	National Status	Management stream under the NSW Biodiversity Conservation Program	Current status of national recovery plans and conservation advice
<i>Acacia bynoeana</i>	Bynoe Wattle	Endangered	Vulnerable	Data deficient	National recovery plan required.
<i>Acacia flocktoniae</i>	Flockton wattle	Vulnerable	Vulnerable	Site-managed	National recovery plan adopted 28 July 2010
<i>Acacia georgensis</i>	Bega Wattle	Vulnerable	Vulnerable	Keep Watch	National recovery plan not required. Conservation advice approved 29 April 2014.
<i>Acacia phasmoides</i>	Phantom Wattle	Vulnerable	Vulnerable	Site-managed	National recovery plan adopted 21 April 2011.
<i>Ammobium craspedioides</i>	Yass Daisy	Vulnerable	Vulnerable	Keep Watch	National recovery plan not required. Conservation advice approved 1 October 2008.
<i>Aprasia parapulchella</i>	Pink-tailed Legless Lizard	Vulnerable	Vulnerable	Landscape	National recovery plan required
<i>Boronia deanei</i>	Deane's Boronia	Vulnerable	Vulnerable	Site-managed	National recovery plan not required. Conservation advice approved 26 March 2008.
<i>Burhinus grallarius</i>	Bush Stone-curlew	Endangered	Not listed	Iconic	State recovery plan approved February 2006
<i>Burramys parvus</i>	Mountain Pygmy-possum	Endangered	Endangered	Iconic	State recovery plan approved May 2002 and national recovery plan required^
<i>Caladenia concolor</i>	Crimson Spider Orchid	Endangered	Vulnerable	Site-managed	National recovery plan adopted 18 August 2004.
<i>Caladenia tessellata</i>	Daddy Long-legs	Endangered	Vulnerable	Site-managed	National recovery plan adopted 13 August 2010.
<i>Callitris oblonga</i>	Pigmy Cypress Pine	Vulnerable	Vulnerable	Site-managed	National recovery plan adopted 28 July 2010.
<i>Calotis glandulosa</i>	Mauve Burr-daisy	Vulnerable	Vulnerable	Site-managed	
<i>Calyptrorhynchus lathamii</i>	Glossy Black-Cockatoo	Vulnerable	Not listed	Site-managed	
<i>Chalinolobus dwyeri</i>	Large-eared Pied Bat	Vulnerable	Vulnerable	Data deficient	National recovery plan adopted 10 February 2012

Scientific name	Common Name	NSW Status	National Status	Management stream under the NSW Biodiversity Conservation Program	Current status of national recovery plans and conservation advice
<i>Thinornis rubricollis rubricollis</i> (formerly <i>Charadrius rubricollis</i>)	Hooded Plover	Critically endangered	Vulnerable	Site-managed	National recovery plan not required. Conservation advice approved 6 November 2014
<i>Correa baeuerlenii</i>	Chef's Cap Correa	Vulnerable	Vulnerable	Data deficient	National recovery plan not required. Conservation advice approved 1 October 2008.
<i>Cryptostylis hunteriana</i>	Leafless Tongue Orchid	Vulnerable	Vulnerable	Site-managed	National recovery plan not required. Conservation advice approved 3 July 2008.
<i>Cynanchum elegans</i>	White-flowered wax plant	Endangered	Endangered	Keep Watch	National recovery plan not required. Conservation advice approved 26 March 2008.
<i>Daphnandra sp C (sp 1 Illawarra)</i>	Illawarra socketwood	Endangered	Endangered	Site-managed	State recovery plan approved January 2005 and recovery plan adopted on 10 June 2005.
<i>Dasyornis brachypterus</i>	Eastern Bristlebird	Endangered	Endangered	Site-managed	National recovery plan adopted 30 January 2014
<i>Dasyurus maculatus</i>	Spotted-tailed Quoll	Vulnerable	Endangered	Landscape	National recovery plan required^
<i>Delma impar</i>	Striped Legless Lizard	Vulnerable	Vulnerable	Landscape	National recovery plan adopted 16 July 2000
<i>Discaria nitida</i>	Leafy Anchor Plant	Endangered	Not listed	Site-managed	
<i>Diuris aequalis</i>	Buttercup Doubletail	Endangered	Vulnerable	Site-managed	National recovery plan not required. Conservation advice approved 26 March 2008.
<i>Eucalyptus aquatica</i>	Broad-leaved Sallee	Vulnerable	Vulnerable	Site-managed	National recovery plan not required. Conservation advice approved 3 July 2008.
<i>Eucalyptus kartzoffiana</i>	Araluen Gum	Vulnerable	Vulnerable	Site-managed	National recovery plan not required. Conservation advice approved 3 July 2008.
<i>Eucalyptus langleyi</i>	Albatross Mallee	Vulnerable	Vulnerable	Keep Watch	National recovery plan not required. Conservation advice approved 3 July 2008.
<i>Eucalyptus parvula</i>	Small-leaved Gum	Endangered	Vulnerable	Site-managed	National recovery plan not required. Conservation advice approved 3 July 2008.

Scientific name	Common Name	NSW Status	National Status	Management stream under the NSW Biodiversity Conservation Program	Current status of national recovery plans and conservation advice
<i>Eucalyptus pulverulenta</i>	Silver- leaved Gum	Vulnerable	Vulnerable	Site-managed	National recovery plan not required. Conservation advice approved 3 July 2008.
<i>Eucalyptus recurva</i>	Mongarlowe Mallee	Critically endangered	Critically endangered	Site-managed	Recovery plan adopted 24 June 2011.
<i>Eucalyptus saxatilis</i>	Suggan Buggan Mallee	Endangered	Not listed	Site-managed	
<i>Eucalyptus sturgissiana</i>	Ettrema Mallee	Vulnerable	Not listed	Site-managed	
<i>Falsistrellus tasmaniensis</i>	Eastern False Pipistrelle	Vulnerable	Not listed	Landscape	
<i>Genoplesium plumosum</i>	Tallong Midge Orchid	Critically endangered	Endangered	Site-managed	State recovery plan approved May 2002 and national recovery plan adopted on 19 February 2004.
<i>Genoplesium vernale</i>	East Lynne midge-orchid	Vulnerable	Vulnerable	Keep Watch	National recovery plan adopted 19 February 2004.
<i>Gentiana bredboensis</i>	Bredbo Gentian	Critically endangered	Vulnerable	Site-managed	National recovery plan not required. Conservation advice approved 3 July 2008.
<i>Gentiana wingecarribiensis</i>	Wingecarribee Gentian	Critically endangered	Endangered	Site-managed	National recovery plan not required. Conservation advice approved 26 March 2008.
<i>Grevillea iaspicula</i>	Wee Jasper Grevillea	Critically endangered	Endangered	Site-managed	National recovery plan not required. Conservation advice approved 26 March 2008.
<i>Grevillea molyneuxii</i>	Tallowa Grevillea	Vulnerable	Endangered	Site-managed	National recovery plan not required. Conservation advice approved 26 March 2008.
<i>Grevillea rivularis</i>	Carrington Falls Grevillea	Critically endangered	Endangered	Site-managed	National recovery plan not required. Conservation advice approved 26 March 2008.
<i>Grevillea wilkinsonii</i>	Tumut Grevillea	Endangered	Endangered	Site-managed	State recovery plan approved July 2001 and national recovery plan adopted on 26 March 2002.
<i>Haloragis exalata exalata</i>	Square Raspwort	Vulnerable	Vulnerable	Keep Watch	National recovery plan not required. Conservation advice approved 29 April 2014.
<i>Heleioporus australiacus</i>	Giant Burrowing Frog	Vulnerable	Vulnerable	Landscape	National recovery plan required.
<i>Hoplocephalus bungaroides</i>	Broad Headed Snake	Endangered	Vulnerable	Site-managed	National recovery plan required.

Scientific name	Common Name	NSW Status	National Status	Management stream under the NSW Biodiversity Conservation Program	Current status of national recovery plans and conservation advice
<i>Irenepharsus trypherus</i>	Delicate Cress	Endangered	Endangered	Site-managed	State recovery plan approved January 2005 and national recovery plan adopted on 10 June 2005.
<i>Isoodon obesulus obesulus</i>	Southern Brown Bandicoot (eastern)	Endangered	Endangered	Site-managed	State recovery plan approved November 2006. National recovery plan required.
<i>Kerivoula papuensis</i>	Golden-tipped Bat	Vulnerable	Not listed	Landscape	
<i>Kunzea cabbagei</i>	Cabbage Kunzea	Vulnerable	Vulnerable	Site-managed	National recovery plan not required. Conservation advice approved 3 July 2008.
<i>Lathamus discolor</i>	Swift Parrot	Endangered	Critically endangered	Landscape	National recovery plan adopted 10 February 2012.
<i>Leptospermum thompsonii</i>	Monga Tea-tree	Vulnerable	Vulnerable	Keep Watch	National recovery plan not required. Conservation advice approved 1 October 2008.
<i>Litoria aurea</i>	Green and Golden Bell Frog	Endangered	Vulnerable	Iconic	National recovery plan required.
<i>Litoria booroolongensis</i>	Booroolong Frog	Endangered	Endangered	Site-managed	National recovery plan adopted 19 September 2012
<i>Lophoictinia isura</i>	Square-tailed Kite	Vulnerable	Not listed	Landscape	
<i>Mastacomys fuscus</i>	Broad-toothed Rat	Vulnerable	Vulnerable	Site-managed	
<i>Melaleuca biconvexa</i>	Biconvex Paperbark	Vulnerable	Vulnerable	Site-managed	National recovery plan not required. Conservation advice approved 26 March 2008.
<i>Micromyrtus minutiflora</i>	(a slender spreading shrub)	Endangered	Vulnerable	Site-managed	National recovery plan not required. Conservation advice approved 3 July 2008.
<i>Miniopterus schreibersii oceanensis</i>	Eastern Bentwing-bat	Vulnerable	Not listed	Landscape	
<i>Mixophyes balbus</i>	Stuttering Frog	Endangered	Vulnerable	Landscape	Recovery plan adopted 10 February 2012
<i>Monotaxis macrophylla</i>	Large-leafed Monotaxis	Endangered	Not listed	Keep Watch	
<i>Monotoca rotundifolia</i>	Trailing Monotoca	Endangered	Not listed	Data deficient	
<i>Mormopterus norfolkensis</i>	Eastern Freetail -bat	Vulnerable	Not listed	Landscape	
<i>Myotis macropus</i> (formerly <i>Myotis adversus</i>)	Southern Myotis	Vulnerable	Not listed	Landscape	

Scientific name	Common Name	NSW Status	National Status	Management stream under the NSW Biodiversity Conservation Program	Current status of national recovery plans and conservation advice
<i>Neophema pulchella</i>	Turquoise Parrot	Vulnerable	Not listed	Landscape	
<i>Ninox connivens</i>	Barking Owl	Vulnerable	Not listed	Landscape	
<i>Ninox strenua</i>	Powerful Owl	Vulnerable	Not listed	Landscape	State recovery plan approved October 2006
<i>Pachycephala olivacea</i>	Olive Whistler	Vulnerable	Not listed	Landscape	
<i>Pedionomus torquatus</i>	Plains Wanderer	Endangered	Critically endangered	Site-managed	National recovery plan required^.
<i>Persicaria elatior</i>	Tall Knotweed	Vulnerable	Vulnerable	Site-managed	National recovery plan not required. Conservation advice approved 1 October 2008.
<i>Persoonia glaucescens</i>	Mittagong Geebung	Endangered	Vulnerable	Site-managed	National recovery plan not required. Conservation advice approved 26 March 2008.
<i>Petaurus australis</i>	Yellow-bellied Glider	Vulnerable	Not listed	Landscape	State recovery plan approved February 2003
<i>Petaurus norfolcensis</i>	Squirrel Glider	Vulnerable	Not listed	Landscape	
<i>Petrogale penicillata</i>	Brush-tailed Rock Wallaby	Endangered	Vulnerable	Iconic	State recovery plan approved March 2008 and national recovery plan (made by Victoria) adopted 10 February 2012
<i>Petroica rodinogaster</i>	Pink Robin	Vulnerable	Not listed	Landscape	
<i>Phascogale tapoatafa</i>	Brush-tailed Phascogale	Vulnerable	Not listed	Landscape	
<i>Phascolarctos cinereus</i>	Koala	Vulnerable	Vulnerable	Iconic	State recovery plan approved November 2008. National recovery plan required.
<i>Phyllota humifusa</i>	Dwarf Phyllota	Vulnerable	Vulnerable	Data deficient	National recovery plan not required. Conservation advice approved 3 July 2008.
<i>Plinthanthesis rodwayi</i>	Budawang's Wallaby Grass	Endangered	Vulnerable	Site-managed	National recovery plan not required. Conservation advice approved 16 December 2008.
<i>Polytelis swainsonii</i>	Superb Parrot	Vulnerable	Vulnerable	Landscape	National recovery plan adopted 21 April 2011.
<i>Pomaderris cotoneaster</i>	Cotoneaster Pomaderris	Endangered	Endangered	Site-managed	National recovery plan adopted 13 August 2010.
<i>Pomaderris gilmourii</i> var <i>cana</i>	Grey Deua Pomaderris	Vulnerable	Vulnerable	Data deficient	National recovery plan not required. Conservation advice approved 3 July 2008.

Scientific name	Common Name	NSW Status	National Status	Management stream under the NSW Biodiversity Conservation Program	Current status of national recovery plans and conservation advice
<i>Pomaderris pallida</i>	Pale Pomaderris	Vulnerable	Vulnerable	Site-managed	National recovery plan not required. Conservation advice approved 1 October 2008.
<i>Pomaderris parrisiae</i>	Parris' Pomaderris	Vulnerable	Vulnerable	Site-managed	National recovery plan not required. Conservation advice approved 3 July 2008.
<i>Pomaderris sericea</i>	Silky Pomaderris	Endangered	Vulnerable	Data deficient	National recovery plan adopted 12 March 2010.
<i>Potorous tridactylus</i>	Long-nosed Potoroo	Vulnerable	Vulnerable	Site-managed	National recovery plan required.
<i>Prasophyllum affine</i>	Jervis Bay Leek Orchid	Endangered	Endangered	Site-managed	National recovery plan adopted 24 July 2012.
<i>Prasophyllum retroflexum</i> (formerly <i>P. morgani</i>)	Kiandra Leek Orchid	Vulnerable	Vulnerable	N/A	National recovery plan adopted 18 August 2004.
<i>Prasophyllum petilum</i>	Boorowa or Tarengo Leek Orchid	Endangered	Endangered	Site-managed	National recovery plan adopted 21 April 2011.
<i>Prasophyllum uroglossum</i>	Wingecarribee Leaf Orchid	Endangered	Not listed	Site-managed	National recovery plan not required. Conservation advice approved 3 July 2008.
<i>Prostanthera densa</i>	Villous Mint-bush	Vulnerable	Vulnerable	Site-managed	National recovery plan not required. Conservation advice approved 3 July 2008.
<i>Pseudomys fumeus</i>	Smoky Mouse	Critically endangered	Endangered	Site-managed	National recovery plan adopted 23 October 2008
<i>Pseudophryne australis</i>	Red-crowned Toadlet	Vulnerable	Not listed	Landscape	
<i>Pseudophryne pengilleyi</i>	Northern Corroboree Frog	Critically endangered	Critically endangered	Iconic	National recovery plan adopted 19 September 2012
<i>Pterostylis gibbosa</i>	Pouched or Illawarra Greenhood	Endangered	Endangered	Site-managed	State recovery plan approved September 2002 and national recovery plan adopted on 19 February 2004.
<i>Pterostylis pulchella</i>	Waterfall Greenhood	Vulnerable	Vulnerable	Site-managed	National recovery plan not required. Conservation advice approved 3 July 2008.
<i>Pultenaea aristata</i>	Prickly Bush-pea	Vulnerable	Vulnerable	Keep Watch	National recovery plan not required. Conservation advice approved 26 March 2008.

Scientific name	Common Name	NSW Status	National Status	Management stream under the NSW Biodiversity Conservation Program	Current status of national recovery plans and conservation advice
<i>Pultenaea baeuerlenii</i>	Budawangs Bush-pea	Vulnerable	Vulnerable	Site-managed	National recovery plan not required. Conservation advice approved 3 July 2008.
<i>Ranunculus anemoneus</i>	Anemone Buttercup	Vulnerable	Vulnerable	Keep Watch	State recovery plan approved July 2001 and national recovery plan adopted on 26 March 2002.
<i>Baloskion longipes</i> (formerly <i>Restio longipes</i>)	Dense Cord-rush	Vulnerable	Vulnerable	Site-managed	National recovery plan not required. Conservation advice approved 26 March 2008.
<i>Commersonia prostrata</i> (formerly <i>Rulingia prostrata</i>)	Dwarf Kerrawang	Endangered	Endangered	Site-managed	National recovery plan adopted 12 March 2010.
<i>Rutidosia leirolepis</i>	Monaro Golden Daisy	Vulnerable	Vulnerable	Site-managed	National recovery plan not required. Conservation advice approved 1 October 2008.
<i>Rutidosia leptorrhynchoides</i>	Button Wrinklewort	Endangered	Endangered	Site-managed	National Recovery Plan adopted 22 March 2013.
<i>Saccolaimus flaviventris</i>	Yellow-bellied Sheath-tail-bat	Vulnerable	Not listed	Landscape	
<i>Scoteanax rueppellii</i>	Greater Broad-nosed Bat	Vulnerable	Not listed	Landscape	
<i>Sminthopsis leucopus</i>	White-footed Dunnart	Vulnerable	Not listed	Landscape	
<i>Swainsona recta</i>	Mountain Swainson-pea or Small Purple-pea	Endangered	Endangered	Site-managed	National recovery plan adopted 19 September 2012.
<i>Syzygium paniculatum</i>	Magenta Lilly Pilly	Endangered	Vulnerable	Site-managed	National recovery plan adopted 24 July 2012.
<i>Thesium australe</i>	Austral Toad-flax	Vulnerable	Vulnerable	Keep Watch	National recovery plan not required. Conservation advice approved 17 December 2013.
<i>Triplarina nowraensis</i>	Nowra Heath Myrtle	Endangered	Endangered	Site-managed	National recovery plan adopted 10 February 2012.
<i>Tyto novaehollandiae</i>	Masked Owl	Vulnerable	Not listed	Landscape	State recovery plan approved October 2006
<i>Tyto tenebricosa</i>	Sooty Owl	Vulnerable	Not listed	Landscape	State recovery plan approved October 2006
<i>Varanus rosenbergi</i>	Rosenberg's goanna	Vulnerable	Not listed	Landscape	

Scientific name	Common Name	NSW Status	National Status	Management stream under the NSW Biodiversity Conservation Program	Current status of national recovery plans and conservation advice
<i>Westringia kydrensis</i>	Kydra Westringia	Endangered	Endangered	Site-managed	National recovery plan not required. Conservation advice approved 1 October 2008.
<i>Anthochaera phrygia</i> (formerly <i>Xanthomyza phrygia</i>)	Regent Honeyeater	Critically endangered	Critically endangered	Iconic	National recovery plan required^
<i>Zieria adenophora</i>	Araluen Zieria	Critically endangered	Endangered	Site-managed	National recovery plan adopted 26 March 2002.
<i>Zieria baeuerlenii</i>	Bomaderry Zieria	Endangered	Endangered	Site-managed	National recovery plan adopted 21 April 2011.
<i>Zieria citriodora</i>	Lemon Zieria	Endangered	Vulnerable	Site-managed	National recovery plan adopted 21 April 2011.
<i>Zieria granulata</i>	Narrow-leaf or Illawarra Zieria	Endangered	Endangered	Site-managed	State recovery plan approved January 2005 and national recovery plan adopted on 10 June 2005.
<i>Zieria involucrata</i>	(a tall shrub)	Endangered	Vulnerable	Site-managed	State recovery plan approved January 2006 and national recovery plan adopted on 9 May 2007.
<i>Zieria murphyi</i>	Velvet Zieria	Vulnerable	Vulnerable	Site-managed	National recovery plan not required. Conservation advice approved 3 July 2008.
<i>Zieria tuberculata</i>	Warty Zieria	Vulnerable	Vulnerable	Site-managed	National recovery plan not required. Conservation advice approved 3 July 2008.

Table notes:

(1) **Site-managed:** species can be successfully secured in the wild by carrying out targeted management actions at specific sites

Landscape: generally distributed across large areas and subject to threats at landscape scale

Iconic: species which the community places a high value on and has particular expectations for conservation

Data deficient: there is insufficient knowledge available on the ecology, distribution and/or management requirements to enable a site-managed species project

Partnership: has less than 10% of its population/distribution occurring within NSW

Keep Watch: lower priority for investment in management

ATTACHMENT 4 NOT USED

ATTACHMENT 5 NOT USED

ATTACHMENT 6 NOT USED

RESEARCH PRIORITIES

- 1 The Parties agree to hold annual discussions on research themes, coordination and potential future directions.
- 2 New South Wales will prepare for each five-yearly review, a compendium of New South Wales Forest research that will provide a bibliography of research in progress, as well as published and unpublished works.
- 3 Research priorities for this Agreement will be updated in each five-yearly Progress Report and discussed at annual meetings.
- 4 The Parties agree to include a summary of forest related research in each five-yearly Progress Report and include an update on current research themes.
- 5 Current research themes include:
 - Forest ecology and sustainability, including flora, fauna, soil and water conservation;
 - Forest health and biosecurity;
 - Forest Products innovation and value adding;
 - Forest resource assessment and security;
 - Forest carbon, bioenergy and biofuels;
 - Climate change impacts and adaptive management;
 - Effectiveness of management prescriptions;
 - Socio-economic values of forest based industries;
 - Cultural values and cultural use;
 - Fire ecology;
 - Long-term water quality and quantity impacts associated with forestry operations; and
 - Matters of National Environmental Significance.

**CONTINUAL IMPROVEMENT OF THE NEW SOUTH WALES'
FOREST MANAGEMENT FRAMEWORK**

Systems covering public and private land

1. The Parties note that the terms of an Integrated Forestry Operations Approval will have primacy over other elements of the Forestry Corporation of NSW Hardwood Forest Management System. The Parties recognise that the Forestry Corporation of NSW Hardwood Forest Management System (including the Regional ESFM Plan, the plan of operations, and harvesting plans), will be the mechanism for implementing the terms of the Integrated Forestry Operations Approval on State forest.
2. New South Wales will implement, adapt and improve its Forest Management Framework across forest management agencies and land tenures by:
 - (a) NOT USED
 - (b) NSW National Parks and Wildlife Service maintaining an environmental management system (EMS) or equivalent management system demonstrating ESFM, for lands dedicated under the *National Parks and Wildlife Act 1974* (NSW) consistent with the following broad principles:
 - an appropriate environmental policy should be in place;
 - the environmental aspects arising from the organisation's past, existing or planned activities, products or services should be identified to determine the environmental impacts of significance;
 - relevant legislative and regulatory arrangements should be identified;
 - priorities should be identified and appropriate environmental objectives and targets set;
 - a structure and program(s) to implement the policy and achieve objectives and targets should be established;
 - planning, monitoring, corrective action, auditing and review activities should be facilitated to ensure both that the policy is complied with and that the EMS or equivalent management system remains appropriate;
 - the system should be capable of adapting to changing circumstances.
 - (c) Forestry Corporation of NSW maintaining a Forestry Corporation of NSW Hardwood Forest Management System as an EMS and maintaining EMS certification under ISO14001 or a demonstrated equivalent environmental management system.
 - (d) Implementing the New South Wales Biodiversity Strategy, or any subsequent biodiversity strategy which complements ESFM.

- (e) Implementing a native vegetation regulatory map and regulatory framework under the *Local Land Services Act 2013* (NSW) which together with other management, documents allow for specific activities to occur that comply with Regulatory Instruments.
- (f) Improving the coordination and effective use of resources allocated to research for ESFM in New South Wales.
- (g) Providing ongoing formal public participation processes to raise awareness and understanding of ESFM and how it can be achieved in New South Wales forests.
- (h) Implementing information management systems to facilitate the sharing of data for the use by all agencies, including local government, involved in the management of forested land.
- (i) Improving the cooperation and coordination between NSW Government agencies so as to achieve integrated management for conservation, wood production, and other values in Forests on both Public Land and Private Land.
- (j) Developing and implementing a community awareness program to build understanding of ESFM and clearly relate these to management requirements for conservation and to the Regulatory Instruments governing activities in both public and private forests.
- (j)A Improving administrative arrangements to ensure Ecologically Sustainable Forest Management on private forests including providing technical advice, extension services and research including assistance in the estimation of Sustainable Yield.
- (k) Maintaining and enhancing competency based training for field staff and staff or contractors undertaking Forestry Operations in flora and fauna identification and management, heritage management, soil and water protection, silvicultural training, inventory and management information systems, and Aboriginal cultural awareness and Aboriginal site identification.
- (l) Integrating bush fire management, including hazard reduction burning activities, across tenure via co-ordinated Bush Fire Management Plans under the *Rural Fires Act 1997* (NSW).
- (m) Integrating pest animal and weed control activities across tenure via Regional Strategic Pest Animal Management Plans and Regional Strategic Weed Management Plans, which have been developed to support regional implementation of the *Biosecurity Act 2015* (NSW) and NSW Biosecurity Strategy.
- (n) Maintaining an Integrated Forestry Operations Approval under the *Forestry Act 2012* (NSW) applicable to the Southern region, noting that the Integrated Forestry Operations Approval will include the following:

- terms under which Forestry Operations may legally occur;
 - conservation for environment values to levels of achievement consistent with Attachments 1 and 3;
 - measures for biodiversity conservation, soil and water protection and threatened fish protection;
 - linkages to prescribed fire management arrangements; and
- (o) measures for the recording and collection of data to inform adaptive management and continual improvement of the Integrated Forestry Operations Approval.
- (p) The Parties note that procedures for reviewing Integrated Forestry Operations Approvals are set out in the *Forestry Act 2012* (NSW).
- (q) Maintaining a Regional ESFM Plan or equivalent instrument which includes the ESFM strategy for the Southern region consistent with any Integrated Forestry Operation Approval applicable the Southern region, and statutory requirements, and including:
- Specification and description of the range of values and processes to be managed, including objectives and targets of management;
 - Descriptions of and links to Regulatory Instruments, standard operating procedures and guides or manuals;
 - Determination of Sustainable Yield;
 - Ongoing arrangements for monitoring activities specified in the plan and reporting against plan objectives and targets;
 - Process for regular reviews of the plan involving public consultation.

**MONTREAL PROCESS CRITERIA FOR THE CONSERVATION AND
SUSTAINABLE MANAGEMENT OF TEMPERATE AND BOREAL
FORESTS**

- Criterion 1: Conservation of biological diversity
- Ecosystem diversity
 - Species diversity
 - Genetic diversity
- Criterion 2: Maintenance of productive capacity of forest ecosystems
- Criterion 3: Maintenance of ecosystem health and vitality
- Criterion 4: Conservation and maintenance of soil and water resources
- Criterion 5: Maintenance of forest contribution to global carbon cycles
- Criterion 6: Maintenance and enhancement of long term multiple socio-economic benefits to meet the needs of societies
- Production and consumption
 - Recreation and tourism
 - Investment in the forest sector
 - Cultural, social and spiritual needs and values
 - Employment and community needs
- Criterion 7: Legal, institutional and economic framework for forest conservation and sustainable management

A framework for development of these criteria and indicators is described in the document *Australia's Sustainable Forest Management Framework of Criteria and Indicators 2008-Policy Guidelines* (Commonwealth of Australia, 2008).

MANAGING LANDS OF SIGNIFICANCE TO ABORIGINAL PEOPLE

- 1 New South Wales agrees to continue to manage CAR Reserve System and State forest on Public Land with significance to Aboriginal people according to the following principles :
 - It is appreciated by both Parties that the Aboriginal people of NSW have a spiritual, social, cultural and economic relationship with their traditional lands and waters, sky, ceremonial and viewing corridors and songlines, including natural values such as flora, fauna and landforms.
 - The Parties recognise that the cultural heritage of the Aboriginal peoples of NSW is a living cultural heritage, and intrinsic to their well-being.
 - The Parties recognise that the cultural heritage of the Aboriginal peoples of NSW comprises both intangible elements (such as beliefs, knowledge and practices) and tangible elements (such as objects, landforms, and ancestral remains).
 - The Parties recognise the aspirations Aboriginal people have in regards to ownership and the rights of Aboriginal Land Councils under the *Aboriginal Land Rights Act 1983* (NSW) for certain Crown lands to be returned to Aboriginal peoples .
 - Both Parties appreciate that the *Native Title Act 1993* (Cth) provides opportunities for Aboriginal people to make application to the Federal Court for their native title rights to be determined and to negotiate Indigenous Land Use Agreements with the NSW Government for the management of public lands in their native title area.
 - The Parties recognise the rights Aboriginal people have in regards to management of traditional lands, and are committed to a working relationship with Aboriginal communities for co-operative design of relevant strategies and policies and co-operative management of Government managed lands as agreed, which may include lands managed by NSW National Parks and Wildlife Service and the Forestry Corporation of NSW.
 - An integral part of this commitment to co-operative management is the transmission of culture to provide opportunity for Aboriginal people access training and to gain employment, to ensure that Aboriginal people can effectively participate in the management of their traditional country, where that country includes Forests on Public Land.
 - The New South Wales Government has provided for Aboriginal people to own lands reserved under the *National Parks and Wildlife Act 1974* (NSW) that are of cultural significance to them through the *National Parks and Wildlife Amendment (Aboriginal Ownership) Act 1996* (NSW). Both Parties

acknowledge that there are National Parks and reserves within the Southern region that may meet the terms of the *National Parks and Wildlife Act 1974* (NSW), and actively advocate the assessment of the Southern region for this purpose.

- Both Parties support initiatives between Government agencies (both State and Local) and Aboriginal communities, that will both strategically manage and preserve New South Wales' rich cultural heritage, and ensure that the maintenance and enhancement of the CAR Reserve System considers Aboriginal interests and values.
 - The Parties will, with Aboriginal stakeholders, identify funding opportunities to support Aboriginal participation in forest management, in particular any Forest Estate areas identified as of special significance to Aboriginal people in the Southern region, for example Working on Country and Indigenous Protected Area programs.
 - Aboriginal parties will be invited to participate in any new partnership arrangement evolved out of this Agreement for the management of the CAR Reserve System.
 - The Parties recognise that Traditional Owners under the *Native Title Act 1993* (Cth) have the right to access and use certain Government managed lands for the purposes of cultural practice. This includes access to Forest Products.
 - The NSW Government recognises that opportunities exist for Aboriginal people in the commercial development of areas of economic significance or in the commercial use of Forest Products, and agrees to respond to requests from the Aboriginal community to develop these opportunities, for example through existing training and mentoring programs.
- 2 The Parties agree to use best endeavours to meet and exceed government Aboriginal employment and procurement targets in the Southern RFA region, particularly in relation to public Forests and cultural heritage management.

SUSTAINABLE YIELD SYSTEMS AND PROCESSES

- 1 The Parties agree that Sustainable Yield calculations and the method and processes used, are important in realising ESFM on the State forest and Crown-timber land estate.
- 2 The Parties agree that FRAMES provides a sound basis for volume allocations at the strategic level and will be used to estimate Sustainable Yield. Further information on FRAMES and its history and implementation can be found in the document *Forest Resource and Management Evaluation System (FRAMES) – A Report on its Development and Implementation to 30 June 2016 (FCNSW)*.
- 3 New South Wales will review and update Sustainable Yield calculations from State forest at least once every five-year review period, or more frequently on an as needs basis. Sustainable Yield calculations will be based on modelling with the goal of yielding the maximum non-declining yield of High Quality Logs over a minimum period of 100 years.
- 4 New South Wales will commission an independent audit of Sustainable Yield calculations at least once every five-yearly review period having regard to the elements in item 7.
- 5 New South Wales will make publicly available the independent audit of Sustainable Yield calculations by publication on the website of the relevant department or agency. Sustainable Yield calculations will address relevant Forest Products for the Southern region, which may include High Quality Logs, Low Quality Logs, Pulpwood and Other Wood Products.
- 6 Any changes in volume allocations to the timber and forest-based industries will be based on Sustainable Yield and be consistent with modelling using FRAMES or an equivalent system.
- 7 New South Wales will maintain a continual improvement program for FRAMES including the following elements:
 - Establishing processes for appropriate internal reviews and audits of Sustainable Yield as part of the Forestry Corporation of NSW Hardwood Forest Management System.
 - Document and review systems, processes, models and databases used in the calculation of Sustainable Yield specifically:
 - growth models and growth model inputs;
 - inventory plot currency and measurement;
 - spatial inputs that determine the modelled net harvest area;

- silviculture, product recovery, yield tables and modelling assumptions to ensure that the modelled outputs reflect current practices and actual yields;
- resource risk management aspects and mitigations (e.g. changes to the model due to resource loss through fire, changes to legislation or Regulatory Instruments that alter access to the resource and invalidate current modelling assumptions, or other impacts associated with climate change); and
- monitor and publish a reconciliation of predicted versus actual Forest Products yields in the third and fifth years of every five-year period.

ATTACHMENT 12 NOT USED

**PRINCIPLES OF ECOLOGICALLY SUSTAINABLE FOREST
MANAGEMENT (ESFM)**

Principle 1: Maintain or increase the full suite of forest values for present and future generations across the NSW native forest estate

- The principle of intergenerational equity (that in meeting the needs of the present generation, the ability of the future generations to meet their own needs is not compromised) is embodied in this principle.
- Ensure that ESFM at the regional and smaller scales is implemented by ecologically appropriate planning and operational practices, and that ESFM targets are set and indicators of performance are monitored.
- Ensure the long-term maintenance of the full range of values of the NSW existing forest estate. The intention is to maintain or increase not only the full range of values, but also the magnitude or level at which those values are maintained or increased.
- Encourage the increased production of plantation-grown timber and the social and economic benefits flowing from this increased production to supplement the wood supply from native forests.

Aims for values include

A Biodiversity

- Biological diversity of forests at the ecosystem, species and genetic levels where biological diversity includes natural patterns of ecosystems, species and gene pools in time and space.
- Address the requirements of vulnerable species. Assist with the recovery of threatened species and maintain the full range of ecological communities at viable levels. Protect landscape values through the careful planning of operations and the reservation of appropriate patches and corridors of vegetation.

B The productive capacity and sustainability of forest ecosystems

- Maintain ecological processes within forests (such as the formation of soil, energy flows and the carbon, nutrient and water cycles, fauna and flora communities and their interactions).
- Maintain or increase the ability of forest ecosystems to produce biomass whether utilised by society or as part of nutrient and energy cycles.

- Ensure the rate of removal of any forest products is consistent with ecologically sustainable levels.
- Ensure the deleterious effects of activities/disturbances which threaten forests, forest health or forest values are minimised.

C Forest ecosystem health and vitality

- Reduce or avoid threats to forest ecosystems from introduced diseases, exotic plants and animals, unnatural regimes of fire or flooding, wind shear, land clearing and urbanisation.
- Promote good environmental practice in relation to pest management.
- Ensure the deleterious effects of activities/disturbances within forests, their scale and intensity, including their cumulative effects are minimised.
- Restore and maintain the suite of attributes (ecological condition, species composition and structure of native forests) where forest health and vitality have been degraded.

D Soil and water

- Maintain the chemical and biological functions of soils by protecting soils from unnatural nutrient losses, exposure, degradation and loss.
- Maintain the physical integrity of soils by protecting soils from erosion, mass movement, instability, compaction, pulverisation and loss.
- Protect water quality (physical, chemical, biological) by measures controlling disturbance resulting from forest activities.
- Identify and maintain at appropriate levels, water yield and flow duration in catchments.

E Positive contribution of forests to global geochemical cycles

- Maintain the positive contribution of forests to the global geochemical cycle (includes climate, air and water quality and deposition).

F Long-term social and economic benefits

- Maintain and enhance, on an ecologically sustainable basis, production of wood and wood products, including value adding, investment and resource security.
- Provided it is ecologically sustainable, set, maintain or enhance the level of use of non-wood products and uses, including bee-keeping, grazing, mining, recreation and tourism, reliable water supply.

- Maintain and enhance, on an ecologically sustainable basis, the provision of employment and community needs such as economic diversification, investment skills, education, jobs stability, training and Indigenous needs.
- Encourage the establishment and use of plantation forests on existing cleared land to expand social and economic values.
- Maintain and enhance the intangible social welfare benefits which forests provide.

G Natural and cultural heritage values

- Protect social, natural and cultural heritage values and sites, including aesthetic, landscape, historic, cultural, educational, scenic, spiritual and scientific values, including Indigenous values and sites.

Principle 2 Ensure public participation, access to information, accountability and transparency in the delivery of ESFM.

- Ensure public participation in decision-making processes at local, regional and State and Federal levels.
- Ensure comprehensive, timely and reasonable public access to information.
- Ensure transparency, openness and accountability in decision making processes and performance.

Principle 3 Ensure legislation, policies, institutional framework, codes, standards and practices related to forest management require and provide incentives for ecologically sustainable management of the native forest estate.

- Establish a process for shared management and administration, recognising the customary and traditional rights of Indigenous people, and the interests of private land-holders and other stakeholders in an area's management.

Principle 4 Apply precautionary principles for prevention of environmental degradation

The incorporation of the precautionary principle into decision making has been endorsed by State and Commonwealth Governments (Commonwealth of Australia 1992 p. 49, IGAE 1992) and is defined as *'where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. In the application of the precautionary principle, public and private decisions should be guided by:*

- *careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment; and*
- *an assessment of the risk-weighted consequences of various options.'*

Principle 5 Apply best available knowledge and adaptive management processes

ESFM would utilise the concept of adaptive management and continual improvement based on best science and expert advice and targeted research on critical gaps in knowledge, monitoring or evaluation.



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of Regional Forest Agreements**

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Disclaimer: The information contained in this publication is based on knowledge and understanding at the time of writing (August 2018). However, because of advances in knowledge, users are reminded of the need to ensure that information upon which they rely is up to date and to check currency of the information with the appropriate officer of the Department of Primary Industries or the user's independent adviser.

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Abbreviations

ABARES	Australian Bureau of Agricultural and Resource Economics and Sciences (Cth)
ABS	Australian Bureau of Statistics (Cth)
AFS	Australian Forestry Standard
BC Act	<i>Biodiversity Conservation Act 2016</i> (NSW)
CAM	Common assessment method
CAPAD	Collaborative Australian Protected Area Database
CAR	Comprehensive, adequate and representative (reserve system)
CO ₂	Carbon dioxide
CRA	Comprehensive regional assessment
CSIRO	Commonwealth Scientific and Industrial Research Organisation
Cth	Commonwealth (of Australia)
C&D	Construction and Demolition
C&I	Commercial and Industrial
DAWR	Department of Agriculture and Water Resources (Cth)
DoEE	Department of the Environment and Energy (Cth)
DPI	Department of Primary Industries (NSW)
EMS	Environmental Management System
EPA	Environment Protection Authority (NSW)
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth)
EPL	Environment Protection Licence
ERF	Emissions Reduction Fund
ESFM	Ecologically sustainable forest management
FA	Forest Agreement
Forestry Act	<i>Forestry Act 2012</i> (NSW)

FCNSW	Forestry Corporation of NSW
FM Act	<i>Fisheries Management Act 1994</i> (NSW)
FMP	Forest Management Plan
FMS	Forest Management System
FMZ	Forest management zoning (zones)
FRAMES	Forest Resource and Management Evaluation System
FTAs	Free Trade Agreements
FTE	Full-Time-Equivalent
GBMWhA	Greater Blue Mountains World Heritage Area
HQL	High-quality large sawlogs
HQS	High-quality small sawlogs
HWP	Harvested wood product(s)
IFOA	Integrated forestry operations approval
ILUA	Indigenous land use agreement
IPART	Independent Pricing and Regulatory Tribunal
IUCN	International Union for Conservation of Nature
JANIS	Joint ANZECC/MCFFA National Forest Policy Statement Implementation Sub-committee
LALC	Local Aboriginal Land Councils
LGA	Local Government Area
LiDAR	Light Detection and Ranging
LLS Act	<i>Local Land Services Act 2013</i> (NSW)
LNE	Lower North East
MIG	Montréal Process Implementation Group for Australia
MOU	Memorandum of Understanding
m ³	Cubic Metres

NFI	National Forest Inventory
NFPS	National Forest Policy Statement (1992)
NPWS	National Parks and Wildlife Service (NSW)
NPW Act	<i>National Parks and Wildlife Act 1974</i> (NSW)
NRC	Natural Resources Commission
NRS	National Reserve System
NV Act	<i>Native Vegetation Act 2003</i> (NSW)
OEH	Office of Environment and Heritage (NSW)
pa	Per Annum
PAS	Priority Action Statement
PMF	Park Management Framework
PMP	Park Management Program
PoM	Plans of Management
PNF	Private native forestry
PNF Code	Private Native Forestry Code of Practice (NSW)
POEO Act	<i>Protection of the Environment Operations Act 1997</i> (NSW)
PPG	Poles, piles and girders
PR Act	<i>Plantations and Reafforestation Act 1999</i> (NSW)
PR Code	Plantations and Reafforestation (Code) Regulation 2001 (NSW)
RD&E	Research, Development and Extension
RFA	Regional Forest Agreement
RFA Act	<i>Regional Forest Agreements Act 2002</i> (Cth)
RIFA	Red Imported Fire Ant
RNE	Register of the National Estate
R&D	Research and Development
SEED	Sharing and Enabling Environmental Data

SLA	Service Level Agreement
SOC	State Owned Corporation
SOFR	Australia's State of the Forests Report
TAP	Threat abatement plan
TSC Act	<i>Threatened Species Conservation Act 1995</i> (NSW)
UNE	Upper North East
UNESCO	United Nations Educational, Scientific and Cultural Organization
WH	World Heritage
WHA	World Heritage Area
WSA	Wood supply agreement

Introduction

Between 1999 and 2001, the State of New South Wales and the Commonwealth of Australia (i.e. 'the Parties') entered into three Regional Forest Agreements (RFAs) covering the coastal and tablelands regions of NSW.

The three NSW RFAs were among 10 that were signed between the Commonwealth and four states – NSW, Tasmania, Victoria and Western Australia – between 1997 and 2001.

The NSW RFAs were signed following Comprehensive Regional Assessments (CRAs) of the Eden, Upper North East, Lower North East, and Southern regions, which provided an information base from commissioned projects, to evaluate the economic, social, environmental and heritage uses and values of the forests in each RFA region.

Experts contributing to the CRAs came from such fields as archaeology, botany, forest ecology, geography, geomorphology, geology, hydrology and soil science, as well as economics, regional development and social planning. The CRAs were a result of detailed study, consultation and negotiation with a diverse range of stakeholders.

The CRAs were described in the 1996 scoping agreement for the NSW RFAs and covered:

- a. Biodiversity
- b. Old Growth
- c. Wilderness
- d. Endangered species
- e. National Estate values
- f. World Heritage values
- g. Indigenous Heritage
- h. Social values
- i. Economic values and industry development opportunities in forested areas
- j. Ecologically sustainable management

These matters were subsequently incorporated into paragraph (a) of the definition of 'Regional Forest Agreement' or 'RFA' in section 4 of the *Regional Forest Agreements Act 2002* (Cth) (RFA Act). The RFA Act gives effect to certain obligations of the Commonwealth under the RFAs and certain aspects of the *National Forest Policy Statement* (Cth) (NFPS).

The full definition of an RFA is as follows:

RFA or Regional Forest Agreement means an agreement that is in force between the Commonwealth and a State in respect of a region or regions, being an agreement that satisfies all the following conditions:

a) the agreement was entered into having regard to assessments of the following matters that are relevant to the region or regions:

- i. environmental values, including old growth, wilderness, endangered species, national estate values and world heritage values*
- ii. indigenous heritage values*
- iii. economic values of forested areas and forest industries*
- iv. social values (including community needs)*
- v. principles of ecologically sustainable management.*

- b) the agreement provides for a comprehensive, adequate and representative reserve system;*
- c) the agreement provides for the ecologically sustainable management and use of forested areas in the region or regions;*
- d) the agreement is expressed to be for the purpose of providing long-term stability of forests and forest industries;*
- e) the agreement is expressed to be a Regional Forest Agreement.*

With the Eden RFA (which was the first of the three NSW RFAs) due to expire in August 2019, the Australian and NSW governments committed to renew the agreements for 20 years from their current expiry date. The parties are committed that the renewed RFAs will continue to provide for a comprehensive, adequate and representative reserve system, and for the ecologically sustainable management and use of forested areas in the region. The parties are also committed to ensuring that the renewed RFAs will be expressed to be for the purposes of providing long-term stability of forests and forest industries, and will be referred to as Regional Forest Agreements.

Assessments of those matters which are listed in para (a) of the definition of 'RFA' in the *Regional Forest Agreements Act 2002* were initially undertaken prior to entering into the RFAs through the CRA process that preceded the signing of the NSW RFAs from August 1999. Paragraph D of the Recitals in the Eden RFA specifically refers to the agreement being entered into having regard to "studies and projects carried out in relation to all of the following matters relevant to the region" and it lists exactly the matters referred to in para (a) of the definition of 'RFA' in the RFA Act.

The purpose of this report is to provide an update on the matters listed in para (a) of the definition of the RFA in order to support the decision by the parties to enter into the proposed renewal of the RFA. This assessment considers the likely applicability of the findings of the CRAs to the proposed term of the renewed RFAs, the current status of the values based on additional information derived from various sources published since the governments entered into the agreement, and the likely impact on those values of the proposed renewal of the NSW RFAs. This document summarises the above consideration by reference to each of the listed matters.

For the purposes of this report, 'ecologically sustainable management' in para (a) of the definition of 'RFA' in the RFA Act is taken to be synonymous with Ecologically Sustainable Forest Management as used in the NSW RFAs. In Australia, the internationally-agreed Montréal Process Criteria and Indicators for reporting on sustainable forest management are used. The Montréal Process Criteria and Indicators were agreed to be the framework for reporting on sustainability (refer to clause 52 of the current Eden RFA, as an example). The framework for Ecologically Sustainable Forest Management covers all of the matters listed in para (a) of the definition of 'RFA' in the RFA Act, and therefore provides the performance criteria for the assessment in this report.

All of the evaluation processes and reviews described in this report were commissioned through statutory or other governmental process. The outcomes and findings of all of the

processes have been considered through the formal, independent five-yearly reviews of the NSW RFAs undertaken jointly by the Australian and NSW governments.

The Australian and NSW governments have duly taken account of the outcomes of these reviews and assessment processes, by providing formal responses to each of the five-yearly reviews and by agreeing to implement further measures consistent with the adaptive management and continual improvement commitments in the NSW RFAs, and sustainable management principles.

This report shows that the Australian and NSW governments have, through a comprehensive and diverse range of processes, had ongoing regard to the listed matters in para (a) of the definition of 'RFA' in the RFA Act relevant to the region.

The report also provides an assessment of the state of the values using the latest available information from a variety of sources within the context of:

- continuing NSW Regional Forest Agreements, noting policy commitments of both governments
- the most recent joint government response to the latest independent five-yearly review of the NSW Regional Forest Agreements
- NSW Forest Management Framework.

Further detail on how NSW Forest Management Framework adapts to new information and decisions of government can be found in NSW Forest Management Framework document (2018) (Department of Primary Industries, 2018).

This document takes data from published sources and assimilates it to provide information, over time, about relevant NSW RFA matters.

It is not a replacement for other reviews that have been done relating to NSW RFAs or which have included Montréal Process indicators. Rather it draws on these sources to illuminate the state of the matters and indicators as they have changed over the life of the current NSW RFAs.

Background

RFAs are a means of balancing environmental, economic and social uses and values of key native forest regions across Australia. They are derived from the National Forest Policy Statement (NFPS) and are formalised in the RFA Act.

Forest operations undertaken in accordance with an RFA do not require additional approvals under Part 3 of the EPBC Act. The inclusion of RFA provisions within the EPBC Act recognises that in each RFA region a CRA was undertaken to address the environmental, economic and social objectives of the EPBC Act.

Rather than being an exemption from the EPBC Act requirements, the establishment of RFAs constitutes a form of assessment and approval.

The exemption from Part 3 of the EPBC Act recognises that RFAs have established comprehensive reserve networks, and that forestry operations must adhere to the principles of Ecologically Sustainable Forest Management (ESFM) including the application of forest

management strategies, usually through prescriptions, and adaptive management to protect matters of national environmental significance (MNES).

The management of MNES within RFA regions is consistent with the objectives of the EPBC Act, but there are different implementation mechanisms.

Additionally, RFAs do not exempt forestry operations from obligations in state-based legislation for the protection threatened species and communities.

The three NSW RFAs were originally established for a period of 20 years and are now approaching their expiry dates:

- The Eden RFA signed on the 26 August 1999 expires 2019
- The North East RFA signed on 31 March 2000 expires 2020
- The Southern RFA signed on 24 April 2001 expires 2021.

The NSW RFAs established an agreed framework for the ecologically sustainable forest management and use of forests in those regions. In particular, the NSW RFAs:

- identify areas required for the purposes of a CAR reserve system and provide for the conservation of those areas
- provide for the ecologically sustainable management and use of forested areas in those regions
- are for the purpose of providing long-term stability of forests and forest industries
- have regard to studies and projects carried out in relation to:
 - environmental values, including old growth, wilderness, endangered species, National Estate values and World Heritage values
 - Aboriginal heritage values
 - economic values of forested areas and forest industries
 - social values (including community needs)
 - the principles of ecologically sustainable forest management (ESFM).

The Australian and NSW governments have committed to:

- Renewing each of the NSW RFAs for a further term of 20 years
- establishing a 'rolling' life for each Regional Forest Agreement by including a provision to extend its term for a further five years based upon successful completion and implementation of each independent five-yearly review of the Regional Forest Agreement.

The Australian and NSW governments are therefore working to renew the NSW RFAs for a period of 20 years from their current expiry date.

In renewing the NSW RFAs, the Australian and NSW governments seek to maintain the objectives of the agreement. The governments are also seeking to negotiate a range of other minor improvements to the NSW RFAs to address some of the issues raised by various consultative reviews, consistent with continual improvement.

These improvements include:

- Streamlined and strengthened review and reporting arrangements

- Graduated dispute resolution
- Better handling of forest management complaints
- Improved communication and consultation between the Australian and NSW governments.

RFAs and RFA regions

RFA regions

Section 41 of the EBPC Act defines four NSW RFA regions:

- (a) the area delineated as the Eden RFA region on the map of that New South Wales Region dated 13 May 1999 and published by the Bureau of Resource Sciences
- (b) the area delineated as the Lower North East RFA region on the map of that New South Wales Region dated 13 May 1999 and published by the Bureau of Resource Sciences
- (c) the area delineated as the Upper North East RFA region on the map of that New South Wales Region dated 13 May 1999 and published by the Bureau of Resource Sciences
- (d) the area delineated as the South Region on the map of the South CRA Region dated August 1997 and published by the State forest GIS Branch of the organisation known as State Forests of New South Wales

RFAs

There are three NSW RFAs:

- Eden RFA
- Southern RFA
- North Eastern RFA.

For historic reasons, the North Eastern RFA covers two RFA regions. These are the Upper North Eastern (UNE) and Lower North Eastern (LNE) RFA regions.

Conversely, the Eden RFA directly covers the Eden RFA region, and the Southern RFA covers the Southern RFA region.

Method

Underpinning the NFPS, the RFA Act, and the RFAs themselves are the principles of ecologically sustainable forest management (ESFM). These principles can be directly mapped to the criteria established in the Montréal Process. The Montréal Process indicators relating to these principles are used in a range of RFA and other reporting, and are used in this document as measures to demonstrate the accumulated changes over time to relevant NSW RFA matters.

The relationship between the Montréal Process indicators, RFAs, CRAs and this assessment of Matters is shown in **Figure 0.1**.

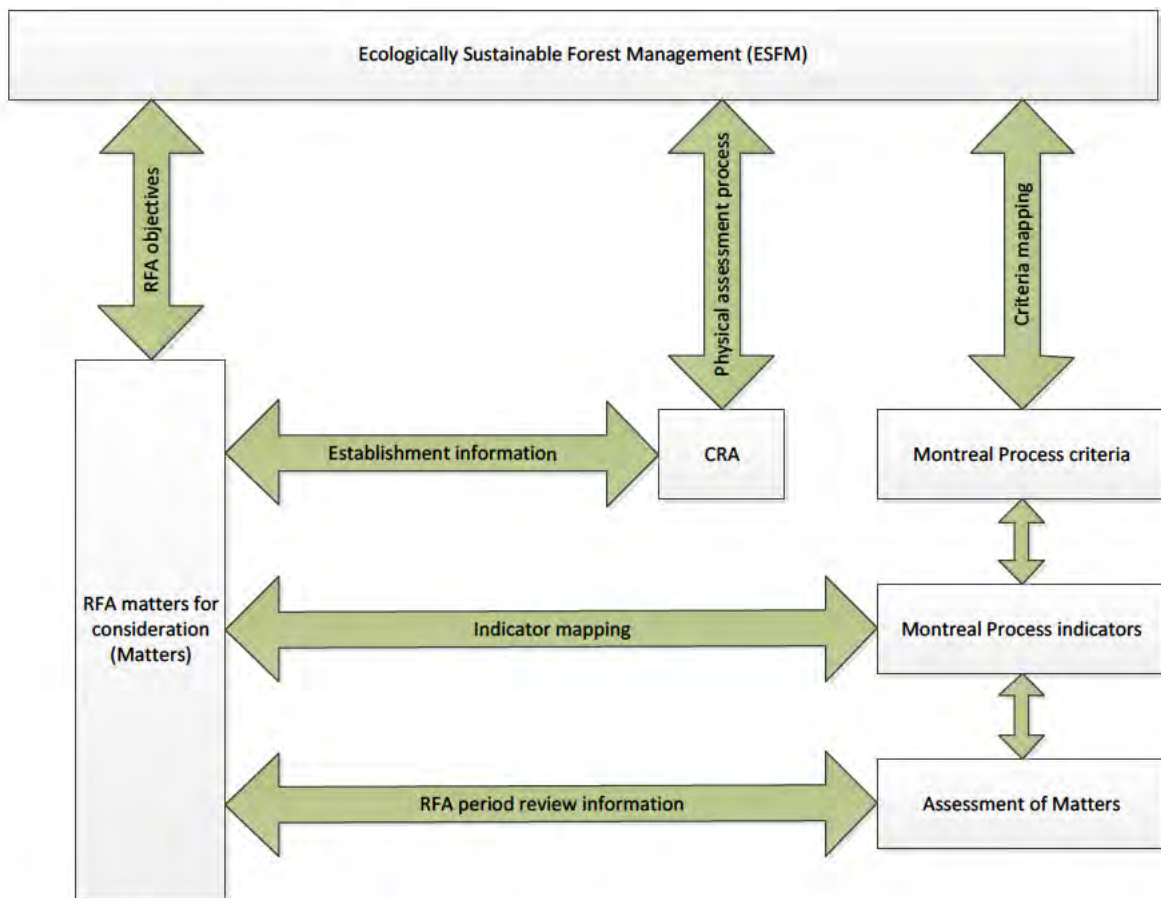


Figure 0.1 RFA baseline and tracking measures

This Assessment of Matters uses published data from various sources which also report using Montréal Process Indicators, such as NSW RFA annual reports and reviews, NSW Forest Agreement annual reports and national State of the Forests reporting. This provides consistency over time to compare the relative measures.

Mapping of the Montréal Process criteria against the principles of ESFM is shown in

Table 0.1.

Table 0.1 Comparison of Montréal Process Criteria with the principles of Ecologically Sustainable Forest Management used in NSW RFAs

Montréal Process Criteria for Sustainable Forest Management	Principles of Ecologically Sustainable Forest Management
Criterion 1. Conservation of biological diversity	<p>Principle 1: Maintain or increase the full suite of forest values for present and future generations across the NSW native forest estate</p> <p>Principle 4: Apply precautionary principles for prevention of environmental degradation</p>
Criterion 2. Maintenance of productive capacity of forest ecosystems	<p>Principle 1: Maintain or increase the full suite of forest values for present and future generations across the NSW native forest estate</p> <p>Principle 5: Apply best available knowledge and adaptive management processes</p>
Criterion 3. Maintenance of ecosystem health and vitality	Principle 1: Maintain or increase the full suite of forest values for present and future generations across the NSW native forest estate
Criterion 4. Conservation and maintenance of soil and water resources	Principle 1: Maintain or increase the full suite of forest values for present and future generations across the NSW native forest estate
Criterion 5. Maintenance of forest contribution to global carbon cycles	<p>Principle 1: Maintain or increase the full suite of forest values for present and future generations across the NSW native forest estate</p> <p>Principle 5: Apply best available knowledge and adaptive management processes</p>
Criterion 6. Maintenance and enhancement of long-term multiple socioeconomic benefits to meet the needs	Principle 1: Maintain or increase the full suite of forest values for present and future generations across the NSW native

Montréal Process Criteria for Sustainable Forest Management	Principles of Ecologically Sustainable Forest Management
of societies	forest estate Principle 2: Ensure public participation, access to information, accountability and transparency in the delivery of ESFM.
Criterion 7. Legal, institutional and economic framework for forest conservation and sustainable management	Principle 2: Ensure public participation, access to information, accountability and transparency in the delivery of ESFM. Principle 3: Ensure legislation, policies, institutional framework, codes, standards and practices related to forest management require and provide incentives for ecologically sustainable management of the native forest estate. Principle 5: Apply best available knowledge and adaptive management processes

Table 0.2 shows the relationship between individual indicators under the Montréal Process criteria, and RFA matters for consideration in the RFA Act.

Where possible, and appropriate, this document provides indicator information at discrete points over the life of current NSW RFAs at an RFA regional level.

Some data is not available, or is not meaningful at the regional level (for example national export policy settings). In these cases information may be presented on a state or national basis.

Where information has not been reported over time, or has not been reported on a consistent basis, notes to this effect are included under the individual indicators.

Table 0.2 Relationship between listed Matters in the RFA Act and Montréal Process indicators

Montréal Process Indicator	Relevant matter in para (a) of the definition of 'RFA' in the RFA Act (best match(es) shown as shaded boxes)				
	4(a)i environmental values, (including old growth, wilderness, endangered species, national estate values and world heritage values)	4(a)ii indigenous heritage values	4(a)iii economic values of forested areas and forest industries	4(a)iv social values (including community needs)	4(a)v principles of ecologically sustainable management
1.1 Ecosystem diversity					
1.1a Area of forest by forest type and tenure					
1.1b Area of forest by growth stage					
1.1c Area of forest in protected area categories					
1.1d Fragmentation of forest cover					
1.2 Species diversity					
1.2a Forest-dwelling species for which ecological information is available					
1.2b The status of forest-dwelling species at risk of not maintaining viable breeding populations, as determined by legislation or scientific assessment					
1.2c Representative species from a range of habitats monitored at scales relevant to regional forest					

Montréal Process Indicator	Relevant matter in para (a) of the definition of 'RFA' in the RFA Act (best match(es) shown as shaded boxes)				
	4(a)i environmental values, (including old growth, wilderness, endangered species, national estate values and world heritage values)	4(a)ii indigenous heritage values	4(a)iii economic values of forested areas and forest industries	4(a)iv social values (including community needs)	4(a)v principles of ecologically sustainable management
management					
1.3 Genetic diversity					
1.3a Forest associated species at risk from isolation and the loss of genetic variation, and conservation efforts for those species					
1.3b Native forest and plantations of indigenous species which have genetic resource conservation mechanisms in place					
2 Maintenance of productive capacity of forest ecosystems					
2.1a Native forest available for wood production, area harvested and growing stock of merchantable and non-merchantable tree species					
2.1b Age class and growing stock of plantations					

Montréal Process Indicator	Relevant matter in para (a) of the definition of 'RFA' in the RFA Act (best match(es) shown as shaded boxes)				
	4(a)i environmental values, (including old growth, wilderness, endangered species, national estate values and world heritage values)	4(a)ii indigenous heritage values	4(a)iii economic values of forested areas and forest industries	4(a)iv social values (including community needs)	4(a)v principles of ecologically sustainable management
2.1c Annual removal of wood products compared to the volume determined to be sustainable for native forests and future yields for plantations					
2.1d Annual removal of non-wood products compared to the level determined to be sustainable					
2.1e The area of native forest harvested and the proportion of that effectively regenerated and the area of plantation clear-fell harvested and the proportion of that effectively					
3 Maintenance of ecosystem health and vitality					
3.1a Scale and impact of agents and processes affecting forest health and vitality					
3.1b Area of forest burnt by planned and unplanned fire					

Montréal Process Indicator	Relevant matter in para (a) of the definition of 'RFA' in the RFA Act (best match(es) shown as shaded boxes)				
	4(a)i environmental values, (including old growth, wilderness, endangered species, national estate values and world heritage values)	4(a)ii indigenous heritage values	4(a)iii economic values of forested areas and forest industries	4(a)iv social values (including community needs)	4(a)v principles of ecologically sustainable management
4 Conservation and maintenance of soil and water resources					
4.1a Area of forest land managed primarily for protective function					
4.1b Management of the risks of soil erosion and the risks to soil physical properties, water quantity and water quality in forests					
5 Maintenance of forests' contribution to global carbon cycles					
5.1a Total forest ecosystem biomass and carbon pool					
6.1 Production and consumption					
6.1a Value and volume of wood and wood products					
6.1b Values, quantities and use of non-wood forest products					
6.1c Value of forest based services					

Montréal Process Indicator	Relevant matter in para (a) of the definition of 'RFA' in the RFA Act (best match(es) shown as shaded boxes)				
	4(a)i environmental values, (including old growth, wilderness, endangered species, national estate values and world heritage values)	4(a)ii indigenous heritage values	4(a)iii economic values of forested areas and forest industries	4(a)iv social values (including community needs)	4(a)v principles of ecologically sustainable management
6.1d Production and consumption and import/export of wood, wood products and non-wood products					
6.1e Degree of recycling of forest products					
6.2 Investment in the forest sector					
6.2a Investment and expenditure in forest management					
6.2b Investment in extension and use of new and improved technologies					
6.3 Recreation and tourism					
6.3a Area of forest available for general recreation/tourism					
6.3b Range and use of recreational/tourism activities available					

Montréal Process Indicator	Relevant matter in para (a) of the definition of 'RFA' in the RFA Act (best match(es) shown as shaded boxes)				
	4(a)i environmental values, (including old growth, wilderness, endangered species, national estate values and world heritage values)	4(a)ii indigenous heritage values	4(a)iii economic values of forested areas and forest industries	4(a)iv social values (including community needs)	4(a)v principles of ecologically sustainable management
6.4 Cultural, social and spiritual needs and values					
6.4a Area of forest to which Indigenous people have use rights that protect their special values and are recognized through formal and informal management regimes					
6.4b Registered places of non-indigenous cultural values in forests that are formally managed to protect those values					
6.4c The extent to which indigenous values are protected, maintained and enhanced through indigenous participation in forest management					
6.4d The importance of forests to people					
6.5 Employment and community needs					
6.5a Direct and indirect employment in the forest sector					

Montréal Process Indicator	Relevant matter in para (a) of the definition of 'RFA' in the RFA Act (best match(es) shown as shaded boxes)				
	4(a)i environmental values, (including old growth, wilderness, endangered species, national estate values and world heritage values)	4(a)ii indigenous heritage values	4(a)iii economic values of forested areas and forest industries	4(a)iv social values (including community needs)	4(a)v principles of ecologically sustainable management
6.5b Wage rates and injury rates within the forest sector					
6.5c Resilience of forest dependent communities to changing social and economic conditions					
6.5d Resilience of forest dependent indigenous communities to changing social and economic conditions					
7 Legal, institutional and economic framework for forest conservation and sustainable management					
7.1a Extent to which the legal and policy framework supports the conservation and sustainable management of forests					
7.1b Extent to which the institutional framework supports the conservation and sustainable management of forests					
7.1c Extent to which the economic framework supports the conservation and sustainable management of forests					

Montréal Process Indicator	Relevant matter in para (a) of the definition of 'RFA' in the RFA Act (best match(es) shown as shaded boxes)				
	4(a)i environmental values, (including old growth, wilderness, endangered species, national estate values and world heritage values)	4(a)ii indigenous heritage values	4(a)iii economic values of forested areas and forest industries	4(a)iv social values (including community needs)	4(a)v principles of ecologically sustainable management
7.1d Capacity to measure and monitor changes in the conservation and sustainable management of forests					
7.1e Capacity to conduct and apply research and development aimed at improving forest management and delivery of forest goods and services					

Linkages to other Processes

A number of processes have produced complementary information aimed at reporting on sustainable management of forest ecosystems. These include the reporting against Montréal Process Criteria and Indicators such as Australia's State of the Forests reporting, and Australian and New South Wales State of the Environment reporting, and NSW reports such as the former Department of Environment and Climate Change's State of the Parks Report and the former Forest NSW's Social, Environmental and Economic Report

In a separate process New South Wales also reports on NSW Forest Agreements and Integrated Forestry Operations Approvals as required by the *Forestry and National Park Estate Act 1998* (NSW). The review of Forest Agreement/Integrated Forestry Operations Approvals includes consideration of the ESFM criteria and indicators specified in each NSW Forest Agreement, being identical to the sustainability indicators referred to in the NSW RFAs.

In addition, the Commonwealth Government, as a signatory to the Montréal Process, also reports under Montréal Process obligations.

Montréal Process Implementation Group for Australia (MIG) indicators

Under the RFAs, reporting against criteria and indicators is carried out in accordance with *A Framework of Regional (Sub-national) Level Criteria and Indicators of Sustainable Forest Management in Australia*¹, developed by the Montréal Process Implementation Group for Australia (MIG). The 1998 indicators current at the signing of the NSW RFAs were updated in 2007 in *Australia's Sustainable Forest Management Framework of Criteria & Indicators 2007 – Policy Guideline*. This provided the seven criteria and 44 indicators currently in use. Mapping of these to the international criteria is shown in Appendix 1.

¹ Department of Primary Industries and Energy 1998

1.Environmental Values

The purpose of this Section is to report on the environmental values that are specifically listed in para (a)(i) of the definition of 'RFA' in the *Regional Forest Agreement Act 2002* (Cth): old growth, wilderness, endangered species, national estate values and world heritage values. Biodiversity values and wetland values have also been included under the 'environmental values' heading.

This section includes the following Montréal Process indicators:

- Indicator 1.1b – Area of forest by growth stage
- Indicator 1.2b – Status of forest dwelling species at risk of not maintaining viable breeding populations, as determined by legislation or scientific assessment
- Indicator 6.4b – Registered places of non-Indigenous cultural value in forests that are formally managed to protect those values
- Indicator 1.1a – Area of forest by forest type and tenure
- Indicator 1.1c – Area of forest in protected area categories
- Indicator 1.2a – Forest dwelling species for which ecological information is available
- Indicator 1.2c – Representative species from a range of habitats monitored at scales relevant to regional forest management
- Indicator 1.3a – Forest associated species at risk from isolation and the loss of genetic variation, and conservation efforts for those species
- Indicator 4.1a – Area of forest land managed primarily for protective functions
- Indicator 4.1b – Management of the risk of soil erosion in forests.

Information is drawn from the original documentation produced as part of the CRA process, subsequent reports (including State of the Forest Reports, State of the Environment reports, statutory independent five-yearly reviews of NSW RFAs required under the RFAs and other relevant data).

Old Growth Values

Old growth forest is defined in the *National Forest Policy Statement*(NFPS) as ecologically mature forest where the effects of disturbances are now negligible² (Commonwealth of Australia 1992). The long-term protection of old growth forest is important because of its aesthetic, cultural and nature conservation values and the absence of disturbance.

Indicator 1.1b – Area of forest by growth stage

This indicator measures the change in area of forest by growth stage to reflect how ecological processes and species associated with those processes change as forests grow. The age and size of trees is important in maintaining forest biodiversity.

² The full NFPS definition is *forest that is ecologically mature and has been subjected to negligible unnatural disturbance such as logging, roading and clearing. The definition focuses on forest in which the upper stratum or overstorey is in the late mature to overmature growth phases.*

Data tables associated with the NSW RFAs report a total of 2.54 million hectares of old growth forest across the four NSW RFA regions³. The spatial data available from the associated CRA process identified a total of 2.47 million hectares of old-growth forest. The difference, 70 thousand hectares, all in the Lower North East RFA region, cannot be identified spatially.

Along with other environmental values, old growth forests were one of the criteria for designing the CAR reserve system under the NSW RFAs. Of the 2.54 million hectares of old growth forest identified as part of the CRA process in the four NSW RFA regions, a total of 1.1 million hectares (45 per cent) was protected under formal reservation (the NSW National Parks and Wildlife Service (NPWS) estate) before the NSW RFAs were signed. By mid-2001, after all three NSW RFAs came into effect, a total of 1.9 million hectares (78 per cent) of the old-growth forest identified in the CRA spatial datasets was protected under the CAR reserve system (which includes Formal Reserves, Informal Reserves, and Regional Prescriptions for forest management on public land). By mid-2016 a total of 2.0 million hectares (80 per cent) of old-growth forest identified in the CRA spatial datasets was protected under the CAR Reserve system.⁴

All old growth forests are excluded from forestry operations in NSW RFA regions through prescriptions in the Integrated Forestry Operations Approvals (IFOAs).

Table 1.1 below summarises the extent of old-growth forest in the NSW RFA regions. Four additional tables (**Table 1.2-Table 1.5**) show the extent of old-growth forest in each RFA region, by Forest Ecosystem, and the extent in protected areas at various time points before and after the respective RFAs were signed, including the most recent area as at 30 June 2016.

It should be noted that the old-growth forest area identified during the CRA process between 1995-2000 has not been updated since, and therefore does not take into account any old-growth forest that has subsequently been subjected to disturbance such as fire, or any additional areas of old-growth forest subsequently identified. Changes in the area figures are due solely to changes of old-growth forest area in protected areas.

³ Public land only. The North East NSW RFA covers the Upper North East and Lower North East RFA regions. Hence there are four RFA regions and three RFAs in NSW.

⁴ Data provided by ABARES

Table 1.1 Old-growth forest in NSW RFA regions identified in the CRA spatial datasets, by RFA region, and the changes in area in the CAR reserve system over time

RFA region	Area ('000 hectares)							Old-growth forest not in protected areas as at 30 June 2016	Proportion in protected areas as at 30 June 2016 (%)
	Total old-growth forest ¹	Old-growth forest in protected areas, by time period				At 30 June 2016 ³			
		Pre-RFA ²	At 30 June 2001 ³	At 30 June 2006 ³	At 30 June 2011 ³				
Upper North East									
Total old-growth forest	654	127	442	446	447	447	207	68	
As proportion of total old-growth forest in RFA region (%)	100	19	68	68	68	68	32		
Lower North East⁴									
Total old-growth forest	959	533	863	867	869	869	91	91	
As proportion of total old-growth forest in RFA region (%)	100	52	90	90	91	91	9		
Southern NSW									
Total old-growth forest	754	407	545	556	561	574	180	76	
As proportion of total old-growth forest in RFA region (%)	100	54	73	74	74	76	24		
Eden									
Total old-growth forest	103	47	75	75	75	76	27	74	
As proportion of total old-growth forest in RFA region (%)	100	46	73	73	73	74	26		
All RFA regions									
Total old-growth forest	2,470	1,114	1,925	1,944	1,953	1,965	504	80	
As proportion of total old-growth forest in all RFA regions (%)	100	44	78	79	79	80	20		

Note: Totals may not tally due to rounding. ¹ Area derived by ABARES from spatial data associated with old-growth CRA reports published in 1998-2000. Increasing levels of reservation over time are applied to this area.

² Directly from the pre-RFA Formal Reserve extent reported in the RFA data tables (formal reserve spatial data provided by the NPWS to the Commonwealth Government at signing of the RFA Scoping Agreement 25 January 1996). Reserves on public land only.

³ Reserves on public land only. This includes the NPWS estate plus Flora Reserves established under the Forestry Act (formal reserves); informal reserves identified from Forest Management Zone datasets at RFA signing (1999-2001), 2004 and 2016; and additional Regional Prescriptions from the Integrated Forestry Operations Approval where available. Together these components constitute the public land component of CAR reserve system.

⁴ Area and proportion values for the Lower North East RFA region derived from spatial data do not include 70 thousand hectares of old-growth forest reported in the RFA data tables that cannot be identified spatially.

Table 1.2 Old-growth forest in the Upper North East RFA region identified in the CRA spatial dataset, by Forest Ecosystem, and the changes in areas in the CAR reserve system over time

Old-growth Forest Ecosystem	Area (hectares)						Old-growth forest not in protected areas as at 30 June 2016	Proportion in protected areas as at 30 June 2016 (%)
	Total old-growth forest ¹	Old-growth forest in protected areas, by time period						
		Pre-RFA ²	At 30 June 2001 ³	At 30 June 2006 ³	At 30 June 2011 ³	At 30 June 2016 ³		
OG 2 Alpine Gum	251	35	190	189	189	194	57	77
OG 3 Baileys Stringybark	21,733	9,193	14,388	14,761	14,919	14,918	6,815	69
OG 10 Black Sallee	4	4	4	4	4	4	0	100
OG 12 Blue Mountain Ash	106	0	105	105	105	105	1	99
OG 14 Brown Barrell	28	15	18	18	18	18	10	64
OG 15 Brown Barrell-Gum	141	56	91	91	91	91	50	65
OG 17 Candlebark	497	0	135	135	135	135	362	27
OG 19 Central Mid Elevation Sydney Blue Gum	1,131	11	880	882	882	884	247	78
OG 20 Clarence Lowland Needlebark Stringybark	5,847	1,429	4,832	4,838	4,840	4,841	1,006	83
OG 21 Lowlands Grey Box	2,642	27	129	171	315	314	2,328	12
OG 23 Coast Range Bloodwood-Mahogany	1,951	337	1,446	1,456	1,456	1,456	495	75
OG 24 Clarence Lowlands Spotted Gum	32,921	1,921	14,097	14,260	14,463	14,444	18,477	44
OG 25 Coast Range Spotted Gum-Blackbutt	107	8	50	50	50	50	57	47
OG 26 Coastal Flooded Gum	2,108	678	1,986	1,987	1,987	1,986	122	94
OG 27 Coastal Sands Blackbutt	2,240	2,155	2,186	2,186	2,186	2,186	54	98
OG 29 Corkwood-Crabapple and Mixed Stringybarks	2,891	21	2,677	2,679	2,679	2,676	215	93
OG 30 Diehard Stringybark-New England Blackbutt	151	45	94	94	94	94	57	62
OG 31 Dorrigo White Gum	2,802	277	2,216	2,216	2,216	2,216	586	79
OG 32 Dry Foothills Blackbutt-Turpentine	1,043	99	815	816	816	817	226	78
OG 33 Dry Foothills Spotted Gum	39,933	2,644	26,621	27,234	27,236	27,166	12,767	68
OG 34 Dry Grassy Blackbutt-Tallowwood	1,148	142	840	847	847	843	305	73

Old-growth Forest Ecosystem	Area (hectares)						Old-growth forest not in protected areas as at 30 June 2016	Proportion in protected areas as at 30 June 2016 (%)
	Total old-growth forest ¹	Old-growth forest in protected areas, by time period						
		Pre-RFA ²	At 30 June 2001 ³	At 30 June 2006 ³	At 30 June 2011 ³	At 30 June 2016 ³		
OG 35 Dry Grassy Stringybark	40,942	8,219	30,491	30,591	30,591	30,635	10,307	75
OG 36 Dry Grassy Tallowwood-Grey Gum	572	2	386	387	387	387	185	68
OG 37 Dry Heathy Blackbutt-Bloodwood	14,649	222	8,469	8,745	8,758	8,757	5,892	60
OG 38 Dry Heathy New England Blackbutt	2,760	923	2,609	2,608	2,608	2,614	146	95
OG 39 Dry Heathy New England Stringybarks	1,099	1,080	1,099	1,099	1,099	1,099	0	100
OG 40 Dry Heathy Sandstone Blackbutt	7,877	2,982	5,066	5,297	5,298	5,298	2,579	67
OG 41 Dry Open New England Blackbutt	52,032	9,800	37,582	37,616	37,616	37,808	14,224	73
OG 42 Dry Redgum-Bloodwood-Apple	221	1	221	221	221	221	0	100
OG 43 Dry Silvertop Stringybark-Apple	9,893	4,182	7,999	7,999	7,999	7,999	1,894	81
OG 44 Dry open Redgum-Broad Leaved Apple	8,373	4,523	6,949	6,969	6,969	6,967	1,406	83
OG 45 Dunns White Gum	108	18	95	94	94	95	13	88
OG 46 Eastern Red Gums	1,436	405	1,349	1,348	1,348	1,350	86	94
OG 47 Escarpment Redgum	6,571	617	3,981	4,017	4,031	4,027	2,544	61
OG 48 Escarpment Scribbly Gum-Apple	3,205	80	2,670	2,690	2,690	2,667	538	83
OG 50 Wet Bangalow-Brushbox	3,452	1,599	2,972	2,977	2,980	2,981	471	86
OG 52 Foothill Grey Gum-Ironbark-Spotted Gum	12,588	3,335	7,540	7,590	7,594	7,600	4,988	60
OG 53 Gorge Grey Box	8,325	4,515	6,940	6,986	6,988	6,987	1,338	84
OG 54 Grey Box-Red Gum-Grey Ironbark	4,836	996	1,634	1,711	1,752	1,752	3,084	36
OG 55 Foothills Grey Gum-Spotted Gum	1,495	85	971	979	979	975	520	65
OG 56 Granite Mallee	1,417	1,266	1,369	1,388	1,388	1,407	10	99
OG 57 Highland Granite Stringybarks	1,795	1,227	1,783	1,783	1,783	1,783	12	99
OG 58 Gorge Grey Gum	4,198	2,454	3,346	3,350	3,353	3,354	844	80
OG 59 Gorge Ironbark-Grey Gum	27,179	5,466	19,100	19,257	19,259	19,259	7,920	71

	Area (hectares)							Proportion in protected areas as at 30 June 2016 (%)
	Total old-growth forest ¹	Old-growth forest in protected areas, by time period				Old-growth forest not in protected areas as at 30 June 2016		
Pre-RFA ²		At 30 June 2001 ³	At 30 June 2006 ³	At 30 June 2011 ³	At 30 June 2016 ³			
Old-growth Forest Ecosystem								
OG 60 Grassy New England Blackbutt-Tallowwood-Blue Gum	19,173	2,262	16,190	16,252	16,252	16,232	2,941	85
OG 61 Grey Box-Ironbark	42	21	23	23	23	23	19	55
OG 62 Grey Box-Northern Grey Gum	13	1	12	12	12	12	1	92
OG 63 Grey Gum-Stringybark	9,212	3,541	7,091	7,152	7,152	7,146	2,066	78
OG 65 Heathy Scribbly Gum	3,179	1,891	2,749	2,752	2,752	2,752	427	87
OG 67 High Elevation Ferny Blackbutt	1,990	47	1,732	1,734	1,734	1,732	258	87
OG 68 High Elevation Messmate-Brown Barrell	105	87	87	87	87	87	18	83
OG 69 High Elevation Moist Open Tallowwood-Blue Gum	1,513	107	1,329	1,325	1,325	1,325	188	88
OG 70 High Elevation Open Spotted Gum	15,622	820	9,212	9,860	9,877	9,880	5,742	63
OG 71 Ironbark	472	52	181	182	182	181	291	38
OG 72 Low Relief Coastal Blackbutt	37	2	31	31	31	31	6	84
OG 73 Lowland Red Gum	8,679	1,271	4,221	4,287	4,326	4,317	4,362	50
OG 74 Lowlands Scribbly Gum	1,396	836	1,326	1,326	1,326	1,327	69	95
OG 75 Lowlands Spotted Gum-Box	1,288	3	464	470	485	485	803	38
OG 76 Coastal Mallee	261	234	247	247	247	247	14	95
OG 78 Mann River Wet New England Blackbutt	4,280	2,305	4,115	4,115	4,115	4,115	165	96
OG 79 Manna Gum-Stringybark	63	40	55	55	55	62	1	98
OG 80 Manna Gum	164	3	123	123	123	123	41	75
OG 81 Messmate	1,770	379	1,044	1,045	1,045	1,053	717	59
OG 83 Mid Elevation Wet Blackbutt	218	0	207	206	206	208	10	95
OG 84 Mid North Coast Wet Brushbox-Tallowwood-Blue Gum	3,152	24	2,930	2,939	2,939	2,929	223	93
OG 85 Mixed Moist Hardwood	62	0	50	51	51	50	12	81
OG 86 Mixed New England Stringybarks	1,094	8	840	841	841	839	255	77

	Area (hectares)							Proportion in protected areas as at 30 June 2016 (%)
	Total old-growth forest ¹	Old-growth forest in protected areas, by time period				Old-growth forest not in protected areas as at 30 June 2016		
Pre-RFA ²		At 30 June 2001 ³	At 30 June 2006 ³	At 30 June 2011 ³	At 30 June 2016 ³			
Old-growth Forest Ecosystem								
OG 87 Mixed Tableland Stringybark-Gum Open Forest	1,005	17	424	423	423	424	581	42
OG 88 Moist Escarpment New England Blackbutt	7,451	4,617	7,277	7,275	7,275	7,276	175	98
OG 89 Moist Foothills Spotted Gum	14,111	816	10,684	10,775	10,775	10,788	3,323	76
OG 90 Moist Messmate-Gum	10,614	484	9,866	9,881	9,881	9,889	725	93
OG 91 Moist Open Escarpment White Mahogany	807	52	712	713	713	714	93	88
OG 92 Moist Shrubby Stringybark-Gum	1,313	8	1,221	1,222	1,222	1,221	92	93
OG 93 Montane Stringybark-Gum	7,165	780	2,931	2,925	2,925	3,107	4,058	43
OG 95 Northern Moist Blackbutt	1,585	435	1,440	1,450	1,450	1,450	135	91
OG 97 Needlebark Stringybark-Large Fruited Blackbutt	5,360	348	3,977	3,994	3,994	3,992	1,368	74
OG 98 New England Peppermint	1,459	18	1,398	1,396	1,396	1,395	64	96
OG 99 New England Stringybark-Blakelys Red Gum	6,653	2,460	4,731	4,731	4,733	4,733	1,920	71
OG 100 Northern Grassy Sydney Blue Gum	3,262	917	2,762	2,770	2,771	2,767	495	85
OG 101 Northern Open Grassy Blackbutt	4,816	1,479	2,938	2,963	2,963	2,958	1,858	61
OG 102 Northern Ranges Dry Tallowwood	11,285	1,361	5,448	5,529	5,601	5,596	5,689	50
OG 103 Northern Wet Brushbox	4,739	924	3,750	3,764	3,771	3,768	971	80
OG 104 Northern Wet Tallowwood-Blue Gum	9,762	3,756	8,258	8,268	8,270	8,274	1,488	85
OG 105 Nymboida Tallowwood-Turpentine	1,284	0	1,259	1,263	1,263	1,263	21	98
OG 106 Open Coastal Brushbox	1,860	344	1,454	1,458	1,458	1,465	395	79
OG 109 Open Shrubby Brushbox-Tallowwood	7,011	1,544	4,817	4,893	4,896	4,894	2,117	70
OG 110 Open Silvertop Stringybark-Blue Gum	1,881	282	1,663	1,664	1,664	1,674	207	89
OG 111 Open Silvertop Stringybark-Tallowwood	2,144	2	1,794	1,801	1,801	1,786	358	83
OG 113 Peppermint	2,641	1,591	1,977	1,974	1,974	1,988	653	75
OG 114 Peppermint-Mountain/Manna Gum	3,069	726	1,025	1,026	1,026	1,099	1,970	36

Old-growth Forest Ecosystem	Area (hectares)						Old-growth forest not in protected areas as at 30 June 2016	Proportion in protected areas as at 30 June 2016 (%)
	Total old-growth forest ¹	Old-growth forest in protected areas, by time period	At 30 June 2001 ³	At 30 June 2006 ³	At 30 June 2011 ³	At 30 June 2016 ³		
		Pre-RFA ²						
OG 115 Red Bloodwood	15	11	14	14	14	14	1	93
OG 116 Red Gum-Stringybark	2,610	211	402	411	414	413	2,197	16
OG 117 Red Mahogany	649	593	633	635	635	634	15	98
OG 118 Richmond Range Spotted Gum	2,011	3	499	507	536	536	1,475	27
OG 119 Richmond Range Spotted Gum-Box	3,694	22	1,308	1,323	1,336	1,344	2,350	36
OG 122 Rough-barked Apples	900	181	860	863	863	863	37	96
OG 123 Roundleaved Gum	6,897	1,280	5,340	5,348	5,348	5,413	1,484	78
OG 124 Roundleaved Gum-Turpentine	7	0	6	6	6	6	1	86
OG 126 Sandstone Spotted Gum-Blackbutt	1,378	87	724	728	732	733	645	53
OG 127 Sherwood Needlebark Stringybark	3,736	556	1,099	1,103	1,108	1,100	2,636	29
OG 128 Silverleaved Ironbark	978	1	55	53	53	55	923	6
OG 129 Smoothbarked Apple	203	191	201	201	201	201	2	99
OG 131 Snow Gum	121	110	119	119	119	120	1	99
OG 132 Snow Gum -Mountain/Manna Gum	1,827	288	1,164	1,170	1,170	1,184	643	65
OG 135 South Coast Tallowwood-Blue Gum	1,282	23	1,161	1,162	1,162	1,162	120	91
OG 138 Steel Box/Craven Grey Box	16	0	5	5	6	6	10	38
OG 139 Stringybark-Apple	12,648	1,407	5,365	5,466	5,558	5,553	7,095	44
OG 140 Stringybark-Mallee	1,842	1,731	1,836	1,836	1,836	1,836	6	100
OG 142 Swamp Mahogany	100	84	85	85	85	85	15	85
OG 145 Sydney Peppermint-Stringybark	120	18	34	34	34	34	86	28
OG 146 Tallowwood	5,277	2,766	4,568	4,589	4,589	4,589	688	87
OG 147 Turpentine	338	76	255	274	275	275	63	81
OG 148 Very Wet New England Blackbutt-Tallowwood	1,240	1,034	1,210	1,216	1,216	1,216	24	98

	Area (hectares)							Proportion in protected areas as at 30 June 2016 (%)
	Total old-growth forest ¹	Old-growth forest in protected areas, by time period				Old-growth forest not in protected areas as at 30 June 2016		
Pre-RFA ²		At 30 June 2001 ³	At 30 June 2006 ³	At 30 June 2011 ³	At 30 June 2016 ³			
Old-growth Forest Ecosystem								
OG 149 Mallee-Peppermint mosaic	700	34	351	351	351	363	337	52
OG 150 Washpool Brushbox-Tallowwood	5,047	3,335	4,898	4,899	4,899	4,898	149	97
OG 152 Wet Bloodwood-Tallowwood	4,400	720	2,941	2,967	2,985	2,983	1,417	68
OG 153 Wet Coastal Tallowwood-Brushbox	187	13	119	119	119	119	68	64
OG 154 Wet Flooded Gum-Tallowwood	675	82	479	486	488	487	188	72
OG 155 Wet Foothills Blackbutt-Turpentine	1,196	8	1,083	1,088	1,088	1,085	111	91
OG 157 Wet Shrubby Brushbox-Tallowwood	2,333	112	2,060	2,060	2,060	2,061	272	88
OG 158 Wet Spotted Gum-Tallowwood	800	609	784	788	788	784	16	98
OG 162 Whitetopped Box	4	0	4	4	4	4	0	100
OG 163 Yellow Box-Blakely's Red Gum	722	56	370	371	371	375	347	52
OG 174 Orange Gum-Tumbledown Gum-Apple	1,659	0	177	178	179	179	1,480	11
OG 175 Orange Gum-New England Blackbutt-Tumbledown Gum	1,623	234	861	867	868	870	753	54
OG 176 Orange Gum-Ironbark	2,303	232	512	520	520	527	1,776	23
OG 177 Outcrop Orange Gum-New England Blackbutt	1,696	4	921	921	921	931	765	55
OG 178 Outcrop Black Cypress-Tumbledown Gum	110	0	4	5	5	4	106	4
OG 179 Yellow Box-Broad-leaved Stringybark	867	0	727	730	730	727	140	84
OG 180 Western New England Blackbutt	7,856	0	3,251	3,254	3,254	3,251	4,605	41
OG 181 Stringybark-Gum	24,411	0	18,150	18,150	18,150	18,150	6,261	74
OG 182 Apple-Black Cypress	703	0	211	211	211	211	492	30
OG 183 Red Gum-Apple	18	0	1	1	1	1	17	6
OG 184 Tumbledown Gum-Ironbark	8,089	0	3,955	3,955	3,955	3,955	4,134	49
OG 185 Orange Gum-Black Cypress	2,417	0	1,337	1,338	1,338	1,337	1,080	55
OG 186 Open Tumbledown Gum-Black Cypress-Orange Gum	938	146	455	455	455	464	474	49

	Area (hectares)							Proportion in protected areas as at 30 June 2016 (%)
	Total old-growth forest ¹	Old-growth forest in protected areas, by time period				Old-growth forest not in protected areas as at 30 June 2016		
Pre-RFA ²		At 30 June 2001 ³	At 30 June 2006 ³	At 30 June 2011 ³	At 30 June 2016 ³			
Old-growth Forest Ecosystem								
OG 189 Silverleaved Ironbark-Cypress	6,734	53	114	114	114	114	6,620	2
OG 190 Yellow Box-Grey Box-Red Gum	1,661	207	332	335	335	336	1,325	20
OG 194 Round-leaved Gum wet heath	3,008	0	2,258	2,260	2,260	2,259	749	75
OG 195 Apple-Manna Gum woodland	1,584	206	948	948	949	951	633	60
OG 196 Broad-leaved Stringybark-Apple Box	4,319	278	3,119	3,135	3,135	3,139	1,180	73
OG 197 Broad-leaved Stringybark	153	19	72	72	72	76	77	50
OG 198 Silvertop Stringybark	41	0	14	14	14	14	27	34
OG 200 Broad-leaved Stringybark-Ribbon Gum	87	0	4	4	4	4	83	5
Total old-growth forest	653,990	127,010	441,941	445,742	446,663	447,168	206,822	68
As proportion of total old growth forest (%)	100	19	68	68	68	68	32	

¹ Area derived by ABARES from spatial data associated with North East region old-growth CRA report 1999. Figures for individual Forest Ecosystems are of variable accuracy and should not be assumed to be more accurate than the nearest 100 hectares. Increasing levels of reservation over time are applied to this area.

² Directly from the pre-RFA Formal Reserve extent reported in the North East RFA data tables (formal reserve spatial data provided by the NPWS to the Commonwealth Government at signing of the RFA Scoping Agreement 25 January 1996). Reserves on public land only.

³ Reserves on public land only. This includes the NPWS estate (formal reserves); informal reserves identified from Forest Management Zone datasets at RFA signing (2000), 2004 and 2016; and additional Regional Prescriptions from the Integrated Forestry Operations Approval for the Upper North East Region. Together these components constitute the CAR reserve system on public land.

Note: Totals may not tally due to rounding

Table 1.3 Old-growth forest in the Lower North East RFA region identified in the CRA spatial dataset, by Forest Ecosystem, and the changes in areas in the CAR reserve system over time

Old-growth Forest Ecosystem	Area (hectares)							Proportion in protected areas as at 30 June 2016 (%)
	Total old-growth forest ¹	Old-growth forest in protected areas, by time period				Old-growth forest not in protected areas as at 30 June 2016		
		Pre-RFA ²	At 30 June 2001 ³	At 30 June 2006 ³	At 30 June 2011 ³		At 30 June 2016 ³	
OG 2 Alpine Gum	783	109	572	621	621	621	162	79
OG 3 Baileys Stringybark	62	88	20	20	62	62	0	100
OG 6 Barrington Dry Shrubby New England Blackbutt-Blue Gum	601	144	568	570	570	570	31	95
OG 7 Barrington Moist Blue Gum-White Mahogany	1,719	308	1,308	1,396	1,399	1,404	315	82
OG 8 Barrington Wet New England Blackbutt-Blue Gum	5,206	1,355	4,448	4,479	4,479	4,494	712	86
OG 10 Black Sallee	1	1	1	1	1	1	0	100
OG 11 Blackbutt-Sydney Peppermint-Smoothbarked Apple	360	206	336	336	336	336	24	93
OG 12 Blue Mountain Ash	1	NR	1	1	1	1	0	100
OG 13 Blue-leaved Stringybark	15	0	15	15	15	15	0	100
OG 14 Brown Barrell	239	27	206	206	206	206	33	86
OG 15 Brown Barrell-Gum	1,716	480	1,267	1,417	1,417	1,422	294	83
OG 17 Candlebark	1	0	1	1	1	1	0	100
OG 19 Central Mid Elevation Sydney Blue Gum	5,300	456	4,442	4,494	4,494	4,491	809	85
OG 20 Clarence Lowland Needlebark Stringybark	11	15	3	3	11	11	0	100
OG 21 Lowlands Grey Box	829	404	586	607	607	607	222	73
OG 23 Coast Range Bloodwood-Mahogany	439	0	428	428	428	428	11	97
OG 25 Coast Range Spotted Gum-Blackbutt	NR	0	NR	NR	NR	NR	NR	NR
OG 26 Coastal Flooded Gum	267	26	188	189	189	187	80	70
OG 27 Coastal Sands Blackbutt	4,966	5,609	4,575	4,575	4,899	4,899	67	99
OG 28 Cool Moist Messmate	1,454	192	1,107	1,110	1,110	1,109	345	76
OG 29 Corkwood-Crabapple and Mixed Stringybarks	1,367	87	1,206	1,208	1,208	1,199	168	88

Old-growth Forest Ecosystem	Area (hectares)							Proportion in protected areas as at 30 June 2016 (%)
	Total old-growth forest ¹	Old-growth forest in protected areas, by time period				Old-growth forest not in protected areas as at 30 June 2016		
		Pre-RFA ²	At 30 June 2001 ³	At 30 June 2006 ³	At 30 June 2011 ³		At 30 June 2016 ³	
OG 30 Diehard Stringybark-New England Blackbutt	21,799	7,771	19,960	20,111	20,111	20,106	1,693	92
OG 31 Dorrigo White Gum	146	21	89	89	89	89	57	61
OG 32 Dry Foothills Blackbutt-Turpentine	3,763	568	2,616	2,632	2,632	2,622	1,141	70
OG 33 Dry Foothills Spotted Gum	1,651	811	1,061	1,025	1,025	1,017	634	62
OG 34 Dry Grassy Blackbutt-Tallowwood	4,036	1,004	2,328	2,378	2,378	2,374	1,662	59
OG 35 Dry Grassy Stringybark	37,472	12,253	27,586	27,864	27,864	27,836	9,636	74
OG 36 Dry Grassy Tallowwood-Grey Gum	32,666	2,532	22,417	22,633	22,664	22,595	10,071	69
OG 37 Dry Heathy Blackbutt-Bloodwood	713	699	607	606	671	672	41	94
OG 38 Dry Heathy New England Blackbutt	324	72	303	304	304	303	21	94
OG 39 Dry Heathy New England Stringybarks	NR	0	NR	NR	NR	NR	NR	NR
OG 41 Dry Open New England Blackbutt	9,238	2,259	6,814	6,833	6,833	6,829	2,409	74
OG 42 Dry Redgum-Bloodwood-Apple	24,064	8,531	16,874	17,233	17,233	17,208	6,856	72
OG 43 Dry Silvertop Stringybark-Apple	8,981	3,803	6,403	6,451	6,451	6,451	2,530	72
OG 44 Dry open Redgum-Broad Leaved Apple	2,091	854	1,331	1,361	1,361	1,361	730	65
OG 46 Eastern Red Gums	1	1	1	1	1	1	0	100
OG 47 Escarpment Redgum	1,894	358	1,494	1,525	1,533	1,527	367	81
OG 48 Escarpment Scribbly Gum-Apple	2,941	1,486	2,329	2,347	2,349	2,349	592	80
OG 49 Escarpment Tallowwood-Bloodwood	17,423	3,794	14,292	14,476	14,476	14,452	2,971	83
OG 50 Wet Bangalow-Brushbox	1,138	439	1,033	1,037	1,037	1,036	102	91
OG 51 Eurabbie	157	9	141	152	152	152	5	97
OG 53 Gorge Grey Box	4,851	2,333	3,462	3,534	3,534	3,532	1,319	73
OG 54 Grey Box-Red Gum-Grey Ironbark	7,553	6,550	7,020	7,056	7,056	7,055	498	93
OG 55 Foothills Grey Gum-Spotted Gum	111	33	73	53	53	53	58	48

Old-growth Forest Ecosystem	Area (hectares)							Proportion in protected areas as at 30 June 2016 (%)
	Total old-growth forest ¹	Old-growth forest in protected areas, by time period				Old-growth forest not in protected areas as at 30 June 2016		
		Pre-RFA ²	At 30 June 2001 ³	At 30 June 2006 ³	At 30 June 2011 ³		At 30 June 2016 ³	
OG 56 Granite Mallee	1,232	407	892	891	897	897	335	73
OG 57 Highland Granite Stringybarks	206	157	171	171	171	171	35	83
OG 58 Gorge Grey Gum	40	19	26	26	26	26	14	65
OG 60 Grassy New England Blackbutt-Tallowwood-Blue Gum	16,535	4,549	12,995	13,219	13,219	13,209	3,326	80
OG 63/217 Grey Gum-Stringybark	34,740	30,054	32,446	32,565	32,565	32,565	2,175	94
OG 65 Heathy Scribbly Gum	9,487	6,957	9,264	9,273	9,273	9,269	218	98
OG 67 High Elevation Ferny Blackbutt	9,253	2,914	8,305	8,363	8,372	8,362	891	90
OG 68 High Elevation Messmate-Brown Barrel	2,113	64	1,550	1,809	1,809	1,801	312	85
OG 69 High Elevation Moist Open Tallowwood-Blue Gum	11,728	3,472	10,105	10,293	10,293	10,290	1,438	88
OG 70 High Elevation Open Spotted Gum	1	0	0	0	0	0	1	0
OG 71 Ironbark	24,384	21,155	23,542	23,562	23,893	23,871	513	98
OG 72 Low Relief Coastal Blackbutt	162	28	50	51	54	54	108	33
OG 73 Lowland Red Gum	140	16	129	129	129	131	9	94
OG 74 Lowlands Scribbly Gum	5,063	4,677	4,359	4,359	4,958	4,958	105	98
OG 76 Coastal Mallee	40	108	39	39	40	40	0	100
OG 79 Manna Gum-Stringybark	79	65	69	68	68	69	10	87
OG 80 Manna Gum	814	38	653	651	651	647	167	79
OG 81 Messmate	2,817	241	2,021	2,025	2,025	2,022	795	72
OG 82 Messmate-Mountain Gum Forest	1,949	1,091	1,521	1,521	1,521	1,611	338	83
OG 83 Mid Elevation Wet Blackbutt	949	281	860	865	875	880	69	93
OG 84 Mid North Coast Wet Brushbox-Tallowwood-Blue Gum	9,275	2,075	8,312	8,385	8,389	8,385	890	90
OG 85 Mixed Moist Hardwood	NR	0	NR	NR	NR	NR	NR	NR
OG 87 Mixed Tableland Stringybark-Gum Open Forest	1,657	278	1,329	1,328	1,328	1,357	300	82

Old-growth Forest Ecosystem	Area (hectares)							Proportion in protected areas as at 30 June 2016 (%)
	Total old-growth forest ¹	Old-growth forest in protected areas, by time period				Old-growth forest not in protected areas as at 30 June 2016		
		Pre-RFA ²	At 30 June 2001 ³	At 30 June 2006 ³	At 30 June 2011 ³		At 30 June 2016 ³	
OG 88 Moist Escarpment New England Blackbutt	12,187	3,247	11,457	10,576	10,576	10,563	1,624	87
OG 89 Moist Foothills Spotted Gum	235	20	136	142	143	138	97	59
OG 90 Moist Messmate-Gum	5	0	4	4	4	4	1	80
OG 91 Moist Open Escarpment White Mahogany	19,070	5,287	15,956	16,483	16,483	16,477	2,593	86
OG 92 Moist Shrubby Stringybark-Gum	109	5	91	93	93	92	17	84
OG 93 Montane Stringybark-Gum	457	121	385	385	385	385	72	84
OG 94 Mountain Gum-Brown Barrell	1,826	695	1,822	1,822	1,822	1,822	4	100
OG 97 Needlebark Stringybark-Large Fruited Blackbutt	22	0	16	16	16	16	6	73
OG 98 New England Peppermint	594	511	580	580	580	580	14	98
OG 99 New England Stringybark-Blakely's Red Gum	10,323	4,566	7,173	7,321	7,321	7,318	3,005	71
OG 105 Nymboida Tallowwood-Turpentine	61	0	47	47	47	46	15	75
OG 106 Open Coastal Brushbox	10,714	821	8,125	8,163	8,182	8,169	2,545	76
OG 107 Open Messmate-New England Blackbutt	4,109	557	4,013	4,031	4,031	4,027	82	98
OG 108 Open Ribbon Gum	8,403	990	7,210	7,219	7,219	7,218	1,185	86
OG 109 Open Shrubby Brushbox-Tallowwood	462	212	397	404	405	404	58	87
OG 110 Open Silvertop Stringybark-Blue Gum	13,100	2,981	11,083	11,197	11,197	11,192	1,908	85
OG 111 Open Silvertop Stringybark-Tallowwood	899	105	811	814	814	812	87	90
OG 113 Peppermint	4,163	1,788	3,546	3,550	3,550	3,541	622	85
OG 114 Peppermint-Mountain/Manna Gum	1,367	600	1,267	1,267	1,267	1,264	103	92
OG 115 Red Bloodwood	NR	4	NR	NR	NR	NR	NR	NR
OG 116 Red Gum-Stringybark	4	2	1	1	1	1	3	25
OG 122 Rough-barked Apples	377	426	344	345	353	350	27	93
OG 123 Roundleaved Gum	28	3	16	16	16	16	12	57

Old-growth Forest Ecosystem	Area (hectares)							Proportion in protected areas as at 30 June 2016 (%)
	Total old-growth forest ¹	Old-growth forest in protected areas, by time period				Old-growth forest not in protected areas as at 30 June 2016		
		Pre-RFA ²	At 30 June 2001 ³	At 30 June 2006 ³	At 30 June 2011 ³		At 30 June 2016 ³	
OG 124/233 Roundleaved Gum-Turpentine	2,064	1,861	1,975	1,975	1,975	1,975	89	96
OG 129 Smoothbarked Apple	1,655	1,051	1,599	1,601	1,703	1,601	54	97
OG 130 Smoothbarked Apple-Sydney Peppermint-Stringybark	954	20	509	521	706	643	311	67
OG 131 Snow Gum	2,856	1,545	2,679	2,779	2,779	2,782	74	97
OG 132 Snow Gum -Mountain/Manna Gum	5,377	2,521	4,658	5,200	5,200	5,199	178	97
OG 133 Snow Gum-Black Sallee	7	7	7	7	7	7	0	100
OG 134 South Coast Shrubby Grey Gum	4,203	529	2,641	2,711	2,752	2,742	1,461	65
OG 135 South Coast Tallowwood-Blue Gum	6,205	684	4,810	4,831	4,831	4,818	1,387	78
OG 137 Southern Wet Sydney Blue Gum	5,215	2,071	4,116	4,211	4,211	4,184	1,031	80
OG 138 Steel Box/Craven Grey Box	38	0	27	38	38	38	0	100
OG 139 Stringybark-Apple	30,925	14,707	23,114	23,489	23,489	23,485	7,440	76
OG 140 Stringybark-Mallee	270	143	265	265	265	265	5	98
OG 142 Swamp Mahogany	189	97	159	159	182	182	7	96
OG 145 Sydney Peppermint-Stringybark	8,696	8,183	8,591	8,594	8,594	8,592	104	99
OG 146 Tallowwood	583	247	364	373	373	373	210	64
OG 147 Turpentine	18	3	6	18	18	18	0	100
OG 148 Very Wet New England Blackbutt-Tallowwood	1,604	375	1,567	1,575	1,576	1,573	31	98
OG 149 Mallee-Peppermint mosaic	1,258	307	839	840	840	839	419	67
OG 153 Wet Coastal Tallowwood-Brushbox	269	70	118	119	119	118	151	44
OG 154 Wet Flooded Gum-Tallowwood	140	11	73	72	77	77	63	55
OG 155 Wet Foothills Blackbutt-Turpentine	4,140	1,311	3,298	3,313	3,360	3,349	791	81
OG 156 Wet New England Blackbutt-Silvertop Stringybark	3,682	1,375	3,456	3,462	3,462	3,459	223	94
OG 157 Wet Shrubby Brushbox-Tallowwood	9,497	1,575	8,408	8,530	8,556	8,541	956	90

Old-growth Forest Ecosystem	Area (hectares)							Proportion in protected areas as at 30 June 2016 (%)
	Total old-growth forest ¹	Old-growth forest in protected areas, by time period				Old-growth forest not in protected areas as at 30 June 2016		
		Pre-RFA ²	At 30 June 2001 ³	At 30 June 2006 ³	At 30 June 2011 ³		At 30 June 2016 ³	
OG 162 Whitetopped Box	345	47	324	331	331	332	13	96
OG 163 Yellow Box-Blakely's Red Gum	47	3	28	28	28	28	19	60
OG 164 Agricultural Plantations-Orchards and Vineyards	1	NR	0	0	0	0	1	0
OG 172 Sand Ridge	1	NR	1	1	1	1	0	100
OG 174 Orange Gum-Tumbledown Gum-Apple	6	68	0	0	0	0	6	0
OG 175 Orange Gum-New England Blackbutt-Tumbledown Gum	101	73	43	43	43	43	58	43
OG 176 Orange Gum-Ironbark	16	1	8	8	8	8	8	50
OG 177 Outcrop Orange Gum-New England Blackbutt	24	2	17	17	17	17	7	71
OG 178 Outcrop Black Cypress-Tumbledown Gum	1	0	0	0	0	0	1	0
OG 179 Yellow Box-Broad-leaved Stringybark	NR	1	NR	NR	NR	NR	NR	NR
OG 182 Apple-Black Cypress	77	41	30	30	30	30	47	39
OG 183 Red Gum-Apple	1,312	1,450	1,305	1,304	1,304	1,305	7	99
OG 184 Tumbledown Gum-Ironbark	NR	0	NR	NR	NR	NR	NR	NR
OG 186 Open Tumbledown Gum-Black Cypress-Orange Gum	110	13	50	50	50	50	60	45
OG 189 Silverleaved Ironbark-Cypress	2	0	0	0	0	0	2	0
OG 190 Yellow Box-Grey Box-Red Gum	184	181	181	181	181	181	3	98
OG 195 Apple-Manna Gum woodland	66	20	32	32	32	32	34	48
OG 196 Broad-leaved Stringybark-Apple Box	125	12	70	70	70	70	55	56
OG 197 Broad-leaved Stringybark	19	1	11	11	11	11	8	58
OG 198 Silvertop Stringybark	14	3	12	12	12	12	2	86
OG 200 Broad-leaved Stringybark-Ribbon Gum	NR	0	NR	NR	NR	NR	NR	NR
OG 202 Peppermint-Apple-Turpentine	23,636	21,517	23,504	23,506	23,506	23,503	133	99
OG 203 Grey Gum-Stringybark-Apple	27,325	26,816	27,252	27,253	27,253	27,253	72	100

Old-growth Forest Ecosystem	Area (hectares)							Proportion in protected areas as at 30 June 2016 (%)
	Total old-growth forest ¹	Old-growth forest in protected areas, by time period				Old-growth forest not in protected areas as at 30 June 2016		
		Pre-RFA ²	At 30 June 2001 ³	At 30 June 2006 ³	At 30 June 2011 ³		At 30 June 2016 ³	
OG 204 Grey Gum - Scribbly Gum	15,564	15,563	15,556	15,555	15,555	15,556	8	100
OG 205 Peppermint-Silvertop Ash-Stringybark	879	881	876	876	876	876	3	100
OG 206 Apple-Grey Gum-Turpentine	12,117	10,071	11,920	11,927	11,927	11,922	195	98
OG 207 Hunter Spotted Gum-Ironbark	32	4	31	31	31	31	1	97
OG 208 Hunter Roughbarked Apple- Red Gum	718	517	665	665	665	665	53	93
OG 209 Yellow Bloodwood-Stringybark	28,806	28,119	28,653	28,652	28,652	28,652	154	99
OG 210 Yellow Bloodwood-Ironbark	14,868	13,391	14,769	14,767	14,767	14,769	99	99
OG 211 Apple-Turpentine	15,125	10,396	15,055	15,055	15,055	15,055	70	100
OG 212 Yellow Bloodwood-Narrowleaved Apple	37,683	32,180	37,593	37,595	37,595	37,593	90	100
OG 213 Stringybark-Scribbly Gum Woodland	7,810	7,805	7,802	7,802	7,802	7,802	8	100
OG 214 Brown Bloodwood-Dwyers Redgum	1,018	1,003	1,007	1,007	1,007	1,007	11	99
OG 215 Brown Bloodwood-Ironbark	9,684	9,693	9,656	9,656	9,656	9,656	28	100
OG 216 Sandstone Ironbark	7,683	7,558	7,561	7,561	7,561	7,561	122	98
OG 217 combined into OG 63/217								
OG 218 Ironbark-Stringybark	4,022	5,211	3,992	3,992	3,992	3,992	30	99
OG 219 Brown Bloodwood	3,667	3,560	3,574	3,574	3,574	3,574	93	97
OG 220 Yellow Bloodwood-Stringybark-Narrowleaved Apple	26,306	22,185	26,205	26,204	26,204	26,205	101	100
OG 221 Apple-Red Bloodwood-Peppermint-Turpentine	14,209	13,267	14,111	14,110	14,110	14,111	98	99
OG 222 Stringybark-Mallee Woodland	5,938	5,936	5,932	5,932	5,932	5,932	6	100
OG 223 Dwarf Apple Forest	13,652	9,708	13,601	13,602	13,602	13,601	51	100
OG 225 Wyong Apple-Scribbly Gum	27	0	27	27	27	27	0	100
OG 226 Mahogany-Banksia Heath	5,368	5,198	5,322	5,322	5,322	5,322	46	99
OG 227 Turpentine-Myrtle	10,146	9,893	10,096	10,098	10,098	10,098	48	100

Old-growth Forest Ecosystem	Area (hectares)							Proportion in protected areas as at 30 June 2016 (%)
	Total old-growth forest ¹	Old-growth forest in protected areas, by time period					Old-growth forest not in protected areas as at 30 June 2016	
		Pre-RFA ²	At 30 June 2001 ³	At 30 June 2006 ³	At 30 June 2011 ³	At 30 June 2016 ³		
OG 228 Turpentine-Oak-Myrtle	7,208	7,132	7,156	7,153	7,153	7,157	51	99
OG 229 Roughbarked Apple-Forest Oak	17,090	16,606	16,991	16,991	16,991	16,991	99	99
OG 230 Watagan Blackbutt-Blue Gum	616	243	537	540	540	537	79	87
OG 231 Watagan Blue Gum	525	166	503	503	503	503	22	96
OG 232 Watagan Spotted Gum-Ironbark-White Mahogany	209	69	172	188	188	188	21	90
OG 233 combined into OG 124/233								
OG 234 Grey Gum - Grey Myrtle	17,144	16,458	16,922	16,913	16,913	16,922	222	99
OG 235 Wet Roundleaved Gum Forest	1,922	1,882	1,908	1,908	1,908	1,908	14	99
OG 236 Bangalay-Blue Gum	6,991	3,771	6,890	6,892	6,892	6,890	101	99
OG 237 Wollemi Manna Gum	1,874	1,878	1,873	1,873	1,873	1,873	1	100
OG 238 Tablelands Grey Gum-Scribbly Gum	194	194	194	194	194	194	0	100
OG 239 Wollemi Roughbarked Apple	2,148	1,636	2,089	2,090	2,090	2,089	59	97
OG 240 Roughbarked Apple-Redgum	91	80	91	91	91	91	0	100
OG 241 Ironbark-Redgum	182	173	172	172	172	172	10	95
OG 242 Hunter Grey Box	3,899	4,280	3,841	3,841	3,841	3,841	58	99
OG 243 Grey Gum-Mugga Ironbark	1,764	1,716	1,724	1,724	1,724	1,724	40	98
OG 244 White Box-Grey Gum	314	454	308	308	308	308	6	98
OG 245 Grey Box	529	515	506	506	506	506	23	96
OG 246 Scribbly Gum-Redgum Woodland	1,427	1,392	1,401	1,401	1,401	1,401	26	98
OG 247 Coastal Bastard Mahogany Forest	2,727	1,868	2,675	2,675	2,722	2,675	52	98
OG 248 Apple-Forest Oak	1,904	1,795	1,866	1,866	1,866	1,866	38	98
OG 249 White Box-Ironbark-Red Gum	2,004	2,176	1,952	1,952	1,952	1,952	52	97
OG 250 Banksia Heath-Scribbly Gum-Apple	98	19	97	97	97	97	1	99

Old-growth Forest Ecosystem	Area (hectares)							Proportion in protected areas as at 30 June 2016 (%)
	Total old-growth forest ¹	Old-growth forest in protected areas, by time period				Old-growth forest not in protected areas as at 30 June 2016		
		Pre-RFA ²	At 30 June 2001 ³	At 30 June 2006 ³	At 30 June 2011 ³		At 30 June 2016 ³	
Total old-growth by Forest Ecosystem	878,968	532,859	782,649	786,895	788,847	788,362	90,606	90
Other old-growth forest datasets								
High conservation old-growth forest	80,260	NR	80,260	80,260	80,260	80,260	0	100
Total old-growth forest	959,228	532,859	862,909	867,155	869,107	868,622	90,606	91
As proportion of total old growth forest (%)	100	52	90	90	91	91	9	

¹ Area derived by ABARES from spatial data associated with North East region old-growth CRA report 1999. Figures for individual Forest Ecosystems are of variable accuracy and should not be assumed to be more accurate than the nearest 100 hectares. Increasing levels of reservation over time are applied to this area.

² Directly from the pre-RFA Formal Reserve extent reported in the North East RFA data tables (formal reserve spatial data provided by the NPWS to the Commonwealth Government at signing of the RFA Scoping Agreement 25 January 1996). Figures are derived from the total old-growth extent of 1.03 million hectares reported in the North East RFA which uses information not available for this analysis. Reserves on public land only.

³ Reserves on public land only. This includes the NPWS estate (formal reserves); informal reserves identified from Forest Management Zone datasets at RFA signing (2000), 2004 and 2016; and additional Regional Prescriptions from the Integrated Forestry Operations Approval for the Upper North East Region. Together these components constitute the CAR reserve system on public land. Area values do not include 70 thousand hectares of old-growth forest reported in the RFA data tables that cannot be identified spatially.

Notes: Totals may not tally due to rounding

NR = Not recorded

High conservation old growth forest figures are from IFOA studies rather than the CRA process.

Table 1.4 Old-growth forest in the Southern RFA region identified in the CRA spatial data, by Forest Ecosystem, and the changes in areas in the CAR reserve system over time

Old-growth Forest Ecosystem	Area (hectares)							Proportion in protected areas as at 30 June 2016 (%)
	Total old-growth forest ¹	Old-growth forest in protected areas, by time period					Old-growth forest not in protected areas as at 30 June 2016	
		Pre-RFA ²	At 30 June 2001 ³	At 30 June 2006 ³	At 30 June 2011 ³	At 30 June 2016 ³		
OG 001 Southern Coastal Hinterland Intermediate Altitude Shrub Dry Forest - <i>Eucalyptus sieberi</i>	18,285	9,359	16,135	16,423	16,423	16,426	1,859	90
OG 002 Hinterland Heath Shrub Dry Forest - <i>Corymbia gummifera/Syncarpia glomulifera</i>	30,174	14,401	21,091	21,294	21,294	21,230	8,944	70
OG 003 Northern Hinterland Shrub Dry Forest - <i>Syncarpia glomulifera/E. scias</i>	6,595	4,962	6,099	6,086	6,086	6,086	509	92
OG 004 Northern Gorge Heath Shrub Dry Forest - <i>E. punctata/E. agglomerata</i>	12,035	8,819	9,213	9,310	9,310	9,310	2,725	77
OG 005 Northern Coastal Lowlands Shrub/Grass Dry Forest - mixed tree species	1,531	167	938	1,113	1,113	983	548	64
OG 007 Southern Coastal Hinterland Shrub/Tussock Grass Dry Forest - <i>E. sieberi</i>	2,231	382	1,422	1,460	1,460	1,443	788	65
OG 008 Far Southern Coastal Shrub Dry Forest - <i>E. sieberi</i>	43	21	20	20	20	20	23	47
OG 009 Coastal Lowlands Cycad/Shrub Dry Forest - <i>Corymbia maculata</i>	8,592	950	3,524	3,683	3,683	3,605	4,987	42
OG 010 Southern Coastal Lowlands Shrub/Grass Dry Forest - <i>E. globoidea/E. longifolia</i>	2,640	52	1,058	1,100	1,100	908	1,732	34
OG 011 Coastal Shrub/Grass Dry Forest - <i>E. botryoides/E. globoidea/Imperata cylindrica</i>	57	38	39	39	39	39	18	68
OG 012 Coastal Hinterland (Buckenboursa) Shrub/Cycad Dry Forest - <i>Corymbia gummifera</i>	289	0	284	284	284	284	5	98
OG 013 Southern Escarpment Foothills Rainshadow Dry Grass Forest - <i>E. agglomerata</i>	2,136	1,565	1,602	1,602	1,602	1,602	534	75
OG 014 Northern Coastal Hinterland Shrub/Grass Dry Forest - <i>E. fibrosa/Corymbia maculata</i>	1,355	611	711	1,173	1,173	1,173	182	87
OG 015 Central and North East Tableland Dry Shrub Forest - <i>E. sieberi</i>	13,328	9,203	10,966	11,144	11,144	11,144	2,184	84
OG 016 North East Tableland Dry Shrub/Tussock Grass Forest - <i>E. agglomerata</i>	6,322	4,036	5,540	5,562	5,607	5,607	715	89
OG 018 Southern Coastal Hinterland Shrub/Vine/Grass Moist Forest - <i>E. cypellocarpa/E. muelleriana</i>	24,891	9,836	18,512	18,755	18,755	18,762	6,129	75
OG 019 Coastal Escarpment and Hinterland Shrub/Fern Dry Forest - <i>E. muelleriana</i>	30,584	14,630	23,714	24,019	24,019	24,010	6,574	79
OG 021 Northern Coastal Hinterland Moist Shrub Forest - <i>C. maculata/E. pilularis</i>	12,193	4,051	7,008	7,136	7,136	7,109	5,084	58
OG 028 OG Coastal Sands Shrub/Fern Forest - <i>E. botryoides/Banksia serrata</i>	615	97	334	334	334	334	281	54
OG 029 OG Northern Coastal Sands Shrub/Fern Forest - <i>E. pilularis/Banksia serrata</i>	2,099	1,288	1,477	1,486	1,510	1,506	593	72

Old-growth Forest Ecosystem	Area (hectares)							Proportion in protected areas as at 30 June 2016 (%)
	Total old-growth forest ¹	Old-growth forest in protected areas, by time period					Old-growth forest not in protected areas as at 30 June 2016	
		Pre-RFA ²	At 30 June 2001 ³	At 30 June 2006 ³	At 30 June 2011 ³	At 30 June 2016 ³		
OG 035 South Coast Byadbo Acacia Scrubs - <i>Acacia sylvestris</i>	17	16	17	17	17	17	0	100
OG 038 Tableland Dry Heath Shrub/Herb/Grass Woodland - <i>Calytrix tetragona</i> (<i>E.gonicalyx</i>)	4	0	4	4	4	4	0	100
OG 040 Coastal Hinterland (Deua NP) Dry Shrub Forest (rhyolite) - <i>E. stenostoma</i>	947	953	947	947	947	947	0	100
OG 043 Western Slopes Riparian Moist Sedge Woodland - <i>E. camaldulensis</i>	37	0	0	0	0	0	37	0
OG 047 Far Southern Hinterland Herb/Grass Moist Forest - <i>E. maidenii</i> / <i>E. globoidea</i>	11	9	10	10	10	10	1	91
OG 048 Coastal Lowlands Riparian Herb/Grass Forest - various eucs	719	154	391	400	400	400	319	56
OG 049 Southern Hinterland Shrub/Herb/Grass Riparian Forest - <i>Angophora floribunda</i> / <i>E. elata</i> / <i>Acacia mearnsii</i>	4,167	2,954	3,522	3,516	3,516	3,519	648	84
OG 050 Southern Escarpment Herb/Grass Dry Forest- <i>Angophora floribunda</i> / <i>E. tereticornis</i>	6,641	2,696	3,930	4,047	4,047	4,047	2,594	61
OG 051 Araluen Acacia Herb/Grass Dry Forest - <i>E. melliodora</i> / <i>E. maidenii</i>	1,461	1	494	660	660	660	801	45
OG 055 Eastern Tableland Fern/Herb/Grass Moist Forest - <i>E. fastigata</i>	10,919	2,719	7,185	7,008	7,008	7,012	3,907	64
OG 056 Tableland and Escarpment Moist Herb/Fern Grass Forest - <i>E. radiata</i> / <i>E. viminalis</i> /	9,838	1,626	5,639	6,130	6,130	5,965	3,873	61
OG 057 Southern Escarpment Shrub/Fern/Herb Moist Forest - <i>E. cypellocarpa</i> incl. <i>E. fastigata</i> & <i>E. obliqua</i>	19,595	13,951	17,347	18,135	18,135	18,199	1,396	93
OG 058 Tableland and Escarpment Wet Layered Shrub Forest - <i>E. fastigata</i> / <i>Olearia argophylla</i> / <i>Dicksonia antarctica</i>	10,688	7,349	10,234	10,256	10,256	10,256	432	96
OG 059 Eastern Tableland and Escarpment Shrub/Fern Dry Forest - <i>E. radiata</i> / <i>E. sieberi</i> / <i>Leucopogon lanceolatus</i>	4,292	703	2,199	2,887	2,887	2,877	1,415	67
OG 061 Southern Escarpment Edge Moist Shrub Forest - <i>E. fraxinoides</i>	748	553	721	718	718	718	30	96
OG 062 Southern Escarpment Edge Moist Shrub/Fern Forest - <i>E. fraxinoides</i> / <i>E. cypellocarpa</i>	2,028	1,048	1,772	1,765	1,765	1,765	263	87
OG 064 Southern East Tableland Edge Shrub/Grass Dry Forest - <i>E. dalrympeana</i> / <i>E. radiata</i>	189	0	178	179	179	177	12	94
OG 066 Eastern Tablelands Shrub/Grass Moist Forest - <i>E. dalrympeana</i> / <i>E. radiata</i> / <i>Poa sieberiana</i>	3,504	1,061	3,125	3,126	3,126	2,982	522	85
OG 068 North East Tablelands Shrub/Herb/Grass Dry Forest - <i>E. pauciflora</i> / <i>E. viminalis</i> / <i>Lomandra longifolia</i>	1,253	184	211	250	250	250	1,003	20

Old-growth Forest Ecosystem	Area (hectares)						Proportion in protected areas as at 30 June 2016 (%)	
	Total old-growth forest ¹	Old-growth forest in protected areas, by time period				Old-growth forest not in protected areas as at 30 June 2016		
		Pre-RFA ²	At 30 June 2001 ³	At 30 June 2006 ³	At 30 June 2011 ³			At 30 June 2016 ³
OG 070 Western Escarpment Dry Shrubland - <i>E. dives</i> / <i>Xanthorrhoea australis</i> / <i>Platylobium formosum</i>	557	416	415	415	415	415	142	75
OG 071 Western Tableland Dry Shrubland - <i>E. macrorhyncha</i> / <i>Leptospermum brevipes</i>	303	174	299	167	167	299	4	99
OG 072 Tablelands Dry Shrub Forest - <i>E. dives</i> / <i>E. radiata</i> / <i>Bursaria lasiophylla</i>	204	85	97	97	97	97	107	48
OG 073 Tableland Dry Shrub/Grass Forest - <i>E. pauciflora</i> / <i>E. viminalis</i> / <i>Acacia dealbata</i> / <i>Themeda australis</i>	7,633	132	1,378	1,638	1,638	1,642	5,991	22
OG 074 South Eastern Tablelands Dry Shrub/Grass/Herb Forest - <i>E. bridgesiana</i> / <i>E. pauciflora</i> / <i>E. rubida</i> / <i>Acaena novae-zealandiae</i>	12,715	2,216	3,860	4,668	4,668	4,668	8,047	37
OG 075 Tablelands Shrub/Tussock Grass Forest - <i>E. dives</i> / <i>Chionochloa pallida</i>	13,860	10,643	11,466	11,422	11,422	11,497	2,363	83
OG 076 Tablelands Shrub/Grass Dry Forest - <i>E. rubida</i> / <i>E. pauciflora</i> / <i>Themeda australis</i>	7,561	2,667	2,871	2,871	2,871	2,871	4,690	38
OG 077 Lower Snowy Dry Shrub/Tussock Grass Forest - <i>E. goniocalyx</i> / <i>Chionochloa pallida</i>	27,956	21,560	24,927	24,927	24,927	24,927	3,029	89
OG 078 Lower Snowy Dry Shrub/Herb Woodland - <i>E. albens</i> / <i>Callitris glauciphylla</i> / <i>Acacia deanei</i>	18,872	17,608	18,186	18,186	18,186	18,186	686	96
OG 079 Montane Dry Shrub/Tussock Grass Forest - <i>E. nortonii</i> / <i>Cassinia longifolia</i> / <i>Chionochloa pallida</i>	419	227	240	240	240	240	179	57
OG 081 Eastern Dry Shrub/Herb/Grass Forest - <i>E. bridgesiana</i> / <i>E. dives</i> / <i>Bursaria spinosa</i> / <i>Poa sieberiana</i>	3,524	0	0	0	0	0	3,524	0
OG 082 Western Montane Acacia Fern/Herb Forest - <i>E. viminalis</i> / <i>E. robertsonii</i> / <i>Cassinia aculeata</i> / <i>Pteridium esculentum</i>	26,607	22,999	23,930	23,612	23,612	24,137	2,470	91
OG 083 Montane Riparian Moist Shrub/Grass/Herb Forest - <i>E. dalrympleana</i> / <i>E. robertsonii</i> / <i>Acacia melanoxyton</i> / <i>Microlaena stipoides</i>	321	98	172	172	172	172	149	54
OG 085 Montane Riparian Moist Shrub/Sedge/Grass Forest - <i>E. dalrympleana</i> / <i>E. viminalis</i> / <i>Leptospermum lanigerum</i> / <i>Poa helmsii</i>	412	389	411	411	411	411	1	100
OG 086 Western Montane Moist Shrub Forest - <i>E. delegatensis</i> / <i>E. pauciflora</i> / <i>Polyscias sambucifolia</i> / <i>Tasmania lanceolata</i>	1,359	1,329	1,339	1,339	1,339	1,339	20	99
OG 087 Western Escarpment Moist Shrub/Herb/Grass Forest - <i>E. delegatensis</i> / <i>E. dalrympleana</i> / <i>Derwentia derwentiana</i> / <i>Stellaria pungens</i>	9,502	9,023	9,051	9,058	9,058	9,071	431	95

Old-growth Forest Ecosystem	Area (hectares)							Proportion in protected areas as at 30 June 2016 (%)
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		Pre-RFA ²	At 30 June 2001 ³	At 30 June 2006 ³	At 30 June 2011 ³	At 30 June 2016 ³		
OG 088 Western Escarpment Shrub/Grass Forest - <i>E. chapmaniana</i> / <i>Daviesia latifolia</i>	189	194	189	189	189	189	0	100
OG 089 Eastern Tablelands Acacia/Herb/Grass Forest - <i>E. dalrympleana</i> / <i>E. viminalis</i> / <i>Acacia melanoxylon</i> / <i>Stellaria pungens</i>	10,361	628	4,698	5,507	5,507	5,427	4,934	52
OG 090 Northern Tablelands Acacia Herb/Grass Dry Forest - <i>E. bridgesiana</i> / <i>Acacia dealbata</i> / <i>Hydrocotyle laxiflora</i>	84	59	63	63	63	63	21	75
OG 091 Burrinjuck Acacia Dry Herb/Grass Forest - <i>E. bridgesiana</i> / <i>E. bicostata</i> / <i>Acacia dealbata</i> / <i>Poa sieberiana</i>	930	26	386	253	253	473	457	51
OG 092 Tablelands Acacia/Grass/Herb Dry Forest - <i>E. bridgesiana</i> / <i>E. melliodora</i> / <i>Acacia mearnsii</i> / <i>Microlaena stipoides</i>	412	34	32	32	32	32	380	8
OG 093 Western Tablelands Herb/Grass Dry Forest - <i>E. robertsonii</i> / <i>Microlaena stipoides</i>	11,244	2,183	8,387	6,568	6,568	8,912	2,332	79
OG 094 South-west Slopes Acacia Dry Herb/Grass Forest - <i>E. bridgesiana</i> / <i>E. macrorhyncha</i> / <i>Acacia dealbata</i> / <i>Microlaena stipoides</i>	6,341	0	3,454	2,754	3,357	4,341	2,000	68
OG 095 Tableland Acacia Moist Herb Forest - <i>E. pauciflora</i> / <i>E. dalrympleana</i> / <i>Acacia dealbata</i> / <i>Helichrysum scorpiodes</i>	9,147	4,237	6,073	5,908	5,908	6,021	3,126	66
OG 096 Tableland Tussock Grass/Herb Forest - <i>E. pauciflora</i> / <i>E. dalrympleana</i> / <i>Poa sieberiana</i>	26	25	26	26	26	26	0	100
OG 097 Montane Acacia/Dry Shrub/Herb/Grass Forest - <i>E. dalrympleana</i> / <i>E. pauciflora</i> / <i>Acacia dealbata</i> / <i>Stellaria pungens</i>	20,514	17,764	18,178	18,126	18,126	18,178	2,336	89
OG 098 Western Montane Moist Shrub Forest - <i>E. pauciflora</i> / <i>E. dalrympleana</i> / <i>Daviesia ulicifolia</i> / <i>Lomandra longifolia</i>	20,349	16,796	17,254	17,214	17,214	17,254	3,095	85
OG 099 Montane Dry Shrub/Herb/Grass Forest - <i>E. pauciflora</i> / <i>Leucopogon hookeri</i> / <i>Stellaria pungens</i>	6,442	6,083	6,113	6,113	6,113	6,113	329	95
OG 100 ACT Montane Dry Shrub/Grass Forest - <i>E. pauciflora</i> / <i>Acacia dealbata</i> / <i>Poa induta</i>	2,494	560	557	557	557	557	1,937	22
OG 101 Western Montane Dry Shrub/Herb/Grass Forest - <i>E. dalrympleana</i> / <i>E. pauciflora</i> / <i>Daviesia latifolia</i> / <i>Coprosma hirtella</i> / <i>Stellaria pungens</i>	6,833	5,821	5,983	5,915	5,915	5,993	840	88
OG 102 Western Montane Dry Fern/Grass Forest - <i>E. dalrympleana</i> / <i>E. pauciflora</i> / <i>Poa sieberiana</i> / <i>Asperula scoparia</i>	1,415	1,013	1,402	1,402	1,402	1,402	13	99

Old-growth Forest Ecosystem	Area (hectares)							Proportion in protected areas as at 30 June 2016 (%)
	Total old-growth forest ¹	Old-growth forest in protected areas, by time period					Old-growth forest not in protected areas as at 30 June 2016	
		Pre-RFA ²	At 30 June 2001 ³	At 30 June 2006 ³	At 30 June 2011 ³	At 30 June 2016 ³		
OG 103 Western Montane Dry Fern/Grass Forest - <i>E. dives</i> / <i>E. dalrympleana</i> / <i>E. robertsonii</i> / <i>Pteridium esculentum</i> / <i>Poa sieberiana</i>	14,492	9,361	11,408	10,648	10,648	11,455	3,037	79
OG 104 Tableland Acacia/Herb/Grass Forest - <i>E. robertsonii</i> / <i>E. dalrympleana</i> / <i>Acacia dealbata</i> / <i>Platylobium formosum</i> / <i>Senecio</i> sp.	12,011	9,715	10,744	10,767	10,767	10,999	1,012	92
OG 106 Montane Dry Shrub/Tussock Forest - <i>E. robertsonii</i> / <i>E. dalrympleana</i> / <i>Platylobium formosum</i> / <i>Tetratheca bauerifolia</i>	8,411	8,168	8,172	8,172	8,172	8,172	239	97
OG 107 Tableland Montane Dry Shrub Forest - <i>E. dalrympleana</i> / <i>E. dives</i> / <i>Hibbertia obtusifolia</i>	5,889	1,978	2,732	2,732	2,732	2,732	3,157	46
OG 108 Western Tablelands Dry Herb/Grass Forest - <i>E. macrorhyncha</i> / <i>E. dives</i> / <i>Hibbertia obtusifolia</i> / <i>Poa sieberiana</i>	34,153	12,943	27,443	25,136	27,246	30,525	3,628	89
OG 109 Tablelands Dry Shrub/Tussock Grass Forest - <i>E. dives</i> / <i>E. mannifera</i> / <i>E. macrorhyncha</i> / <i>Hibbertia obtusifolia</i> / <i>Chionochloa pallida</i>	8,788	1,814	2,977	4,007	4,007	4,052	4,736	46
OG 110 Tablelands Dry Shrub/Grass Forest - <i>E. dives</i> / <i>E. mannifera</i> / <i>E. macrorhyncha</i> / <i>Platylobium formosum</i>	8,836	1,971	5,042	5,175	5,175	5,242	3,594	59
OG 112 Eastern Tablelands Dry Shrub Forest - <i>E. sieberi</i> / <i>E. dives</i> / <i>Brachyloma daphnoides</i> / <i>Poa sieberiana</i>	1,094	0	508	550	550	550	544	50
OG 113 North East Tablelands Dry Shrub/Grass Forest - <i>E. mannifera</i> / <i>E. dives</i> / <i>Brachyloma daphnoides</i> / <i>Dianella revoluta</i>	9,456	3,168	4,345	4,976	4,991	4,991	4,465	53
OG 114 Tablelands Dry Shrub/Tussock Grass Forest - <i>E. macrorhyncha</i> / <i>E. rossii</i> / <i>E. goniocalyx</i> / <i>Chionochloa pallida</i>	5,487	960	1,607	1,607	1,607	1,607	3,880	29
OG 115 South East Tablelands Dry Shrub/Tussock Grass Forest - <i>E. rossii</i> / <i>E. mannifera</i> / <i>Pultenaea procumbens</i> / <i>Chionochloa pallida</i>	21,465	2	2,242	4,054	4,054	4,054	17,411	19
OG 116 Western Slopes Herb/Grass Woodland - <i>E. blakelyi</i> / <i>Microlaena stipoides</i> / <i>Hydrocotyle laxiflora</i>	465	0	55	55	55	219	246	47
OG 118 Western Slopes Dry Grass Forest - <i>E. sideroxylon</i> / <i>E. blakelyi</i> / <i>E. goniocalyx</i> / <i>Elymus scaber</i>	196	0	11	86	86	86	110	44
OG 119 Western Tablelands Dry Shrub/Grass Forest - <i>E. macrorhyncha</i> / <i>E. polyanthemos</i> / <i>Hibbertia obtusifolia</i> / <i>Gonocarpus tetragynus</i>	10,766	0	5,004	4,067	5,353	6,719	4,047	62
OG 120 Western Slopes Shrub/Herb/Grass Dry Forest - <i>E. macrorhyncha</i> / <i>E. albens</i> / <i>Hydrocotyle</i>	1,198	0	439	439	531	531	667	44

Old-growth Forest Ecosystem	Area (hectares)						Proportion in protected areas as at 30 June 2016 (%)	
	Total old-growth forest ¹	Old-growth forest in protected areas, by time period				Old-growth forest not in protected areas as at 30 June 2016		
		Pre-RFA ²	At 30 June 2001 ³	At 30 June 2006 ³	At 30 June 2011 ³			At 30 June 2016 ³
<i>laxiflora/Microlaena stipoides</i>								
OG 121 Western Slopes Grass/Herb Dry Forest - <i>E. macrorhyncha/E. goniocalyx/Gonocarpus tetragynus/Poa sieberiana</i>	25,253	5,057	14,620	14,980	15,939	18,197	7,056	72
OG 123 Montane Wet Heath/Bog - <i>Baeckea utilis/Hakea micranthis</i>	30	33	30	30	30	30	0	100
OG 124 Western Montane Wet Heath/Herb Grass Woodland - <i>E. pauciflora/Epacris breviflora</i>	125	51	55	24	24	55	70	44
OG 128 Sub-alpine Dry Shrub/Herb Woodland - <i>E. niphophila</i>	19,910	18,167	18,156	18,156	18,156	18,156	1,754	91
OG 129133 Alpine Wet Herbfield & Sub-alpine Wet Herb / Grassland / Bog	63	66	63	63	63	63	0	100
OG 130 Sub-alpine Shrub/Grass Woodland - <i>E. niphophila</i>	38,423	38,166	38,389	38,186	38,186	38,396	27	100
OG 131 Sub-alpine Herbfield	43	42	43	43	43	43	0	100
OG 137 Coastal Escarpment Moist Shrub/Fern Forest - <i>E. sieberi/E. piperita/Gleichenia dicarpa</i>	5,525	4,174	5,136	5,136	5,136	5,137	388	93
OG 138 Northern Plateau and Escarpment Heath Shrub Dry Forest - <i>E. sieberi/E. consideniana</i>	10,205	8,038	9,531	9,544	9,544	9,543	662	94
OG 139 Northern Coastal Hinterland Heath Shrub Dry Forest - <i>C. gummifera/E. sclerophyll</i>	17,539	10,615	15,062	15,148	15,148	15,113	2,426	86
OG 146 Tableland Dry Herb/Grass Woodland - <i>E. pauciflora/E. stellulata/Asperula scoparia</i>	56	57	56	56	56	56	0	100
OG 147 Tablelands Moist Sedge/Herb/Grassland	3	0	0	0	0	0	3	0
OG 157 ACT/Monaro Dry Grassland - <i>Bothriochloa macra/Chrysocephalum apiculatum</i>	1	1	1	1	1	1	0	100
OG 158 Monaro Dry Grassland - <i>Austrostipa spp/ Danthonia ssp</i>	26	0	13	13	13	13	13	50
OG 160 Northern Slopes Dry Grass Woodland - <i>E. blakelyi/E. melliodora/Danthonia racemosa/Austrostipa scabra ssp falcata</i>	156	33	66	33	33	65	91	42
OG 171 Coastal Shrub/Grass Forest - <i>E. tereticornis</i>	669	658	660	660	660	660	9	99
OG 174 Shoalhaven Gorge Forest - <i>E. tereticornis / E.melliodora</i>	7,975	5,108	6,416	6,416	6,763	6,763	1,212	85
OG 175 Northern Coastal Lowlands Swamp Forest - <i>E. robusta</i>	56	1	37	37	37	37	19	66
OG 176 Morton Plateau Mallee Swamp Low Forest	771	758	771	771	771	771	0	100
OG 179 Eastern Deua dry shrub Forest - <i>Angophora costata</i>	2,007	495	1,935	1,935	1,935	1,935	72	96

	Area (hectares)							Proportion in protected areas as at 30 June 2016 (%)
	Total old-growth forest ¹	Old-growth forest in protected areas, by time period					Old-growth forest not in protected areas as at 30 June 2016	
		Pre-RFA ²	At 30 June 2001 ³	At 30 June 2006 ³	At 30 June 2011 ³	At 30 June 2016 ³		
Old-growth Forest Ecosystem								
OG 181 North-eastern Tablelands Gully Fern Forest - <i>E.elata / Calochlaena dubia</i>	82	0	0	2	2	2	80	2
OG 192 South West Slopes Tall Shrubland Low Forest - <i>E.dwyeri-Acacia doratoxylon</i>	82	0	0	0	0	0	82	0
Total old-growth forest by Forest Ecosystem	753,346	407,034	552,819	555,633	561,114	573,309	180,037	76
Old-growth with no forest ecosystem class	563	NR	301	303	303	303	260	54
Total old-growth forest	753,909	407,034	544,740	555,936	561,417	573,612	180,297	76
As proportion of total old growth forest (%)	100	54	73	74	74	76	24	

¹Area derived by ABARES from spatial data associated with Southern region old-growth CRA report 1998. Figures for individual Forest Ecosystems are of variable accuracy and should not be assumed to be more accurate than the nearest 100 hectares. Increasing levels of reservation over time are applied to this area.

² Directly from the pre-RFA Formal Reserve extent reported in the Southern RFA data tables (formal reserve spatial data provided by the NPWS to the Commonwealth Government at signing of the RFA Scoping Agreement 25 January 1996). Reserves on public land only.

³Reserves on public land only. This includes the NPWS estate (formal reserves); informal reserves identified from Forest Management Zone datasets at RFA signing (2001), 2004 and 2016; and additional Regional Prescriptions from the Integrated Forestry Operations Approval for the Upper North East Region. Together these components constitute the CAR reserve system on public land.

Note: Totals may not tally due to rounding

Table 1.5 Old-growth forest in the Eden RFA region identified in the CRA spatial dataset, by Forest Ecosystem, and the changes in areas in the CAR reserve system over time

Old-growth Forest Ecosystem	Area (hectares)							Proportion in protected areas as at 30 June 2016 (%)
	Total old-growth forest ¹	Old-growth forest in protected areas, by time period					Old-growth forest not in protected areas as at 30 June 2016	
		Pre-RFA ²	At 30 June 2001 ³	At 30 June 2006 ³	At 30 June 2011 ³	At 30 June 2016 ³		
OG 9 Mountain Wet Layered Forest (<i>Eucalyptus nitens</i>)	444	56	435	435	435	435	9	98
OG 10 Mountain Wet Layered Forest (<i>E. fastigata</i>)	3,895	2,016	3,473	3,473	3,473	3,472	423	89
OG 11 Tantawangalo Wet Shrub Forest	206	13	205	205	205	205	1	100
OG 12 Mountain Wet Fern Forest	592	150	511	511	511	511	81	86
OG 13 Hinterland Wet Fern Forest	9,360	5,587	7,773	7,772	7,772	7,831	1,529	84
OG 14 Hinterland Wet Shrub Forest	3,917	1,809	2,590	2,607	2,605	2,645	1,272	68
OG 15 Mountain Wet Herb Forest	5,804	2,347	4,733	4,733	4,733	4,731	1,073	82
OG 16 Basalt Wet Herb Forest	1,668	184	1,030	1,037	1,037	1,039	629	62
OG 17 Flats Wet Herb Forest	280	94	177	177	177	175	105	63
OG 18 Brogo Wet Vine Forest	407	133	250	250	250	250	157	61
OG 19 Bega Wet Shrub Forest	2,552	536	1,279	1,279	1,279	1,280	1,272	50
OG 20 Bega Dry Grass Forest	299	29	256	256	256	256	43	86
OG 21 Candelo Dry Grass Forest	253	56	211	211	211	211	42	83
OG 24 Subalpine Dry Shrub Forest	7,484	963	1,572	1,624	1,624	1,623	5,861	22
OG 25 Sandstone Dry Shrub Forest	177	176	177	177	177	177	0	100
OG 26 Tableland Dry Shrub Forest	1,472	371	1,062	1,062	1,062	1,063	409	72
OG 27 Waalimma Dry Grass Forest	68	0	46	46	46	46	22	68
OG 28 Wog Dry Grass Forest	119	11	119	119	119	119	0	100
OG 29 Nalbaugh Dry Grass Forest	205	5	173	173	173	173	32	84
OG 30 Wallagaraugh Dry Grass Forest	74	14	46	46	46	46	28	62
OG 31 Hinterland Dry Grass Forest	4,993	974	3,947	3,946	3,946	3,948	1,045	79

Old-growth Forest Ecosystem	Area (hectares)						Old-growth forest not in protected areas as at 30 June 2016	Proportion in protected areas as at 30 June 2016 (%)
	Total old-growth forest ¹	Old-growth forest in protected areas, by time period						
		Pre-RFA ²	At 30 June 2001 ³	At 30 June 2006 ³	At 30 June 2011 ³	At 30 June 2016 ³		
OG 32 Coastal Dry Shrub Forest (<i>E. longifolia</i>)	2,424	911	1,705	1,705	1,705	1,837	587	76
OG 33 Coastal Dry Shrub Forest (<i>E. muelleriana</i>)	2,839	1,441	2,319	2,338	2,338	2,341	498	82
OG 34 Brogo Dry Shrub Forest	2,843	1,268	1,852	1,852	1,851	2,010	833	71
OG 35 Escarpment Dry Grass Forest	4,971	1,532	3,096	3,096	3,096	3,097	1,874	62
OG 36 Dune Dry Shrub Forest	117	37	105	105	105	105	12	90
OG 37 Coastal Dry Shrub Forest (<i>Angophora floribunda</i>)	2,799	1,256	1,775	1,773	1,773	1,777	1,022	63
OG 41 Mountain Dry Shrub Forest (<i>E. fraxinoides</i>)	353	166	321	321	321	321	32	91
OG 42 Coastal Dry Shrub Forest (<i>E. obliqua</i>)	1,778	773	1,355	1,355	1,355	1,365	413	77
OG 43 Mountain Dry Shrub Forest (<i>E. cypellocarpa</i>)	516	416	467	467	467	467	49	91
OG 44 Foothills Dry Shrub Forest	748	320	661	661	661	660	88	88
OG 45 Mountain Dry Shrub Forest (<i>E. sieberi</i>)	346	224	311	311	311	311	35	90
OG 46 Lowland Dry Shrub Forest	4,687	2,341	2,984	2,982	2,982	3,056	1,631	65
OG 47 Eden Dry Shrub Forest	4,332	2,812	3,541	3,541	3,541	3,597	735	83
OG 48 Bega Dry Shrub Forest	776	575	710	710	710	722	54	93
OG 49 Coastal Dry Shrub Forest (<i>E. agglomerata</i>)	3,380	1,573	2,232	2,232	2,229	2,237	1,143	66
OG 50 Genoa Dry Shrub Forest	849	705	760	760	760	760	89	90
OG 58 Swamp Forest	121	51	114	114	114	116	5	96
OG 71 Monaro Basalt Grass Woodland	388	36	356	356	356	356	32	92
OG 72 Numeralla Dry Shrub Woodland	2,214	290	305	335	335	335	1,879	15
OG 73 Monaro Dry Grass Forest	732	0	297	486	486	486	246	66
OG 79 Timbillica Dry Shrub Forest	1,525	274	1,188	1,188	1,188	1,192	333	78
OG 81 Wadbilliga Dry Shrub Forest	11,100	10,921	11,010	11,010	11,010	11,010	90	99
OG 82 Wadbilliga Range Ash Forest	398	398	398	398	398	398	0	100

Old-growth Forest Ecosystem	Area (hectares)						Old-growth forest not in protected areas as at 30 June 2016	Proportion in protected areas as at 30 June 2016 (%)
	Total old-growth forest ¹	Old-growth forest in protected areas, by time period				At 30 June 2016 ³		
		Pre-RFA ²	At 30 June 2001 ³	At 30 June 2006 ³	At 30 June 2011 ³	At 30 June 2016 ³		
OG 84 Wadbilliga Range Wet Forest	1,269	1,134	1,144	1,144	1,144	1,144	125	90
OG 85 Wadbilliga Gorge Dry Forest	2,016	1,693	1,864	1,864	1,864	1,864	152	92
OG 86 Wadbilliga River Valley Forest	534	361	486	486	486	486	48	91
Total old-growth forest by Forest Ecosystem	98,324	47,032	71,421	71,729	71,723	72,286	26,038	74
Old-growth with no forest ecosystem class	4,360	NR	3,556	3,564	3,563	3,581	779	82
Total old growth forest	102,684	47,032	74,977	75,293	75,286	75,867	26,817	74
As proportion of total old-growth forest (%)	100	46	73	73	73	74	26	

¹ Area derived by ABARES from spatial data associated with Eden region old-growth CRA report 1998. Figures for individual Forest Ecosystems are of variable accuracy and should not be assumed to be more accurate than the nearest 100 hectares. Increasing levels of reservation over time are applied to this area.

² Directly from the pre-RFA Formal Reserve extent reported in the Eden RFA data tables (formal reserve spatial data provided by the NPWS to the Commonwealth Government at signing of the RFA Scoping Agreement 25 January 1996). Reserves of public land only.

³ Reserves on public land only. This includes the NPWS estate (formal reserves); informal reserves identified from Forest Management Zone datasets at RFA signing (1999), 2004 and 2016; and additional Regional Prescriptions from the Integrated Forestry Operations Approval for the Upper North East Region. Together these components constitute the CAR reserve system on public land.

Note: Totals may not tally due to rounding

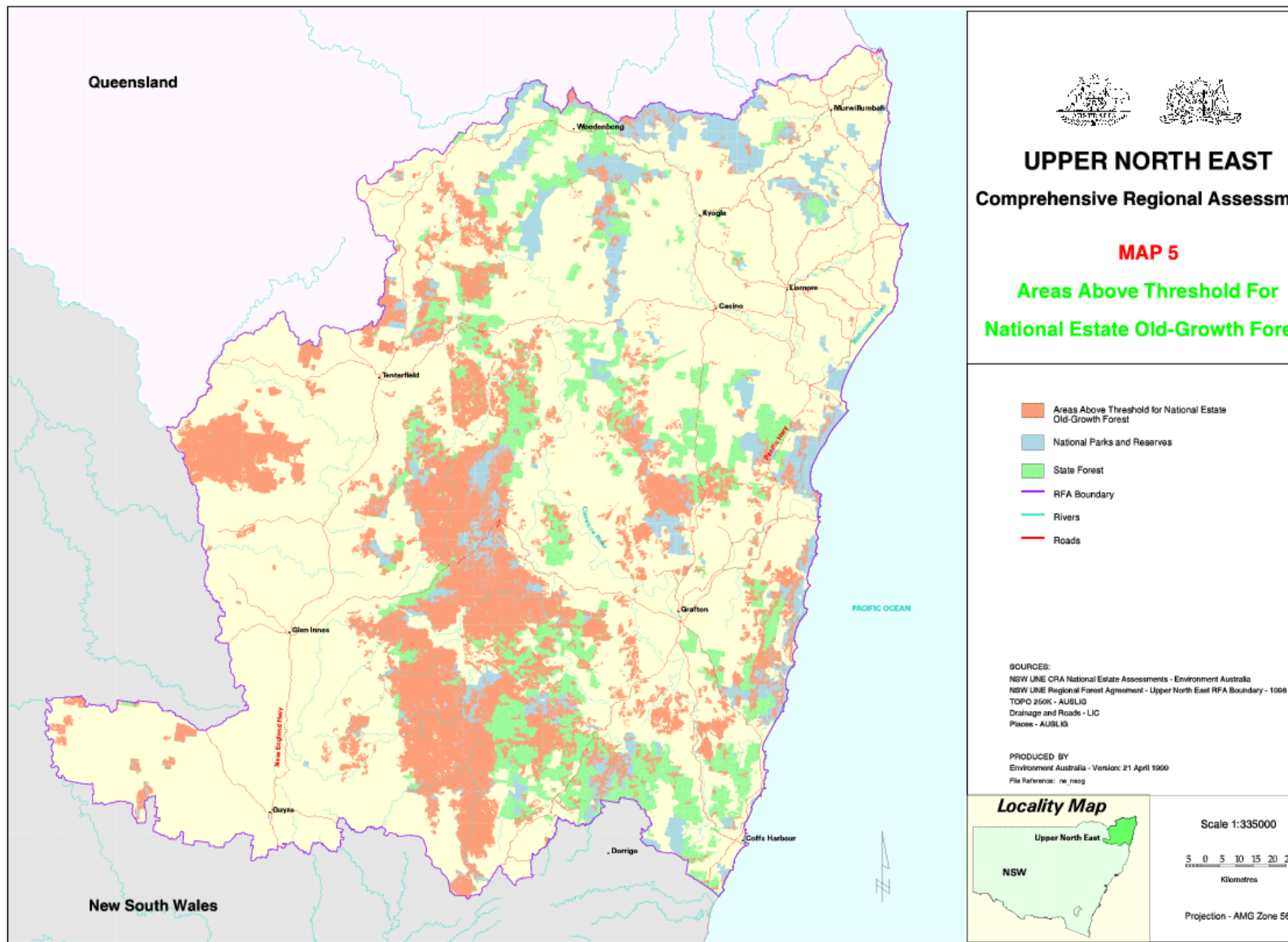


Figure 1.1 Old Growth Forest in the UNE RFA region

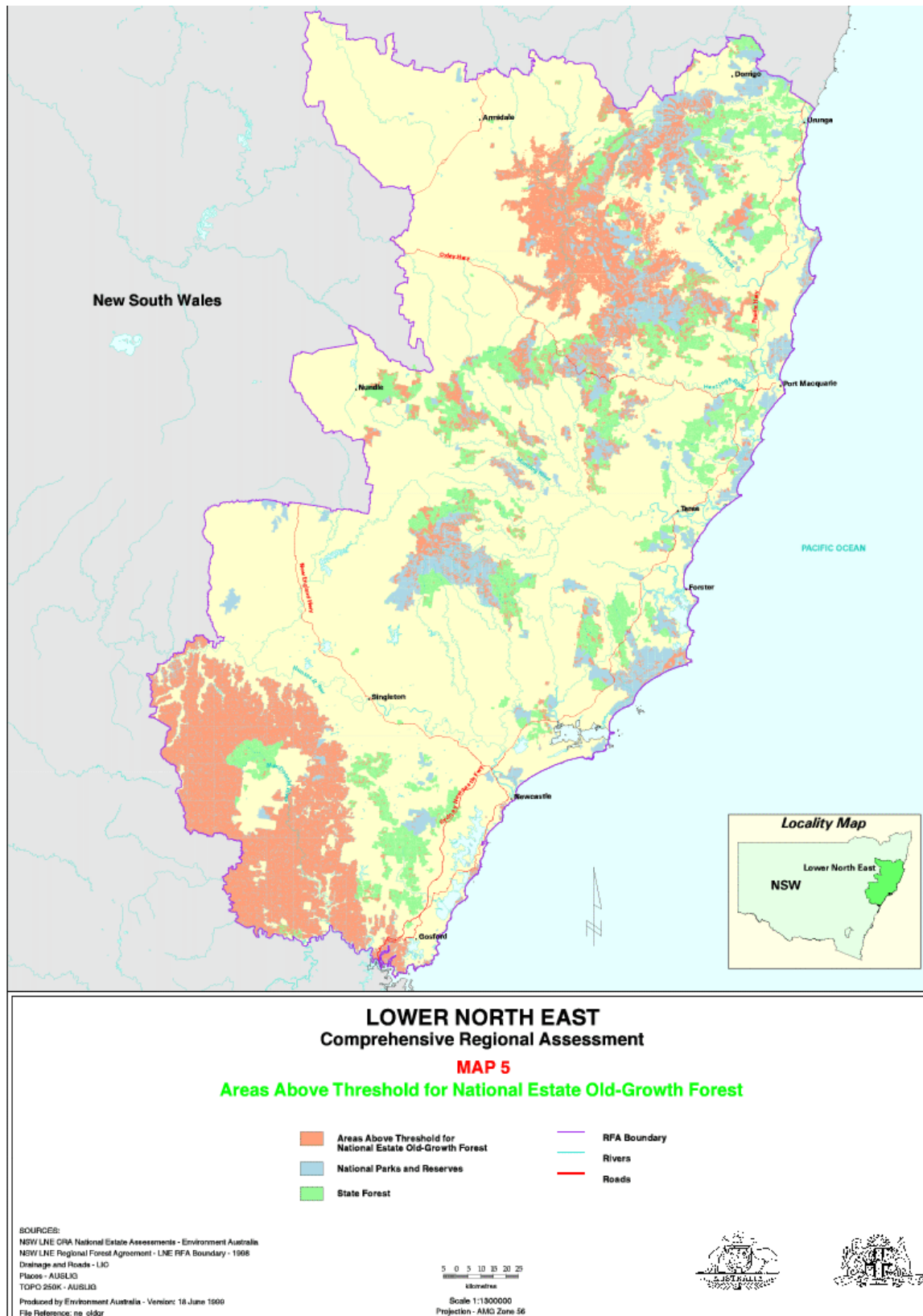


Figure 1.2 Old Growth Forest in the LNE RFA region

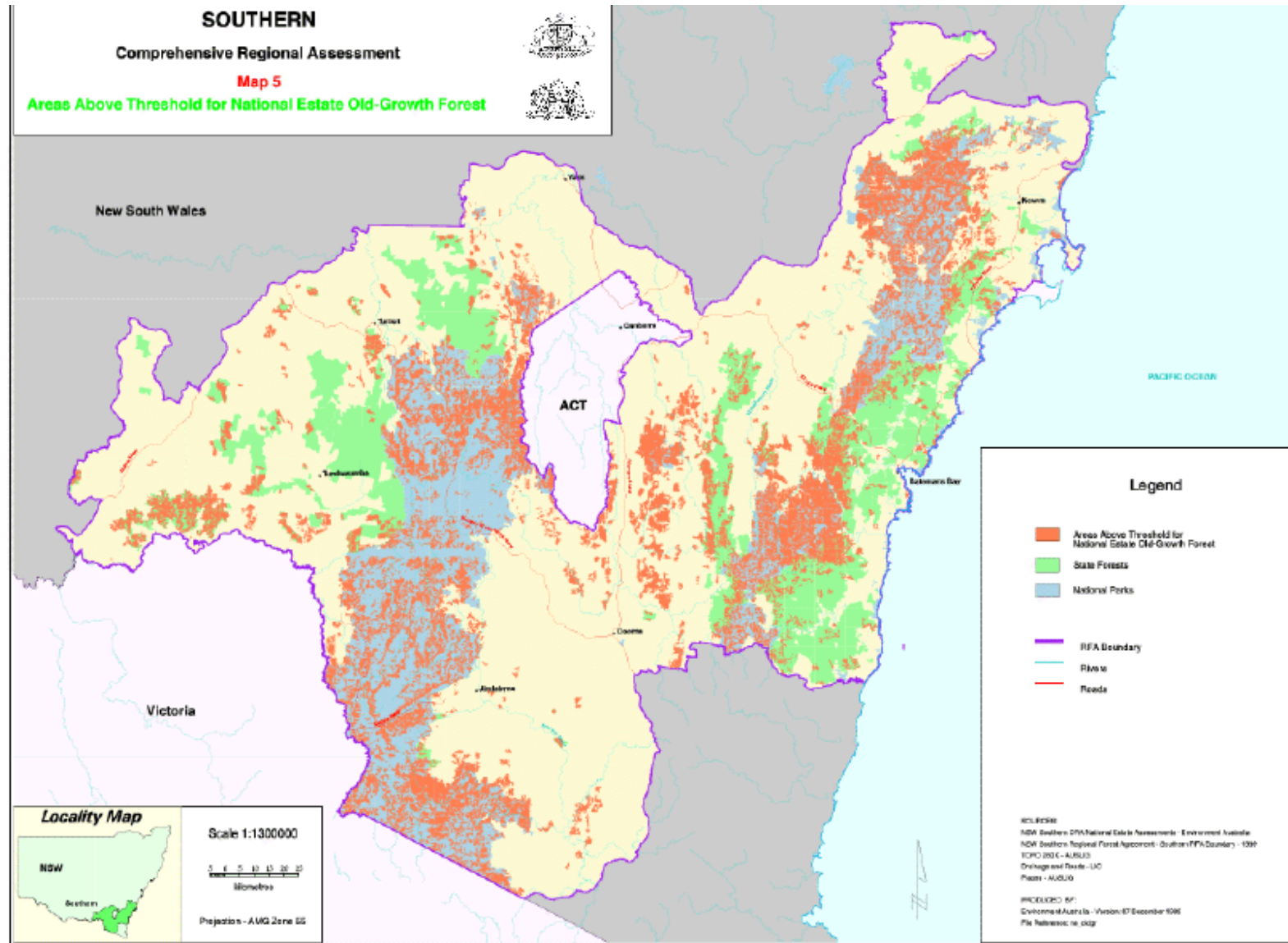


Figure 1.3 Old Growth Forest in the Southern RFA region

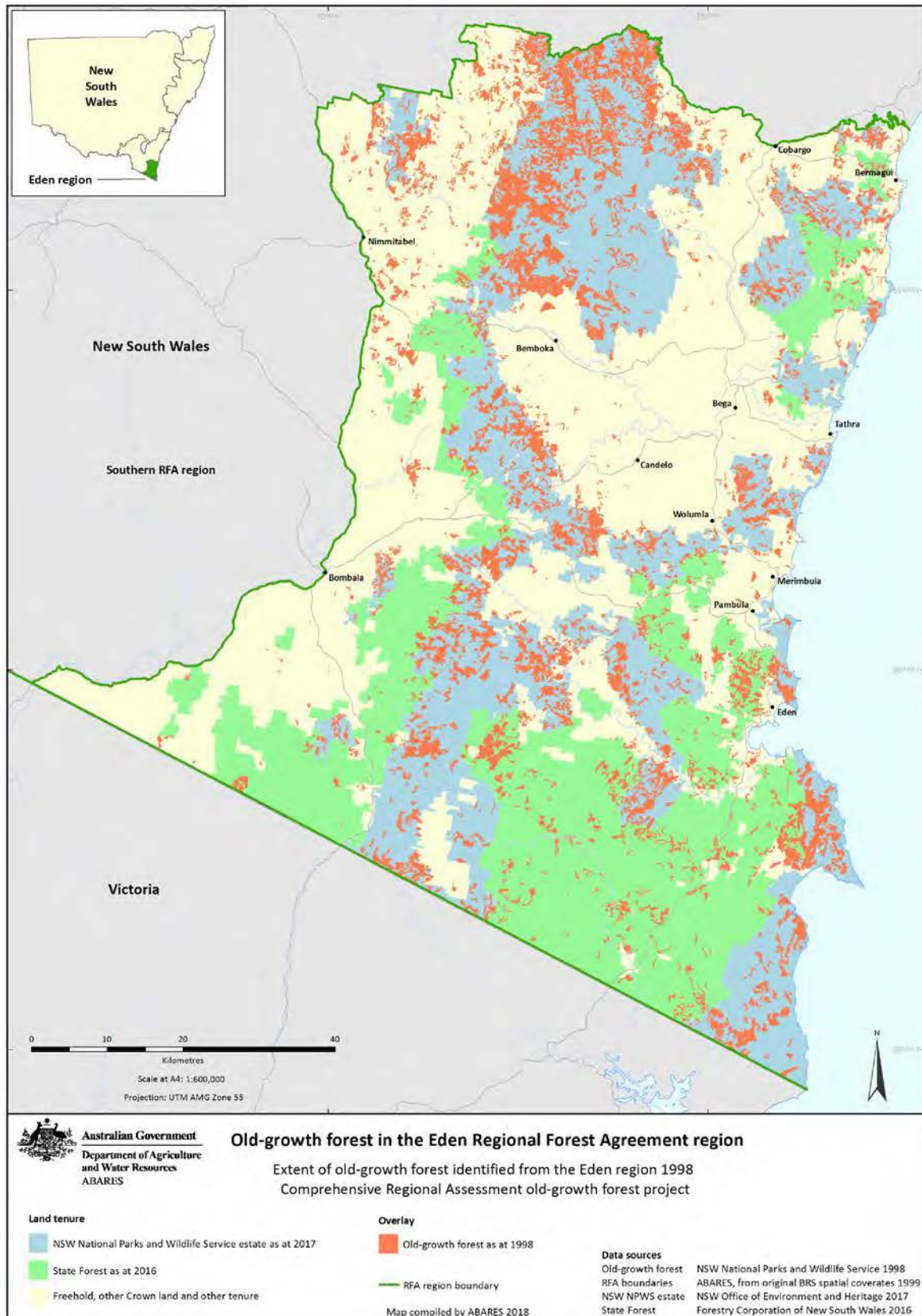


Figure 1.4 Old Growth Forest in the UNE RFA region

Wilderness values

The National Forest Policy Statement/JANIS Criteria defines Wilderness as:

*Land that, together with its plant and animal communities, is in a state that has not been substantially modified by, and is remote from, the influences of European settlement...*⁵

The *Wilderness Act 1987* (NSW) identifies Wilderness as:

The area is, together with its plant and animal communities, in a state that has not been substantially modified by humans and their works or is capable of being restored to such a state; is of sufficient size to make its maintenance in such a state feasible; and is capable of providing opportunities for solitude and appropriate self-reliant recreation.

The CRA process undertaken between 1995 and 2000 documented three classes of wilderness:

1. Delineated Wilderness: the extent of land that meets National Wilderness Inventory (NWI) criteria for 'high quality wilderness' as defined by the JANIS⁶ criteria
2. Identified Wilderness: the extent of land that meets the criteria of the *Wilderness Act 1987* (NSW)
3. Declared Wilderness: the extent of Identified Wilderness that is formally declared for protection under the *Wilderness Act 1987* (NSW). All of this area in NSW RFA regions is also in formal reserves.

Delineated Wilderness was determined for the CRA by a desktop analysis of datasets relating to landscape factors (remoteness, naturalness, size etc.) that relate to the NFPS/JANIS wilderness definition. Delineated Wilderness was the layer used to determine the JANIS reservation targets (90%, or more if practicable) for wilderness in the development of the three NSW RFAs.

Identified Wilderness and Declared Wilderness were determined for the CRA through the process stated in the *Wilderness Act 1987* (NSW). This includes a formal process for the assessment, identification and (for Declared Wilderness) declaration of wilderness in NSW.

The wilderness spatial datasets identified during the CRA process have not been updated since that time. The data presented here therefore do not take into account any additional areas of wilderness subsequently identified, or any areas that are no longer wilderness. Changes in the area figures presented here are solely due to changes in the areas of wilderness that are reserved in formal reserves; areas of wilderness not in formal reserves may be on private land, or in State forest or other crown land.

Wilderness extent and protection in NSW RFA regions

⁵ The full NFPS definition is *land that, together with its plant and animal communities, is in a state that has not been substantially modified by, and is remote from, the influences of European settlement or is capable of being restored to such a state; is of sufficient size to make its maintenance in such a state feasible; and is capable of providing opportunities for solitude and self-reliant recreation.*

⁶ Nationally Agreed Criteria for the Establishment of a Comprehensive, Adequate and Representative Reserve System for Forests in Australia, a report by the Joint ANZECC/MCFFA National Forest Policy Statement Implementation Sub-committee.

The extent of formally reserved Delineated Wilderness, formally reserved Identified Wilderness, and the International Union for Conservation of Nature (IUCN) Protected Areas Wilderness Category, are each determined through different mechanisms using different definitions of wilderness. The IUCN Wilderness Area is derived from the Commonwealth Department of the Environment and Energy's Collaborative Australian Protected Area Database (CAPAD) so may include wilderness outside formal reserves but otherwise protected through mechanisms recorded in CAPAD, such as informal reserves. Declared Wilderness is a subset of Identified Wilderness.

Figure 1.5 to **Figure 1.12** show the mapped extent of wilderness areas in the four RFA regions.

Delineated Wilderness

A total of 1.7 million hectares of Delineated Wilderness occurs in the NSW RFA regions. Prior to signing of the NSW RFAs, a total of 1.3 million hectares (77 per cent) was protected in formal reserves. After signing of the NSW RFAs, (1999-2001), and as at 30 June 2016, a total of 1.6 million hectares (92 per cent) is protected in formal reserves.

Identified Wilderness

A total of 1.5 million hectares of Identified Wilderness occurs in the NSW RFA regions. Prior to signing of the NSW RFAs, a total of 1.2 million hectares (83 per cent) was protected in formal reserves. After signing of the NSW RFAs, and as at 30 June 2016, a total of 1.4 million hectares (93 per cent) is protected in formal reserves.

Declared Wilderness

A total of 0.93 million hectares of the area of Identified Wilderness in the NSW RFA regions is Declared Wilderness. Prior to signing of the NSW RFAs, a total of 0.92 million hectares was protected in formal reserves. After signing of the NSW RFAs, and as at 30 June 2016, a total of 0.93 million hectares is protected in formal reserves.

Table 1.6 summarises the extent of these three wilderness classes in the NSW RFA regions and the extent that was reserved at various time points before and after the respective RFAs were signed, including the latest area reserved.

International Union for Conservation of Nature wilderness

The IUCN defines Wilderness as:

Protected areas that are usually large unmodified or slightly modified areas, retaining their natural character and influence, without permanent or significant human habitation, which are protected and managed so as to preserve their natural condition.

The IUCN Protected Areas Category Ib: Wilderness Area is reported through CAPAD. The 2016 CAPAD identified 1.4 million hectares of Category Ib: Wilderness Area across the four NSW RFA regions.

Table 1.7 shows the extent of IUCN Wilderness Area by RFA region, and the extent of formally reserved wilderness within the three types of wilderness identified during the CRA process, as at 30 June 2016 and by RFA region⁷.

⁷ All figures are for total land area, and include forest and non-forest areas in RFA regions.

Table 1.6 Wilderness area in NSW RFA regions identified in the CRA spatial datasets, by RFA region, and the changes in area in reserves over time

Wilderness classification and RFA region	Area ('000 hectares)							Proportion of total wilderness reserved as at 30 June 2016 (%)
	Total wilderness	Pre-RFA ²	Area of wilderness in formal reserves, by time period ¹				Wilderness not reserved as at 30 June 2016	
At 30 June 2001			At 30 June 2006	At 30 June 2011	At 30 June 2016			
Delineated Wilderness (National Wilderness Inventory criteria)³								
Upper North East	302	121	249	250	250	250	52	83
Lower North East	495	389	455	456	456	456	39	92
Southern	860	741	808	808	808	808	52	94
Eden	91	86	90	90	90	90	1	99
All RFA regions⁴	1,748	1,338	1,602	1,604	1,604	1,604	144	92
Proportion of total wilderness (%)	100	77	92	92	92	92	8	
Identified Wilderness (Wilderness Act 1987 (NSW) criteria)⁵								
Upper North East	316	199	271	275	275	275	41	87
Lower North East	490	416	447	449	449	449	42	92
Southern	556	514	534	534	534	534	22	96
Eden	129	114	126	126	126	126	3	98
All RFA regions⁴	1,491	1,243	1,378	1,383	1,383	1,383	108	93
Proportion of total wilderness (%)	100	83	92	93	93	93	7	

Table 1.6 (continued) Wilderness area in NSW RFA regions identified in the CRA spatial datasets, by RFA region, and the changes in area in reserves over time

Wilderness classification and RFA region	Area ('000 hectares)							Proportion of total wilderness reserved as at 30 June 2016 (%)
	Total wilderness	Area of wilderness in formal reserves, by time period					Wilderness not reserved as at 30 June 2016	
		Pre-RFA	At 30 June 2001	At 30 June 2006	At 30 June 2011	At 30 June 2016		
Declared Wilderness (<i>Wilderness Act 1987</i> (NSW))⁵								
Upper North East	160	159	160	160	160	160	0	100
Lower North East	229	222	225	225	225	225	3	99
Southern	481	480	480	480	480	480	0	100
Eden ⁵	57	57	57	57	57	57	0	99
All RFA regions⁴	927	918	922	922	923	923	4	100
Proportion of total wilderness (%)	100	99	100	100	100	100	0	

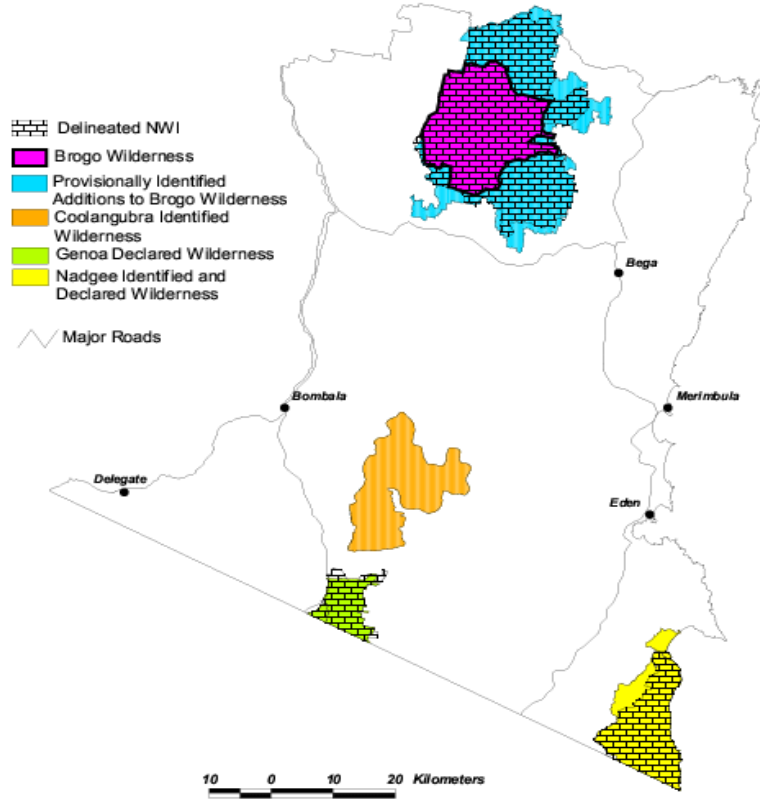
Notes:

1. Derived from spatial data for reserves on the national parks estate.
2. Area derived by ABARES from the formal reserve spatial data provided by the NPWS to the Commonwealth Government at signing of the NSW RFA Scoping Agreement circa 25 January 1996.
3. Derived from National Wilderness Inventory spatial data.
4. Totals may not tally due to rounding
5. Derived from spatial data for reserves on the national parks estate.
6. Area derived by ABARES from the formal reserve spatial data provided by the NPWS to the Commonwealth Government at signing of the NSW RFA Scoping Agreement circa 25 January 1996.
7. Area derived by ABARES from spatial data associated with wilderness CRA reports from 1998-2000.
8. No spatial data for Declared Wilderness in the Eden region was available for this analysis. Area figure was derived from the Eden wilderness CRA report (NSW NPWS, *Wilderness Assessment – Eden Region A Report undertaken for the NSW CRA/RFA Steering Committee project number NE 25/EH, 1998, Sydney*). Area has been carried across each time period without accounting for potential changes in reservation.

Table 1.7 Area in NSW RFA regions in IUCN Category Ib – Wilderness Area, and areas of formally reserved wilderness in various CRA categories, at 30 June 2016

RFA region	Area ('000 hectares)			
	IUCN Category Ib – Wilderness Area	Delineated wilderness in formal reserves	Identified wilderness in formal reserves	Declared wilderness in formal reserves
Upper North East	324	250	275	160
Lower North East	834	456	449	225
Southern	178	808	534	480
Eden	85	90	126	57
Total	1,421	1,604	1,383	923

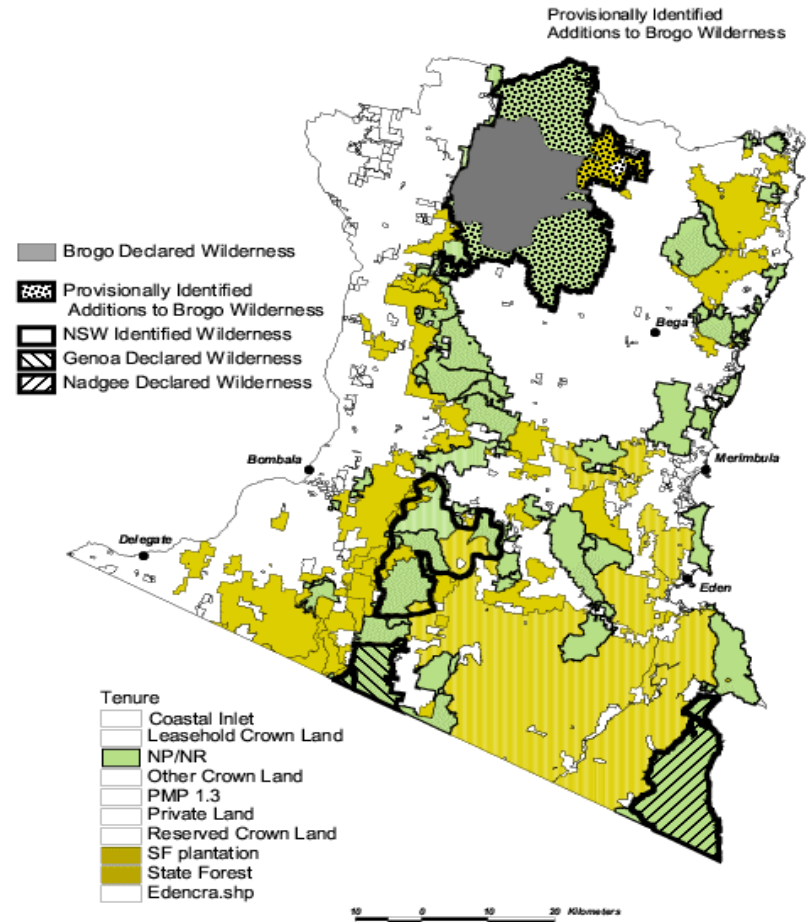
Source: IUCN Wilderness Area derived by ABARES from CAPAD 2016



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Figure 1.5 Eden RFA region: Provisionally identified and declared wilderness with tenure (May 1998)



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Figure 1.6 Eden RFA region: NSW identified and declared wilderness with delineated NWI (May 1998)

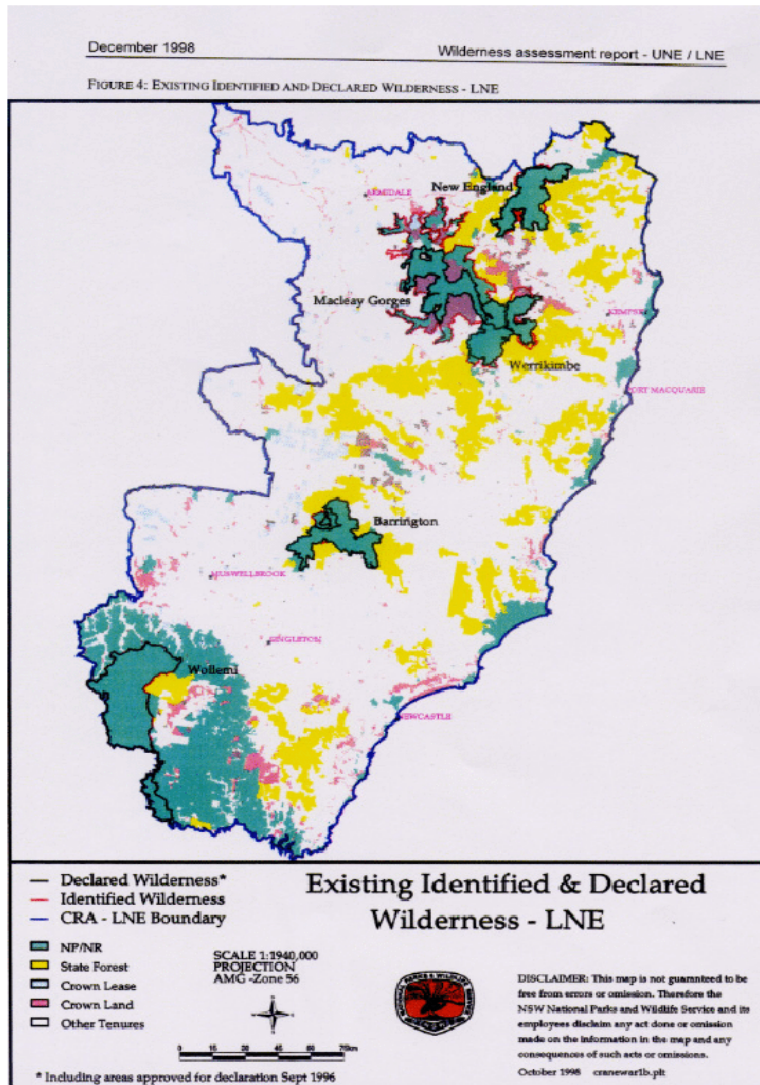


Figure 1.7 Lower North East RFA region: Identified and declared wilderness with tenure (December 1998)

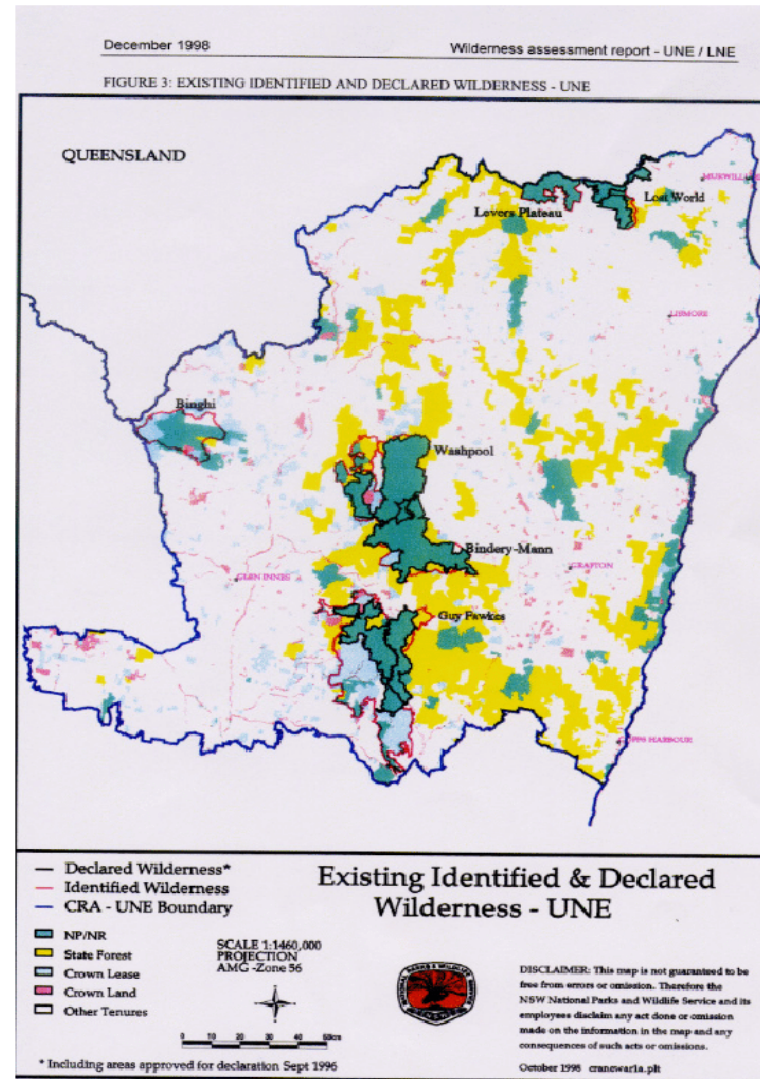


Figure 1.8 Upper North East RFA region: Identified and declared wilderness with tenure (December 1998)

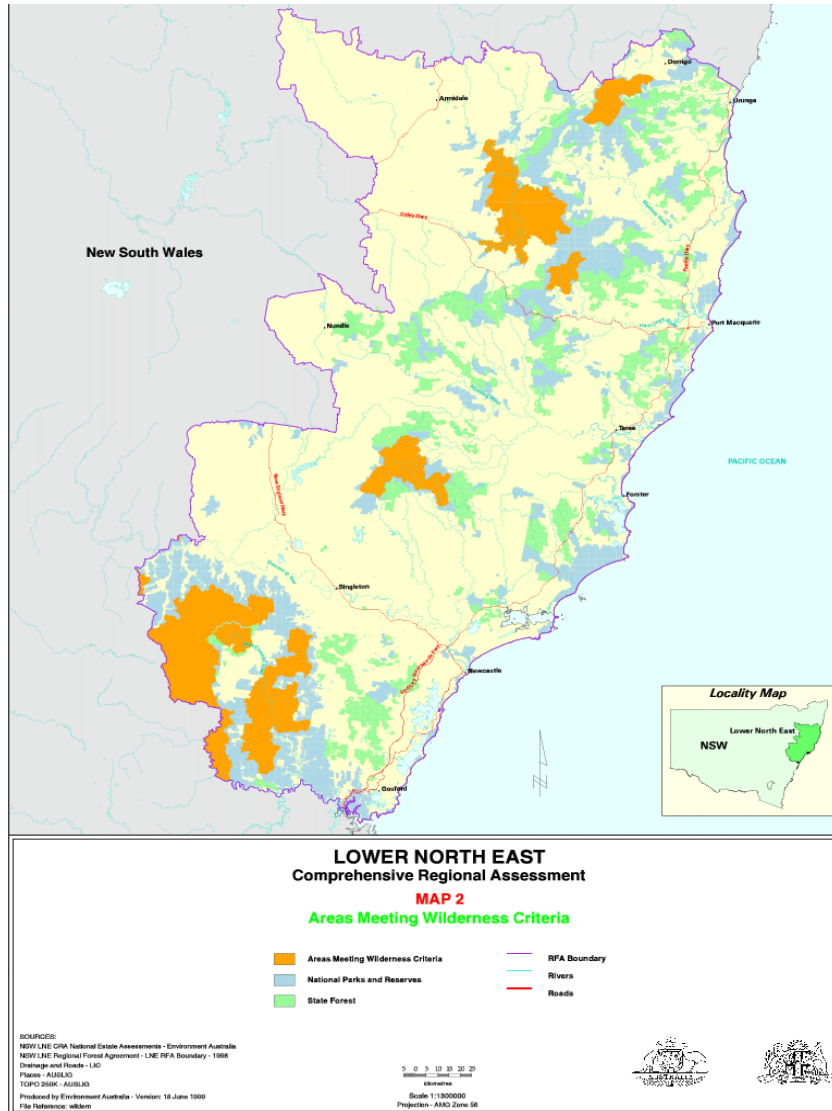


Figure 1.9 Lower North East RFA region: Delineated NWI (December 1998)

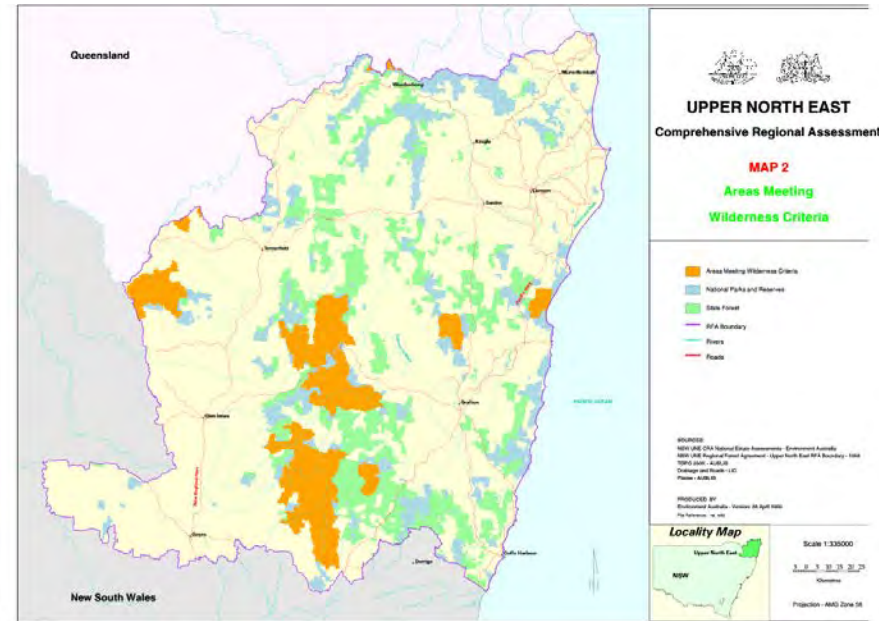


Figure 1.10 Upper North East RFA region: Delineated NWI (December 1998)

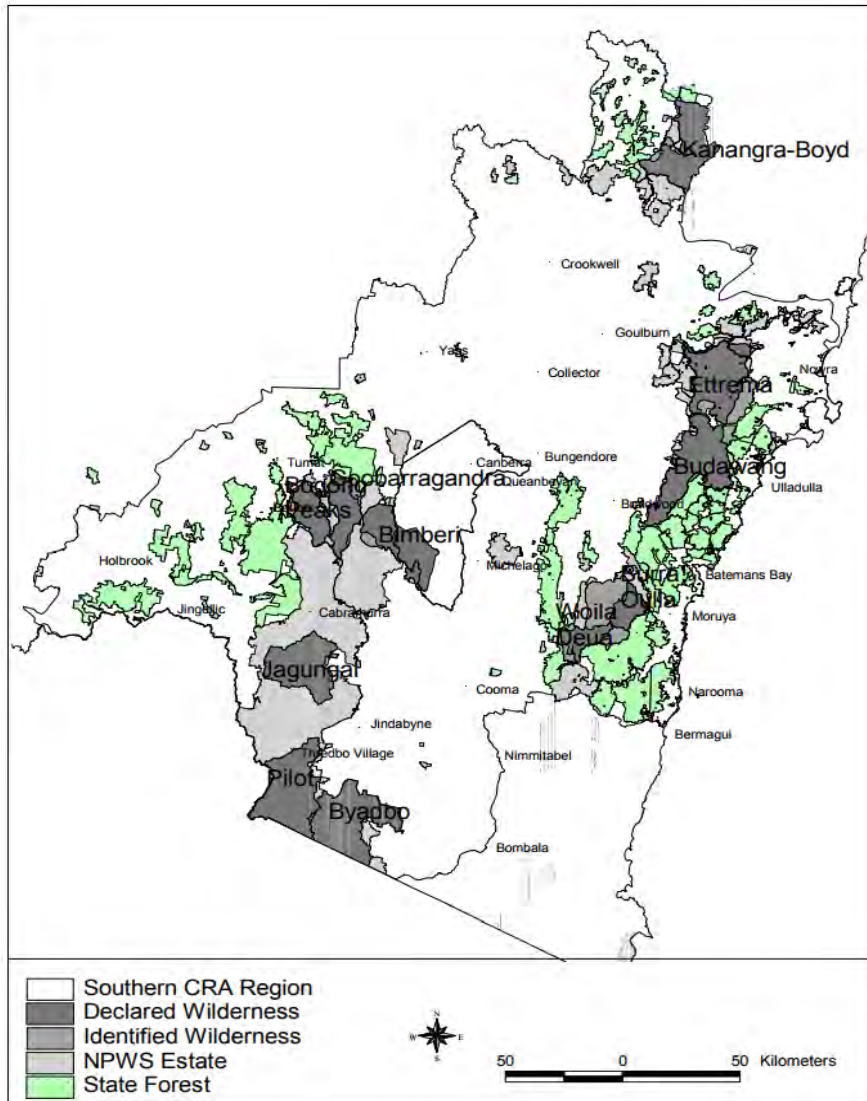


Figure 1.11 Southern RFA region: Identified and declared wilderness with tenure (February 2000)

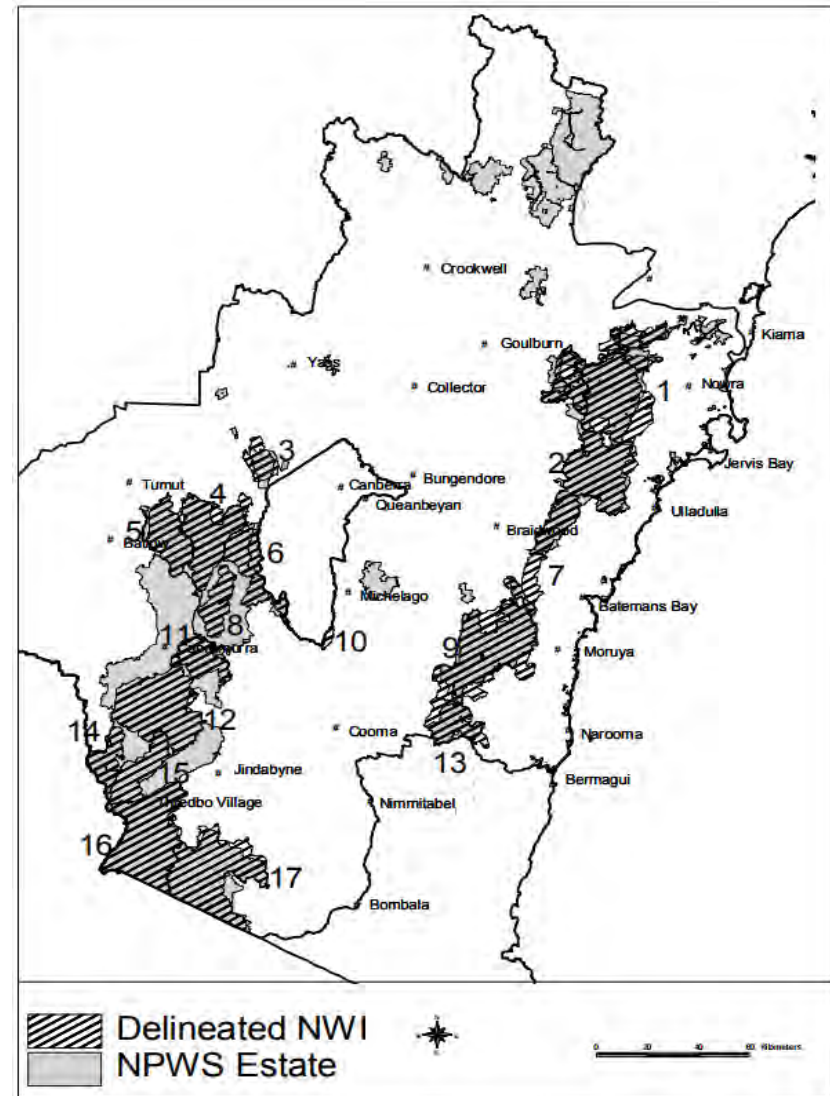


Figure 1.12 Southern RFA region: Delineated NWI (February 2000)

Endangered species values

There are currently 412 threatened species and 8 non-threatened migratory birds listed under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) that are known or likely to occur within the NSW RFA regions (Appendix 2). Almost all listed species (99.5%) have a conservation advice and/or recovery plan to assist recovery. There are also 28 EPBC Act listed threatened ecological communities in the NSW RFA regions (Appendix 2). All have conservation advices, recovery plans or both in place to assist in management and recovery.

There are 13 listed threatening processes affecting threatened species in the NSW RFA regions. National Threat Abatement Plans have been prepared for all listed processes where a plan was considered a feasible, effective or efficient way to abate the processes. This covers 10 of the 13 identified processes.

Since the signing of the first NSW RFA (Eden - 26 August 1999), 81 additional species have been listed as threatened under national legislation.

National Legislation protecting Listed Species and Communities

After the NSW RFAs were signed (1999–2001), new Commonwealth environmental legislation came into force that changed the definition and assessment of threatened species at the national level. The EPBC Act protects Australia's native species and ecological communities by providing for the:

- identification and listing of threatened species and ecological communities
- development of conservation advice and, where appropriate, recovery plans for listed species and ecological communities
- development of a register of critical habitat identification
- recognition of key threatening processes
- development of threat abatement plans where appropriate⁸.

Listing and protection processes

The national listing of species and ecological communities follows a rigorous scientific assessment process and involves consultation with stakeholders including scientific experts and the public. Advice on the eligibility of a species or ecological community for listing is provided to the responsible Minister by the independent Threatened Species Scientific Committee.

Listing species or ecological communities recognises their long-term survival is under threat. Once listed a threatened species and ecological community is recognised as a matter of national environmental significance and must be considered in the EPBC Act's assessment and approval provisions.

⁸ ABARES, Australia's State of the Forest Report 2013

Conservation advice and recovery plans

Since 2007, a conservation advice is required at the time of listing a threatened species or ecological community. Conservation advices outline the eligibility for listing, and immediate priorities for conservation, research and recovery⁹.

For some species and ecological communities, a more comprehensive recovery plan may also be developed to guide recovery action. Recovery plans set out the research and management actions that are necessary to stop the decline of, and support the recovery of, listed threatened species and ecological communities, including the identification of critical habitat¹⁰. The aim of a recovery plan is to assist the long-term survival in its natural environment of the species or ecological community.

Key threatening processes and threat abatement plans

The listing process for a key threatening processes is similar to the listing of species and ecological communities. A listed key threatening process is not a matter of national environmental significance. Once a key threatening process is listed under the EPBC Act, a threat abatement plan is developed if it is shown to be a 'feasible, effective and efficient way' to abate the threatening process. Threat abatement plans provide for the research, management, and any other actions necessary to reduce the impact of a listed key threatening process on native species and ecological communities.

As with recovery plans, a threat abatement plan can be made by the Minister alone or jointly with relevant states and territories, or the minister can adopt a state or territory plan. Before a plan is made or adopted, there must be public consultation and advice from the Threatened Species Scientific Committee about the plan.

Interaction between the RFAs and the EPBC Act

RFAs provide relevant compliance with requirements within the EPBC Act as they provide for protection of the environment; promote ecologically sustainable development; promote the conservation of biodiversity; and provide for the protection of conservation of heritage.

Section 38 of the EPBC Act streamlines forest planning processes by exempting forest operations in RFA areas from other assessment and approval under the EPBC Act. This means forestry operations that are undertaken in accordance with a RFA do not require approval for the purposes of any provision in Part 3 of the EPBC Act¹¹. The exception is forestry operations within World Heritage or Ramsar wetlands sites, where assessment and approval is required. The rationale being the EPBC Act recognises 'that in each RFA region a

⁹ DoEE, *Conservation Advices*, www.environment.gov.au/biodiversity/threatened/conservation-advices.html (accessed 24 April 2018).

¹⁰ DoEE, *Recovery Plans*, www.environment.gov.au/biodiversity/threatened/recovery-plans (accessed 24 April 2018)

¹¹ Explanatory Memorandum, Environment Protection and Biodiversity Conservation Bill 1999 (C'wth), para.[112]

comprehensive assessment has been undertaken to address the environmental, economic and social impacts of forestry operations¹².

NSW Legislation protecting Listed Species and Communities

When NSW RFAs were signed between 1999 and 2001, NSW threatened species were primarily managed under the *Threatened Species Conservation Act 1995* (NSW) (TSC Act). At this time, and up until 2004, the TSC Act required a recovery plan to be prepared for every threatened species and community listed in the TSC Act.

At a state level, as listings grew, the preparation of individual recovery plans for the large number of species and communities involved proved to be impractical. The costs for preparing recovery plans also varied greatly, estimated to be between \$5,000 and \$200,000¹³, and suggesting inconsistent interpretation of recovery plan requirements. At this point the rate of plan preparation was not keeping pace with new species listings, and government investment in plan preparation was recognised as disproportionate to the investment in recovery and threat abatement actions.

To correct the imbalance between planning and implementation a Priority Action Statement (PAS) was introduced in 2007¹⁴. While recovery plans continued to be important for high-profile, complex or critically endangered threatened species, around 90% of threatened species in NSW were ultimately managed solely under the PAS.

The PAS contained a list of actions for recovering each threatened species, population and community, and for decreasing each key threat, in NSW. When the PAS was formally approved in 2007, more than 10,000 actions were publicly exhibited. Feedback was used to improve and update the actions.

All PAS actions were documented and made publicly available to support the development and implementation of management programs. Each PAS action was assigned to one of 34 recovery and threat abatement strategies (e.g. habitat management, community liaison). The implementation of PAS actions under each strategy could also be assessed to better understand the types of activities being managed.

In 2017, the *Biodiversity Conservation Act 2016* (NSW) (BC Act) replaced the TSC Act with all current NSW threatened species now listed under the BC Act. Recovery plans do not form part of the BC Act, but existing plans remain a reference source for applicable species.

¹² Explanatory Memorandum, Environment Protection and Biodiversity Conservation Bill 1999 (C'wth), para.[113]

¹³ The conservation and protection of national threatened species and ecological communities, Australian National Audit Office, Department of the Environment and Water Resources, Audit Report No 31, 2007

¹⁴ Review of the NSW Threatened Species Priorities Action Statement, NSW Office of Environment and Heritage, 2013

Under the BC Act, the PAS is replaced by the NSW Biodiversity Conservation Program which outlines current strategies for assisting threatened species, populations and ecological communities.

The Biodiversity Conservation Program (BC Program) consists of:

- a. strategies to achieve the objectives of the Program in relation to each threatened species and threatened ecological community
- b. a framework to guide the setting of priorities for implementing the strategies
- c. a process for monitoring and reporting on the overall outcomes and effectiveness of the Program.

Through the BC Program, the *Saving our Species* program implements strategies through its conservation projects.

Strategies to minimise the impacts of key threatening processes may, but are not required to, be included in the BC Program.

The head of the NSW environment agency is to ensure that a strategy to achieve the objectives of the BC Program in relation to a threatened species or threatened ecological community is included in the BC Program within 2 years after the species or ecological community is listed in the BC Act.

In NSW, the assessment of extinction risk to species and of key threatening processes is undertaken by the NSW Threatened Species Scientific Committee. The NSW Threatened Species Scientific Committee was established under the BC Act and it is an independent committee of scientists appointed by the Minister for the Environment.

The NSW Threatened Species Scientific Committee determines which threatened species, populations of a species and ecological communities should be listed and their risk of extinction and which threats should be listed as key threatening processes using the common assessment method. The common assessment method uses consistent categories and criteria, and is applied at the 'national scale', meaning that all occurrences of the species within Australia are considered in the assessment¹⁵.

Consistent with the BC Program and threat abatement plans under the Saving our Species program, the IFOAs for public lands and Private Native Forestry Codes of Practice (NSW) (PNF Codes) for private lands contain measures designed to mitigate the impact of forestry operations on threatened species and threatened ecological species.

Threatened ecological communities, as listed by the NSW Threatened Species Scientific Committee, are not available for timber harvesting as the *National Parks and Wildlife Act 1974* (NSW) (NPW Act) prohibits the picking or harming of all threatened ecological communities¹⁶. The current IFOAs do not authorise any forestry operations in threatened

¹⁵ DoEE, *Common Assessment Method*, www.environment.gov.au/biodiversity/threatened/cam (accessed 23 April 2017)

¹⁶ S118A of the NPW Act was revoked in August 2017. The relevant provision is now Clause 2.2 of the BC Act.

ecological communities. As such, the threatened ecological communities mapped by the EPA continue to be unavailable for timber production. Most of these threatened ecological communities have been unavailable for harvesting for over a decade¹⁷.

¹⁷ NSW EPA, Threatened ecological communities mapping, www.epa.nsw.gov.au/your-environment/native-forestry/mapping-research/threatened-ecological-communities-mapping (accessed 30 April 2018)

Indicator 1.2b Status of forest dwelling species at risk of not maintaining viable breeding populations, as determined by legislation or scientific assessment

This indicator measures the conservation status of nationally listed threatened forest dwelling species. Documentation of this information over time allows analysis of changes to species' conservation status indicating the extent to which forest species biodiversity is being maintained.

As of April 2018, there are 412 EPBC Act listed threatened fauna and flora species known or likely to occur within the NSW RFA regions (**Table 1.8**). Appendix 2 details all EPBC listed species which have been recorded within the NSW RFA regions as well as the status of national conservation advices and recovery plans. Appendix 3 details NSW listed threatened species.

Table 1.8 Number of threatened EPBC listed species by RFA region

RFA region	Critically Endangered	Endangered	Vulnerable	Total
Eden	7	30	68	105
North East (Upper and Lower)	21	93	180	294
Southern	24	60	113	197
Total across all RFA regions¹	37	133	242	412

Notes:

¹Totals are less than the sum of the number for each listed category because many species occur in more than one RFA. Threatened marine mammals, fish, sharks and migratory birds that are restricted to coastal and marine environments are excluded from the list.

Source: Environmental Resources Information Network Species of National Environmental Significance Database.

Eden RFA

The Eden CRA assessed more than 150 threatened and/or forest dependent flora and 55 fauna species, including the greater glider (*Petauroides volans*), the long footed potoroo (*Potorous longipes*) and the stuttering barred frog (*Mixophyes balbus*). Under the Eden RFA, these species were protected within the CAR reserve system and through prescriptions. For example, the region contains the northern-most occurrence of the endangered long footed potoroo. The Recovery Plan for this species was approved in February 2000 and details specific management actions to assist in recovery. The Eden RFA has assisted in the protection of the long footed potoroo by including almost all of its known habitat within dedicated reserves.

As of April 2018, there were 105 EPBC listed fauna and flora species recorded within the Eden RFA region (**Table 1.9**). Since the signing of Eden RFA on 26 August 1999, 29 species have been added to the threatened species list under the EPBC Act.

Table 1.9 Number of threatened EPBC listed species in the Eden RFA as of April 2018

Type	Critically Endangered	Endangered	Vulnerable	Total
Flora	1	14	32	47
Reptile	0	1	2	3
Bird	6	8	19	33
Mammal	0	4	7	11
Frog	0	2	6	8
Insect	0	0	0	0
Snail	0	0	0	0
Freshwater Fish and Crustaceans	0	1	2	3
Total	7	30	68	105

Notes:

Marine mammals, fish, sharks and migratory birds that are restricted to coastal and marine environments are excluded from the list.

Source: Environmental Resources Information Network Species of National Environmental Significance Database.

Southern RFA

The Southern CRA assessed more than 165 threatened or regionally significant forest-dependent flora species and 69 fauna species. Fauna included the giant burrowing frog (*Heleioporus australiacus*), greater glider (*Petauroides volans*), and tiger quoll (*Dasyurus maculatus*). Flora included the wee jasper grevillea (*Grevillea iaspicula*), and phantom wattle (*Acacia phasmoides*). Under the RFA, these species were protected within the CAR reserve system and through prescriptions.

As at April 2018, there were 205 listed fauna and flora species recorded within the Southern RFA region, of which 58% are flora species and 42% are fauna species (**Table 1.10**). Since the signing of Southern RFA on 24 April 2001, 58 species have been added to the threatened species list under the EPBC Act.

Table 1.10 Number of threatened EPBC listed species in the Southern RFA as of April 2018

Type	Critically Endangered	Endangered	Vulnerable	Total
Flora	10	39	70	119
Reptile	0	3	3	6
Bird	8	9	23	40
Mammal	0	4	9	13
Frog	2	3	6	11
Insect	1	0	0	1
Snail	0	0	0	0
Freshwater Fish and Crustaceans	3	2	2	7
Total	24	60	113	197

Notes:

Marine mammals, fish, sharks and migratory birds that are restricted to coastal and marine environments are excluded from the list.

Source: Environmental Resources Information Network Species of National Environmental Significance Database.

North East RFA

The North East CRA assessed more than 109 threatened flora and 144 fauna species. Fauna included the barking owl (*Ninox connivens*), masked owl (*Tyto novaehollandiae*), southern barred frog (*Mixophyes balbus*), and yellow bellied glider (*Petaurus australis*). Flora included the hairy quandong (*Elaeocarpus williamsianus*) and species of green hood orchid. Under the RFA, these species are protected within the CAR reserve system and through prescriptions.

As at April 2018, there were 302 listed fauna and flora species recorded within the North East RFA regions, of which 69.5% are flora species and 30.5% are fauna species (**Table 1.11**).

Since the signing of North East RFA on 31 March 2000, 59 species have been added to threatened species list under the EPBC Act.

Table 1.11 Number of threatened EPBC listed species in the North East RFA as of April 2018

Type	Critically Endangered	Endangered	Vulnerable	Total
Flora	11	69	130	210
Reptile	1	0	9	10
Bird	6	12	23	41
Mammal	0	3	10	13
Frog	0	4	6	10
Insect	1	1	0	2
Snail	1	1	0	2
Freshwater Fish and Crustaceans	1	3	2	6
Total	21	93	180	294

Notes:

Marine mammals, fish, sharks and migratory birds that are restricted to coastal and marine environments are excluded from the list.

Source: Environmental Resources Information Network Species of National Environmental Significance Database.

Status of Listed Species recovery plans and conservation advice

Of the 412 listed threatened species known or likely to occur within the NSW RFA regions (Appendix 2), 410 have either a conservation advice, recovery plan or both to assist in species recovery (**Table 1.12**). National plans are being finalised for the grey-headed flying fox (*Pteropus poliocephalus*) and the long-nosed potoroo (*Potorous longipes*) (found in all three NSW RFA regions). The eight non-threatened listed migratory birds do not require a conservation advice or recovery plan.

Table 1.12 Status of recovery plans and conservation advices for listed threatened species in the NSW RFA regions

Status of conservation advice and recovery plans	RFA region			Total ¹
	Eden	Southern	North East	
Both Conservation advice and Recovery plan approved	10	27	59	80
Conservation advice approved, Recovery plan required	15	30	26	38
Conservation advice approved, Recovery plan not required	33	78	147	202
Recovery plan approved, no Conservation advice	45	60	60	90
Recovery plan in development, no Conservation advice	2	2	2	2
Total number of threatened species	105	197	294	412

Notes:

Table excludes non-threatened listed migratory birds as conservation advices and recovery plans not required.

Marine mammals, fish, sharks and migratory birds that are restricted to coastal and marine environments are excluded from the list.

Source: Environmental Resources Information Network Species of National Environmental Significance Database.

Figure 1.13 shows the distribution of threatened forest-dwelling and forest-dependent fauna and flora species across NSW. The number of listed species per unit area is highest in the coastal areas, where species diversity is also high.

Forest-dwelling species are species that occur in forest vegetation types, although they may also occur outside forests. Forest-dependent species are species that require a forest habitat for at least part of their lifecycles¹⁸.

¹⁸ ABARES, State of the Forest Report 2013

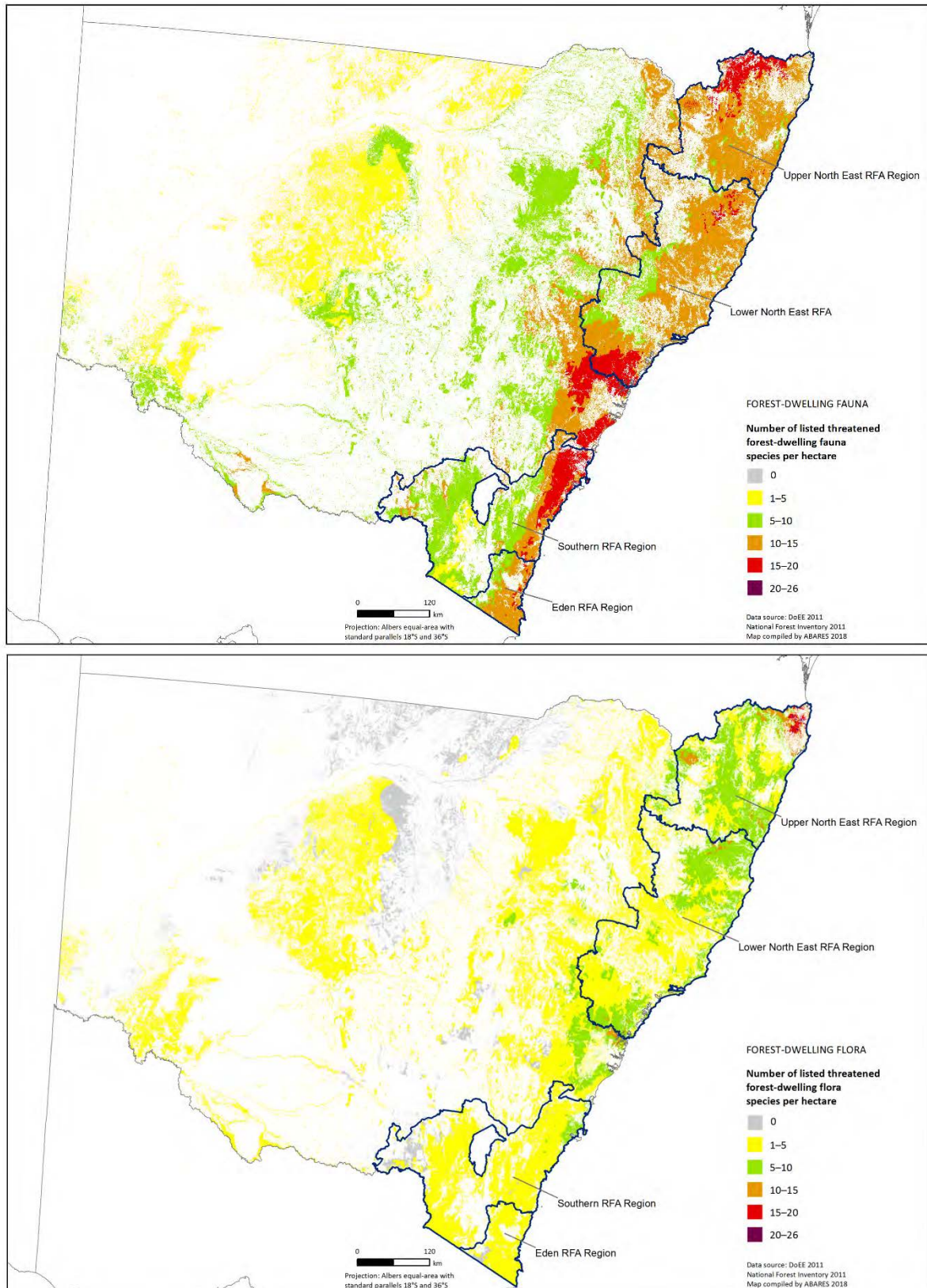


Figure 1.13 Distribution of threatened forest dwelling fauna and flora species in the NSW RFA regions as of 2011

Notes: Map shows the modelled potential coincidence of threatened species listed under the EPBC Act with the 2013 forest extent (National Forest Inventory), including areas where the species are known to occur, areas where they are likely to occur, and areas where they may occur.

Source: Environmental Resources Information Network Species of National Environmental Significance Database.

There are 28 ecological communities listed as threatened under the EPBC Act in the NSW RFA regions (**Table 1.13**). All 28 threatened ecological communities were listed between 12 December 2005 and 20 March 2018 after the three NSW RFAs had been signed between 1999 and 2001.

Table 1.13 Number of Threatened Ecological Communities listed under the EPBC Act by RFA regions as at April 2018.

RFA region(s)	Critically Endangered	Endangered	Vulnerable	Total
Eden	5	4	1	10
North East ¹	12	8	1	21
Southern	7	9	1	17
Total²	16	11	1	28

Notes:

¹ Figures include both Upper and Lower North East RFA regions which are covered by the single North East RFA

² Totals are less than the sum of the number for each listed category because many species occur in more than one RFA region.
Source: Environmental Resources Information Network Species of National Environmental Significance Database.

Figure 1.14 presents the modelled potential distribution of threatened forest ecological communities, calculated as a summed frequency of the listed threatened forest ecological communities that could occur at a site¹⁹.

¹⁹ As per the State of the Forest Report 2013

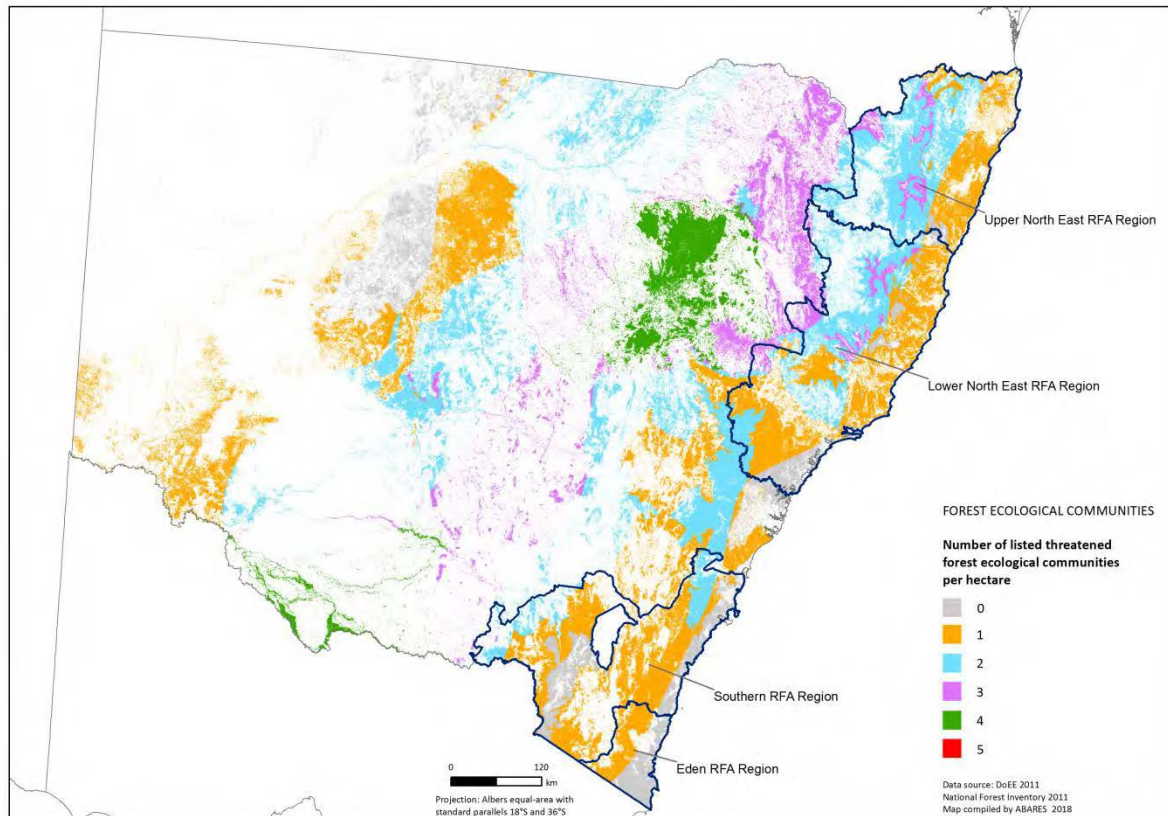


Figure 1.14 Potential distribution of listed ecological communities

Note: Map shows the modelled potential coincidence of threatened ecological communities listed under the EPBC Act with the 2013 forest extent, including areas where the communities are known to occur, areas where they are likely to occur, and areas where they may occur. Some endangered ecological communities are restricted in extent and cannot readily be visualised at the scale of this map.

Source: Environmental Resources Information Network Species of National Environmental Significance Database.

Status of Listed Communities recovery plans and conservation advice

Of the 28 EPBC listed threatened ecological communities within NSW RFA regions (Appendix 2), all have either a conservation advice, recovery plan or both in place to assist in recovery. The Commonwealth Minister for the Environment has determined that for 12 listed communities with conservation advices, recovery plans are also required.

Case Study: Monitoring the response of Koalas to timber harvesting in New South Wales

Koalas (*Phascolarctos cinereus*) are a cryptic species that are surprisingly difficult to survey, especially in remote, tall forests. This has led to a poor knowledge-base about their status in forested areas distant from population centres. The key threats to Koalas are identified as permanent tree cover loss by land clearing, increased housing around bushland, road traffic, dog attack, prolonged drought and disease (McAlpine et al. 2015). Notwithstanding this, the impact of forest management and timber harvesting on Koalas has been a frequent focus of community discussions about forestry.

In 2015, a joint project between the NSW Department of Primary Industries and the EPA produced a new habitat map to assist with better identifying important Koala habitat in areas proposed for timber harvesting in north east NSW (Law et al. 2017). As part of the field validation of this habitat map, an innovative acoustic method for surveying Koalas was trialled.

The success of this survey method led to new research that has been systematically assessing the status of Koalas in forests and their response to harvesting. Acoustic devices (SongMeters) are set at sites for one week to record male bellows during the breeding seasons. Recordings are scanned by Ecosounds software at the Queensland University of Technology to identify Koala bellows amongst other nocturnal sounds. The key aim of this research is to determine if Koala occupancy varies with harvest intensity and time since harvest.

Acoustic surveys were undertaken between 2015 and 2017, targeting the modelled high quality habitat (Law et al. 2017). This is an extensive area, representing ~ 1.6 million hectares of forested habitat for Koalas in northern NSW. Sites were stratified by known harvest history, including unharvested sites. In total, 170 sites were surveyed making it one of the most comprehensive, regional scale surveys for Koalas in NSW. Preliminary results indicate unexpectedly high occupancy rates (~80 %) across a broad range of forests and amongst all successional ages and harvest intensities. Analysis is proceeding to allow a more comprehensive assessment of the response of Koalas to timber harvesting. Acoustic detection is proving to be a highly successful and efficient technique for recording Koalas in forested areas where traditional surveys have had limited effectiveness. In addition, the three years of data collection will form the basis of an ongoing forest landscape monitoring program for Koalas.

Case Study: Bandicoots on film in forests and heathlands

The southern brown bandicoot (*Isodon obesulus*) is listed as an endangered species in NSW. Since 2013, infrared cameras have been used to monitor trends in southern brown bandicoot populations in Ben Boyd National Park and Nadgee Nature Reserve in the far south-eastern corner of NSW. Camera monitoring can help establish the impact of environmental management strategies in these reserves, particularly intensive fox control work and ecological burning.

In addition to the target species, the cameras record information about the status of other threatened fauna, including the long-nosed potoroo (*Potorous tridactylus*) and eastern pygmy possum (*Cercartetus nanus*), as well as other species of interest for environmental management, such as the long-nosed bandicoot (*Perameles nasuta*).

Camera monitoring to-date has indicated that the southern brown bandicoot occurs in discrete patches of habitat within each reserve, and has persisted in those patches irrespective of surrounding management activities. This is also the case for the long-nosed bandicoot, which is common and widespread, and the long-nosed potoroo, also relatively widespread. However, monitoring has not been in place for long enough to infer meaningful trends in patterns of occurrence of these species.

Key threatening processes

There are 13 EPBC threatening processes listed under the EPBC Act affecting threatened species in the NSW RFA regions (see **Table 1.14**). The Australian Government has developed threat abatement plans for most of the key threatening processes registered under the EPBC Act.

Table 1.14 Key threatening processes affecting threatened species in NSW RFA regions

EPBC listed key threatening process	Effective listing date	Threat abatement plan date of approval
Competition and land degradation by rabbits	16 July 2000	2016
Competition and land degradation by unmanaged goats	16 July 2000	2008
Dieback caused by the root-rot fungus (<i>Phytophthora cinnamomi</i>)	16 July 2000	2014
Predation by European red fox	16 July 2000	2008
Predation by feral cats	16 July 2000	2015
Land clearance	4 April 2001	NA - Threat abatement plan not considered a feasible, effective or efficient way to abate the process
Loss of climatic habitat caused by anthropogenic emissions of greenhouse gases	4 April 2001	NA - Commonwealth, States and Territories have actions underway to abate this Key Threatening Process and therefore a threat abatement plan is not considered a feasible, effective or efficient way to abate the process.
<i>Psittacine circoviral</i> (beak-and-feather) disease affecting endangered psittacine species	4 April 2001	2005 (This plan ceased on 1 October 2015, and the Department of Environment and Energy has developed a non-statutory threat abatement advice)
Predation, habitat degradation, competition and disease transmission by feral pigs	6 August 2001	2017
Infection of amphibians with chytrid fungus, resulting in chytridiomycosis	23 July 2002	2016

EPBC listed key threatening process	Effective listing date	Threat abatement plan date of approval
Reduction in biodiversity of Australian native fauna and flora due to the red imported fire ant, <i>Solenopsis invicta</i>	2 April 2003	2006 (This plan ceased on 1 October 2016, and may soon be replaced by a new plan)
Biological effects, including lethal toxic ingestion, caused by cane toads (<i>Bufo marinus</i>)	12 April 2005	2011
Loss and degradation of native plant and animal habitat by invasion of escaped garden plants, including aquatic plants	8 January 2010	NA - In 2009 the Minister for the Environment decided not to have a threat abatement plan for this key threatening process. This decision was reviewed in 2014 and the original decision was upheld.

Note:

NA – Not applicable

Key threatening processes are as listed in the EPBC database.

Source: www.environment.gov.au/cgi-bin/sprat/public/publicgetkeythreats.pl.

Case Study: Imported red fire ants impact on biodiversity in the NSW RFA regions

The Red Imported Fire Ant (RIFA) is a small colonial ant that is a native of the Pantanal region of Southern Brazil in South America. They damage plants by eating fruit, seeds, tunnelling into stems and girdling seedlings. They also prey heavily on ground invertebrates and attack any slow moving vertebrates such as bird nestlings.²⁰

On 28 November 2014, the Commonwealth Department of Agriculture staff at Port Botany detected RIFA during routine surveillance. DNA testing from the one infested site positively confirmed the samples as a new incursion of RIFA into Australia.

Following a successful cross government response, a statistical review of the surveillance conducted at Port Botany concluded that there is a high confidence that there are no further nests within the 2km surveillance zone.

The National Biosecurity Management Group unanimously resolved that movement restrictions at Port Botany could be lifted once prescribed baiting and luring commitments had been fulfilled in 2016.

²⁰ DoEE, Reduction in impacts of tramp ants on biodiversity in Australian and its territories, www.environment.gov.au/biodiversity/threatened/publications/tap/tramp-ants (accessed 30 April 2018)

Lifting of the movement restrictions allowed businesses and the general public in the Port Botany area to freely move RIFA host material such as soil, plants and timber. This is a significant milestone in the eradication program.²¹

Table 1.15 highlights the EPBC Act listed species found in NSW RFA regions known to be threatened by red imported fire ants. Impacts are being managed by a national threat abatement plan, available on the Department of the Environment and Energy website.

Table 1.15 EPBC listed species at risk from fire ants in NSW RFA regions²²

Common name	Scientific name	EPBC Listing	RFA region	Reason for risk to fire ants
Plains-wanderer	<i>Pedionomus torquatus</i>	Critically Endangered	S	Ground-nesting species.
Eastern Bristlebird	<i>Dasyornis brachypterus</i>	Vulnerable	NE	Nest usually near the ground in clumps of grass or small shrubs.
Squatter Pigeon (southern)	<i>Geophaps scripta scripta</i>	Vulnerable	NE	Nest in a scrape in the ground.
Black-breasted Button-quail	<i>Turnix melanogaster</i>	Vulnerable	NE	Ground birds that live in grasslands (open habitat).
Mallee fowl	<i>Leipoa ocellata</i>	Vulnerable	S	This species is a mound-builder and so their eggs and hatching chicks are potentially at risk from fire ant predation.

Notes:

RFA regions: NE – North East, S – Southern, E – Eden

Source: www.environment.gov.au/biodiversity/threatened/key-threatening-processes/reduction-in-native-fauna-and-flora-due-to-red-imported-fire-ant

Case Study: Predation by the European red fox

'Predation by the European red fox (*Vulpes vulpes*) is listed as a key threatening process under the EPBC Act. Under the EPBC Act, the Australian Government, in consultation with the

²¹ www.dpi.nsw.gov.au/biosecurity/insect-pests/fire-ants accessed 29 May 2018

²² Commonwealth of Australia. 2006. *Threat abatement plan to reduce the impacts of tramp ants on biodiversity in Australia and its territories*, Department of the Environment and Heritage, Canberra

states and territories, developed the Threat Abatement Plan for Predation by the European Red Fox. The threat abatement plan aims to reduce the impact of predation by foxes by:

- Preventing foxes occupying new areas in Australia and eradicating foxes from high-conservation-value 'islands';
- Promoting the maintenance and recovery of native species and ecological communities that area affected by fox predation;
- Improving knowledge and understanding of fox impacts and interactions with other species and other ecological processes;
- Improving the effectiveness, target specificity, integration and humaneness of control options for foxes; and
- Increasing awareness of all stakeholders of the objectives and actions of the threat abatement plan, and of the need to control and manage foxes.

In addition to the national Threat Abatement Plan, the NSW Fox Threat Abatement Plan 2010 establishes priorities for fox control to conserve biodiversity in NSW. At present, intensive across-tenure fox control has been established at more than 50 priority sites over almost 1 million hectares of public and private lands. Monitoring programs have been established to measure the responses of target threatened species, other native fauna and foxes at these sites. Monitoring aims to refine the priorities for control and the methods used over time. The WildCount monitoring program has provided over ten years of monitoring data on the Red Fox, among other animals. WildCount uses motion-sensitive digital cameras at 200 sites across 146 parks and reserves in eastern NSW and looks at trends in occurrence of animals at these sites, to understand if animals are in decline, increasing or stable.

National Estate values

The term *National Estate* refers to places defined in section 4 of the repealed *Australian Heritage Commission Act 1975* (Cth). After the signing of the three NSW RFAs, the *Australian Heritage Commission Act 1975* (Cth) was repealed and the Register of the National Estate was phased out. As a consequence, the RFAs do not reflect the current system of heritage protection under the EPBC Act through the National and Commonwealth Heritage Lists and the *Australian Heritage Council Act 2003* (Cth).

There are 6 places on the National Heritage List and 23 places on the Commonwealth Heritage List within the NSW RFA regions. Most of these places have management plans that outline how the heritage values of the site are protected.

For the past 20 years, the NSW Forest Management Framework has provided for the protection of National Heritage Values of National Heritage Places in accordance with National Heritage Management Principles.

Changes to National Legislation

Closure of the Register of the National Estate

After the NSW RFAs were signed between 1999 and 2001, a new system of national heritage protection was introduced. The Register of the National Estate was a national list of places of natural, historic and Indigenous significance. Each site was identified under the repealed *Australian Heritage Commission Act 1975* (Cth) and the EPBC Act. The Register was maintained by the former Australian Heritage Commission and later the Australian Government between 1975 and 2007.

In 1997, the Council of Australian Governments agreed that it was more appropriate for heritage listing and protection to be the responsibility of the government agencies that were best placed to deliver agreed outcomes. As a result, the *Australian Heritage Commission Act 1975* (Cth) was repealed and the Register of the National Estate was phased out as a statutory list.

The Register was frozen in 2007 and ceased to be a recognised statutory list in February 2012. The Register of the National Estate is maintained on a non-statutory basis as a publicly available archive of information on more than 13,000 places throughout Australia. This list can be publicly accessed on the Australian Heritage Database.

A new national heritage system

The expiration and repeal of parts of the EPBC Act and the *Australian Heritage Council Act 2003* (Cth) relating to the Register of National Estate did not diminish protection of Commonwealth heritage places. These parts were superseded by stronger ongoing heritage protection provisions under national environment law.

National Estate Values are now managed through a combination of the National and Commonwealth Heritage Lists, the NSW Heritage Register and the Heritage Codes of local planning schemes. The National Heritage List includes places of outstanding heritage value

to the nation, and the Commonwealth Heritage List includes heritage places owned or controlled by the Commonwealth.

Commonwealth and National Heritage List assessment

Anyone can nominate a place with significant or outstanding heritage values for the Commonwealth or National Heritage List. The Australian Heritage Council assesses the values of nominated places against set criteria and makes recommendations to the Minister for the Environment about listing. There are two key tools used to assess Commonwealth and National Heritage List nominations: criteria and thresholds. To reach the threshold for the National Heritage List, a place must have 'outstanding' heritage value to the nation. This means that it must be important to the Australian community as a whole. The threshold for inclusion on the Commonwealth Heritage List is local heritage significance.

NSW legislation to protect National Estate Values

The NSW State Heritage Register was created in 1999 and now lists over 1,650 items state-wide, in both private and public ownership. Places identified as being of state significance are protected under the *Heritage Act 1977* (NSW). The *Heritage Act 1977* (NSW) provides for an understanding and conservation of the State's heritage, identification and registration and interim protection of items of state heritage significance, encouraging the adaptive reuse of, and assisting owners with the conservation of items of State heritage significance. This Act constitutes the Heritage Council of New South Wales and confers on it functions relating to the State's heritage.

The State Heritage Register is a list of places and objects of particular importance to the people of NSW. A place or object is state significant if it is important for the whole of NSW. Heritage items may be valued by particular groups in the community, such as Aboriginal communities, religious groups or people with a common ethnic background.

The Heritage Council has developed criteria to help establish whether an item is state significant. Some places and items may not reach the threshold for listing on the State Heritage Register but may be of local heritage significance within a local government area (LGA).

The State Heritage Register lists a diverse range of places, buildings and objects including: Aboriginal places, buildings, objects, monuments, gardens, natural landscapes, archaeological sites, shipwrecks, relics, streets, industrial structures, public buildings, shops, factories, houses, religious buildings, schools, conservation precincts, jetties, bridges and movable items such as church organs and ferries.

The State Heritage Inventory, also maintained by the NPWS, is a list of heritage items in New South Wales including Aboriginal Places, State Heritage Register, Interim Heritage Orders, State Agency Heritage Registers and Local Environmental Plans.

The Heritage Division of the NPWS is directly responsible for maintaining Aboriginal Places and the State Heritage Register.

The NPW Act requires Plans of Management (PoMs) to guide the conservation of biodiversity, rehabilitation of landscapes and the protection of natural and cultural heritage, including protection of world heritage values and management of world heritage properties in a park.

PoMs are maintained by the NPWS, and are legal documents developed to guide how a park will be sustainably managed. They also contain information about the natural environment, Aboriginal heritage, history, and recreational opportunities in a park, and include management principles for use of a park by Aboriginal people for cultural purposes, sustainable visitor or tourist use, natural resource management and land management practices.

NSW Case Study: Sealy Lookout Cultural Shows Highlight Region's Gumbaynggirr Heritage

The Forestry Corporation of NSW (FCNSW) has worked closely with local Aboriginal land councils (LALCs) and traditional owner groups for many years to identify and protect the rich history of Aboriginal cultural heritage in State forests and facilitate access for cultural activities.

In January 2017, a new cultural experience developed by Bularri Muurlay Nyanggan Aboriginal Corporation was announced²³, offering visitors to the award-winning Sealy Lookout and Korora Lookout in Orara East State Forest a unique insight into the region's Aboriginal cultural heritage.

Bularri Muurlay Nyanggan's Clark Webb said "visitors would enjoy more than two hours of songs, dance and bush tucker as well as dreamtime stories about local landforms along a guided walk from Sealy Lookout to Korora Lookout". "The Corporation is focussed on promoting Gumbaynggirr language and culture, and these cultural showcases are a fantastic opportunity for us to share some of our language and heritage with the local community as well as with visitors to our region".

The views from Sealy Lookout and Korora Lookout take in many landforms that have significance in Gumbaynggirr culture, so they are ideal locations to introduce people to our history and share some of our stories about these special places.

Visitors have commented that they had an enjoyable and welcoming experience that provides a unique insight into local Aboriginal language, songs and culture, and that it was a remarkable experience and rare opportunity to embrace Gumbaynggirr culture.

²³ www.forestrycorporation.com.au/about/releases/cultural-shows

Indicator 6.4b Registered places of non-Indigenous cultural value in forests that are formally managed to protect those values

This indicator measures and monitors management regimes for non-Indigenous cultural values, such as historical, research, education, aesthetic, and social heritage values. Maintaining these values is integral to the protection of non-Indigenous peoples values associated with forests.

Across NSW, 2,225,000 hectares of forested land is on sites included in the Non-Indigenous Heritage Sites of Australia dataset²⁴ (**Figure 1.15**). The current places in NSW RFA regions on the National Heritage List and the Commonwealth Heritage List are provided in **Table 1.16** and **Table 1.17**.

²⁴ Source: ABARES

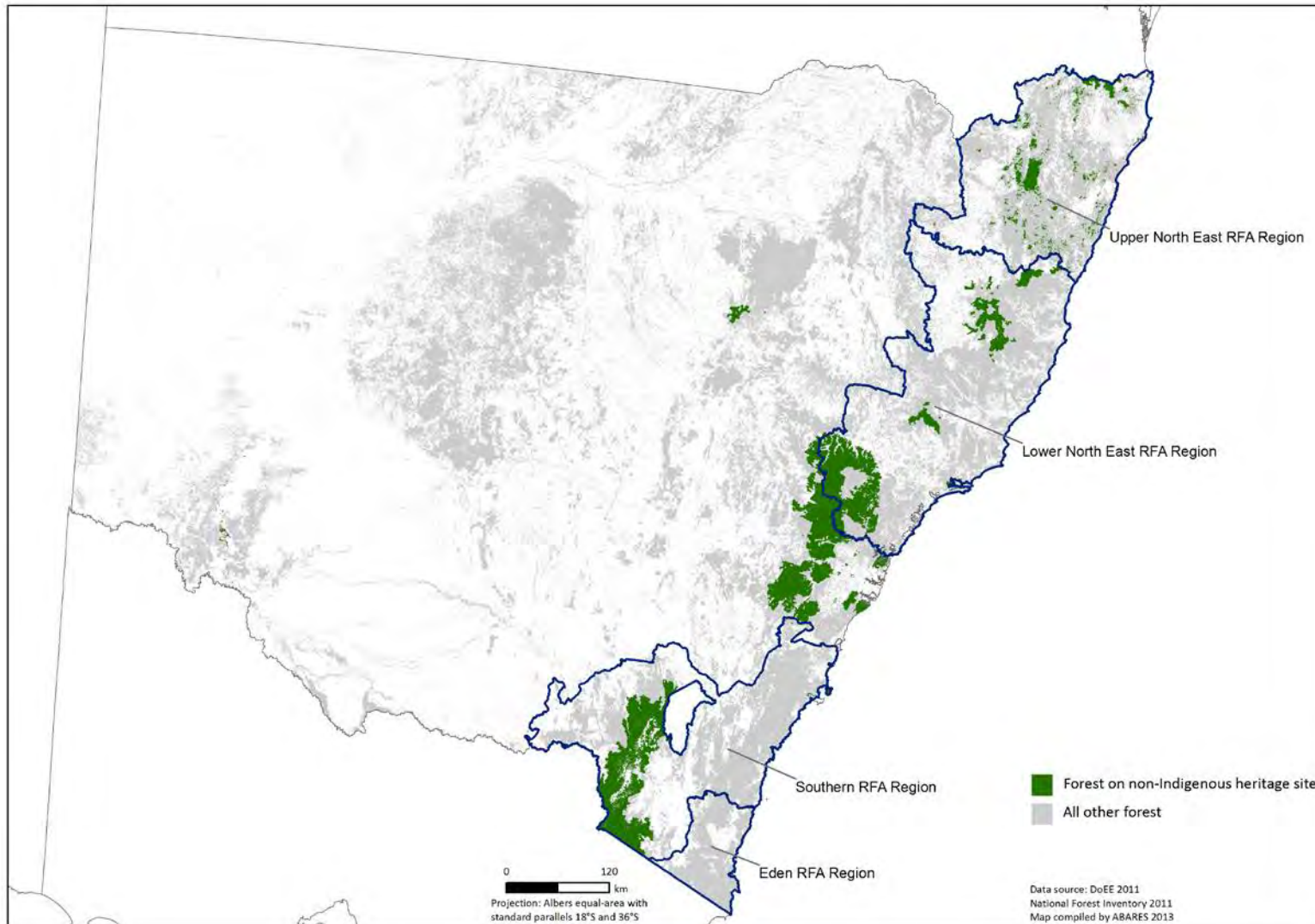


Figure 1.15 Forests on sites included in the Non-Indigenous Heritage Sites of Australia database

Table 1.16: NSW National Heritage List places

Name	Type	RFA area	Listing date
Gondwana Rainforests of Australia*	Natural	NE	21/5/2007
The Greater Blue Mountains Area (GBMWAH)*	Natural	NE, S	21/5/2007
Australian Convict Sites (Old Great North Road)*	Natural	NE	1/8/2007
Snowy Mountains Scheme	Historic	S	14/10/2016
Australian Alps National Parks and Reserves	Natural	S	7/11/2008
Ku-ring-gai Chase National Park, Lion and Spectacle Island Nature Reserves	Natural	NE	15/12/2006

Notes:

RFA region: S – Southern, NE – North East, E – Eden

* Places are also a World Heritage property

Table 1.17: NSW Commonwealth Heritage List places

Place	Type	RFA area	Listing date
Armidale Post Office	Historic	NE	8/11/2011
Beecroft Peninsula	Natural	S	22/06/2004
Bundanon Trust Property	Historic	S	21/09/2015
Fort Wallace	Historic	NE	22/06/2004
Googong Foreshores Cultural and Geodiversity Heritage Areas	Historic	S	3/11/2017
Hunter River Lancers Training Depot	Historic	NE	22/06/2004
Kempsey Post Office	Historic	NE	8/11/2011
Kiama Post Office	Historic	S	8/11/2011
Macksville Post Office	Historic	NE	8/11/2011
Maitland Post Office	Historic	NE	8/11/2011
Murinbin House Group	Historic	NE	22/06/2004

Place	Type	RFA area	Listing date
Muswellbrook Post Office	Historic	NE	8/11/2011
Nobbys Lighthouse	Historic	NE	22/06/2004
Point Perpendicular Light-station	Historic	S	22/06/2004
Scone Post Office	Historic	NE	22/08/2012
Smoky Cape Lighthouse	Historic	NE	22/06/2004
Sugarloaf Point Lighthouse	Historic	NE	22/06/2004
Tumut Post Office	Historic	S	22/08/2012
Williamtown RAAF Base Group	Historic	NE	22/06/2004
Wingham Post Office	Historic	NE	22/08/2012
Yass Post Office	Historic	S	8/11/2011

Notes:

RFA region: S – Southern, NE – North East, E – Eden

World Heritage values

There are three World Heritage properties located within the NSW RFAs regions (**Table 1.18**). These are managed cooperatively by the NSW and Australian Governments in accordance with the Australian World Heritage Intergovernmental Agreement.

All three World Heritage properties have Statements of Outstanding Universal Value that describe the listed World Heritage values of each property. They also have comprehensive management/strategic plans that provide broad management principles for the area, and establish the framework for the integrated management, protection, interpretation and monitoring of the properties.

World Heritage properties are managed separately from processes put in place by the NSW RFAs, and are protected by Part 3 of the EPBC Act. The Australian and NSW Governments will continue to participate in the assessment and protection of any future World Heritage places consistent with the Australian World Heritage Intergovernmental Agreement.

Legislative protection of World Heritage values

The UNESCO World Heritage Convention 1972 establishes a list of places that have natural and/or cultural values of outstanding global significance. As a signatory to the convention, Australia has an obligation to identify, protect and conserve places on the World Heritage List²⁵.

Under the EPBC Act, World Heritage properties are matters of national environmental significance. The EPBC Act therefore provides protection for World Heritage properties by ensuring that an assessment process is undertaken for proposed actions (including forestry operations) that will, or are likely to, have a significant impact on the World Heritage values of a declared world heritage property. This process allows the Commonwealth Minister for the Environment to grant or refuse approval to take an action, and to impose conditions on the taking of an action within a world heritage property. The EPBC Act also provides for the preparation of management plans which set out the significant heritage aspects of the place and how the values of the site will be managed.

The exemption of forestry operations in RFAs from other Commonwealth assessment and approval requirements under section 38 of the EPBC Act does not apply to operations within World Heritage properties or Ramsar wetland sites²⁶.

World Heritage listing

To be inscribed on the World Heritage list, properties must demonstrate outstanding universal value and meet at least one of the ten selection criteria. These criteria are based on cultural heritage and natural heritage as defined in the World Heritage Convention.

²⁵ DoEE, Australian World Heritage laws, www.environment.gov.au/heritage/laws/world (accessed 26 April 2018)

²⁶ See section 42 of the EPBC Act.

Only the Australian Government can nominate Australian places for inclusion on the World Heritage List. The World Heritage Committee assesses nominated places against the set criteria and makes the final decision as to the places that are included on the World Heritage List.

NSW World Heritage sites

There are 6 World Heritage properties in NSW, of which three are located in or partly in the North East RFA regions (**Table 1.18**). Both the Greater Blue Mountains Area and Australian Convict Sites (Old Great North Road) World Heritage properties were listed after the signing of the North East RFA on 31 March 2000. There are no World Heritage properties currently within the Southern or Eden RFA regions (**Figure 1.16**).

Table 1.18 World Heritage properties located in NSW RFA regions

World Heritage site	RFA region	Class	Effective Date
1. Gondwana Rainforests of Australia	NE	Natural	17/12/1994
2. The Greater Blue Mountains Area	NE	Natural	3/12/2000
3. Australian Convict Sites (Old Great North Road)	NE	Cultural	31/7/2010

Note: NE includes both Upper and Lower North East RFA regions

The Gondwana Rainforests of Australia

The Gondwana Rainforests of Australia is a serial, cross-jurisdictional site comprising the major remaining areas of rainforest in southeast Queensland and northeast New South Wales. It was added to the World Heritage List in November 1986, under its original name 'Australian East Coast Temperate & Subtropical Rainforest Park'. The Gondwana Rainforests represents outstanding examples of major stages of the Earth's evolutionary history, ongoing geological and biological processes, and exceptional biological diversity. A wide range of plant and animal lineages and communities with ancient origins in Gondwana, many of which are restricted largely or entirely to the Gondwana Rainforests, survive in this collection of reserves. The Gondwana Rainforests also provides the principal habitat for many threatened species of flora and fauna.

Greater Blue Mountains World Heritage Area

The Greater Blue Mountains World Heritage Area (GBMWHA) is a deeply incised sandstone tableland that encompasses 1.03 million hectares of eucalypt-dominated landscape just inland from Sydney. The GBMWHA was inscribed on the World Heritage List in 2000 and included on the National Heritage List on 21 May 2007. Spread across eight adjacent conservation reserves, it constitutes one of the largest and most intact tracts of protected bushland in Australia. It also supports an exceptional representation of the taxonomic, physiognomic and ecological diversity that eucalypts have developed: an outstanding illustration of the evolution of plant life. A number of rare and endemic taxa, including relict

flora such as the Wollemi pine, also occur here. The geology and geomorphology of the area, which includes 300 metre cliffs, slot canyons and waterfalls, provides the physical conditions and visual backdrop to support these outstanding biological values.

Australian Convict Sites (Old Great North Road)

The Old Great Northern Road is part of the Australian Convicts Sites World Heritage property listed in 2010. It is one of the 11 Australian Convict Sites that comprise the World Heritage property. The Old Great North Road is a significant example of major public infrastructure developed using convict labour. Situated in its unaltered natural bushland setting, the Old Great North Road is the best surviving example of an intact convict-built road with massive structural works, which remains undisturbed by later development.

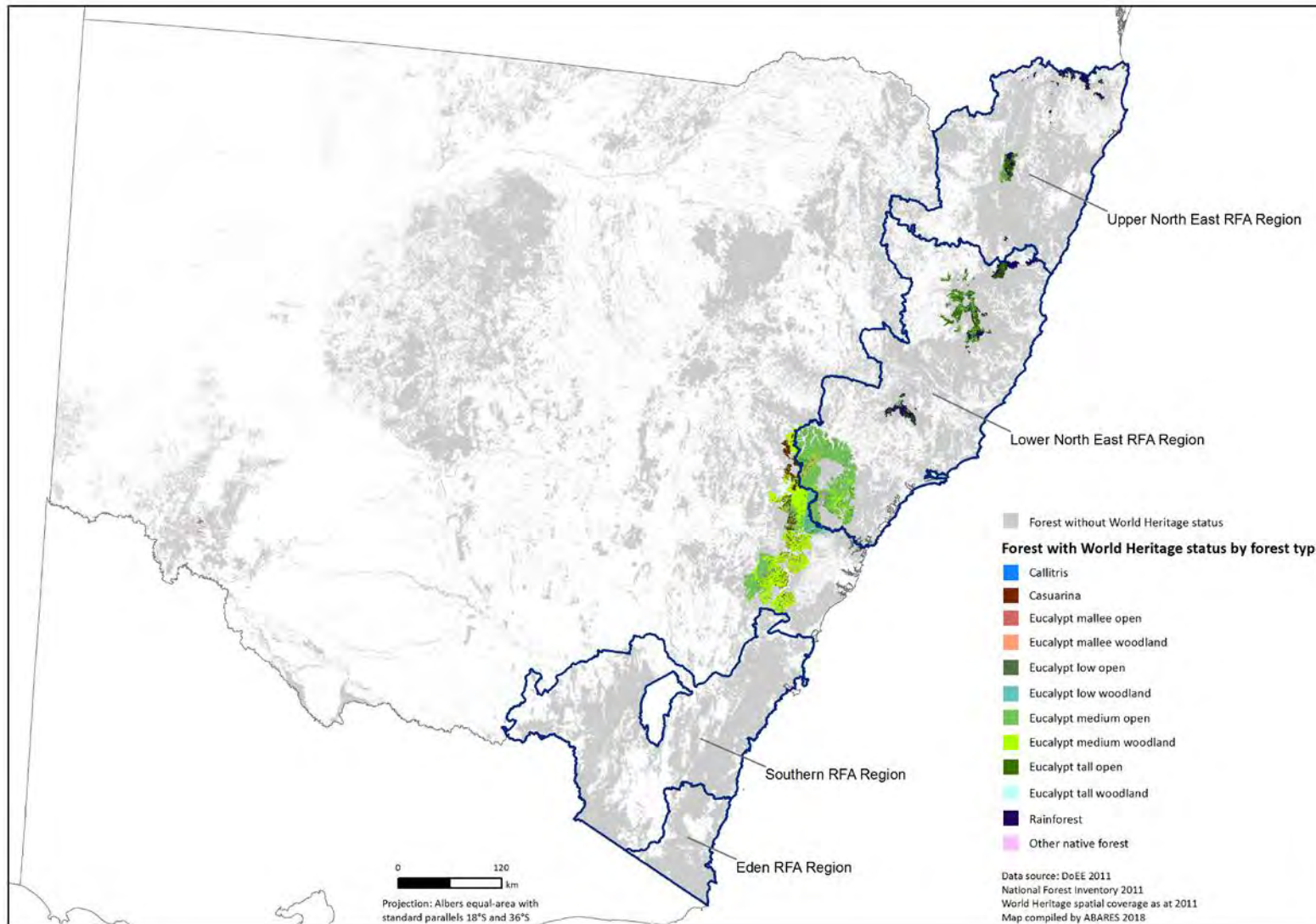


Figure 1.16 Native forest areas with World Heritage status within the NSW RFA regions

Extent of NSW World Heritage sites

Approximately 1,348,000 hectares of NSW's native forests are within World Heritage sites (equivalent to 5.9% of total forest in NSW). NSW has the highest proportion of forest within World Heritage sites of any state or territory in Australia (ABARES 2013).

Table 1.19 Area of native forest in World Heritage areas

Forest type	NSW Area of forest in World Heritage areas ('000 hectares)	Australia Area of forest in World Heritage areas ('000 hectares)
Acacia	0	17
Callitris	1	1
Casuarina	66	93
Eucalypt	1,113	2,637
Eucalypt mallee open	9	9
Eucalypt mallee woodland	8	8
Eucalypt low closed	0	1
Eucalypt low open	8	91
Eucalypt low woodland	35	121
Eucalypt medium closed	0	12
Eucalypt medium open	568	1,152
Eucalypt medium woodland	348	903
Eucalypt tall closed	0	0
Eucalypt tall open	137	308
Eucalypt tall woodland	0	32
Mangrove	0	77
Melaleuca	0	111
Rainforest	135	1,151

Forest type	NSW Area of forest in World Heritage areas (‘000 hectares)	Australia Area of forest in World Heritage areas (‘000 hectares)
Other native forest	33	201
Total forest in World Heritage areas	1,348	4,286
Total forest in each jurisdiction	22,681	124,751
World Heritage area forest as proportion of total forest in each jurisdiction (%)	5.9	3.4

Note: For this indicator data is only available at the State level.

Biodiversity Values

Biodiversity is the name given to the variety of living things, the different flora, fauna and organisms, the genetic information they contain and the ecosystems they form. Biodiversity values were fundamental in establishing a comprehensive, adequate and representative CAR reserve system under NSW RFAs and were a focus of the related CRAs.

The National Reserve System (NRS) is Australia's network of public, Indigenous and private protected areas over land and inland freshwater. Its focus is to secure long-term protection for samples of Australia's diverse ecosystems and the plants and animals they support. The NRS includes the protected areas and reserves established and effectively managed through the collective efforts of the Australian Government, the states, territories, local government, Indigenous and private landholders and non-government organisations.

Indicators of biodiversity value can include the number and diversity of flora and fauna species, ecological communities and forest types. These indicators take into account the range of flora and fauna species and communities, and the reserves established to protect biodiversity.

Indicator 1.1a Area of forest by forest type and tenure

Area of forest, by forest type

Comprehensive Regional Assessment

The extent of Forest Ecosystems reported in the NSW RFA regions was identified through the CRA process between 1995 and 2000, and has not been updated since that time.²⁷

Spatial data and related data tables associated with the NSW RFAs reported a total of 8.32 million hectares of Forest Ecosystems for all NSW RFA regions. By RFA region, 3.17 million hectares are in the Lower North East region, 2.45 million hectares in the Southern region, 2.17 million hectares in the Upper North East region and 533 thousand hectares in the Eden Region (**Table 1.20**).

²⁷ Further information on the CRA Forest Ecosystems classification and mapping projects for the RFA regions can be found at agriculture.gov.au/forestry/policies/rfa/regions/new-south-wales

Table 1.20 CRA Forest Ecosystem area in NSW RFA regions

Forest category	Area, by RFA region ¹ ('000 hectares)				Total
	Upper North East	Lower North East	Southern	Eden	
Forest Ecosystems	2,167	3,175	2,446	533	8,320

Source: ABARES

Notes:

¹Area derived by ABARES from spatial data associated with the Forest Ecosystem CRA reports published in 1998-2000 and RFA data tables published in 1999-2001

Totals may not tally due to rounding

Australia's State of the Forests Report 2013

The Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES), under the auspices of the National Forest Inventory (NFI), collects and communicates information on Australia's forests. The NFI collects and collates data from Commonwealth, state and territory government agencies and authorities, and from private land managers. These data are reported nationally, primarily in the Australia's State of the Forests Report (SOFR) series published every five years, most recently *Australia's State of the Forests Report 2013* (SOFR 2013)²⁸.

Prior to SOFR 2013, national forest area was derived from direct compilation of state and territory datasets of varying scales and completeness, and using different data collection methods, and is not included in this analysis.

For SOFR 2013, the NFI introduced a new, more rigorous and national technique for identifying forest area, called the Multiple Lines of Evidence approach. This technique analyses multiple forest cover datasets from national and state sources, including remotely sensed datasets, to delineate forest extent with improved accuracy. This methodology is different from the process undertaken to assemble the forest coverage for the NSW RFA CRAs, and uses different input datasets with a different time-stamp, so the NFI area figures and the CRA area figures cannot be compared.

For SOFR 2013, the NFI recognised three main categories of forest: 'Native forest', 'Industrial plantation' and 'Other forest'. Native forest comprises eight native forest types named after genus or structural form. Industrial plantation comprises three plantation types and includes only plantations grown on commercial scale for wood production. 'Other forest' includes non-commercial plantations and other forests planted for various purposes. The spatial forest extent dataset prepared for SOFR 2013 was published by ABARES as *Forests of Australia (2013) v2.0*.

²⁸ MIG (Montréal Process Implementation Group for Australia) & NFISC (National Forest Inventory Steering Committee) 2013, *Australia's State of the Forests Report 2013*. Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES), Canberra

NFI forest extent as prepared for SOFR 2013, by forest type

The NFI forest extent as prepared for SOFR 2013 across the four NSW RFA regions shows a total forest area of 9.59 million hectares, with 9.28 million hectares of Native forest, 286 thousand hectares of Industrial plantation and 30 thousand hectares of Other forest. **Table 1.21** shows the SOFR 2013 forest extent, by forest category for each RFA region. **Table 1.22** shows the SOFR 2013 forest extent, by forest type for each RFA region.

As noted above, differences in forest area figures reported between CRA reports (as sum of the Forest Ecosystem areas, **Table 1.20**) and SOFR 2013 (**Table 1.21** and **Table 1.22**) are the result of different collection and processing methodologies. The native forest area reported in **Table 1.21** and **Table 1.22** does not necessarily represent an actual change in forest area but a realistic indication of the forest area extent within forest ecosystems of the NSW RFA regions.

Table 1.21 NFI forest area as prepared for SOFR 2013 in NSW RFA regions, by NFI forest category

Forest category	Area, by RFA region ¹ ('000 hectares)				Total
	Upper North East	Lower North East	Southern	Eden	
Native forest	2,435	3,685	2,595	562	9,278
Industrial plantations	74	40	133	40	286
Other forest	8	17	4	2	30
Total forest	2,518	3,742	2,732	603	9,595

Notes:¹ Area derived by ABARES from *Forests of Australia (2013) v2.0*

Totals may not tally due to rounding

Table 1.22 NFI forest area as prepared for SOFR 2013 in NSW RFA regions, by NFI forest category and forest type

Forest type	Area, by RFA region ¹ ('000 hectares)				Total
	Upper North East	Lower North East	Southern	Eden	
Acacia	2	10	24	21	57
Callitris	97	2	0	0	99
Casuarina	6	6	41	34	87
Eucalypt	1,892	2,717	2,266	479	7,354
Mangrove	1	9	3	1	13
Melaleuca	24	40	4	0	68
Rainforest	169	321	49	9	548
Other native forest	244	581	209	18	1,051
Total native forest	2,435	3,685	2,595	562	9,278
Softwood	15	11	133	38	197
Hardwood	57	27	0	2	86
Unknown or mixed species	2	1	0	0	3
Total Industrial plantations	74	40	133	40	286
Other forest	8	17	4	2	30
Total forest	2,518	3,742	2,732	603	9,595

Notes: ¹ Area derived by ABARES from *Forests of Australia (2013) v2.0*

Totals may not tally due to rounding

Area of forest, by tenure

Comprehensive Regional Assessment

Spatial data and related data tables associated with the NSW RFAs reported a total of 8.32 million hectares in Forest Ecosystems for all NSW RFA regions, of which 4.74 million hectares (57 per cent) are on public land and 3.58 million hectares (43 per cent) are on private and leasehold land. **Table 1.23** shows the area of Forest Ecosystems separately by public land and by private and leasehold land for each RFA region.

Table 1.23 CRA Forest Ecosystem area, by tenure in NSW RFA regions

Forest Ecosystem tenure	Area, by RFA region ¹ ('000 hectares)					Proportion of total Forest Ecosystem area (%)
	Upper North East	Lower North East	Southern	Eden	Total	
Public	973	1,740	1,618	408	4,739	57
Private and leasehold	1,194	1,435	828	125	3,582	43
Total	2,167	3,175	2,446	533	8,320	100

Notes: ¹Area derived by ABARES from spatial data associated with the Forest Ecosystem CRA reports published in 1998-2000 and RFA data tables published in 1999-2001. Based on the best available data at signing of RFA.

Totals may not tally due to rounding

Australia's State of the Forests Report 2013

Australia's SOFR series reports forest tenure, or ownership, by six classes that condense the wide range of state and territory tenure systems. The six classes are:

- Leasehold forest,
- Multiple-use public forest,
- Nature conservation reserve,
- Other Crown land,
- Private forest (including Indigenous), and
- Unresolved tenure.

The spatial forest tenure dataset prepared for SOFR 2013 was published by ABARES as *Forests of Australia (2013) v2.0*.

NFI forest extent as prepared for SOFR 2013, by forest tenure

The NFI forest extent as prepared for SOFR 2013, extracted by the four NSW RFA regions, shows a total forest area of 9.59 million hectares, including 3.97 million hectares in private forest (41 per cent), 3.52 million hectares (37 per cent) in nature conservation reserves, 1.70 million hectares (18 per cent) in multiple-use public forests and 0.38 million hectares (4 per cent) in leasehold forest with negligible areas in other Crown lands and unresolved tenure. **Table 1.24** shows the NFI forest extent as prepared for SOFR 2013, by forest tenure class for each RFA region.

As noted above, differences in forest area figures reported between CRA reports (as sum of the Forest Ecosystem areas, **Table 1.23**) and SOFR 2013 (**Table 1.24**) are the result of different collection and processing methodologies. The native forest area reported in **Table 1.24** does not necessarily represent an actual change in forest area but a realistic indication of the forest area extent within forest ecosystems of the NSW RFA regions.

Table 1.24 NFI forest area as prepared for SOFR 2013 in NSW RFA regions, by forest tenure

Forest tenure class	RFA region ('000 hectares)					Proportion of total RFA forest area (%)
	Upper North East	Lower North East	Southern	Eden	Total	
Leasehold forest	130	116	133	6	384	4.0
Multiple-use public forest	499	513	477	213	1,701	17.7
Nature conservation reserve	650	1,335	1,284	250	3,519	36.7
Other Crown land	5	11	3	1	20	0.2
Private forest (Including Indigenous)	1,234	1,767	835	134	3,970	41.4
Unresolved tenure	1	0	0	0	1	0.0
Total forest	2,518	3,742	2,732	603	9,595	100.0

Notes: ¹ Area derived by ABARES from *Tenure of Australia's Forests (2013) v2.0*

Totals may not tally due to rounding

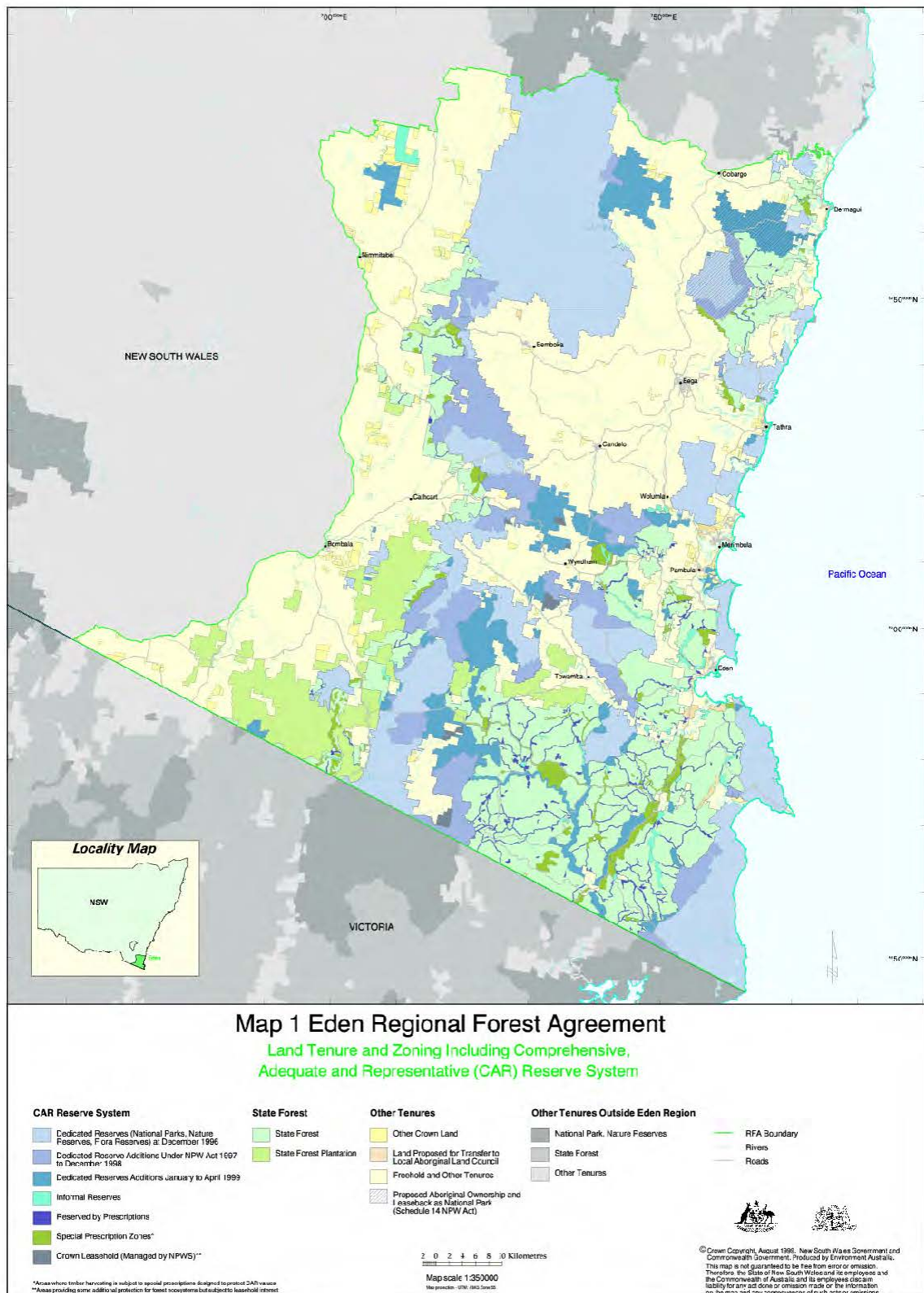


Figure 1.17 Eden RFA region by land type and tenure (from NSW CRA August 1998)

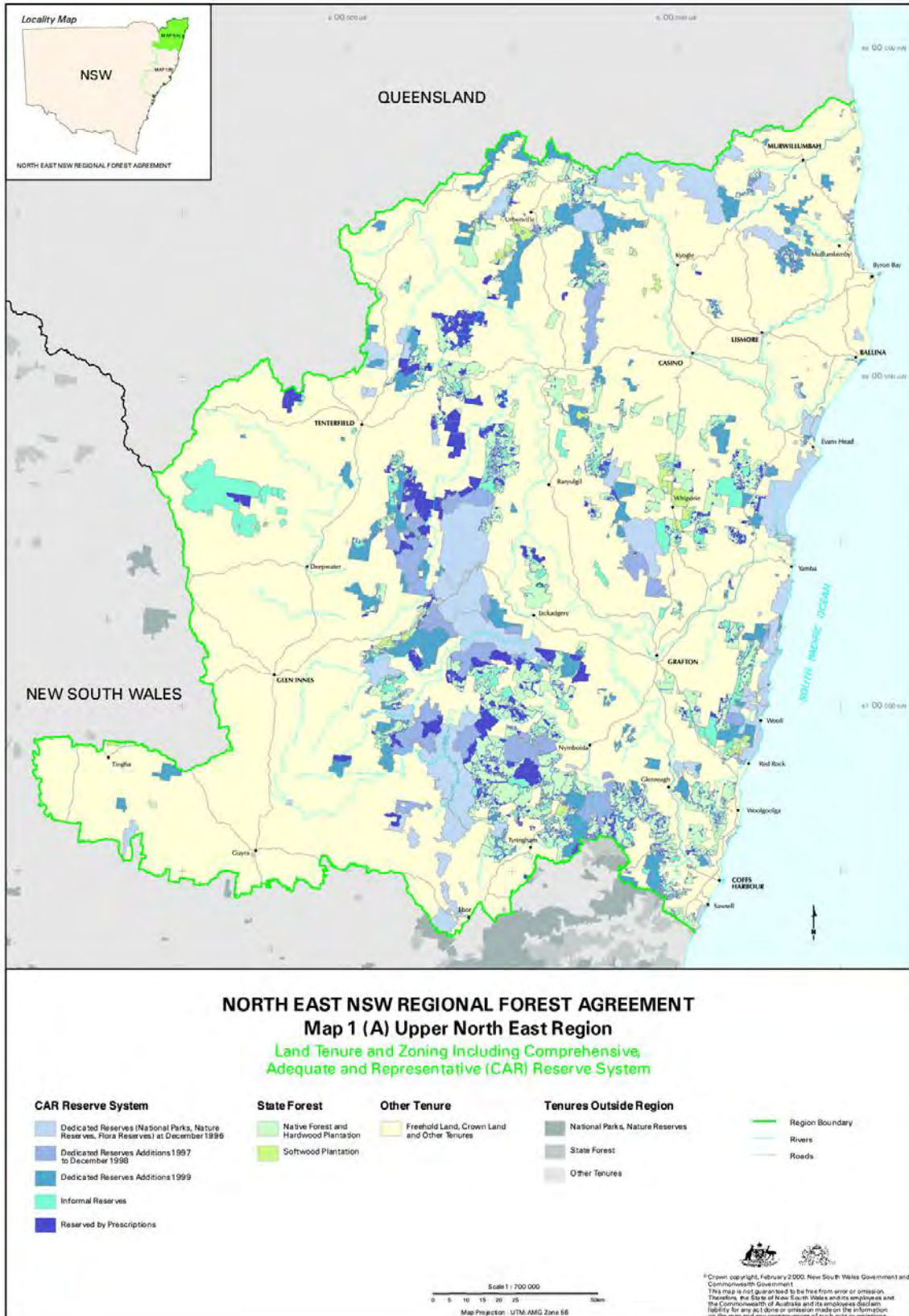


Figure 1.18 UNE RFA region by land type and tenure (from NSW CRA February 2000)

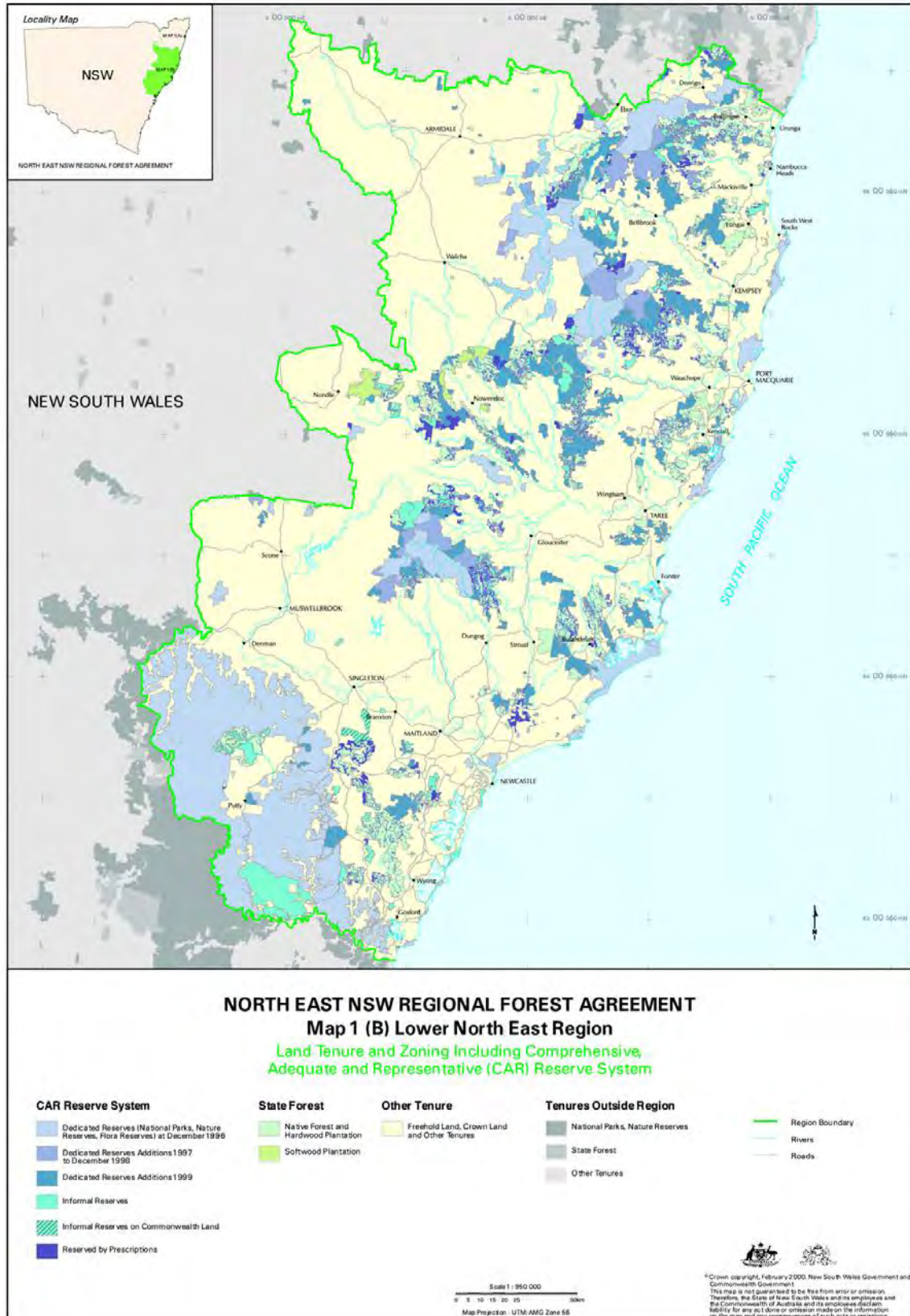


Figure 1.19 LNE RFA region by land type and tenure (from NSW CRA February 2000)

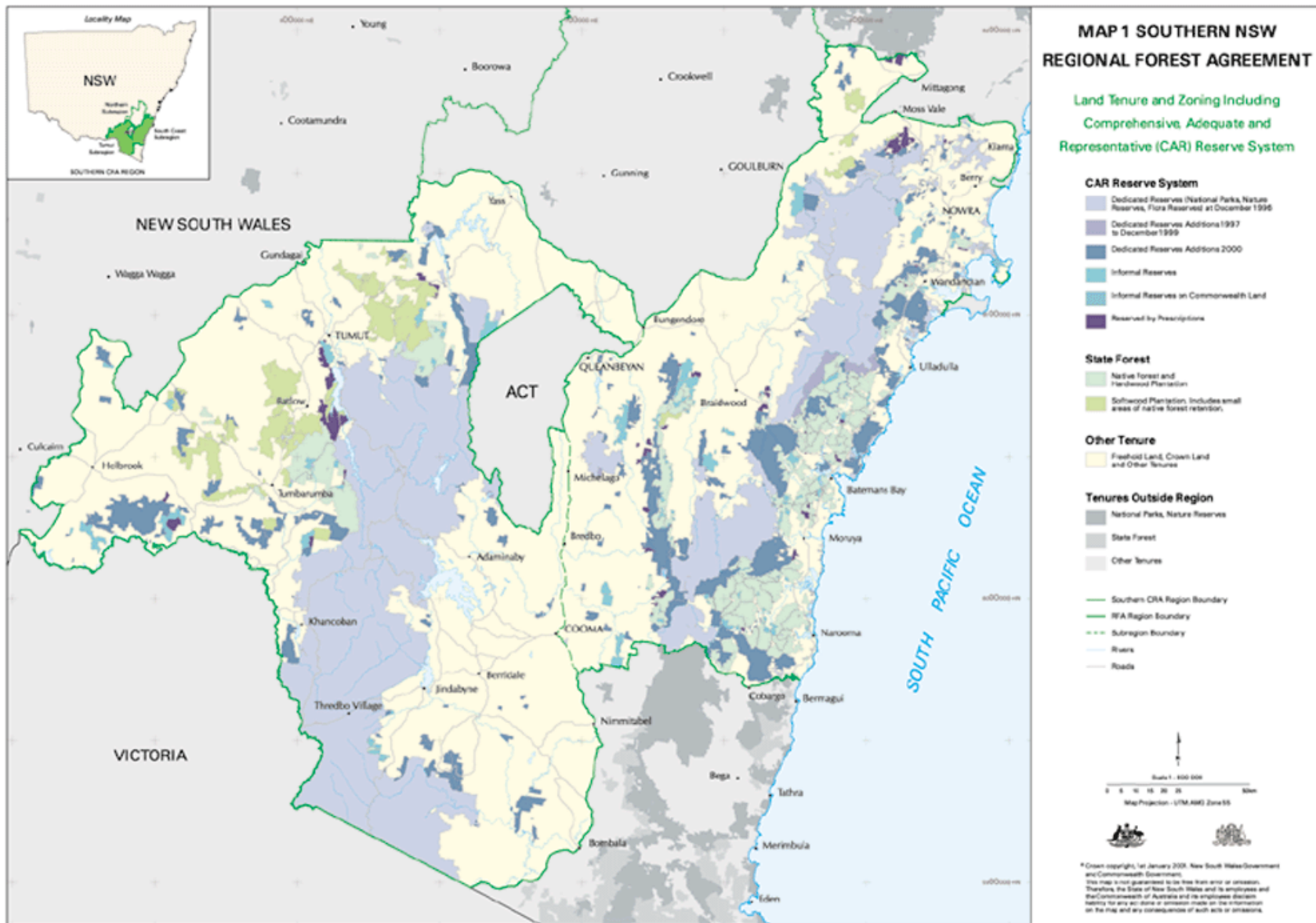


Figure 1.20 Southern RFA region by land type and tenure (from NSW CRA February 2000)

Indicator 1.1c Area of forest in protected area categories

Extent of protected areas in RFA regions

This indicator uses the area and proportion of forest ecosystems reserved through formal and informal processes as a measure of the emphasis placed by society on the preservation of representative ecosystems as a strategy to conserve biodiversity.

Spatial data from the CRA Process shows a total of 15.0 million hectares of land area in the three RFA regions of New South Wales. Prior to the signing of the NSW RFAs, a total of 2.57 million hectares (17 per cent) of the total land area in the RFA regions was protected under formal reservation (the NPWS estate). These data include all land categories, namely Forest Ecosystems, Non-forest Ecosystems. These data exclude areas within the NSW RFA regions that were land not classified as a terrestrial ecosystem such as agricultural land and built up areas.

By mid-2001, after all three NSW RFAs came into effect a total of 4.04 million hectares (27 per cent) of total land in those RFA regions was protected under the CAR reserve system (which includes Formal Reserves, Informal Reserves, and Regional Prescriptions for forest management on public land). This represents an increase on 1.47 million hectares of land in protected areas after all three RFAs came into effect.

By mid-2016, a total of 4.22 million hectares (28 per cent) of the total land in RFA regions was protected under the CAR reserve system. This represents an increase of 182 thousand hectares of land in CAR Reserves across the four RFA regions since all three RFAs came into effect.

Table 1.25 below summarises the extent of land in each RFA region and the extent that was in protected area categories at various time points before and after the respective NSW RFAs were signed, including the most recent area as at 30 June 2016.

Table 1.25 RFA land area, and the changes in area in the CAR reserve system over time

RFA region	Area ('000 hectares)						RFA region not in protected areas as at 30 June 2016	Proportion in protected areas as at 30 June 2016 (%)
	RFA region Total ¹	RFA region in protected areas on public land, by time period						
		Pre-RFA ²	At 30 June 2001 ³	At 30 June 2006 ³	At 30 June 2011 ³	At 30 June 2016 ³		
Upper North East								
Total area	3,910	374	847	871	873	873	3,037	22
As proportion of total (%)	100	10	22	22	22	22	78	
Lower North East								
Total area	5,789	946	1,478	1,526	1,569	1,568	4,222	27
As proportion of total (%)	100	16	26	26	27	27	73	
Southern								
Total area	4,516	1,037	1,419	1,435	1,443	1,474	3,042	33
As proportion of total (%)	100	23	31	32	32	33	67	
Eden								
Total area	814	212	293	295	295	305	509	37
As proportion of total (%)	100	26	36	36	36	37	63	
All RFA regions								
Total area	15,029	2,568	4,038	4,126	4,179	4,220	10,809	28
As proportion of total (%)	100	17	27	27	28	28	72	

Notes: Totals may not tally due to rounding. ¹ Area derived by ABARES from spatial data associated with the CRA reports published in 1998-2000. Increasing levels of reservation over time are applied to this area. Figures may differ slightly from original CRA analyses. ² Area derived by ABARES from spatial data provided by NSW and associated with the CRA reports published in 1998-2000. This data is likely to include some national parks gazetted after the signing of the RFA Scoping Agreement (25 January 1996) and before signing of respective RFAs (1999-2001) which were not reported in the tabular figures in the RFA data tables. Reserves on public land only. ³ Reserves on public land only. Spatial datasets include the NPWS estate (formal reserves) at RFA signing during 1999 to 2001 and continuous since then; informal reserves identified from Forest Management Zone datasets at RFA signing, 2004 and 2016; and additional Regional Prescriptions from the Integrated Forestry Operations Approval where available. Together these components constitute the CAR reserve system on public land.

Extent of RFA Forest and Non-Forest Ecosystems in protected areas

Spatial data and related tables associated with the NSW RFAs report a total of 8.55 million hectares of land in terrestrial ecosystems, comprising 8.32 million hectares in Forest Ecosystems and 0.23 million hectares in Non-Forest Ecosystems. These data exclude areas of the RFA regions that were not classified as terrestrial ecosystems, being for example agricultural land and built up areas. The extent of protected area categories in entire RFA regions is captured in the previous analysis (“Extent of RFA region in protected areas”).

Of the 8.55 million hectares of land in terrestrial ecosystems identified in the four RFA regions, a total of 2.15 million hectares (25 per cent) was protected under formal reservation (the NPWS estate) before the RFAs were signed. By mid-2001, after all RFAs²⁹ came into effect, a total of 3.94 million hectares (46 per cent) of land in Forest and Non-Forest Ecosystems was protected under the CAR reserve system (which includes Formal Reserves, Informal Reserves, and Regional Prescriptions for forest management on public land). By mid-2016 a total of 4.09 million hectares (48 per cent) of land in terrestrial ecosystems was protected under the CAR reserve system.

Table 1.26 below summarises the extent of terrestrial ecosystems in the NSW RFA regions and the extent that was in protected areas at various time points. Four additional tables (**Table 1.27 - Table 1.30**) show the extent of all terrestrial ecosystems in each of the individual RFA regions, by individual Forest and Non-Forest Ecosystem, and the area that was in protected areas at various time points before and after the respective NSW RFAs were signed, including the most recent area in the CAR reserve system as at June 2016³⁰.

²⁹ The North East NSW RFA covers the Upper North East and Lower North East RFA regions. Hence there are four RFA regions and three RFAs in NSW

³⁰ The areas of individual terrestrial ecosystems identified during the CRA process have not been updated since that time. The data presented therefore do not take into account any additional area of terrestrial ecosystems subsequently identified, or any areas that no longer form a terrestrial ecosystem, or any areas that have been misclassified into the wrong terrestrial ecosystem. Changes in the area figures presented here are solely due to changes in areas of terrestrial ecosystems that are in protected areas on public land.

Table 1.26 Terrestrial ecosystem areas in NSW RFA regions

As identified in the CRA spatial datasets, by RFA region, and the changes in area in the CAR reserve system over time

RFA region and ecosystem type	Area ('000 hectares)						Terrestrial ecosystems not in protected areas as at 30 June 2016	Proportion in protected areas as at 30 June 2016 (%)
	Terrestrial ecosystems total ¹	Pre-RFA ²	Terrestrial ecosystem in protected areas on public land, by time period					
			At 30 June 2001 ³	At 30 June 2006 ³	At 30 June 2011 ³	At 30 June 2016 ³		
Upper North East								
Forest Ecosystems	2,167	221	778	801	802	802	1,364	37
Non-Forest Ecosystems	61	23	43	44	44	45	16	74
Total terrestrial ecosystems	2,228	244	822	844	846	847	1,380	38
As proportion of total terrestrial ecosystem area (%)	100	11	37	38	38	38	62	
Lower North East								
Forest Ecosystems	3,175	724	1,410	1,453	1,472	1,478	1,697	47
Non-Forest Ecosystems	39	23	31	31	31	32	7	81
Total terrestrial ecosystems	3,213	747	1,441	1,484	1,503	1,510	1,704	47
As proportion of total terrestrial ecosystem area (%)	100	23	45	46	47	47	53	
Southern								
Forest Ecosystems	2,446	911	1,297	1,312	1,321	1,351	1,095	55
Non-Forest Ecosystems	113	92	95	95	95	95	18	84
Total terrestrial ecosystems	2,558	1,003	1,392	1,407	1,416	1,446	1,112	57
As proportion of total terrestrial ecosystem area (%)	100	39	54	55	55	57	43	
Eden								
Forest Ecosystems	533	152	280	282	282	292	241	55
Non-Forest Ecosystems	18	8	11	11	11	11	7	60

RFA region and ecosystem type	Area ('000 hectares)						Terrestrial ecosystems not in protected areas as at 30 June 2016	Proportion in protected areas as at 30 June 2016 (%)
	Terrestrial ecosystems total ¹	Pre-RFA ²	Terrestrial ecosystem in protected areas on public land, by time period					
			At 30 June 2001 ³	At 30 June 2006 ³	At 30 June 2011 ³	At 30 June 2016 ³		
Total terrestrial ecosystems	552	160	291	292	292	303	248	55
As proportion of total terrestrial ecosystem area (%)	100	29	53	53	53	55	45	
All RFA regions								
Forest Ecosystems	8,320	2,009	3,765	3,847	3,876	3,924	4,396	47
Non-Forest Ecosystems	231	145	179	180	181	183	49	79
Total terrestrial ecosystems	8,551	2,154	3,945	4,027	4,057	4,107	4,445	48
As proportion of total terrestrial ecosystem area (%)	100	25	46	47	47	48	52	

Notes:

The areas of Forest Ecosystems and Non-Forest Ecosystems together form the total terrestrial ecosystem area for an RFA region (both classes are reported in both the CRA reports and the RFA data tables). The remaining land area (being agricultural, horticultural and urban land and the like) is not reported in the CRA reports of the RFA data tables, and contains small additional areas of reserve.

¹ Area derived by ABARES from spatial data associated with the Forest Ecosystem CRA reports published in 1998-2000. Increasing levels of reservation over time are applied to this area.

² Directly from the pre-RFA Formal Reserve extent reported in the RFA data tables (formal reserve spatial data provided by the NPWS to the Commonwealth Government at signing of the RFA Scoping Agreement 25 January 1996). Reserves on public land only.

³ Reserves on public land only. Spatial datasets include the NPWS estate (formal reserves); informal reserves identified from Forest Management Zone datasets at RFA signing (1999-2001), 2004 and 2016; and additional Regional Prescriptions from the Integrated Forestry Operations Approval where available. Together these components constitute the CAR reserve system on public land.

Totals may not tally due to rounding

Table 1.27 Terrestrial ecosystem areas in the Upper North East RFA region

as identified in the CRA spatial data, by changes in area in the CAR reserve system over time

Terrestrial ecosystem type	Area (hectares)							Proportion in protected areas as at 30 June 2016 (%)
	Terrestrial ecosystem total ¹	Terrestrial ecosystem in protected areas on public land, by time period				Terrestrial ecosystem not in protected areas as at 30 June 2016		
		Pre-RFA ²	At 30 June 2001 ³	At 30 June 2006 ³	At 30 June 2011 ³		At 30 June 2016 ³	
Forest Ecosystem								
2 Alpine Gum	1,329	123	365	368	368	368	961	28
3 Baileys Stringybark	34,931	9,515	15,396	16,197	16,379	16,385	18,546	47
10 Black Sallee	6	6	6	6	6	6	0	100
12 Blue Mountain Ash	121	0	118	117	117	117	4	97
14 Brown Barrell	166	15	30	30	30	30	136	18
15 Brown Barrell-Gum	1,004	132	184	184	184	184	820	18
16 Bull Oak	2	0	2	2	2	2	0	100
17 Candlebark	1,961	0	253	253	253	253	1,708	13
18 Casuarina Woodland	43	6	11	11	11	11	32	26
19 Central Mid Elevation Sydney Blue Gum	6,786	40	1,766	1,793	1,793	1,793	4,993	26
20 Clarence Lowland Needlebark Stringybark	10,817	2,113	6,763	7,134	7,136	7,136	3,681	66
21 Lowlands Grey Box	23,913	32	422	531	757	761	23,152	3
22 Coast Cypress Pine	82	47	69	69	69	69	13	84
23 Coast Range Bloodwood-Mahogany	5,919	456	2,394	2,666	2,666	2,666	3,253	45
24 Clarence Lowlands Spotted Gum	174,787	2,335	20,343	22,120	22,404	22,441	152,346	13
25 Coast Range Spotted Gum-Blackbutt	743	9	136	138	138	138	605	19
26 Coastal Flooded Gum	9,426	1,194	4,157	4,198	4,200	4,200	5,226	45
27 Coastal Sands Blackbutt	3,101	2,798	2,889	2,889	2,889	2,889	212	93

Terrestrial ecosystem type	Area (hectares)						Terrestrial ecosystem not in protected areas as at 30 June 2016	Proportion in protected areas as at 30 June 2016 (%)
	Terrestrial ecosystem total ¹	Terrestrial ecosystem in protected areas on public land, by time period				Pre-RFA ²		
		At 30 June 2001 ³	At 30 June 2006 ³	At 30 June 2011 ³	At 30 June 2016 ³			
29 Corkwood-Crabapple and Mixed Stringybarks	6,093	24	3,905	3,938	3,938	3,938	2,155	65
30 Diehard Stringybark-New England Blackbutt	1,062	71	153	154	154	154	908	15
31 Dorrigo White Gum	3,385	288	2,346	2,346	2,346	2,346	1,039	69
32 Dry Foothills Blackbutt-Turpentine	7,364	109	1,934	1,967	1,967	1,967	5,397	27
33 Dry Foothills Spotted Gum	90,829	2,765	34,339	35,772	35,785	35,785	55,044	39
34 Dry Grassy Blackbutt-Tallowwood	6,052	319	1,513	1,544	1,544	1,544	4,508	26
35 Dry Grassy Stringybark	69,987	9,268	36,385	36,656	36,656	36,656	33,331	52
36 Dry Grassy Tallowwood-Grey Gum	5,564	12	697	704	704	704	4,860	13
37 Dry Heathy Blackbutt-Bloodwood	46,630	328	13,005	15,034	15,050	15,051	31,579	32
38 Dry Heathy New England Blackbutt	4,276	1,020	3,255	3,249	3,249	3,249	1,027	76
39 Dry Heathy New England Stringybarks	1,178	1,155	1,177	1,177	1,177	1,177	1	100
40 Dry Heathy Sandstone Blackbutt	19,036	3,431	6,893	7,710	7,711	7,711	11,325	41
41 Dry Open New England Blackbutt	121,339	11,662	49,040	49,258	49,262	49,262	72,077	41
42 Dry Redgum-Bloodwood-Apple	243	1	237	237	237	237	6	98
43 Dry Silvertop Stringybark-Apple	13,041	4,703	9,137	9,143	9,143	9,143	3,898	70
44 Dry open Redgum-Broad Leaved Apple	10,484	5,259	7,844	7,868	7,868	7,868	2,616	75
45 Dunns White Gum	975	102	632	638	638	638	337	65
46 Eastern Red Gums	3,002	739	2,192	2,189	2,189	2,189	813	73
47 Escarpment Redgum	28,206	1,742	7,980	8,177	8,204	8,204	20,002	29
48 Escarpment Scribbly Gum-Apple	5,488	132	3,616	3,648	3,648	3,648	1,840	66
50 Wet Bangalow-Brushbox	10,098	2,139	4,386	4,431	4,442	4,442	5,656	44
52 Foothill Grey Gum-Ironbark-Spotted Gum	46,753	3,868	11,543	12,323	12,327	12,328	34,425	26

Terrestrial ecosystem type	Area (hectares)						Terrestrial ecosystem not in protected areas as at 30 June 2016	Proportion in protected areas as at 30 June 2016 (%)
	Terrestrial ecosystem total ¹	Terrestrial ecosystem in protected areas on public land, by time period				Pre-RFA ²		
		At 30 June 2001 ³	At 30 June 2006 ³	At 30 June 2011 ³	At 30 June 2016 ³			
53 Gorge Grey Box	11,147	5,454	8,190	8,271	8,276	8,276	2,871	74
54 Grey Box-Red Gum-Grey Ironbark	20,438	1,592	3,085	3,305	3,361	3,361	17,077	16
55 Foothills Grey Gum-Spotted Gum	8,685	95	1,727	1,933	1,933	1,933	6,752	22
56 Granite Mallee	1,887	1,428	1,573	1,593	1,593	1,593	294	84
57 Highland Granite Stringybarks	2,483	1,682	2,282	2,282	2,282	2,282	201	92
58 Gorge Grey Gum	5,532	2,780	3,741	3,745	3,748	3,748	1,784	68
59 Gorge Ironbark-Grey Gum	63,226	5,789	24,220	24,730	24,736	24,736	38,490	39
60 Grassy New England Blackbutt-Tallowwood-Blue Gum	40,245	2,649	20,333	20,716	20,716	20,716	19,529	51
61 Grey Box-Ironbark	131	21	36	37	37	37	94	28
62 Grey Box-Northern Grey Gum	509	6	73	72	72	72	437	14
63 Grey Gum-Stringybark	12,810	3,702	7,541	7,759	7,759	7,759	5,051	61
65 Heathy Scribbly Gum	7,758	2,254	4,497	4,669	4,669	4,669	3,089	60
67 High Elevation Ferny Blackbutt	10,462	49	3,599	3,722	3,722	3,722	6,740	36
68 High Elevation Messmate-Brown Barrell	329	90	91	91	91	91	238	28
69 High Elevation Moist Open Tallowwood-Blue Gum	3,533	118	1,665	1,677	1,677	1,677	1,856	47
70 High Elevation Open Spotted Gum	50,005	950	13,705	15,013	15,034	15,034	34,971	30
71 Ironbark	7,713	52	1,176	1,674	1,674	1,679	6,034	22
72 Low Relief Coastal Blackbutt	859	37	434	437	437	437	422	51
73 Lowland Red Gum	57,016	1,676	9,428	11,441	11,505	11,546	45,470	20
74 Lowlands Scribbly Gum	3,496	1,199	2,202	2,292	2,292	2,292	1,204	66
75 Lowlands Spotted Gum-Box	19,737	5	3,294	3,604	3,624	3,625	16,112	18
76 Coastal Mallee	1,412	1,182	1,212	1,212	1,212	1,212	200	86

Terrestrial ecosystem type	Area (hectares)						Terrestrial ecosystem not in protected areas as at 30 June 2016	Proportion in protected areas as at 30 June 2016 (%)
	Terrestrial ecosystem total ¹	Terrestrial ecosystem in protected areas on public land, by time period				Pre-RFA ²		
		At 30 June 2001 ³	At 30 June 2006 ³	At 30 June 2011 ³	At 30 June 2016 ³			
77 Mangrove	734	351	374	382	382	386	348	53
78 Mann River Wet New England Blackbutt	5,132	2,343	4,788	4,788	4,788	4,788	344	93
79 Manna Gum-Stringybark	90	41	60	60	60	60	30	67
80 Manna Gum	1,287	11	306	307	307	307	980	24
81 Messmate	6,309	483	1,370	1,381	1,381	1,381	4,928	22
83 Mid Elevation Wet Blackbutt	1,180	0	905	904	904	904	276	77
84 Mid North Coast Wet Brushbox-Tallowwood-Blue Gum	10,378	26	5,086	5,238	5,238	5,238	5,140	50
85 Mixed Moist Hardwood	346	0	141	143	143	143	203	41
86 Mixed New England Stringybarks	3,002	9	1,377	1,385	1,385	1,385	1,617	46
87 Mixed Tableland Stringybark-Gum Open Forest	4,694	32	758	765	765	765	3,929	16
88 Moist Escarpment New England Blackbutt	10,275	4,934	8,630	8,640	8,640	8,640	1,635	84
89 Moist Foothills Spotted Gum	35,657	909	15,312	15,590	15,590	15,590	20,067	44
90 Moist Messmate-Gum	25,159	627	14,070	14,184	14,184	14,184	10,975	56
91 Moist Open Escarpment White Mahogany	1,814	54	1,094	1,119	1,119	1,119	695	62
92 Moist Shrubby Stringybark-Gum	4,139	13	1,869	1,867	1,867	1,867	2,272	45
93 Montane Stringybark-Gum	28,687	972	5,387	5,371	5,371	5,371	23,316	19
95 Northern Moist Blackbutt	9,101	743	5,197	5,860	5,865	5,865	3,236	64
97 Needlebark Stringybark-Large Fruited Blackbutt	9,966	450	4,826	5,224	5,224	5,224	4,742	52
98 New England Peppermint	3,590	100	2,906	2,844	2,844	2,844	746	79
99 New England Stringybark-Blakely's Red Gum	10,786	2,950	5,322	5,323	5,325	5,325	5,461	49
100 Northern Grassy Sydney Blue Gum	9,245	1,723	5,169	5,247	5,252	5,252	3,993	57
101 Northern Open Grassy Blackbutt	21,590	2,518	5,964	6,357	6,357	6,359	15,231	29

Terrestrial ecosystem type	Area (hectares)							Proportion in protected areas as at 30 June 2016 (%)
	Terrestrial ecosystem total ¹	Terrestrial ecosystem in protected areas on public land, by time period				Terrestrial ecosystem not in protected areas as at 30 June 2016		
		Pre-RFA ²	At 30 June 2001 ³	At 30 June 2006 ³	At 30 June 2011 ³		At 30 June 2016 ³	
102 Northern Ranges Dry Tallowwood	57,107	2,894	11,742	12,757	12,883	12,883	44,224	23
103 Northern Wet Brushbox	16,379	1,282	6,583	6,791	6,801	6,801	9,578	42
104 Northern Wet Tallowwood-Blue Gum	25,764	4,462	13,070	13,339	13,343	13,343	12,421	52
105 Nymboida Tallowwood-Turpentine	2,645	0	1,983	2,009	2,009	2,009	636	76
106 Open Coastal Brushbox	6,533	460	2,396	2,534	2,534	2,534	3,999	39
109 Open Shrubby Brushbox-Tallowwood	17,472	1,938	6,657	6,858	6,864	6,864	10,608	39
110 Open Silvertop Stringybark-Blue Gum	3,130	440	2,181	2,185	2,185	2,185	945	70
111 Open Silvertop Stringybark-Tallowwood	4,525	5	2,239	2,258	2,258	2,258	2,267	50
112 Paperbark	28,577	7,320	10,221	10,718	10,723	10,746	17,831	38
113 Peppermint	6,478	1,799	2,903	2,890	2,890	2,890	3,588	45
114 Peppermint-Mountain/Manna Gum	12,829	1,041	1,773	1,775	1,775	1,775	11,054	14
115 Red Bloodwood	217	30	199	200	200	200	17	92
116 Red Gum-Stringybark	27,128	284	667	701	706	710	26,418	3
117 Red Mahogany	1,273	1,135	1,202	1,204	1,204	1,204	69	95
118 Richmond Range Spotted Gum	22,511	4	3,010	3,039	3,072	3,072	19,439	14
119 Richmond Range Spotted Gum-Box	24,814	22	2,835	2,914	2,932	2,932	21,882	12
120 River Oak	3,221	117	475	478	487	489	2,732	15
122 Rough-barked Apples	1,683	223	1,346	1,372	1,372	1,372	311	82
123 Roundleaved Gum	17,975	1,493	7,112	7,132	7,132	7,132	10,843	40
124 Roundleaved Gum-Turpentine	30	0	21	23	23	23	7	77
126 Sandstone Spotted Gum-Blackbutt	4,808	91	1,061	1,126	1,130	1,131	3,677	24
127 Sherwood Needlebark Stringybark	9,098	580	1,378	1,393	1,398	1,398	7,700	15

Terrestrial ecosystem type	Area (hectares)						Terrestrial ecosystem not in protected areas as at 30 June 2016	Proportion in protected areas as at 30 June 2016 (%)
	Terrestrial ecosystem total ¹	Terrestrial ecosystem in protected areas on public land, by time period				Pre-RFA ²		
		At 30 June 2001 ³	At 30 June 2006 ³	At 30 June 2011 ³	At 30 June 2016 ³			
128 Silverleaved Ironbark	1,988	1	80	80	80	80	1,908	4
129 Smoothbarked Apple	270	255	268	268	268	268	2	99
131 Snow Gum	288	192	246	247	247	247	41	86
132 Snow Gum -Mountain/Manna Gum	21,305	419	1,542	1,557	1,566	1,584	19,721	7
133 Snow Gum-Black Sallee	2	2	2	2	2	2	0	100
135 South Coast Tallowwood-Blue Gum	5,338	33	2,021	2,058	2,058	2,058	3,280	39
138 Steel Box/Craven Grey Box	427	0	170	174	175	175	252	41
139 Stringybark-Apple	34,813	2,354	8,114	8,298	8,401	8,401	26,412	24
140 Stringybark-Mallee	2,194	2,039	2,177	2,177	2,177	2,177	17	99
142 Swamp Mahogany	578	139	273	296	296	296	282	51
143 Swamp Oak	2,883	779	1,004	1,019	1,021	1,037	1,846	36
145 Sydney Peppermint-Stringybark	255	21	47	47	47	47	208	18
146 Tallowwood	8,430	4,542	6,534	6,557	6,557	6,557	1,873	78
147 Turpentine	2,943	145	1,291	1,345	1,357	1,362	1,581	46
148 Very Wet New England Blackbutt-Tallowwood	1,498	1,137	1,403	1,411	1,411	1,411	87	94
149 Mallee-Peppermint mosaic	1,618	46	449	445	445	445	1,173	28
150 Washpool Brushbox-Tallowwood	5,683	3,541	5,338	5,340	5,340	5,340	343	94
152 Wet Bloodwood-Tallowwood	33,357	1,221	7,701	8,648	8,696	8,696	24,661	26
153 Wet Coastal Tallowwood-Brushbox	6,581	30	776	793	793	793	5,788	12
154 Wet Flooded Gum-Tallowwood	9,317	143	1,734	2,070	2,085	2,085	7,232	22
155 Wet Foothills Blackbutt-Turpentine	7,437	33	2,955	3,005	3,005	3,005	4,432	40
157 Wet Shrubby Brushbox-Tallowwood	4,891	124	2,884	2,897	2,897	2,897	1,994	59

Terrestrial ecosystem type	Area (hectares)						Terrestrial ecosystem not in protected areas as at 30 June 2016	Proportion in protected areas as at 30 June 2016 (%)
	Terrestrial ecosystem total ¹	Terrestrial ecosystem in protected areas on public land, by time period				Pre-RFA ²		
		At 30 June 2001 ³	At 30 June 2006 ³	At 30 June 2011 ³	At 30 June 2016 ³			
158 Wet Spotted Gum-Tallowwood	2,538	626	911	935	935	935	1,603	37
162 Whitetopped Box	4	0	4	4	4	4	0	100
163 Yellow Box-Blakely's Red Gum	7,245	62	418	422	422	428	6,817	6
168 Rainforest	159,211	55,723	145,466	145,663	145,669	145,669	13,542	91
174 Orange Gum-Tumbledown Gum-Apple	15,435	0	182	184	189	189	15,246	1
175 Orange Gum-New England Blackbutt-Tumbledown Gum	19,304	343	1,193	1,218	1,225	1,225	18,079	6
176 Orange Gum-Ironbark	34,295	282	946	979	979	998	33,297	3
177 Outcrop Orange Gum-New England Blackbutt	7,945	6	999	999	1,002	1,017	6,928	13
178 Outcrop Black Cypress-Tumbledown Gum	1,034	0	4	5	5	5	1,029	0
179 Yellow Box-Broad-leaved Stringybark	3,859	0	827	835	856	856	3,003	22
180 Western New England Blackbutt	12,415	0	3,345	3,348	3,349	3,349	9,066	27
181 Stringybark-Gum	30,258	0	18,493	18,498	18,500	18,500	11,758	61
182 Apple-Black Cypress	1,994	0	211	211	211	211	1,783	11
183 Red Gum-Apple	592	0	1	1	1	1	591	0
184 Tumbledown Gum-Ironbark	11,070	0	4,482	4,482	4,482	4,482	6,588	40
185 Orange Gum-Black Cypress	3,510	0	1,408	1,411	1,411	1,411	2,099	40
186 Open Tumbledown Gum-Black Cypress-Orange Gum	10,593	204	630	638	639	654	9,939	6
189 Silverleaved Ironbark-Cypress	23,285	82	197	197	197	197	23,088	1
190 Yellow Box-Grey Box-Red Gum	21,273	269	624	657	657	661	20,612	3
194 Round-leaved Gum wet heath	5,997	0	2,446	2,455	2,456	2,456	3,541	41
195 Apple-Manna Gum woodland	16,214	283	1,208	1,213	1,215	1,216	14,998	7
196 Broad-leaved Stringybark-Apple Box	19,948	386	3,688	3,726	3,727	3,741	16,207	19

Terrestrial ecosystem type	Area (hectares)							Proportion in protected areas as at 30 June 2016 (%)
	Terrestrial ecosystem total ¹	Terrestrial ecosystem in protected areas on public land, by time period				Terrestrial ecosystem not in protected areas as at 30 June 2016		
		Pre-RFA ²	At 30 June 2001 ³	At 30 June 2006 ³	At 30 June 2011 ³		At 30 June 2016 ³	
197 Broad-leaved Stringybark	1,643	20	89	90	90	95	1,548	6
198 Silvertop Stringybark	1,200	0	16	16	16	16	1,184	1
200 Broad-leaved Stringybark-Ribbon Gum	650	0	7	7	7	7	643	1
Total Forest Ecosystems	2,166,601	221,159	778,386	800,747	802,171	802,421	1,364,180	37
Non-Forest Ecosystem								
5 Banksia	2,046	257	609	745	746	746	1,300	36
64 Heath	9,805	8,943	9,041	9,041	9,041	9,041	764	92
66 Herbfield and Fjaeldmark	68	53	52	52	52	52	16	76
96 Natural Grassland	370	43	266	266	266	266	104	72
121 Rock	18,162	1,191	16,974	16,943	16,943	16,943	1,219	93
125 Saltbush	16	10	11	11	11	11	5	69
141 Swamp	24,118	9,192	13,168	13,485	13,561	14,802	9,316	61
169 Scrub	5,447	2,895	3,075	3,117	3,117	3,117	2,330	57
199 Riparian Shrubland	1,252	0	3	3	3	8	1,244	1
Total Non-Forest Ecosystems	61,284	22,584	43,199	43,663	43,740	44,986	16,298	73
Total Terrestrial ecosystems	2,227,885	243,743	821,585	844,410	845,911	847,407	1,380,478	38
As proportion of total Terrestrial ecosystem area (%)	100	11	37	38	38	38	62	

Notes:

¹ Area derived by ABARES from spatial data associated with the North East region RFA 2000. Figures for individual ecosystem classes are of variable accuracy and should not be assumed to be more accurate than the nearest 100 hectares. Increasing levels of reservation over time are applied to this area.

² Directly from the pre-RFA Formal Reserve extent reported in the North East RFA (formal reserve spatial data provided by the NPWS to the Commonwealth Government at signing of the RFA Scoping Agreement 25 January 1996). Reserves on public land only.

³ Reserves on public land only. This includes the NPWS estate (formal reserves); informal reserves identified from Forest Management Zone datasets at RFA signing (2000), 2004 and 2016; and additional Regional Prescriptions from the Integrated Forestry Operations Approval where available. Together these components constitute the CAR reserve system on public land. Spatial datasets covering different time-periods have been reprojected to a common projection but some small differences remain between the datasets. Informal reserves on other Crown land identified from the 2004 Forest Management Zone dataset are included in all subsequent time periods.

Totals may not tally due to rounding

Table 1.28 Terrestrial ecosystem areas in the Lower North East RFA region

as identified in the CRA spatial data, by changes in area in the CAR reserve system over time

Terrestrial ecosystem type	Area (hectares)							Proportion in protected areas as at 30 June 2016 (%)
	Terrestrial ecosystem total ¹	Terrestrial ecosystem in protected areas on public land, by time period					Terrestrial ecosystem not in protected areas as at 30 June 2016	
		Pre-RFA ²	At 30 June 2001 ³	At 30 June 2006 ³	At 30 June 2011 ³	At 30 June 2016 ³		
Forest Ecosystem								
2 Alpine Gum	3,971	205	1,540	1,794	1,794	1,798	2,173	45
3 Baileys Stringybark	285	214	234	234	234	234	51	82
6 Barrington Dry Shrubby New England Blackbutt-Blue Gum	3,227	161	1,678	1,688	1,688	1,688	1,539	52
7 Barrington Moist Blue Gum-White Mahogany	32,659	485	6,520	10,870	11,127	11,494	21,165	35
8 Barrington Wet New England Blackbutt-Blue Gum	45,911	2,158	10,746	11,728	11,728	11,728	34,183	26
10 Black Sallee	2	1	1	1	1	1	1	50
11 Blackbutt-Sydney Peppermint-Smoothbarked Apple	1,382	240	435	435	435	435	947	31
12 Blue Mountain Ash	1	0	1	1	1	1	0	100
13 Blue-leaved Stringybark	25	0	25	25	25	25	0	100
14 Brown Barrell	814	48	427	427	427	427	387	52
15 Brown Barrell-Gum	8,711	668	2,551	3,497	3,497	3,554	5,157	41
16 Bull Oak	5	0	5	5	5	5	0	100
17 Candlebark	20	0	2	2	2	2	18	10
18 Casuarina Woodland	362	272	299	299	317	317	45	88
19 Central Mid Elevation Sydney Blue Gum	40,971	731	8,629	9,213	9,227	9,245	31,726	23
20 Clarence Lowland Needlebark Stringybark	81	78	79	79	79	79	2	98
21 Lowlands Grey Box	1,219	576	699	724	724	724	495	59

Terrestrial ecosystem type	Area (hectares)						Terrestrial ecosystem not in protected areas as at 30 June 2016	Proportion in protected areas as at 30 June 2016 (%)
	Terrestrial ecosystem total ¹	Terrestrial ecosystem in protected areas on public land, by time period						
		Pre-RFA ²	At 30 June 2001 ³	At 30 June 2006 ³	At 30 June 2011 ³	At 30 June 2016 ³		
22 Coast Cypress Pine	34	29	32	32	32	32	2	94
23 Coast Range Bloodwood-Mahogany	564	0	528	528	528	528	36	94
25 Coast Range Spotted Gum-Blackbutt	25	0	25	25	25	25	0	100
26 Coastal Flooded Gum	8,753	136	1,916	1,946	1,968	1,989	6,764	23
27 Coastal Sands Blackbutt	17,312	7,561	8,386	8,386	9,400	9,400	7,912	54
28 Cool Moist Messmate	6,467	293	1,910	1,903	1,903	1,903	4,564	29
29 Corkwood-Crabapple and Mixed Stringybarks	2,293	105	1,517	1,527	1,527	1,527	766	67
30 Diehard Stringybark-New England Blackbutt	43,510	8,886	29,416	29,852	29,852	29,859	13,651	69
31 Dorrigo White Gum	1,123	23	126	122	122	122	1,001	11
32 Dry Foothills Blackbutt-Turpentine	33,592	894	6,875	7,093	7,167	7,167	26,425	21
33 Dry Foothills Spotted Gum	17,688	1,039	3,139	3,265	3,291	3,394	14,294	19
34 Dry Grassy Blackbutt-Tallowwood	59,390	2,822	7,926	8,097	8,180	9,092	50,298	15
35 Dry Grassy Stringybark	97,614	14,475	34,193	36,365	36,365	36,436	61,178	37
36 Dry Grassy Tallowwood-Grey Gum	178,516	3,213	44,703	46,140	46,337	46,339	132,177	26
37 Dry Heathy Blackbutt-Bloodwood	2,889	1,095	1,495	1,506	1,511	1,511	1,378	52
38 Dry Heathy New England Blackbutt	528	79	365	391	391	391	137	74
39 Dry Heathy New England Stringybarks	15	7	15	15	15	15	0	100
41 Dry Open New England Blackbutt	32,932	2,904	8,744	8,969	8,969	8,969	23,963	27
42 Dry Redgum-Bloodwood-Apple	69,509	10,303	20,783	22,120	22,120	22,120	47,389	32
43 Dry Silvertop Stringybark-Apple	14,918	4,371	7,494	8,131	8,131	8,131	6,787	55
44 Dry open Redgum-Broad Leaved Apple	2,291	920	1,431	1,461	1,461	1,461	830	64
46 Eastern Red Gums	38	23	32	36	36	36	2	95

Terrestrial ecosystem type	Area (hectares)						Terrestrial ecosystem not in protected areas as at 30 June 2016	Proportion in protected areas as at 30 June 2016 (%)
	Terrestrial ecosystem total ¹	Terrestrial ecosystem in protected areas on public land, by time period						
		Pre-RFA ²	At 30 June 2001 ³	At 30 June 2006 ³	At 30 June 2011 ³	At 30 June 2016 ³		
47 Escarpment Redgum	20,498	594	2,708	3,024	3,135	3,150	17,348	15
48 Escarpment Scribbly Gum-Apple	7,574	1,658	2,739	2,954	2,954	2,954	4,620	39
49 Escarpment Tallowwood-Bloodwood	49,918	4,451	21,070	21,653	21,677	21,678	28,240	43
50 Wet Bangalow-Brushbox	3,614	628	1,620	1,647	1,663	1,663	1,951	46
51 Eurabbie	276	9	248	260	260	260	16	94
53 Gorge Grey Box	6,034	2,509	3,838	3,999	3,999	3,999	2,035	66
54 Grey Box-Red Gum-Grey Ironbark	19,838	7,496	8,347	8,527	8,527	8,527	11,311	43
55 Foothills Grey Gum-Spotted Gum	2,438	75	975	977	978	978	1,460	40
56 Granite Mallee	4,025	625	1,313	1,326	1,326	1,340	2,685	33
57 Highland Granite Stringybarks	924	197	261	261	261	261	663	28
58 Gorge Grey Gum	51	21	36	36	36	36	15	71
60 Grassy New England Blackbutt-Tallowwood-Blue Gum	33,586	5,450	17,140	17,512	17,512	17,512	16,074	52
63/217 Grey Gum-Stringybark	46,977	34,377	37,931	38,488	38,488	38,488	8,489	82
65 Heathy Scribbly Gum	23,471	8,182	11,576	11,673	11,679	11,679	11,792	50
67 High Elevation Ferny Blackbutt	30,899	3,401	17,192	17,382	17,551	17,551	13,348	57
68 High Elevation Messmate-Brown Barrell	15,974	201	3,447	5,590	5,590	5,618	10,356	35
69 High Elevation Moist Open Tallowwood-Blue Gum	27,141	4,122	14,131	14,486	14,498	14,498	12,643	53
70 High Elevation Open Spotted Gum	12	0	1	1	1	1	11	8
71 Ironbark	89,985	24,661	33,722	33,807	40,006	40,312	49,673	45
72 Low Relief Coastal Blackbutt	10,894	137	1,660	1,963	1,969	1,969	8,925	18
73 Lowland Red Gum	366	45	210	211	211	211	155	58

Terrestrial ecosystem type	Area (hectares)						Terrestrial ecosystem not in protected areas as at 30 June 2016	Proportion in protected areas as at 30 June 2016 (%)
	Terrestrial ecosystem total ¹	Terrestrial ecosystem in protected areas on public land, by time period						
		Pre-RFA ²	At 30 June 2001 ³	At 30 June 2006 ³	At 30 June 2011 ³	At 30 June 2016 ³		
74 Lowlands Scribbly Gum	9,724	6,678	6,998	7,011	7,168	7,168	2,556	74
76 Coastal Mallee	801	723	729	729	738	738	63	92
77 Mangrove	1,001	56	709	702	771	810	191	81
79 Manna Gum-Stringybark	632	74	95	103	103	103	529	16
80 Manna Gum	3,852	75	1,097	1,110	1,110	1,110	2,742	29
81 Messmate	20,291	308	3,980	4,128	4,128	4,187	16,104	21
82 Messmate-Mountain Gum Forest	8,537	1,481	2,571	2,573	2,573	2,867	5,670	34
83 Mid Elevation Wet Blackbutt	6,981	351	3,928	4,107	4,844	4,845	2,136	69
84 Mid North Coast Wet Brushbox-Tallowwood-Blue Gum	31,917	2,679	17,334	17,626	17,691	17,691	14,226	55
85 Mixed Moist Hardwood	232	0	48	50	50	50	182	22
87 Mixed Tableland Stringybark-Gum Open Forest	7,897	478	2,067	2,137	2,137	2,341	5,556	30
88 Moist Escarpment New England Blackbutt	22,579	3,888	18,079	18,276	18,279	18,279	4,300	81
89 Moist Foothills Spotted Gum	7,929	117	2,199	2,252	2,277	2,346	5,583	30
90 Moist Messmate-Gum	78	0	15	15	15	15	63	19
91 Moist Open Escarpment White Mahogany	38,495	6,136	20,323	21,308	21,308	21,308	17,187	55
92 Moist Shrubby Stringybark-Gum	423	9	174	176	176	176	247	42
93 Montane Stringybark-Gum	2,567	124	513	554	554	554	2,013	22
94 Mountain Gum-Brown Barrell	3,196	1,223	3,035	3,041	3,041	3,041	155	95
97 Needlebark Stringybark-Large Fruited Blackbutt	502	0	262	262	262	262	240	52
98 New England Peppermint	656	591	594	594	594	594	62	91
99 New England Stringybark-Blakelys Red Gum	28,245	5,541	8,847	10,298	10,298	10,298	17,947	36

Terrestrial ecosystem type	Area (hectares)						Terrestrial ecosystem not in protected areas as at 30 June 2016	Proportion in protected areas as at 30 June 2016 (%)
	Terrestrial ecosystem total ¹	Terrestrial ecosystem in protected areas on public land, by time period						
		Pre-RFA ²	At 30 June 2001 ³	At 30 June 2006 ³	At 30 June 2011 ³	At 30 June 2016 ³		
105 Nymboida Tallowwood-Turpentine	248	0	159	161	161	161	87	65
106 Open Coastal Brushbox	64,878	1,184	22,207	22,668	22,970	22,973	41,905	35
107 Open Messmate-New England Blackbutt	12,151	1,052	5,618	5,699	5,699	5,700	6,451	47
108 Open Ribbon Gum	24,537	1,124	10,754	10,787	10,787	10,795	13,742	44
109 Open Shrubby Brushbox-Tallowwood	2,887	298	1,028	1,042	1,046	1,046	1,841	36
110 Open Silvertop Stringybark-Blue Gum	53,990	3,928	18,794	19,852	19,852	19,964	34,026	37
111 Open Silvertop Stringybark-Tallowwood	1,889	110	1,017	1,019	1,019	1,019	870	54
112 Paperbark	12,866	6,760	8,055	8,147	8,220	8,243	4,623	64
113 Peppermint	13,115	2,170	4,471	4,521	4,521	4,521	8,594	34
114 Peppermint-Mountain/Manna Gum	5,736	674	1,622	1,625	1,625	1,625	4,111	28
115 Red Bloodwood	5	5	4	4	4	4	1	80
116 Red Gum-Stringybark	12,238	2	90	90	90	90	12,148	1
117 Red Mahogany	65	2	2	7	7	7	58	11
120 River Oak	922	346	581	606	606	606	316	66
122 Rough-barked Apples	2,636	872	984	986	1,016	1,017	1,619	39
123 Roundleaved Gum	172	5	21	21	21	21	151	12
124/233 Roundleaved Gum-Turpentine	8,624	2,290	3,002	2,994	2,994	2,994	5,630	35
129 Smoothbarked Apple	18,751	1,713	4,495	4,689	5,555	6,315	12,436	34
130 Smoothbarked Apple-Sydney Peppermint-Stringybark	9,517	26	2,339	2,584	4,392	4,481	5,036	47
131 Snow Gum	4,433	2,248	3,258	3,384	3,384	3,394	1,039	77
132 Snow Gum -Mountain/Manna Gum	23,120	3,336	6,746	8,390	8,390	8,444	14,676	37

Terrestrial ecosystem type	Area (hectares)						Terrestrial ecosystem not in protected areas as at 30 June 2016	Proportion in protected areas as at 30 June 2016 (%)
	Terrestrial ecosystem total ¹	Terrestrial ecosystem in protected areas on public land, by time period				Terrestrial ecosystem not in protected areas as at 30 June 2016		
		Pre-RFA ²	At 30 June 2001 ³	At 30 June 2006 ³	At 30 June 2011 ³			
133 Snow Gum-Black Sallee	16	7	16	16	16	16	0	100
134 South Coast Shrubby Grey Gum	151,030	2,486	20,362	21,144	22,811	23,726	127,304	16
135 South Coast Tallowwood-Blue Gum	71,217	1,674	17,345	17,587	17,611	17,621	53,596	25
137 Southern Wet Sydney Blue Gum	41,695	3,073	12,493	13,773	13,853	13,934	27,761	33
138 Steel Box/Craven Grey Box	125	0	90	121	121	121	4	97
139 Stringybark-Apple	81,300	16,866	27,734	32,108	32,138	32,147	49,153	40
140 Stringybark-Mallee	665	556	634	634	634	634	31	95
142 Swamp Mahogany	2,177	330	722	729	762	770	1,407	35
143 Swamp Oak	4,868	1,166	1,460	1,468	1,922	1,922	2,946	39
145 Sydney Peppermint-Stringybark	13,778	9,468	11,744	11,759	11,759	11,759	2,019	85
146 Tallowwood	746	275	411	437	437	437	309	59
147 Turpentine	235	3	71	91	91	91	144	39
148 Very Wet New England Blackbutt-Tallowwood	2,867	483	2,485	2,498	2,549	2,551	316	89
149 Mallee-Peppermint mosaic	3,621	402	1,050	1,100	1,100	1,103	2,518	30
153 Wet Coastal Tallowwood-Brushbox	10,245	143	1,225	1,237	1,242	1,242	9,003	12
154 Wet Flooded Gum-Tallowwood	6,161	41	1,339	1,389	1,391	1,391	4,770	23
155 Wet Foothills Blackbutt-Turpentine	50,264	1,695	17,958	18,865	19,274	19,274	30,990	38
156 Wet New England Blackbutt-Silver-top Stringybark	15,604	1,909	7,512	7,606	7,606	7,609	7,995	49
157 Wet Shrubby Brushbox-Tallowwood	30,589	2,075	17,244	17,504	18,359	18,359	12,230	60
162 Whitetopped Box	967	61	448	576	576	576	391	60
163 Yellow Box-Blakely's Red Gum	2,696	4	48	48	48	48	2,648	2

Terrestrial ecosystem type	Area (hectares)						Terrestrial ecosystem not in protected areas as at 30 June 2016	Proportion in protected areas as at 30 June 2016 (%)
	Terrestrial ecosystem total ¹	Terrestrial ecosystem in protected areas on public land, by time period						
		Pre-RFA ²	At 30 June 2001 ³	At 30 June 2006 ³	At 30 June 2011 ³	At 30 June 2016 ³		
168 Rainforest	256,326	79,544	217,688	220,422	221,938	221,950	34,376	87
174 Orange Gum - Tumbledown Gum - Apple	10,169	75	289	331	331	331	9,838	3
175 Orange Gum - New England Blackbutt - Tumbledown Gum	23,572	98	683	699	699	699	22,873	3
176 Orange Gum - Ironbark	6,636	1	162	162	162	162	6,474	2
177 Outcrop Orange Gum - New England Blackbutt	3,170	2	106	106	106	106	3,064	3
178 Outcrop Black Cypress - Tumbledown Gum	659	0	0	0	0	-	659	0
179 Yellow Box - Broad-leaved Stringybark	273	1	11	12	12	12	261	4
182 Apple - Black Cypress	14,635	75	229	229	229	229	14,406	2
183 Red Gum - Apple	4,065	1,797	2,321	2,319	2,319	2,319	1,746	57
184 Tumbledown Gum - Ironbark	160	0	0	0	0	-	160	0
186 Open Tumbledown Gum - Black Cypress - Orange Gum	7,959	20	185	186	186	186	7,773	2
189 Silverleaved Ironbark - Cypress	2,007	0	15	15	15	15	1,992	1
190 Yellow Box - Grey Box - Red Gum	7,724	210	393	393	393	393	7,331	5
195 Apple - Manna Gum woodland	6,638	33	157	172	172	172	6,466	3
196 Broad-leaved Stringybark - Apple Box	10,442	14	268	274	274	274	10,168	3
197 Broad-leaved Stringybark	1,346	2	55	55	55	55	1,291	4
198 Silvertop Stringybark	1,501	3	100	100	100	100	1,401	7
200 Broad-leaved Stringybark - Ribbon Gum	7	0	1	1	1	1	6	14
202 Peppermint-Apple-Turpentine	36,556	24,910	29,878	29,885	29,937	30,225	6,331	83
203 Grey Gum-Stringybark-Apple	37,492	30,867	32,467	32,487	32,487	32,487	5,005	87
204 Grey Gum - Scribbly Gum	18,871	18,032	18,243	18,242	18,242	18,242	629	97

Terrestrial ecosystem type	Area (hectares)						Terrestrial ecosystem not in protected areas as at 30 June 2016	Proportion in protected areas as at 30 June 2016 (%)
	Terrestrial ecosystem total ¹	Terrestrial ecosystem in protected areas on public land, by time period						
		Pre-RFA ²	At 30 June 2001 ³	At 30 June 2006 ³	At 30 June 2011 ³	At 30 June 2016 ³		
205 Peppermint-Silvertop Ash-Stringybark	1,309	1,019	1,033	1,033	1,033	1,033	276	79
206 Apple-Grey Gum-Turpentine	28,264	11,592	15,822	15,882	15,970	16,031	12,233	57
207 Hunter Spotted Gum-Ironbark	25,740	4	2,300	2,287	3,137	3,388	22,352	13
208 Hunter Roughbarked Apple- Red Gum	8,876	644	903	914	919	925	7,951	10
209 Yellow Bloodwood-Stringybark	52,329	32,619	37,065	37,090	37,090	37,090	15,239	71
210 Yellow Bloodwood-Ironbark	29,520	15,535	19,581	19,585	19,585	19,585	9,935	66
211 Apple-Turpentine	21,680	12,009	18,256	18,255	18,255	18,255	3,425	84
212 Yellow Bloodwood-Narrowleaved Apple	57,711	37,113	45,900	45,896	45,896	45,896	11,815	80
213 Stringybark-Scribbly Gum Woodland	9,196	8,944	9,010	9,006	9,006	9,006	190	98
214 Brown Bloodwood-Dwyers Redgum	1,862	1,162	1,163	1,163	1,163	1,163	699	62
215 Brown Bloodwood-Ironbark	11,650	11,129	11,157	11,148	11,148	11,148	502	96
216 Sandstone Ironbark	12,427	8,820	8,808	8,808	8,808	8,808	3,619	71
217 combined into 63/217								
218 Ironbark-Stringybark	15,843	6,246	6,266	6,266	6,266	6,266	9,577	40
219 Brown Bloodwood	8,905	4,202	4,226	4,226	4,226	4,226	4,679	47
220 Yellow Bloodwood-Stringybark-Narrowleaved Apple	39,881	25,716	33,426	33,431	33,431	33,431	6,450	84
221 Apple-Red Bloodwood-Peppermint-Turpentine	23,923	15,340	17,946	18,070	18,085	18,085	5,838	76
222 Stringybark-Mallee Woodland	7,084	6,833	6,869	6,867	6,867	6,867	217	97
223 Dwarf Apple Forest	20,238	11,420	17,649	17,651	17,651	17,651	2,587	87
224 Coastal Apple-Stringybark-Scribbly Gum	1,070	0	46	47	47	47	1,023	4
225 Wyong Apple-Scribbly Gum	3,768	0	119	122	146	146	3,622	4

Terrestrial ecosystem type	Area (hectares)						Terrestrial ecosystem not in protected areas as at 30 June 2016	Proportion in protected areas as at 30 June 2016 (%)
	Terrestrial ecosystem total ¹	Terrestrial ecosystem in protected areas on public land, by time period						
		Pre-RFA ²	At 30 June 2001 ³	At 30 June 2006 ³	At 30 June 2011 ³	At 30 June 2016 ³		
226 Mahogany-Banksia Heath	9,830	6,065	6,795	6,805	6,805	6,805	3,025	69
227 Turpentine-Myrtle	15,745	11,417	12,235	12,279	12,279	12,279	3,466	78
228 Turpentine-Oak-Myrtle	13,833	8,329	8,996	8,980	8,980	8,980	4,853	65
229 Roughbarked Apple-Forest Oak	33,615	19,286	22,000	22,000	22,000	22,000	11,615	65
230 Watagan Blackbutt-Blue Gum	13,664	295	3,563	5,195	5,203	5,353	8,311	39
231 Watagan Blue Gum	16,218	194	5,600	6,486	6,589	6,774	9,444	42
232 Watagan Spotted Gum-Ironbark-White Mahogany	8,609	90	1,285	2,931	3,002	3,368	5,241	39
233 combined into 124/233								
234 Grey Gum - Grey Myrtle	35,600	19,253	23,420	23,374	23,374	23,374	12,226	66
235 Wet Roundleaved Gum Forest	2,637	2,176	2,212	2,212	2,212	2,212	425	84
236 Bangalay-Blue Gum	14,197	4,374	8,734	8,741	8,741	8,741	5,456	62
237 Wollemi Manna Gum	2,260	2,151	2,168	2,168	2,168	2,168	92	96
238 Tablelands Grey Gum-Scribbly Gum	210	210	210	210	210	210	0	100
239 Wollemi Roughbarked Apple	6,021	1,903	2,799	2,801	2,801	2,801	3,220	47
240 Roughbarked Apple-Redgum	316	92	124	125	125	125	191	40
241 Ironbark-Redgum	2,550	210	223	223	223	223	2,327	9
242 Hunter Grey Box	12,040	5,055	5,525	5,523	5,523	5,523	6,517	46
243 Grey Gum-Mugga Ironbark	2,988	2,037	2,048	2,048	2,048	2,048	940	69
244 White Box-Grey Gum	1,818	561	998	989	989	989	829	54
245 Grey Box	1,024	614	588	588	588	588	436	57
246 Scribbly Gum-Redgum Woodland	3,141	1,619	1,723	1,723	1,723	1,723	1,418	55

Terrestrial ecosystem type	Area (hectares)							Proportion in protected areas as at 30 June 2016 (%)
	Terrestrial ecosystem total ¹	Terrestrial ecosystem in protected areas on public land, by time period					Terrestrial ecosystem not in protected areas as at 30 June 2016	
		Pre-RFA ²	At 30 June 2001 ³	At 30 June 2006 ³	At 30 June 2011 ³	At 30 June 2016 ³		
247 Coastal Bastard Mahogany Forest	18,002	2,247	4,297	4,447	4,708	4,861	13,141	27
248 Apple-Forest Oak	7,508	2,135	2,599	2,602	2,620	2,620	4,888	35
249 White Box-Ironbark-Red Gum	26,170	2,830	3,951	3,954	3,954	3,954	22,216	15
250 Banksia Heath-Scribbly Gum-Apple	10,795	49	619	614	904	904	9,891	8
Total Forest Ecosystems	3,174,598	724,471	1,409,830	1,452,582	1,471,895	1,478,051	1,696,547	47
Non-Forest Ecosystem								
5 Banksia	4,196	1,323	1,705	1,711	1,896	1,898	2,298	45
64 Heath	14,286	10,571	11,616	11,617	11,700	11,700	2,586	82
66 Herbfield and Fjaeldmark	2	2	2	2	2	2	0	100
96 Natural Grassland	138	111	111	111	111	111	27	80
121 Rock	6,576	1,452	6,210	6,333	6,335	6,372	204	97
125 Saltbush	200	0	0	0	0	0	200	0
141 Swamp	9,130	6,853	8,366	8,392	8,516	8,618	512	94
169 Scrub	3,073	2,251	2,729	2,787	2,818	2,818	255	92
199 Riparian Shrubland	1,172	1	16	16	16	16	1,156	1
Total Non-Forest Ecosystems	38,773	22,564	30,755	30,969	31,394	31,535	7,238	81
Total Terrestrial ecosystems	3,213,371	747,035	1,440,585	1,483,551	1,503,289	1,509,586	1,703,785	47
As proportion of total Terrestrial ecosystem area (%)	100	23	45	46	47	47	53	

Notes:

¹ Area derived by ABARES from spatial data associated with the North East RFA (2000). Figures for individual ecosystem classes are of variable accuracy and should not be assumed to be more accurate than the nearest 100 hectares. Increasing levels of reservation over time are applied to this area.

² Directly from the pre-RFA Formal Reserve extent reported in the North East RFA (formal reserve spatial data provided by the NPWS to the Commonwealth Government at signing of the RFA Scoping Agreement 25 January 1996). Reserves on public land only.

³ Reserves on public land only. This includes the NPWS estate (formal reserves); informal reserves identified from Forest Management Zone datasets at RFA signing (2000), 2004 and 2016; and additional Regional Prescriptions from the Integrated Forestry Operations Approval where available. Together these components constitute the CAR reserve system on public land. Spatial datasets covering different time-periods have been reprojected to a common projection but some small differences remain between the datasets. Informal reserves on other Crown land identified from the 2004 Forest Management Zone dataset are included in all subsequent time periods.

Totals may not tally due to rounding

Table 1.29 Terrestrial ecosystem areas in the Southern RFA region

as identified in the CRA spatial data, by changes in area in the CAR reserve system over time

Terrestrial ecosystem type	Area (hectares)						Terrestrial ecosystem not in protected areas as at 30 June 2016	Proportion in protected areas as at 30 June 2016 (%)
	Terrestrial ecosystem total ¹	Terrestrial ecosystem in protected areas on public land, by time period				Pre-RFA ²		
		At 30 June 2001 ³	At 30 June 2006 ³	At 30 June 2011 ³	At 30 June 2016 ³			
Forest Ecosystem								
1 Southern Coastal Hinterland Intermediate Altitude Shrub Dry Forest - <i>E. sieberi</i>	50,567	18,797	36,429	37,385	37,385	37,410	13,157	74
2 Hinterland Heath Shrub Dry Forest - <i>Corymbia gummifera/Syncarpia glomulifera</i>	86,242	22,421	42,158	42,971	42,971	43,024	43,218	50
3 Northern Hinterland Shrub Dry Forest - <i>Syncarpia glomulifera/E. scias</i>	16,215	10,678	14,253	14,246	14,246	14,249	1,966	88
4 Northern Gorge Heath Shrub Dry Forest - <i>E. punctata/E. agglomerata</i>	17,822	12,719	13,274	13,429	13,429	13,429	4,393	75
5 Northern Coastal Lowlands Shrub/Grass Dry Forest - mixed tree species	8,846	291	2,425	3,765	3,765	3,768	5,078	43
7 Southern Coastal Hinterland Shrub/Tussock Grass Dry Forest - <i>E. sieberi</i>	20,355	1,002	7,005	7,203	7,203	7,231	13,124	36
8 Far Southern Coastal Shrub Dry Forest - <i>E. sieberi</i>	479	157	203	203	203	203	276	42
9 Coastal Lowlands Cycad/Shrub Dry Forest - <i>Corymbia maculata</i>	55,532	1,730	10,873	11,454	11,582	11,651	43,881	21
10 Southern Coastal Lowlands Shrub/Grass Dry Forest - <i>E. globoidea/E. longifolia</i>	17,634	148	4,513	4,567	4,567	4,577	13,057	26
11 Coastal Shrub/Grass Dry Forest - <i>E. botryoides/E. globoidea/Imperata cylindrica</i>	426	167	254	254	254	254	172	60
12 Coastal Hinterland (Buckenbours) Shrub/Cycad Dry Forest - <i>Corymbia gummifera</i>	1,005	0	836	821	821	821	184	82
13 Southern Escarpment Foothills Rainshadow Dry Grass Forest - <i>E. agglomerata</i>	4,192	3,169	3,210	3,210	3,210	3,210	982	77
14 Northern Coastal Hinterland Shrub/Grass Dry Forest - <i>E. fibrosa/Corymbia maculata</i>	5,756	1,075	1,292	2,183	2,183	2,183	3,573	38
15 Central and North East Tableland Dry Shrub Forest - <i>E. sieberi</i>	56,597	14,277	19,724	21,855	21,887	21,887	34,710	39
16 North East Tableland Dry Shrub/Tussock Grass Forest - <i>E. agglomerata</i>	15,506	6,318	9,111	9,131	9,337	9,337	6,169	60
17 Northern Sandstone Dry Shrub Forest - <i>E. punctata</i>	92	0	0	0	0	0	92	0
18 Southern Coastal Hinterland Shrub/Vine/Grass Moist Forest - <i>E. cypellocarpa/E.</i>	50,316	13,389	30,493	31,122	31,122	31,140	19,176	62

Terrestrial ecosystem type	Area (hectares)						Terrestrial ecosystem not in protected areas as at 30 June 2016	Proportion in protected areas as at 30 June 2016 (%)
	Terrestrial ecosystem total ¹	Terrestrial ecosystem in protected areas on public land, by time period				Pre-RFA ²		
		At 30 June 2001 ³	At 30 June 2006 ³	At 30 June 2011 ³	At 30 June 2016 ³			
<i>muelleriana</i>								
19 Coastal Escarpment and Hinterland Shrub/Fern Dry Forest - <i>E. muelleriana</i>	68,666	20,647	41,399	42,145	42,145	42,167	26,499	61
20 Coastal Hinterland Gully Rainforest	2,976	80	1,349	1,348	1,348	1,350	1,626	45
21 Northern Coastal Hinterland Moist Shrub Forest - <i>C. maculata/E. pilularis</i>	69,988	8,892	24,149	24,463	24,482	24,573	45,415	35
24 Coastal Tall Wet Heath Swamp Forest - <i>Casuarina glauca/Melaleuca ericifolia</i>	6,119	657	1,594	1,580	1,580	1,581	4,538	26
25 South Coast Swamp Forest - <i>Casuarina glauca</i>	3,792	391	984	986	1,006	1,008	2,784	27
27 Ecotonal Coastal Swamp Forest - <i>Casuarina glauca/E. botryoides</i>	343	17	29	29	50	50	293	15
28 Coastal Sands Shrub/Fern Forest - <i>E. botryoides/Banksia serrata</i>	2,525	215	889	979	979	989	1,536	39
29 Northern Coastal Sands Shrub/Fern Forest - <i>E. pilularis/Banksia serrata</i>	10,838	2,299	4,107	4,401	4,456	4,456	6,382	41
32 Coastal Escarpment Rocky Shrub Dry Forest	44	44	46	46	46	46	0	105
34 Deua Ecotonal Shrub Forest - <i>E. smithii/E. cypellocarpa/Astrotricha latifolia/Notelaea venosa</i>	123	123	117	117	117	117	6	95
35 South Coast Acacia Scrubs - <i>Acacia sylvestris</i>	3,980	1,876	2,847	2,857	2,857	2,858	1,122	72
37 Scabby Range Dry Shrub Woodland - <i>E. debeuzevillei/Leptospermum namadgiensis</i>	271	143	250	250	250	250	21	92
38 Tableland Dry Heath Shrub/Herb/Grass Woodland - <i>Calytrix tetragona(E.goniocalyx)</i>	1,456	748	1,179	1,174	1,175	1,183	273	81
40 Coastal Hinterland (Deua NP) Dry Shrub Forest (rhyolite) - <i>E. stenostoma</i>	2,415	2,336	2,398	2,398	2,398	2,398	17	99
41 Rain Shadow (lower Snowy) Shrubland	705	345	394	394	394	394	311	56
43 Western Slopes Riparian Moist Sedge Woodland - <i>E. camaldulensis</i>	1,589	0	0	0	0	0	1,589	0
47 Far Southern Hinterland Herb/Grass Moist Forest - <i>E. maidenii/E. globoidea</i>	85	51	72	72	72	72	13	85
48 Coastal Lowlands Riparian Herb/Grass Forest - various eucs	3,625	308	953	956	956	961	2,664	27
49 Southern Hinterland Shrub/Herb/Grass Riparian Forest - <i>Angophora floribunda/E.</i>	14,573	6,810	9,063	9,081	9,081	9,091	5,482	62

Terrestrial ecosystem type	Area (hectares)						Proportion in protected areas as at 30 June 2016 (%)	
	Terrestrial ecosystem total ¹	Terrestrial ecosystem in protected areas on public land, by time period				Terrestrial ecosystem not in protected areas as at 30 June 2016		
		Pre-RFA ²	At 30 June 2001 ³	At 30 June 2006 ³	At 30 June 2011 ³			At 30 June 2016 ³
<i>elata</i> / <i>Acacia mearnsii</i>								
50 Southern Escarpment Herb/Grass Dry Forest- <i>Angophora floribunda</i> / <i>E.tereticornis</i> herb grass forest	18,926	5,595	7,806	7,932	7,932	7,933	10,993	42
51 Araluen Acacia Herb/Grass Dry Forest - <i>E. melliodora</i> / <i>E. maidenii</i>	4,882	58	681	1,332	1,332	1,333	3,549	27
53 Riparian Acacia Shrub/Grass/Herb Forest - <i>Casuarina cunninghamiana</i>	5,242	769	1,662	1,669	1,673	1,687	3,555	32
55 Eastern Tableland Fern/Herb/Grass Moist Forest - <i>E. fastigata</i>	36,826	4,680	16,737	16,748	16,748	16,769	20,057	46
56 Tableland and Escarpment Moist Herb/Fern Grass Forest - <i>E. radiata</i> / <i>E. viminalis</i> / <i>Viola</i> spp	30,714	3,114	12,188	13,399	13,399	13,436	17,278	44
57 Southern Escarpment Shrub/Fern/Herb Moist Forest - <i>E. cypellocarpa</i> incl. <i>E. fastigata</i> & <i>E. obliqua</i>	37,166	20,695	29,929	31,357	31,357	31,441	5,725	85
58 Tableland and Escarpment Wet Layered Shrub Forest - <i>E. fastigata</i> / <i>Olearia argophylla</i> / <i>Dicksonia antarctica</i>	19,184	11,650	17,895	17,949	17,949	17,953	1,231	94
59 Eastern Tableland and Escarpment Shrub/Fern Dry Forest - <i>E. radiata</i> / <i>E. sieberi</i> / <i>Leucopogon lanceolatus</i>	13,656	1,945	5,824	7,575	7,575	7,595	6,061	56
61 Southern Escarpment Edge Moist Shrub Forest - <i>E. fraxinoides</i>	3,259	2,437	3,006	2,998	2,998	2,998	261	92
62 Southern Escarpment Edge Moist Shrub/Fern Forest - <i>E. fraxinoides</i> / <i>E. cypellocarpa</i>	7,633	3,530	6,053	6,020	6,020	6,021	1,612	79
64 Southern East Tableland Edge Shrub/Grass Dry Forest - <i>E. dalrympeana</i> / <i>E. radiata</i>	1,103	0	943	965	965	965	138	87
66 Eastern Tablelands Shrub/Grass Moist Forest - <i>E. dalrympeana</i> / <i>E. radiata</i> / <i>Poa sieberiana</i>	5,832	1,256	4,185	4,169	4,169	4,170	1,662	72
68 North East Tablelands Shrub/Herb/Grass Dry Forest - <i>E. pauciflora</i> / <i>E. viminalis</i> / <i>Lomandra longifolia</i>	9,442	471	897	1,303	1,303	1,303	8,139	14
70 Western Escarpment Dry Shrubland - <i>E. dives</i> / <i>Xanthorhoea australis</i> / <i>Platylobium formosum</i>	1,567	1,180	1,204	1,204	1,204	1,208	359	77
71 Western Tableland Dry Shrubland - <i>E. macrorhyncha</i> / <i>Leptospermum brevipes</i>	769	457	717	452	452	717	52	93

Terrestrial ecosystem type	Area (hectares)							Proportion in protected areas as at 30 June 2016 (%)
	Terrestrial ecosystem total ¹	Terrestrial ecosystem in protected areas on public land, by time period				Terrestrial ecosystem not in protected areas as at 30 June 2016		
		Pre-RFA ²	At 30 June 2001 ³	At 30 June 2006 ³	At 30 June 2011 ³		At 30 June 2016 ³	
72 Tablelands Dry Shrub Forest - <i>E. dives</i> / <i>E. radiata</i> / <i>Bursaria lasiophylla</i>	546	0	46	46	46	46	500	8
73 Tableland Dry Shrub/Grass Forest - <i>E. pauciflora</i> / <i>E. viminalis</i> / <i>Acacia dealbata</i> / <i>Themeda australis</i>	70,124	2,155	7,117	8,369	8,369	8,411	61,713	12
74 South Eastern Tablelands Dry Shrub/Grass/Herb Forest - <i>E. bridgesiana</i> / <i>E. pauciflora</i> / <i>E. rubida</i> / <i>Acaena novae-zealandiae</i>	50,156	2,482	5,251	6,544	6,544	6,544	43,612	13
75 Tablelands Shrub/Tussock Grass Forest - <i>E. dives</i> / <i>Chionchloa pallida</i>	32,536	17,329	18,899	18,856	18,856	18,932	13,604	58
76 Tablelands Shrub/Grass Dry Forest - <i>E. rubida</i> / <i>E. pauciflora</i> / <i>Themeda australis</i>	38,752	8,545	9,010	8,992	8,992	9,010	29,742	23
77 Lower Snowy Dry Shrub/Tussock Grass Forest - <i>E. goniocalyx</i> / <i>Chionochloa pallida</i>	69,920	35,779	45,738	45,738	45,738	45,738	24,182	65
78 Lower Snowy Dry Shrub/Herb Woodland - <i>E. albens</i> / <i>Callitris glauciphylla</i> / <i>Acacia deanei</i>	37,242	31,804	34,338	34,338	34,338	34,338	2,904	92
79 Montane Dry Shrub/Tussock Grass Forest - <i>E. nortonii</i> / <i>Cassinia longifolia</i> / <i>Chionochloa pallida</i>	604	227	249	249	249	249	355	41
80 ACT Dry Shrub/Herb Forest - <i>E. dives</i> / <i>E. bridgesiana</i> / <i>Cassinia longifolia</i> / <i>Hydrocotyle laxiflora</i>	4	0	0	0	0	0	4	0
81 Eastern Dry Shrub/Herb/Grass Forest - <i>E. bridgesiana</i> / <i>E. dives</i> / <i>Bursaria spinosa</i> / <i>Poa sieberiana</i>	8,487	0	0	0	0	0	8,487	0
82 Western Montane Acacia Fern/Herb Forest - <i>E. viminalis</i> / <i>E. robertsonii</i> / <i>Cassinia aculeata</i> / <i>Pteridium esculentum</i>	94,998	65,022	69,301	69,117	69,117	71,163	23,835	75
83 Montane Riparian Moist Shrub/Grass/Herb Forest - <i>E. dalrympleana</i> / <i>E. robertsonii</i> / <i>Acacia melanoxylon</i> / <i>Microlaena stipoides</i>	945	238	471	471	471	471	474	50
85 Montane Riparian Moist Shrub/Sedge/Grass Forest - <i>E. dalrympleana</i> / <i>E. viminalis</i> / <i>Leptospermum lanigerum</i> / <i>Poa helmsii</i>	669	652	656	656	656	656	13	98
86 Western Montane Moist Shrub Forest - <i>E. delegatensis</i> / <i>E. pauciflora</i> / <i>Polyscias sambucifolia</i> / <i>Tasmannia lanceolata</i>	4,061	4,043	4,049	4,049	4,049	4,049	12	100

Terrestrial ecosystem type	Area (hectares)						Terrestrial ecosystem not in protected areas as at 30 June 2016	Proportion in protected areas as at 30 June 2016 (%)
	Terrestrial ecosystem total ¹	Terrestrial ecosystem in protected areas on public land, by time period				Pre-RFA ²		
		At 30 June 2001 ³	At 30 June 2006 ³	At 30 June 2011 ³	At 30 June 2016 ³			
87 Western Escarpment Moist Shrub/Herb/Grass Forest - <i>E. delegatensis</i> / <i>E. dalrympleana</i> / <i>Derwentia derwentiana</i> / <i>Stellaria pungens</i>	69,713	54,542	54,546	55,511	55,511	55,597	14,116	80
88 Western Escarpment Shrub/Grass Forest - <i>E. chapmaniana</i> / <i>Daviesia latifolia</i>	587	587	592	592	592	592	0	100
89 Widespread Tablelands Acacia/Herb/Grass Forest - <i>E. dalrympleana</i> / <i>E. viminialis</i> / <i>Acacia melanoxylon</i> / <i>Stellaria pungens</i>	29,767	837	11,101	13,050	13,050	13,105	16,662	44
90 Northern Tablelands Acacia Herb/Grass Dry Forest - <i>E. bridgesiana</i> / <i>Acacia dealbata</i> / <i>Hydrocotyle laxiflora</i>	1,347	147	205	205	205	205	1,142	15
91 Burninjuck Acacia Dry Herb/Grass Forest - <i>E. bridgesiana</i> / <i>E. bicostata</i> / <i>Acacia dealbata</i> / <i>Poa sieberiana</i>	4,424	455	1,670	1,533	1,533	2,062	2,362	47
92 Tablelands Acacia/Grass/Herb Dry Forest - <i>E. bridgesiana</i> / <i>E. melliodora</i> / <i>Acacia mearnsii</i> / <i>Microlaena stipoides</i>	6,476	197	269	269	269	269	6,207	4
93 Western Tablelands Herb/Grass Dry Forest - <i>E. robertsonii</i> / <i>Microlaena stipoides</i>	32,412	6,236	18,580	15,557	15,557	19,780	12,632	61
94 South-west Slopes Acacia Dry Herb/Grass Forest - <i>E. bridgesiana</i> / <i>E. macrorhyncha</i> / <i>Acacia dealbata</i> / <i>Microlaena stipoides</i>	25,677	0	7,402	6,337	7,393	9,417	16,260	37
95 Tableland Acacia Moist Herb Forest - <i>E. pauciflora</i> / <i>E. dalrympleana</i> / <i>Acacia dealbata</i> / <i>Helichrysum scorpiodes</i>	36,549	12,188	17,168	16,349	16,349	17,227	19,322	47
96 Tableland Tussock Grass/Herb Forest - <i>E. pauciflora</i> / <i>E. dalrympleana</i> / <i>Poa sieberiana</i>	318	317	311	311	311	311	7	98
97 Montane Acacia/Dry Shrub/Herb/Grass Forest - <i>E. dalrympleana</i> / <i>E. pauciflora</i> / <i>Acacia dealbata</i> / <i>Stellaria pungens</i>	67,482	51,529	53,631	52,794	52,794	53,668	13,814	80
98 Western Montane Moist Shrub Forest - <i>E. pauciflora</i> / <i>E. dalrympleana</i> / <i>Daviesia ulicifolia</i> / <i>Lomandra longifolia</i>	70,756	47,578	49,963	49,887	49,887	49,963	20,793	71
99 Montane Dry Shrub/Herb/Grass Forest - <i>E. pauciflora</i> / <i>Leucopogon hookeri</i> / <i>Stellaria pungens</i>	10,172	8,690	9,325	9,325	9,325	9,325	847	92
100 ACT Montane Dry Shrub/Grass Forest - <i>E. pauciflora</i> / <i>Acacia dealbata</i> / <i>Poa induta</i>	5,567	831	815	815	815	815	4,752	15

Terrestrial ecosystem type	Area (hectares)						Terrestrial ecosystem not in protected areas as at 30 June 2016	Proportion in protected areas as at 30 June 2016 (%)
	Terrestrial ecosystem total ¹	Terrestrial ecosystem in protected areas on public land, by time period				Pre-RFA ²		
		At 30 June 2001 ³	At 30 June 2006 ³	At 30 June 2011 ³	At 30 June 2016 ³			
101 Western Montane Dry Shrub/Herb/Grass Forest - <i>E. dalrympleana</i> / <i>E. pauciflora</i> / <i>Daviesia latifolia</i> / <i>Coprosma hirtella</i> / <i>Stellaria pungens</i>	41,254	16,922	20,295	20,273	20,273	20,486	20,768	50
102 Western Montane Dry Fern/Grass Forest - <i>E. dalrympleana</i> / <i>E. pauciflora</i> / <i>Poa sieberiana</i> / <i>Asperula scoparia</i>	2,869	1,457	2,760	2,760	2,760	2,760	109	96
103 Western Montane Dry Fern/Grass Forest - <i>E. dives</i> / <i>E. dalrympleana</i> / <i>E. robertsonii</i> / <i>Pteridium esculentum</i> / <i>Poa sieberiana</i>	49,332	25,230	30,551	29,239	29,239	30,725	18,607	62
104 Tableland Acacia/Herb/Grass Forest - <i>E. robertsonii</i> / <i>E. dalrympleana</i> / <i>Acacia dealbata</i> / <i>Platylobium formosum</i> / <i>Senecio</i> sp.	41,116	28,726	32,679	31,742	31,742	33,651	7,465	82
106 Montane Dry Shrub/Tussock Forest - <i>E. robertsonii</i> / <i>E. dalrympleana</i> / <i>Platylobium formosum</i> / <i>Tetratheca bauerifolia</i>	29,551	28,409	28,446	28,446	28,446	28,446	1,105	96
107 Tableland Montane Dry Shrub Forest - <i>E. dalrympleana</i> / <i>E. dives</i> / <i>Hibbertia obtusifolia</i>	20,330	3,576	5,196	5,198	5,198	5,198	15,132	26
108 Western Tablelands Dry Herb/Grass Forest - <i>E. macrorhyncha</i> / <i>E. dives</i> / <i>Hibbertia obtusifolia</i> / <i>Poa sieberiana</i>	75,056	25,344	53,611	48,743	51,566	58,655	16,401	78
109 Tablelands Dry Shrub/Tussock Grass Forest - <i>E. dives</i> / <i>E. mannifera</i> / <i>E. macrorhyncha</i> / <i>Hibbertia obtusifolia</i> / <i>Chionochloa pallida</i>	28,497	2,083	4,107	6,019	6,019	6,071	22,426	21
110 Tablelands Dry Shrub/Grass Forest - <i>E. dives</i> / <i>E. mannifera</i> / <i>E. macrorhyncha</i> / <i>Poa sieberiana</i>	18,393	2,528	8,080	8,628	8,628	8,720	9,673	47
112 Eastern Tablelands Dry Shrub Forest - <i>E. sieberi</i> / <i>E. dives</i> / <i>Brachyloma daphnoides</i> / <i>Poa sieberiana</i>	7,646	0	1,141	1,490	1,490	1,567	6,079	20
113 North East Tablelands Dry Shrub/Grass Forest - <i>E. mannifera</i> / <i>E. dives</i> / <i>Brachyloma daphnoides</i> / <i>Dianella revoluta</i>	50,342	4,334	6,666	9,525	9,540	9,540	40,802	19
114 Tablelands Dry Shrub/Tussock Grass Forest - <i>E. macrorhyncha</i> / <i>E. rossii</i> / <i>E. goniocalyx</i> / <i>Chionochloa pallida</i>	25,018	1,613	4,292	4,374	4,374	4,432	20,586	18
115 South East Tablelands Dry Shrub/Tussock Grass Forest - <i>E. rossii</i> / <i>E. mannifera</i> / <i>Pultenaea procumbens</i> / <i>Chionochloa pallida</i>	59,766	2	6,696	9,576	9,576	9,576	50,190	16

Terrestrial ecosystem type	Area (hectares)						Terrestrial ecosystem not in protected areas as at 30 June 2016	Proportion in protected areas as at 30 June 2016 (%)
	Terrestrial ecosystem total ¹	Terrestrial ecosystem in protected areas on public land, by time period				Pre-RFA ²		
		At 30 June 2001 ³	At 30 June 2006 ³	At 30 June 2011 ³	At 30 June 2016 ³			
116 Western Slopes Herb/Grass Woodland - <i>E. blakelyi</i> / <i>Microlaena stipoides</i> / <i>Hydrocotyle laxiflora</i>	4,052	0	134	134	134	678	3,374	17
117 Western Slopes Dry Grass Woodland - <i>E. albens</i> / <i>Microlaena stipoides</i> / <i>Bothriochloa macra</i>	981	0	22	22	22	22	959	2
118 Western Slopes Dry Grass Forest - <i>E. sideroxylon</i> / <i>E. blakelyi</i> / <i>E. goniocalyx</i> / <i>Elymus scaber</i>	308	0	12	185	185	185	123	60
119 Western Tablelands Dry Shrub/Grass Forest - <i>E. macrorhyncha</i> / <i>E. polyanthemos</i> / <i>Hibbertia obtusifolia</i> / <i>Gonocarpus tetragynus</i>	36,151	2	9,241	8,382	10,245	12,251	23,900	34
120 Western Slopes Shrub/Herb/Grass Dry Forest - <i>E. macrorhyncha</i> / <i>E. albens</i> / <i>Hydrocotyle laxiflora</i> / <i>Microlaena stipoides</i>	10,354	0	1,051	1,034	1,121	1,152	9,202	11
121 Western Slopes Grass/Herb Dry Forest - <i>E. macrorhyncha</i> / <i>E. goniocalyx</i> / <i>Gonocarpus tetragynus</i> / <i>Poa sieberiana</i>	61,833	7,439	24,530	25,103	26,470	30,080	31,753	49
124 Western Montane Wet Heath/Herb Grass Woodland - <i>E. pauciflora</i> / <i>Epacris breviflora</i>	4,390	247	550	406	406	1,549	2,841	35
127 Sub-alpine Dry Shrub/Herb/Grass Woodland - <i>E. debeuzevillei</i>	187	178	165	165	165	165	22	88
128 Sub-alpine Dry Shrub/Herb Woodland - <i>E. niphophila</i>	45,894	40,986	41,089	41,089	41,089	41,089	4,805	90
130 Sub-alpine Shrub/Grass Woodland - <i>E. niphophila</i>	66,452	65,979	66,252	65,857	65,857	66,265	187	100
137 Coastal Escarpment Moist Shrub/Fern Forest - <i>E. sieberi</i> / <i>E. piperita</i> / <i>Gleichenia dicarpa</i>	14,476	8,968	12,190	12,227	12,227	12,229	2,247	84
138 Northern Plateau and Escarpment Heath Shrub Dry Forest - <i>E. sieberi</i> / <i>E. considiniana</i>	30,823	16,434	23,533	23,325	23,325	23,370	7,453	76
139 Northern Coastal Hinterland Heath Shrub Dry Forest - <i>C. gummifera</i> / <i>E. sclerophylla</i>	48,057	15,237	27,265	27,760	27,760	27,766	20,291	58
146 Tableland Dry Herb/Grass Woodland - <i>E. pauciflora</i> / <i>E. stellulata</i> / <i>Asperula scoparia</i>	1,164	244	336	339	339	340	824	29
153 Tablelands and Slopes Herb/Grassland/ Woodland - <i>Themeda australis</i> plus <i>E.</i>	156	0	1	3	3	3	153	2

Terrestrial ecosystem type	Area (hectares)						Terrestrial ecosystem not in protected areas as at 30 June 2016	Proportion in protected areas as at 30 June 2016 (%)
	Terrestrial ecosystem total ¹	Terrestrial ecosystem in protected areas on public land, by time period				Pre-RFA ²		
		At 30 June 2001 ³	At 30 June 2006 ³	At 30 June 2011 ³	At 30 June 2016 ³			
<i>pauciflora/E. rubida</i>								
154 Tableland Dry Grass Woodland - <i>E. bridgesiana/Themeda australis</i>	15	0	0	0	0	0	15	0
160 Western Slopes Dry Grass Woodland - <i>E. blakelyi/E. melliodora/Danthonia racemosa</i>	3,646	52	74	44	44	72	3,574	2
161 Tablelands and Slopes Dry Herb/Grass Woodland - <i>E. melliodora/Danthonia racemosa</i>	556	0	0	0	0	0	556	0
162 Western Slopes Moist Herb/Sedge/Grass Woodland - <i>E. blakelyi/Carex appressa</i>	150	0	0	0	0	0	150	0
164 Coastal Escarpment Cool Temperate Rainforest	1,049	717	960	960	960	960	89	92
165 Southern Escarpment Cool/Warm Temperate Rainforest	3,716	1,040	2,762	2,860	2,860	2,860	856	77
166 Central Coastal Hinterland and Lowland Warm Temperate Rainforest	7,926	4,136	5,960	5,963	5,984	5,984	1,942	75
167 Coastal Lowland Sub Tropical/Littoral Rainforest	585	11	236	237	237	237	348	41
168 Ecotonal Granite Dry Rainforest - <i>Backhousia myrtifolia/Acmena smithii/Angophora floribunda/Pittosporum undulatum/Doodia aspera</i>	316	0	201	242	242	242	74	77
169 Coastal Hinterland Sub Tropical Warm Temperate Rainforest	7,825	2,215	2,512	2,514	2,514	2,514	5,311	32
170 Southern Coastal Hinterland Dry Gully Rainforest - <i>Backhousia myrtifolia</i>	7,244	870	3,926	3,944	3,944	3,946	3,298	54
171 Coastal Shrub/Grass Forest - <i>E. tereticornis</i>	3,512	1,699	1,669	1,669	1,669	1,669	1,843	48
172 Kosciuszko Western Escarpment Cool Temperate Rainforest	106	106	107	107	107	107	0	100
173 Northern Grass Herb Forest on Basalt	164	0	13	13	13	13	151	8
174 Shoalhaven Gorge Forest - <i>E. tereticornis / E.melliodora</i>	13,473	5,547	7,465	7,574	8,024	8,024	5,449	60
175 Northern Coastal Lowlands Swamp Forest - <i>E. robusta</i>	459	22	95	95	95	95	364	21
176 Morton Plateau Mallee Swamp Low Forest	40,155	35,619	38,233	38,241	38,241	38,241	1,914	95
177 Illawarra Lowland Sub-Tropical Rainforest	1,674	0	0	0	0	0	1,674	0

Terrestrial ecosystem type	Area (hectares)							Proportion in protected areas as at 30 June 2016 (%)
	Terrestrial ecosystem total ¹	Terrestrial ecosystem in protected areas on public land, by time period					Terrestrial ecosystem not in protected areas as at 30 June 2016	
		Pre-RFA ²	At 30 June 2001 ³	At 30 June 2006 ³	At 30 June 2011 ³	At 30 June 2016 ³		
178 Robertson Warm Temperate Rainforest	215	1	2	2	2	2	213	1
179 Eastern Deua dry shrub Forest - <i>Angophora costata</i>	2,713	607	2,177	2,193	2,193	2,193	520	81
180 Cooma Dry grass Forest - <i>E. viminalis-E.dives</i>	1,134	0	0	0	0	0	1,134	0
181 North-eastern Tablelands Gully Fern Forest - <i>Eelata / Calochlaena dubia</i>	3,098	0	248	439	439	439	2,659	14
185 Mangrove Estuarine Low Forest	1,393	226	332	332	345	345	1,048	25
192 South West Slopes Tall Shrubland Low Forest - <i>E.dwyeri-Acacia doratoxylon</i>	1,689	0	695	777	777	777	912	46
196 South West Slopes Tall Shrubland Low Forest - <i>E.dealбата</i>	152	0	0	0	0	0	152	0
Total Forest Ecosystems	2,445,600	911,373	1,296,860	1,312,357	1,320,538	1,351,081	1,094,519	55
Non-Forest Ecosystem								
36 Montane / Sub-Alpine Dry Rocky Shrubland	2,828	2,680	2,725	2,725	2,725	2,725	103	96
65 Southern Escarpment Edge Moist Heath - <i>Oxylobium ellipticum</i>	31	29	29	29	29	29	2	94
69 Eastern Tablelands Damp Heath - <i>Epacris microphylla/Schoenus apogon</i>	63	8	45	49	49	49	14	78
123 Montane Wet Heath/Bog - <i>Baeckea utilis</i>	300	282	291	291	291	291	9	97
125 Montane Wet Heath/Herb Grass - <i>Hypolepsis japonica - Hydrocotyle peduncularis</i>	50	19	17	17	17	17	33	34
126 Montane Wet Sedgeland - <i>Carex gaudichaudiana</i>	189	3	96	96	96	96	93	51
131 Sub-alpine Herbfield	32,815	32,671	32,761	32,759	32,759	32,761	54	100
134 Eastern Tablelands Dry Heath - <i>Allocasuarina nana</i>	3,635	1,173	1,394	1,525	1,525	1,525	2,110	42
135 Southern Escarpment (Wadbilliga) Moist Heath	155	49	120	120	120	120	35	77
140 Northern Coastal Tall Wet Heath	4,324	250	1,310	1,310	1,310	1,310	3,014	30

Terrestrial ecosystem type	Area (hectares)							Proportion in protected areas as at 30 June 2016 (%)
	Terrestrial ecosystem total ¹	Terrestrial ecosystem in protected areas on public land, by time period				Terrestrial ecosystem not in protected areas as at 30 June 2016		
		Pre-RFA ²	At 30 June 2001 ³	At 30 June 2006 ³	At 30 June 2011 ³		At 30 June 2016 ³	
141 Northern Coast (and Escarpment) Wet Heath/Sedge	3,448	2,638	2,811	2,813	2,813	2,815	633	82
144 Northern Coast and Hinterland Moist Heath	1,042	602	765	766	766	766	276	74
147 Tablelands Moist Sedge/Herb/Grassland	130	14	36	26	26	34	96	26
148 Tableland Tussock Grassland /Sedgeland/ Woodland - <i>Poa labillardieri</i>	3,218	1	44	48	48	48	3,170	1
151 Tableland Sedge/Grass Herbland - <i>Themeda australis/Carex appressa</i>	0	0	0	0	0	0	0	NA
152 Tableland Herb/Grassland - <i>Themeda australis</i>	2	0	0	0	0	0	2	0
157 ACT/Monaro Dry Grassland - <i>Bothriochloa macra/Chrysocephalum apiculatum</i>	285	2	1	1	1	1	284	0
158 Monaro Dry Grassland - <i>Austrostipa spp/ Danthonia ssp</i>	230	0	18	18	18	18	212	8
186 Mudflats/Saltmarshes	893	96	427	427	427	427	466	48
187 Coastal Headland Heathlands	414	109	16	16	16	16	398	4
188 Sand-dune Wetlands	373	80	191	191	191	191	182	51
189 Coastal Alluvial Valley Floor Wetlands	143	0	2	3	3	3	140	2
190 Rock	2,362	1,617	1,768	1,783	1,804	1,804	558	76
22/23 Southern Coastal Hind Dune/Headland Scrub & Southern Coastal Dune Scrub	1,226	572	268	268	268	268	958	22
23/26 Coastal Dune Herb/Grassland & Southern Coastal Dune Scrub	2,335	543	526	526	526	526	1,809	23
123/126 Montane Wet Heath/Bog - <i>Baeckea utilis</i> & Montane Wet Sedgeland - <i>Carex gaudichaudiana</i>	2,296	567	1,504	1,512	1,512	1,513	783	66
129/133 Alpine Wet Herbfield & Sub-alpine Wet Herb / Grassland / Bog	49,794	47,672	47,852	47,804	47,804	47,852	1,942	96
Total Non-Forest Ecosystems	112,581	91,677	95,017	95,123	95,144	95,205	17,376	85
Total Terrestrial ecosystems	2,558,181	1,003,050	1,391,877	1,407,480	1,415,682	1,446,286	1,111,895	57

Terrestrial ecosystem type	Area (hectares)							Proportion in protected areas as at 30 June 2016 (%)
	Terrestrial ecosystem total ¹	Terrestrial ecosystem in protected areas on public land, by time period					Terrestrial ecosystem not in protected areas as at 30 June 2016	
		Pre-RFA ²	At 30 June 2001 ³	At 30 June 2006 ³	At 30 June 2011 ³	At 30 June 2016 ³		
As proportion of total Terrestrial ecosystem area (%)	100	39	54	55	55	57	43	

Notes:

¹ Area derived by ABARES from spatial data associated with the Southern RFA (2001). Figures for individual ecosystem classes are of variable accuracy and should not be assumed to be more accurate than the nearest 100 hectares. Increasing levels of reservation over time are applied to this area.

² Directly from the pre-RFA Formal Reserve extent reported in the Southern RFA (formal reserve spatial data provided by the NPWS to the Commonwealth Government at signing of the RFA Scoping Agreement 25 January 1996). Reserves on public land only.

³ Reserves on public land only. This includes the NPWS estate (formal reserves); informal reserves identified from Forest Management Zone datasets at RFA signing (2000), 2004 and 2016; and additional Regional Prescriptions from the Integrated Forestry Operations Approval where available. Together these components constitute the CAR reserve system on public land. Spatial datasets covering different time-periods have been reprojected to a common projection but some small differences remain between the datasets. Informal reserves on other Crown land identified from the 2004 Forest Management Zone dataset are included in all subsequent time periods.

Totals may not tally due to rounding

Table 1.30 Terrestrial ecosystem areas in the Eden RFA region

as identified in the CRA spatial data, by changes in area in the CAR reserve system over time

Terrestrial ecosystem type	Area (hectares)						Terrestrial ecosystem not in protected areas as at 30 June 2016	Proportion in protected areas as at 30 June 2016 (%)
	Terrestrial ecosystem total ¹	Terrestrial ecosystem in protected areas on public land, by time period						
		Pre-RFA ²	At 30 June 2001 ³	At 30 June 2006 ³	At 30 June 2011 ³	At 30 June 2016 ³		
Forest Ecosystem								
1 Dry Rainforest	42	9	38	38	38	38	4	90
2 Myanba Rainforest	333	322	334	334	334	334	0	100
3 Rocky Top Dry Shrub Forest	1,188	918	1,045	1,045	1,045	1,047	141	88
4 <i>Acacia sylvestris</i> / Brogo Shrub Rainforest	6,288	3,533	3,883	3,883	3,883	3,883	2,405	62
5 Bunga Head Rainforest	7	7	7	7	7	7	0	100
6 Coastal Warm Temperate Rainforest	6,390	2,047	4,246	4,251	4,251	4,750	1,640	74
7 Hinterland Warm Temperate Rainforest	3,026	1,275	2,229	2,230	2,230	2,231	795	74
8 Cool Temperate Rainforest	1,053	326	989	989	989	990	63	94
9 Mountain Wet Layered Forest (<i>E. nitens</i>)	1,813	180	1,732	1,732	1,732	1,732	81	96
10 Mountain Wet Layered Forest (<i>E. fastigata</i>)	17,940	4,624	10,226	10,225	10,225	10,252	7,688	57
11 Tantawangalo Wet Shrub Forest	790	212	772	772	772	772	18	98
12 Mountain Wet Fern Forest	2,259	438	1,794	1,794	1,794	1,794	465	79
13 Hinterland Wet Fern Forest	44,032	17,975	28,056	28,057	28,057	28,759	15,273	65
14 Hinterland Wet Shrub Forest	25,875	5,889	11,539	11,589	11,589	12,319	13,556	48
15 Mountain Wet Herb Forest	30,875	6,617	18,321	18,317	18,317	18,345	12,530	59
16 Basalt Wet Herb Forest	12,208	790	3,809	3,894	3,894	3,911	8,297	32
17 Flats Wet Herb Forest	2,931	429	1,198	1,201	1,201	1,203	1,728	41
18 Brogo Wet Vine Forest	4,306	777	1,386	1,386	1,386	1,386	2,920	32

Terrestrial ecosystem type	Area (hectares)							Proportion in protected areas as at 30 June 2016 (%)
	Terrestrial ecosystem total ¹	Terrestrial ecosystem in protected areas on public land, by time period					Terrestrial ecosystem not in protected areas as at 30 June 2016	
		Pre-RFA ²	At 30 June 2001 ³	At 30 June 2006 ³	At 30 June 2011 ³	At 30 June 2016 ³		
19 Bega Wet Shrub Forest	16,891	1,305	4,047	4,049	4,049	4,056	12,835	24
20 Bega Dry Grass Forest	3,808	159	3,238	3,238	3,238	3,239	569	85
21 Candelo Dry Grass Forest	1,463	60	1,254	1,254	1,254	1,254	209	86
24 Subalpine Dry Shrub Forest	26,584	2,127	4,633	4,713	4,713	4,747	21,837	18
25 Sandstone Dry Shrub Forest	822	697	745	745	745	745	77	91
26 Tableland Dry Shrub Forest	16,114	2,218	6,868	6,866	6,866	6,886	9,228	43
27 Waalimma Dry Grass Forest	1,324	0	364	364	364	365	959	28
28 Wog Wog Dry Grass Forest	922	435	899	899	899	899	23	98
29 Nalbaugh Dry Grass Forest	1,936	58	835	835	835	835	1,101	43
30 Wallagaraugh Dry Grass Forest	914	199	496	496	496	497	417	54
31 Hinterland Dry Grass Forest	27,586	4,098	17,689	17,689	17,689	17,699	9,887	64
32 Coastal Dry Shrub Forest (<i>E. longifolia</i>)	23,400	4,760	10,022	10,025	10,025	14,382	9,018	61
33 Coastal Dry Shrub Forest (<i>E. muelleriana</i>)	16,136	4,734	9,947	10,068	10,068	10,088	6,048	63
34 Brogo Dry Shrub Forest	14,144	3,588	6,262	6,262	6,262	8,309	5,835	59
35 Escarpment Dry Grass Forest	22,004	4,225	9,821	9,835	9,835	9,836	12,168	45
36 Dune Dry Shrub Forest	603	239	505	505	505	505	98	84
37 Coastal Dry Shrub Forest (<i>An. floribunda</i>)	15,147	4,719	7,250	7,244	7,244	7,417	7,730	49
40 Riverine Forest	65	0	44	44	44	44	21	68
41 Mountain Dry Shrub Forest (<i>E. fraxinoides</i>)	1,864	1,105	1,620	1,620	1,620	1,621	243	87
42 Coastal Dry Shrub Forest (<i>E. obliqua</i>)	21,552	2,719	7,258	7,259	7,259	7,314	14,238	34
43 Mountain Dry Shrub Forest (<i>E. cypellocarpa</i>)	2,479	2,123	2,284	2,284	2,284	2,284	195	92

Terrestrial ecosystem type	Area (hectares)							Proportion in protected areas as at 30 June 2016 (%)
	Terrestrial ecosystem total ¹	Terrestrial ecosystem in protected areas on public land, by time period					Terrestrial ecosystem not in protected areas as at 30 June 2016	
		Pre-RFA ²	At 30 June 2001 ³	At 30 June 2006 ³	At 30 June 2011 ³	At 30 June 2016 ³		
44 Foothills Dry Shrub Forest	3,142	1,082	2,490	2,490	2,490	2,490	652	79
45 Mountain Dry Shrub Forest (<i>E. sieberi</i>)	1,915	691	1,134	1,134	1,134	1,135	780	59
46 Lowland Dry Shrub Forest	15,120	6,274	8,117	8,115	8,115	8,730	6,390	58
47 Eden Dry Shrub Forest	17,141	9,407	12,970	12,969	12,969	13,321	3,820	78
48 Bega Dry Shrub Forest	4,455	2,630	3,461	3,461	3,461	4,174	281	94
49 Coastal Dry Shrub Forest (<i>E. agglomerata</i>)	31,835	5,306	10,568	10,566	10,566	10,900	20,935	34
50 Genoa Dry Shrub Forest	3,026	1,996	2,262	2,262	2,262	2,262	764	75
58 Swamp Forest	953	224	855	855	855	860	93	90
71 Monaro Basalt Grass Woodland	3,387	89	3,080	3,080	3,080	3,080	307	91
72 Numeralla Dry Shrub Woodland	8,240	467	533	567	567	567	7,673	7
73 Monaro Dry Grass Forest	3,615	18	1,248	2,105	2,105	2,105	1,510	58
79 Timbillica Dry Shrub Forest	22,792	1,124	7,295	7,296	7,296	7,416	15,376	33
81 Wadbilliga Dry Shrub Forest	27,337	26,551	27,031	27,031	27,031	27,031	306	99
82 Wadbilliga Range Ash Forest	1,007	1,007	1,014	1,014	1,014	1,014	0	100
84 Wadbilliga Range Wet Forest	3,207	2,521	2,590	2,590	2,590	2,592	615	81
85 Wadbilliga Gorge Dry Forest	7,234	5,442	6,324	6,324	6,324	6,324	910	87
86 Wadbilliga River Valley Forest	1,894	1,447	1,721	1,721	1,721	1,721	173	91
Total Forest Ecosystems	533,412	152,212	280,378	281,618	281,618	292,497	240,915	55
Non-Forest Ecosystem								
23 Monaro Grassland	331	0	0	0	0	0	331	0

Terrestrial ecosystem type	Area (hectares)							Proportion in protected areas as at 30 June 2016 (%)
	Terrestrial ecosystem total ¹	Terrestrial ecosystem in protected areas on public land, by time period					Terrestrial ecosystem not in protected areas as at 30 June 2016	
		Pre-RFA ²	At 30 June 2001 ³	At 30 June 2006 ³	At 30 June 2011 ³	At 30 June 2016 ³		
38 Southern Riparian Scrub	516	106	412	413	413	415	101	80
39 Northern Riparian Scrub	485	34	260	261	261	261	224	54
51 Rock Shrub (<i>K. ambigua</i>)	51	20	44	44	44	44	7	87
52 Mountain Rock Scrub	202	153	169	169	169	169	33	84
53 Montane Heath	1,350	382	576	746	746	746	604	55
54 Mountain Nadgee Heath	371	306	363	363	363	363	8	98
55 Coastal Lowland Heath	1,630	1,490	1,602	1,602	1,602	1,602	28	98
56 Swamp Heath	385	10	135	135	135	135	250	35
57 Lowland Swamp	1,892	896	1,586	1,586	1,586	1,587	305	84
59 Sub-alpine Bog	1,869	181	567	567	567	569	1,300	30
60 Floodplain Wetlands	3,281	285	474	471	471	478	2,803	15
61 Coastal Scrub	1,504	1,128	1,197	1,197	1,197	1,197	307	80
63 Estuarine Wetland (<i>M. ericifolia</i>)	930	91	133	131	131	134	796	14
64 Saltmarsh	295	48	81	81	81	81	214	27
66 Estuarine Wetland (<i>Av. marina</i>)	38	0	15	15	15	20	18	52
83 Wadbilliga Mallee Heath	3,085	3,060	3,061	3,061	3,061	3,061	24	99
Total Non-Forest Ecosystems	18,215	8,189	10,675	10,842	10,842	10,873	7,342	60
Total Terrestrial ecosystem	551,627	160,401	291,053	292,460	292,460	303,370	248,257	55
As proportion of total Terrestrial ecosystem area (%)	100	29	53	53	53	55	45	

Notes:

¹ Area derived by ABARES from spatial data associated with the Eden RFA (1999). Figures for individual ecosystem classes are of variable accuracy and should not be assumed to be more accurate than the nearest 100 hectares. Increasing levels of reservation over time are applied to this area.

² Directly from the pre-RFA Formal Reserve extent reported in the Eden RFA (formal reserve spatial data provided by the NPWS to the Commonwealth Government at signing of the RFA Scoping Agreement 25 January 1996). Reserves on public land only.

³ Reserves on public land only. This includes the NPWS estate (formal reserves); informal reserves identified from Forest Management Zone datasets at RFA signing (2000), 2004 and 2016; and additional Regional Prescriptions from the Integrated Forestry Operations Approval where available. Together these components constitute the CAR reserve system on public land. Spatial datasets covering different time-periods have been reprojected to a common projection but some small differences remain between the datasets. Informal reserves on other Crown land identified from the 2004 Forest Management Zone dataset are included in all subsequent time periods.

Totals may not tally due to rounding

Extent of World Heritage Areas in NSW RFA regions

The total land area of the four NSW RFA regions is 15.0 million hectares, of which 749 thousand hectares (5 per cent) is in a UNESCO World Heritage Area (WHA) as at 30 June 2016. The sum of the extent of Forest Ecosystems identified during the CRA process was determined as 8.32 million hectares³¹, of which 730 thousand hectares (9 per cent) is in a World Heritage Area as at 30 June 2016.

When the RFA Scoping Document was signed in early 1996, and before all three NSW RFAs came into effect, the only World Heritage area within the NSW RFA regions was the Gondwana Rainforests WHA³², which was inscribed on the World Heritage List in 1986 and extended in 1994. A total of 309 thousand hectares of land (including 299 thousand hectares in Forest Ecosystems) of the Gondwana Rainforests WHA is in NSW RFA regions, with 213 thousand hectares of land (208 thousand hectares in Forest Ecosystems) in the Lower North East Region and 97 thousand hectares of land (91 thousand hectares in Forest Ecosystems) in the Upper North East region.

As a consequence of the RFA processes³³ the Greater Blue Mountains³⁴ was inscribed on the World Heritage List in 2000, representing the evolution of Australia's unique eucalypt vegetation. This included 439 thousand hectares of land (431 thousand hectares in Forest Ecosystems) in the Lower North East RFA region.

In 2010, the Australian Convict Sites³⁵ WHA was inscribed to the World Heritage List and included 350 hectares of land (all within Forest Ecosystems) in the Lower North East RFA region. No further inscriptions to the World Heritage List have been made that occur within NSW RFA regions.

Table 1.31 below summarises the extent of World Heritage Areas in each RFA region at various time points before and after the respective NSW RFAs were signed, including the most recent area as at 30 June 2016. No World Heritage Areas occur within the Southern or Eden RFA regions.

Table 1.32 summarises the extent of Forest Ecosystems in World Heritage Areas in each RFA region at various time points before and after the RFAs were signed. The areas of Forest Ecosystems identified during the CRA process have not been updated since that time. The data presented here therefore do not take into account any change to the total area of

³¹ This area of 8.32 million hectares could be taken as the total area of forest in NSW RFA regions at the date of signing the RFAs, but is never presented as such in the RFA documentation or tables

³² www.environment.gov.au/heritage/places/world/gondwana

³³ Commonwealth of Australia (1999) CRA World Heritage Sub-theme: Eucalypt-dominated vegetation. Report of the Canberra Expert Workshop 8 and 9 March, 1999, Commonwealth of Australia, Environment Forest Taskforce, Canberra. Available from www.agriculture.gov.au/SiteCollectionDocuments/forestry/publications/nat_cra_whs.pdf

³⁴ www.environment.gov.au/heritage/places/world/blue-mountains

³⁵ www.environment.gov.au/heritage/places/world/convict-sites

forest, that is, any additional area of Forest Ecosystems subsequently identified, or any areas that no longer form Forest Ecosystems.

Table 1.31 World Heritage Areas (WHA) in NSW RFA regions over time periods before and after RFA signing

RFA region	Land area ('000 hectares)							Proportion of RFA region area in WHA as at 30 June 2016 (%)
	RFA region total ¹	Pre-RFA ³	WHA in RFA region, by time period ²				RFA region not in WHA as at 30 June 2016	
			At 30 June 2001 ⁴	At 30 June 2006 ⁴	At 30 June 2011 ⁴	At 30 June 2016 ⁴		
Upper North East								
Total area	3,910	97	97	97	97	97	3,814	2.5
As proportion of total (%)	100	2.5	2.5	2.5	2.5	2.5	98	
Lower North East								
Total area	5,789	213	652	652	652	652	5,137	11
As proportion of total (%)	100	3.7	11	11	11	11	89	
Southern								
Total area	4,516	0	0	0	0	0	4,516	0
As proportion of total (%)	100	0	0	0	0	0	100	
Eden								
Total area	814	0	0	0	0	0	814	0
As proportion of total (%)	100	0	0	0	0	0	100	
All RFA regions								
Total area	15,029	309	748	748	749	749	14,281	5.0
As proportion of total (%)	100	2.1	5.0	5.0	5.0	5.0	95	

Notes:

¹ Area derived by ABARES from spatial data associated with the CRA reports published in 1998-2000. Area and proportion of RFA region in WHA over time is applied to this area.

² Area derived by ABARES from spatial data for WHA current to 2016.

³ Figures exclude WHA records that were inscribed on the World Heritage List after the signing of the RFA Scoping Agreement (25 January 1996).

⁴ Figures include WHA records inscribed on the World Heritage List up to this date.

Totals may not tally due to rounding

Table 1.32 Forest Ecosystem areas in World Heritage Areas (WHA) in NSW RFA regions over time periods before and after RFA signing

RFA region	Area ('000 hectares)							Forest Ecosystems not in WHA as at 30 June 2016	Proportion of Forest Ecosystem area in WHAs as at 30 June 2016 (%)
	RFA region total of Forest Ecosystems ¹	RFA Forest Ecosystem area in WHAs, by time period ²					At 30 June 2016 ⁴		
		Pre-RFA ³	At 30 June 2001 ⁴	At 30 June 2006 ⁴	At 30 June 2011 ⁴	At 30 June 2016 ⁴			
Upper North East									
Total Forest Ecosystems	2,167	91	91	91	91	91	91	2,076	4
As proportion of total Forest Ecosystems (%)	100	4.2	4.2	4.2	4.2	4.2	4.2	96	
Lower North East									
Total Forest Ecosystems	3,175	208	639	639	639	639	639	2,535	20
As proportion of total Forest Ecosystems (%)	100	6.5	20	20	20	20	20	80	
Southern									
Total Forest Ecosystems	2,446	0	0	0	0	0	0	2,446	0
As proportion of total Forest Ecosystems (%)	100	0	0	0	0	0	0	100	
Eden									
Total Forest Ecosystems	533	0	0	0	0	0	0	533	0
As proportion of total Forest Ecosystems (%)	100	0	0	0	0	0	0	100	
All RFA regions									
Total Forest Ecosystems	8,320	299	730	730	730	730	730	7,590	8.8
As proportion of total Forest Ecosystems (%)	55	3.6	8.8	8.8	8.8	8.8	8.8	91	

Notes:¹ Area derived by ABARES from spatial data associated with the Forest Ecosystem CRA reports published in 1998-2000. Area and proportion of Forest Ecosystems in WHA over time is applied to this area.

² Area derived by ABARES from spatial data for Forest Ecosystems CRA reports, and WHA current to 2016.

³ Figures exclude WHA records that were inscribed on the World Heritage List after the signing of the RFA Scoping Agreement (25 January 1996).

⁴ Figures include WHA records inscribed on the World Heritage List up to this date.

Totals may not tally due to rounding

Indicator 1.2a Forest dwelling species for which ecological information is available

This indicator reports the level of information available to manage forest dwelling species and tracks changes in this knowledge over time. The amount of habitat, disturbance and life history information available to make management decisions indicates the capacity to assess risk to species and to implement conservation strategies.

The national State of the Forests report provides information on forest dwelling and forest dependent species on a five yearly basis.

Over the period from 1998 to 2011, the number of forest dwelling vertebrate species identified in NSW increased by 64 per cent from 504 to 827. Over the same period, the corresponding national figure increased from 1227 to 2212 species, an increase of 80 per cent.

Species sighting data is available at a regional level from the NSW BioNet Atlas, although by its nature, this is not exhaustive and does not include forest dwelling and dependence information. Case studies such as the WildCount project are able to provide species observational data at an RFA regional level.

Table 1.33 Number of forest-dwelling vertebrate species, by jurisdiction (2011) ¹

Taxonomic group ²	NSW	Australia ³
Fish	73	220
Amphibians	77	200
Reptiles	213	789
Birds	344	666
Mammals	120	336
Total	827	2,212

Table 1.34 Number of forest-dwelling vertebrate species, by year

Year	NSW	Australia
1998	504	1,227 ⁴
2001	780	1,817
2006	760	—
2011	827	2,212

— = not available

¹ Forest-dwelling species are species that may use forest habitat for all or part of their lifecycles.

² Subspecies are included where they are managed by jurisdictions or nationally. Non-native species are not included.

³ Numbers for Australia also include data from offshore forested islands—such as Torres Strait, Christmas, Lord Howe and Norfolk islands.

⁴ SOFR 1998 reported a national minimum estimate of forest-dwelling native vertebrate fauna, based on an incomplete compilation of data from New South Wales, the Northern Territory, Tasmania and parts of Queensland.

Source: SOFR 2013.

Table 1.35 Number of forest-dependent vertebrate species, by jurisdiction, 2011 ¹

Taxonomic group ²	NSW	Australia ³
Fish	36	109
Amphibians	31	91
Reptiles	92	350
Birds	199	371
Mammals	68	180
Total	426	1,101

Source: SOFR 2013

Notes:

¹ Forest-dependent species are species that must inhabit a forest habitat for all or part of their lifecycles.

² Subspecies are included where they are managed by jurisdictions or nationally. Non-native species are not included.

³ Numbers for Australia also include data from offshore forested islands—such as Torres Strait, Christmas, Lord Howe and Norfolk islands.

Table 1.36 Number of forest-dwelling vascular plant species, by jurisdiction

Reporting date	NSW	Australia
1998	—	13,622
2001	7,448	16,532
2006	7,461	n.r.
2011	7,472	16,836

Source: SOFR 2013

Notes:

— = not available.

n.r. = not reported

BioNet Atlas

NSW maintains a centralised, publicly accessible, spatial database which includes species sightings – The BioNet Atlas³⁶. The atlas contains biodiversity observation data for NSW and is a component of the BioNet repository which contains a number of biodiversity data products.

The atlas has been expanded since 1980 from exclusively listing species sightings data to now include four data collections:

- **Species Sightings** – records of species including flora, mammals, birds, reptiles, amphibians, some fungi, invertebrates and fish
- **Systematic Surveys** – detailed systematic flora or fauna survey information for sites where systematic surveys have been undertaken
- **Threatened Biodiversity** – detailed ecological data for each species, populations, communities and key threatening processes listed under the BC Act, in addition to management actions
- **Species Names** – species taxonomic details.

WildCount case study 2014³⁷

WildCount is a long term, fauna monitoring project undertaken by NSW OEH and NPWS which uses remotely located motion-sensitive digital cameras to record fauna within 146 parks and reserves straddling the Great Eastern Ranges. The study area covers more than 250,000 km² in eastern NSW. Since the WildCount program started in 2012, a small team of researchers and volunteers have collected, processed and reviewed approximately 280,000 wildlife images each year.

In 2014, remote motion sensitive cameras were deployed at a total of 204 sites across eastern NSW, 200 of which were on national parks estate. The WildCount 2014 field season recorded 87 species: 43 mammals, 41 birds, and 3 reptiles across the NSW RFA regions. Findings from across the four RFA regions in 2014 are detailed in **Table 1.37**.

³⁶ <http://www.environment.nsw.gov.au/wildlifeatlas/about.htm>

³⁷ WildCount case study provided by NPWS Biodiversity and Wildlife team

Table 1.38 Summary of 2014 WildCount findings by RFA regions in 2014

Region	Number of sites	Number of parks	Number of species detected	Number of threatened species
Eden	10	5	29	1
Southern	49	32	49	3
LNE	57	41	67	7
UNE	37	31	58	6

Indicator 1.2c Representative species from a range of habitats monitored at scales relevant to regional forest management

This indicator provides broad habitat, population and range information for representative forest dwelling flora and fauna. Evidence of changing ranges or densities of forest dwelling species can be used to guide forest management activities so that they are consistent with maintenance of forest biodiversity.

Scientific Studies

Detailed information has accumulated over the past 20-30 years on the response of representative species to wood harvesting in NSW. An overview of species responses to pre-RFA harvesting in northern NSW found that 40 species appeared to be significantly disadvantaged by harvesting, another 40 species appeared to be significantly favoured by harvesting, while the remainder (147 species) appeared to be relatively unaffected (Kavanagh and Stanton 2005). The sensitivity of some species to harvesting reinforces the necessity for sustainable forest management practices, especially via prescriptions designed to mitigate impacts on specific species. A recent review of these practices during the RFA period concluded that there is a considerable body of knowledge supporting their effectiveness at the local level (Slade and Law 2016).

A range of species-specific responses to wood harvesting as assessed by scientific studies are presented in **Table 1.38**. For many threatened species, such as the Giant Barred Frog and the Golden-tipped Bat, mitigation measures protect core habitat along riparian zones and maintain populations (Lemckert and Brassil 2000; Law and Chidel 2004). Other threatened species, such as hollow-dependent Eastern Pygmy Possum and insectivorous bats, show resilience to wood harvesting because of sufficient landscape protection (Law et al. 2002; Law et al. 2013). Some species, such as the Hastings River Mouse, appear to require some level of disturbance to their habitat and have been found to occur in higher numbers after harvesting compared to areas where harvesting was excluded (Law et al. 2016). Conversely, Greater Gliders are highly sensitive to intensive wood harvesting, though populations can be maintained by excluding harvesting from riparian zones and retaining > 40 % of the basal area in harvested areas (Kavanagh 2000). Koalas are the subject of current research and high detection rates have been recorded after harvesting, across a range of intensities and different times since harvest, at an equivalent rate to old growth forest (Law unpubl. data).³⁸

³⁸ See appendix 3 and 4 for further information on national and NSW threatened species

Table 1.39 Scientific studies assessing the impact of timber harvesting on biodiversity in NSW

Species/Resource	Harvesting Impact	Key Mitigation Measure	Source
Eastern Forest bat	n.d.	Landscape protection	Law and Anderson 2000
Eastern Pygmy Possum	n.d.	Landscape protection	Law et al. 2013
Eucalypt nectar	-	Landscape protection + large tree protection	Law et al. 2000; Law and Chidel 2008
Forest bat community	±	Landscape protection + hollow tree retention	Law and Chidel 2002; Lloyd et al. 2006; Adams et al. 2009
Forest diurnal bird community	±	Landscape protection	Kavanagh and Stanton 2003
Forest frog community	±	Riparian buffer and Landscape protection	Lemckert 1999
Giant Barred Frog	n.d.	Riparian buffer	Lemckert and Brassil 2000
Giant Burrowing Frog	?	Landscape Protection	Penman et al. 2005
Golden-tipped Bat	n.d.	Riparian/Rainforest buffer	Law and Chidel 2004
Greater Glider	-	Hollow tree retention	Kavanagh 2000
Hastings River Mouse	+	Disturbance+Landscape protection	Law et al. 2016
Koala	n.d.	Landscape and browse tree protection	Law unpubl. data
Large Forest owls	n.d.	Landscape protection	Kavanagh 2002
Large-footed Myotis	n.d.	Riparian buffers	Law unpubl. data
Yellow-bellied Glider	n.d.	Landscape protection	Kambouris et al. 2014

Notes: n.d. indicates no impact detected;

? indicates potential impact;

+ indicates positive impact

- indicates negative impact

± indicates positive or negative impacts for different species within the community monitored

Long-term trends

While short-term studies provide an assessment of the response of different species to wood harvesting and mitigation measures, long-term trends are also essential to gauge the time taken for populations to recover after disturbance. A number of long-term studies have focused on documenting trends over time. One example is the Eden Burning Study area in the Eden RFA region, which has been tracking changes in fuel loads, plants, diurnal birds and bats over more than two decades in relation to wood harvesting and frequent burning. Wood harvesting resulted in a short term increase in understorey plant species diversity, which was no longer apparent 15 years after harvesting (**Figure 1.21**). Frequent fire resulted in small, but predictable changes in vegetation, with short-lived herbaceous species increasing in frequently burnt sites and longer-lived shrubs decreasing in these sites (Penman *et al.* 2008). Another long-term example is from the Karuah Hydrology area in Chichester State Forest in the LNE region where forest bats have been banded annually for 20 years. The effect of harvesting history (old growth forest compared to regrowth forest 16-30 years after harvesting) on survival was minor and species-specific, with no detectable effect on survival for two species, a small positive effect for one species, and a small negative effect for another species (Law *et al.* 2018). There was also no effect of harvesting history on the abundance or body condition of any of these species.

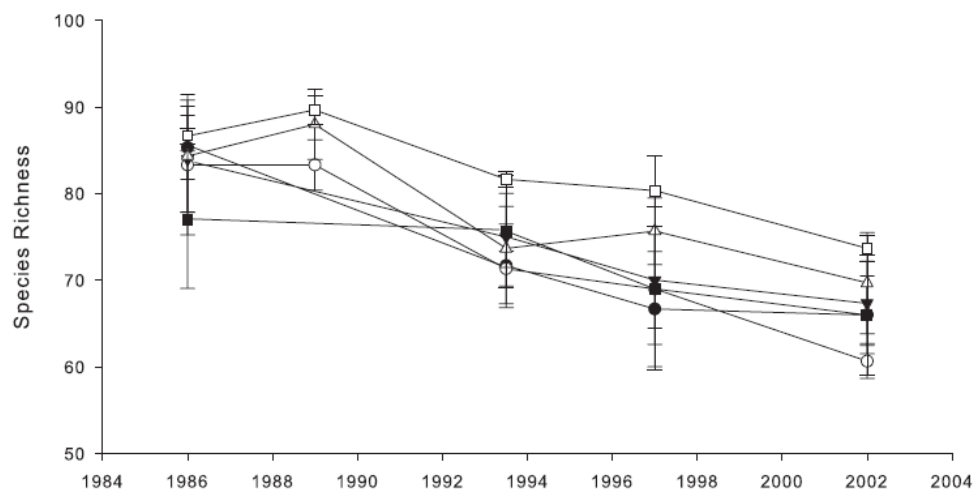


Figure 1.21 Total species richness of ground flora and shrubs at the coupe level (Penman *et al.* 2008).

One of the longest ecological studies in Australia is now nearing 40 years, investigating the recovery of diurnal birds from intensive harvesting in the Eden RFA region (Kavanagh *et al.* 1985; Kavanagh and Stanton 2003). One of the original aims of this study was to investigate the importance of small unlogged patches as refugia and sources of recovery for bird populations. The study began in the 1970s when no old trees were retained in logged areas and no stream-side reserves were retained. However, intensive harvesting took place as a patchwork of small (~15 hectare) alternate coupes, with unharvested coupes retained adjacent to harvested coupes to maintain landscape heterogeneity. The study found that recovery on harvested coupes had occurred for many species after 13 years and that, after 22

years, the bird assemblages on harvested and unharvested coupes had largely converged (**Figure 1.22**). The presence of nearby unharvested forest patches aided recovery time on the harvested coupes. Notably, some hollow-nesting species (e.g. White-throated Tree-creepers *Cormobates leucophaea*) had not fully recovered on harvested coupes, emphasising the importance of retaining old or ‘habitat trees’ in the harvested areas themselves.

Forest owls and arboreal mammals have been subject to long-term, periodic monitoring in the south-east forests of the Eden RFA region (Kavanagh and Stanton unpubl. data). About 14 years after intensive wood harvesting and major wildfire disturbance, significant increases were recorded in the distribution and detection rates of the Powerful Owl (*Ninox strenua*) and the Sooty Owl (*Tyto tenebricosa*) (**Figure 1.23**). Detection rates of these two owls continued to increase until approximately 20 years after disturbance by 1997/2000. Thereafter, site-occupancy for the Powerful Owl decreased substantially, following a marked decrease in abundance of their principal prey species, the Common Ringtail Possum (*Pseudocheirus peregrinus*). These results highlight the dynamic nature of regenerating forests and the predator- prey interactions within the system.

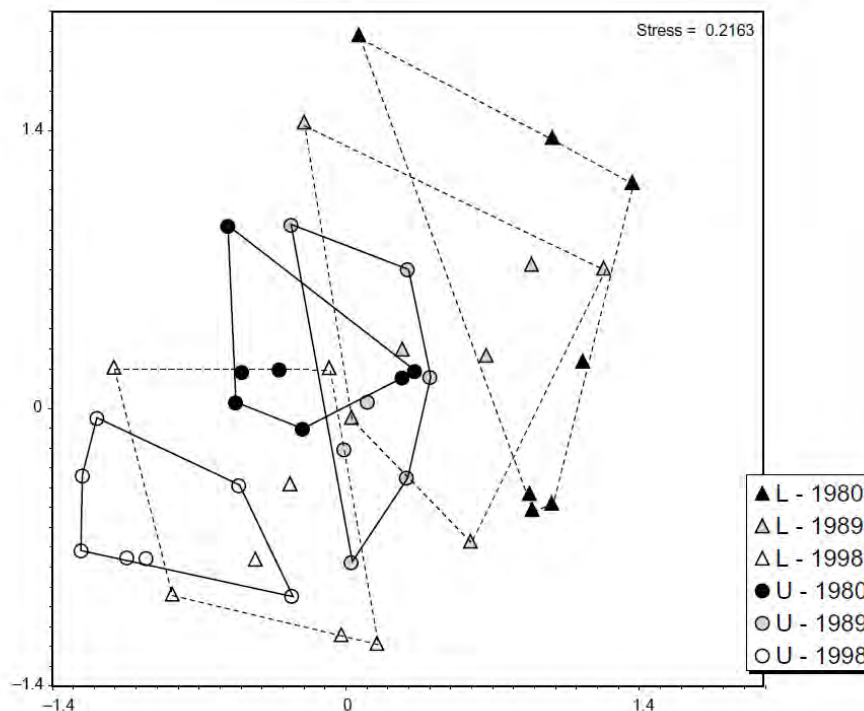


Figure 1.22 Similarity in bird assemblages on logged and unlogged coupes in 1980, 1989 and 1998 (after Kavanagh and Stanton 2003). Polygon groupings are made by treatments within each year. U=unlogged, L=logged. Logged coupes grouped by broken lines, unlogged coupes grouped by solid lines. Axes represent multidimensional values so that greater distances along the plot represent greater differences in bird communities.

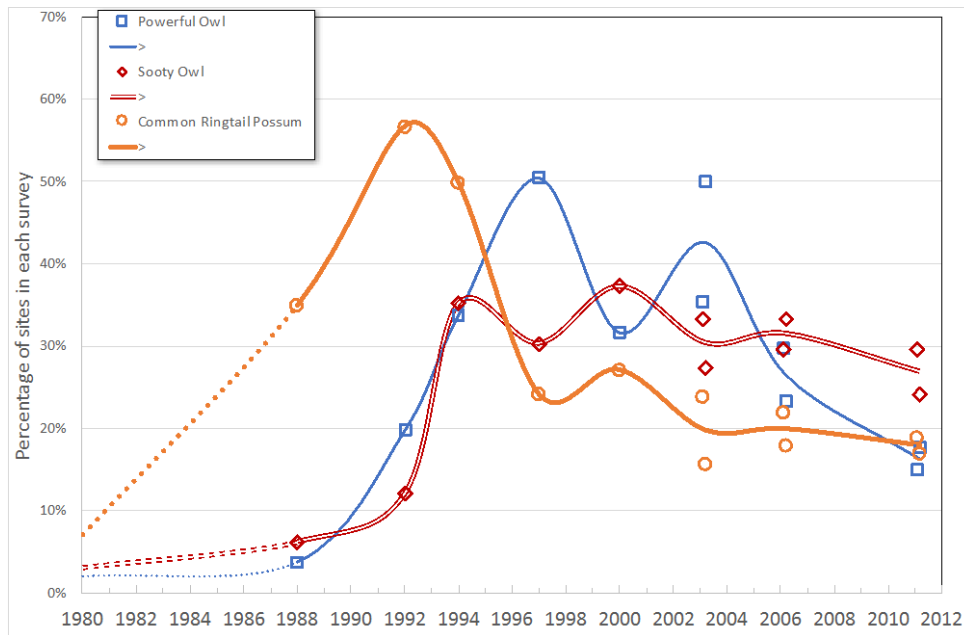


Figure 1.23 Detection rates for two species of large forest owl and a primary prey species in the far south-east forests of NSW. Connecting lines pass through the average measure for years with two samples and are to aid interpretation of the data points (Kavanagh and Stanton unpubl. data).

In addition to monitoring in native forests, changes to biodiversity since establishment of eucalypt plantations on cleared farmland in the North East RFA region have been monitored for 17 years. Among diurnal birds, 47 per cent of species increased (mostly forest species) over 11 years of plantation growth and 31 per cent of species (mostly open country species) declined (Law *et al.* 2014). Eleven threatened mammals and nocturnal birds were recorded in these plantations, but common species such as the Brushtail Possum were the main increasers over time (Law *et al.* 2017).

WildCount (see Indicator 1.2a) is looking at trends in occurrence of animals at the sites, to understand if animals are in decline, increasing or stable.

Other current biodiversity monitoring programs undertaken by FCNSW or Department of Primary Industries (DPI) - Forestry in native forests are listed in **Table 1.39**.

Table 1.40 Monitoring of forest dwelling species by FCNSW and/or DPI

Monitoring	Location	Category	Details	Commenced, schedule and frequency)	Summary of results
Southern brown bandicoot (<i>Isodon obesulus</i>)	Ben Boyd National Park and Nadgee Nature Reserve in the far south-eastern corner of NSW	Ground-living mammals	Infrared cameras used to monitor trends in southern brown populations at 40 sites. In addition to the target species, the cameras record information about the status of other threatened fauna, including the long-nosed potoroo (<i>Potorous tridactylus</i>) and eastern pygmy possum (<i>Cercatetus nanus</i>), as well as other species of interest for environmental management, such as the long-nosed bandicoot (<i>Perameles nasuta</i>).	Commenced in 2013	Camera monitoring to-date has indicated that the southern brown bandicoot occurs in discrete patches of habitat within each reserve, and has persisted in those patches irrespective of surrounding management activities. This is also the case for the long-nosed bandicoot, which is common and widespread, and the long-nosed potoroo, also relatively widespread. However, monitoring has not been in place for long enough to infer meaningful trends in patterns of occurrence of these species.
Brush-tailed Rock Wallaby (<i>Petrogale penicillata</i>)	Cessnock / Watagans, Watagans and Pokolbin SFs LNE	Ground-living mammals	Pellet counts assessing ongoing presence of BRTPs as a result of fox control programs - part of Fox threat abatement plan.	Commenced in approximately 2000. Pellet counts at standard points across 3 sites. 3 times per year	Rock wallabies persist at the sites, need for revision of methodology and safety concerns. Data is only allowing for determination of persistence at sites. Sampling has temporarily ceased due to safety concerns on cliff edges.
Large-footed Myotis (<i>Myotis macropus</i>)	Kippara and Mount Boss State forest, UNE	Flying mammal	Banding of bats inhabiting several bridges in Kippara State Forest and surrounding area. Occurring for more than 10 years.	Commenced in approximately 1996	Bat age, health, sex, previously banded. Data allowing for population estimates and changes over time in harvested forest

Monitoring	Location	Category	Details	Commenced; schedule and frequency)	Summary of results
					landscape. Long term data.
Southern Brown Bandicoot (<i>Isodon obesulus</i>)	Yambulla, Nadgee, Timbillica and East Boyd State forest – Far south east NSW Eden	Ground-living mammals	Twice annual remote camera sample surveys. Monitoring persistence in the landscape over time and habitat management strategy within the Eden threatened species licence	2007	Presence of individuals over sampling period enabling determination of occupancy rates and changes in occupancy over time. Data indicates on going presence in the forests, additional data captured on Long-nosed Bandicoots and Long-nosed Potoroos showing similar presence in the forests.
Smoky Mouse (<i>Pseudomys fumeus</i>)	Nullica State Forest Eden	Ground-living mammals	Twice annual remote camera sample surveys. Monitoring persistence in the landscape over time and habitat management strategy within the Eden threatened species licence including vegetation plots.	2007	Presence of individuals over sampling period enabling determination of occupancy rates and changes in occupancy over time. Species persists in low numbers.
Giant Burrowing Frog (<i>Helioporus australicus</i>)	Nullica and Yambulla State forest Eden	Frogs	Breeding site monitoring, through identification of tadpoles, stream and weather monitoring, song meter call identification	2007	Breeding sites located are continuing to be used, calling parameters and weather conditions including stream flow characteristics.
Yellow-bellied Glider (<i>Petaurus australis</i>)	Bago and Maragle State forest Tumut	Arboreal Mammals	Surveys and monitoring of population to assess ongoing persistence of population and provide data on endangered population.	2010	Population appears not to be isolated but is linked through the broader area of Kosciusko National Park, powerline easements do not appear to be the barrier they were considered. Population persists in the forests.

Monitoring	Location	Category	Details	Commenced; schedule and frequency)	Summary of results
Bell-minor associated Dieback (forest health)	Northern NSW forests UNE, LNE	Forest Health	Investigations underway into satellite image modelling for retrospective assessment of change in canopy health, helicopter flights undertaken to repeat 2004 forest health assessing	2016	Results will be collated and used to improve understanding of rate of spread, causal factors and value of fire as a tool
Koala (<i>Phascolarctos cinereus</i>)	Northern NSW forests and Eden forests (UNE, LNE, Eden)	Arboreal mammals	Song meters deployed to record the male bellowing calls in spring / early summer	2015	Preliminary use of song meters proving to be very successful, recogniser developed, enabling repeat sampling to be undertaken which will enable long term habitat occupancy trends.
<i>Acacia ruppii</i>	Northern Forests UNE	Flora	Response to disturbance, review results with EPA, determine appropriate protective measures	2005	Results used to assist in determining appropriate conditions for species for IFOA revision.
<i>Niemeyera whitei</i>	Northern Forests UNE	Flora	Response to disturbance, review results with EPA, determine appropriate protective measures	2005	Results used to assist in determining appropriate conditions for species for IFOA revision.
<i>Boronia umbellata</i>	Northern Forests UNE	Flora	Response to disturbance, review results with EPA, determine appropriate protective measures	2005	Results used to assist in determining appropriate conditions for species for IFOA revision.
<i>Melaleuca groveana</i>	Northern Forests UNE, LNE	Flora	Response to disturbance, review results with EPA, determine appropriate protective measures	2005	Results used to assist in determining appropriate conditions for species for IFOA revision.

Monitoring	Location	Category	Details	Commenced; schedule and frequency)	Summary of results
<i>Tasmannia purpurascens</i>	Northern Forests LNE	Flora	Response to disturbance, review results with EPA, determine appropriate protective measures	2005	Results used to assist in determining appropriate conditions for species for IFOA revision.
<i>Hibbertia marginata</i>	Northern Forests UNE	Flora	Response to disturbance, review results with EPA, determine appropriate protective measures	2005	Results used to assist in determining appropriate conditions for species for IFOA revision.
<i>Grevillea quadricauda</i>	Northern Forests UNE	Flora	Response to disturbance, review results with EPA, determine appropriate protective measures	2005	Results used to assist in determining appropriate conditions for species for IFOA revision.
<i>Eucalyptus glaucina</i>	Northern Forests UNE	Flora	Response to disturbance, review results with EPA, determine appropriate protective measures	2005	Results used to assist in determining appropriate conditions for species for IFOA revision.
<i>Angophora robur</i>	Northern Forests UNE	Flora	Response to disturbance, review results with EPA, determine appropriate protective measures	2005	Results used to assist in determining appropriate conditions for species for IFOA revision.
<i>Parsonsia dorrigensis</i>	Northern Forests UNE, LNE	Flora	Response to disturbance, review results with EPA, determine appropriate protective measures	2005	Results used to assist in determining appropriate conditions for species for IFOA revision.
<i>Macrozamia johnsonii</i>	Northern Forests UNE	Flora	Response to disturbance, review results with EPA, determine appropriate protective measures	2005	Results used to assist in determining appropriate conditions for species for IFOA revision.

Monitoring	Location	Category	Details	Commenced; schedule and frequency)	Summary of results
Biodiversity in eucalypt plantations	Northern Forests UNE	Ground-living mammals, arboreal mammals, diurnal and nocturnal birds	DPI Research and monitoring	1997	Results peer reviewed and published, used to assess biodiversity status
Significant bat roosts	Southern Forests RFA	Bats	Annual population counts	1999	Results used to assess biodiversity status
Burning study	Eden RFA	Various	Monitoring flora and fauna response to burning	1986	Results peer reviewed and published, used to assess response to disturbance
Forest bats	Northern Forests LNE	Bats	Annual banding	1999	Results peer reviewed and published, used to assess response to disturbance
Golden-tipped bat (<i>Kerivoula papuensis</i>)	Southern RFA	Arboreal mammals	Periodic Radio tracking	2001	Results peer reviewed and published, used to assess response to disturbance
Hastings River mouse (<i>Pseudomys oralis</i>)	Northern Forests UNE	Ground-living mammals	1,150 traps in 23 locations	April 2015	Results used to assist in determining appropriate conditions for species for IFOA revision.

Monitoring	Location	Category	Details	Commenced; schedule and frequency)	Summary of results
Aquatic macro-invertebrates	Northern Forests UNE	Invertebrate	Ongoing monitoring at 6 sites	May 2015	Results used to assist in determining appropriate conditions for species for IFOA revision.
Northern corroboree frog (<i>Pseudophryne pengilleyi</i>)	Tumut area	Amphibians	Monitored via call response	2005	Results used to assist in determining appropriate conditions for species for IFOA revision.

Source: FCNSW and DPI staff.

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Law, B.S., Chidel, M., Brassil, T., Turner, G. and Gonsalves, L. (2017) Winners and losers among mammals and nocturnal birds over 17 years in response to large-scale eucalypt plantation establishment on farmland. *Forest Ecology and Management* 399, 108-119.

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Slade, C. and Law, B. (2016) The other half of the coastal State Forest estate in New South Wales; the value of informal forest reserves for conservation. *Australian Zoologist*

Indicator 1.3a Forest associated species at risk from isolation and the loss of genetic variation, and conservation efforts for those species

This indicator assesses the risks to loss of forest genetic variation and describes the formal measures designed to mitigate this risk. A loss of genetic diversity in species can result in a decreased ability to adapt to future environmental change, and thus a higher risk of extinction.

Australia's Biodiversity Conservation Strategy 2010—2030 is a guiding policy framework for conserving Australia's biodiversity, which includes genetic diversity. Formal measures are in place across NSW to address the risk of loss of genetic variation in threatened species. These measures include recovery plans, conservation advices, habitat restoration, wildlife corridors, engineered animal movement mechanisms, seed-collecting programs, and management of habitat and populations under forest management systems. Nominations for listing as 'threatened' include species with populations that are low in numbers, small in geographic extent or fragmented, and that have low genetic variability, hybridisation and fecundity issues.

The NSW *Saving our Species* program also considers where it is prudent to 'insure' against future extinction by storing a representative sample of the genetic variation of the species in a way that allows for reintroduction if extinction in the wild occurs. Genetic storage can be either storage of preserved genetic material (i.e. seeds) or maintaining the species in live, captive populations³⁹. For example, although outside the NSW RFA regions, the *Saving our Species* program is continuing to work in partnership with surrounding landholders to increase the population and improve the genetic diversity of rock-wallabies at Jenolan Caves⁴⁰.

In the NSW RFA regions, there are several examples of projects aimed at conserving and increasing threatened species populations.

In the Ourimbah State Forest in the LNE region, the NSW Government implemented a habitat protection program for one of Australia's largest colonies of the eastern horseshoe bat (*Rhinolophus megaphyllus*), which was first discovered in the mid-1990s. The program involved modifications to harvesting plans to protect the habitat of the bat. Long-term

³⁹ OEH 2013, *Introducing Saving our Species Program*, accessed 4 September 2017 www.environment.nsw.gov.au/research-and-publications/publications-search/introducing-saving-ourspecies

⁴⁰ OEH 2016, *Savings our Species 2016-2021: More plants and animals to be saved from extinction*, accessed 4 September 2017 www.environment.nsw.gov.au/research-and-publications/publicationssearch/saving-our-species-2016-2021

monitoring since 1996 shows that the species is thriving, with a population at the site fluctuating at around 10,000 individuals⁴¹.

Case study: Release of long-nosed potoroos and southern brown bandicoots in Booderee National Park

Long-nosed potoroos (a vulnerable species) and southern brown bandicoots (an endangered species) have long been extinct in Booderee, likely as the result of predation by foxes⁴². An intensive feral predator control program has been carried out in Booderee since the early 2000s, and fox and cat numbers are now low.

Populations of long-nosed potoroos (*Potorous tridactylus*) and southern brown bandicoots (*Isodon obesulus*) are being translocated from State forests near Eden to the Booderee National Park near Jervis Bay. The release of these species into Booderee National Park has been made possible by the park's intensive fox control program.

Seasonal monitoring using remote sensing digital cameras showed southern brown bandicoots were thriving in the State forests near Eden with the aid of a permanent pest animal baiting program. Due to the increased numbers in the southern brown bandicoot population, individuals have been translocated to the Booderee National Park to re-establish a resident population⁴³.

The project plans to introduce at least 36 long-nosed potoroos and 30 southern brown bandicoots. This project is a partnership between Parks Australia (Department of the Environment and Energy), FCNSW, the NSW NPWS, the Australian National University (ACT) and the Southern Ark team from Department of Environment, Land, Water and Planning (Victoria), with veterinary assistance from Taronga Zoo.

Progress of the project to date includes:

- The first group of 23 long-nosed potoroos was released in Booderee in October 2014, with a further 12 animals released in October 2015.
- Thirteen southern brown bandicoots were reintroduced in May 2016, after being absent from the park for almost 100 years.
- Researchers from the Australian Government National Environmental Science Programme's Threatened Species Recovery Hub have been involved in the reintroductions and are coordinating tracking and monitoring of the released animals.
- Southern brown bandicoots tracked for a month following translocation all appeared to show normal behaviour, including nest building, and they rapidly selected heath as their preferred habitat.

⁴¹ FCNSW n.d., *Ecology*, accessed 15 November 2016
www.forestrycorporation.com.au/about/contact-us

⁴² Department of the Environment and Energy 2017, *Booderee potoroos and bandicoots*, accessed 1 September 2017 www.environment.gov.au/biodiversity/threatened/publications/factsheet-booderee-potoroos-andbandicoots

⁴³ FCNSW 2014, *Southern brown bandicoot continues to thrive in Eden State forests*, accessed June 2017 www.forestrycorporation.com.au/about/releases/southern-brown-bandicoot

- Ongoing monitoring continues to detect both long-nosed potoroos and southern brown bandicoots, including some with pouch young, persisting at the release sites.

Wetland values

Australia has international obligations under the Ramsar Convention to protect the ecological character of declared Ramsar wetlands. The four Ramsar Wetlands of International Importance in the NSW RFA regions cover approximately 48,176 hectares. While the original NSW RFAs do not include clauses specifically on wetland values, they include the commitments from the NSW Government to implement measures to improve catchment and water management. These measures have largely been met as reported in the five-yearly reviews and in the Independent Reviews.

All Ramsar listed wetlands, including those in RFA regions, are protected by Part 3 of the EPBC Act. This means any action (including forestry operations) that has, will have, or is likely to have, a significant impact on the ecological character of a Ramsar wetland must be referred to the Minister and undergo an environmental assessment and approval process.

The primary responsibility for managing wetlands and their associated flora and fauna is vested in the respective landholder/land manager. Individual state and territory governments have the primary legislative and policy responsibility for natural resource management⁴⁴. The NSW OEH is responsible for implementing the Ramsar Convention in NSW.

Australia's obligations under the Convention on Wetlands of International Importance (Ramsar Convention)

The Ramsar Convention is an international agreement promoting the conservation and wise use of wetlands. It aims to halt the worldwide loss of wetlands and to conserve, through wise use and management, those that remain.

As a signatory of this Convention, Australia has an obligation to manage and protect wetlands of international importance (Ramsar wetlands). The EPBC Act establishes a process for identifying Ramsar wetlands and encourages best practice management through nationally consistent management principles. The EPBC Act provides automatic protection for Ramsar wetlands by ensuring an assessment process is undertaken for proposed actions (including forestry operations) that will, or are likely to, have a significant impact on the ecological character of a declared Ramsar wetland. This process allows the Commonwealth Minister for the Environment to grant or refuse approval to take an action, and to impose conditions on the taking of an action.

The exemption from other Commonwealth assessment and approval requirements under section 38 of the EPBC Act for forestry operations in RFA areas does not apply to operations within Ramsar wetland sites.

Protecting NSW Ramsar sites

Wetland sites are listed under the Ramsar Convention if they meet at least one of the nine Ramsar criteria. A wetland should be considered internationally important if it:

⁴⁴ DoEE, Managing Wetlands, www.environment.gov.au/water/wetlands/managing (accessed 1 May 2018)

1. Contains a representative, rare, or unique example of a natural or near-natural wetland type found within the appropriate biogeographic region.
2. Supports vulnerable, endangered, or critically endangered species or threatened ecological communities.
3. Supports populations of plant and/or animal species important for maintaining the biological diversity of a particular biogeographic region.
4. Supports plant and/or animal species at a critical stage in their life cycles, or provides refuge during adverse conditions.
5. Regularly supports 20,000 or more waterbirds.
6. Regularly supports one per cent of the individuals in a population of one species or subspecies of waterbird.
7. Supports a significant proportion of indigenous fish subspecies, species or families, life-history stages, species interactions and/or populations that are representative of wetland benefits and/or values and thereby contributes to global biological diversity.
8. Is an important source of food for fishes, spawning ground, nursery and/or migration path on which fish stocks, either within the wetland or elsewhere, depend.
9. Regularly supports one per cent of the individuals in a population of one species or subspecies of wetland-dependent non-avian animal species. Under the Ramsar Convention, the NSW government is required to protect the ecological character of its Ramsar sites.

The NSW Government's Wetlands Policy promotes the sustainable conservation, management and wise use of wetlands in NSW and the need for all stakeholders to work together to protect wetland ecosystems and their catchments. The policy recognises that there are several Acts which can help to protect wetland values such as the BC Act and the EPBC Act.

The NSW Government is responsible for managing all Ramsar wetlands in the NSW RFA regions and works collaboratively with a diverse range of stakeholders, including Ramsar Convention Secretariat, Commonwealth Government, local governments, landowners and community groups, to promote the conservation and wise use of wetlands and to implement the Ramsar Convention⁴⁵. OEH is responsible for:

- Coordinating which wetlands in NSW are to be nominated for listing as Ramsar sites
- Advising on how existing Ramsar wetlands are managed
- Managing Ramsar wetlands in national parks and reserves
- Promoting the values of the Ramsar Convention
- Reporting to the Australian Government on how the convention is being implemented in NSW.

Ramsar sites in NSW RFA regions

⁴⁵ OEH, *Internationally significant wetlands*, www.environment.nsw.gov.au/topics/water/wetlands/internationally-significant-wetlands (accessed 27 April 2018)

As of May 2018, 66 Australian wetlands – including 12 in NSW- have been designated to the Ramsar list. Of the 12 Ramsar sites in NSW, four are located in the NSW RFA regions and cover approximately 48,176 hectares (see **Table 1.40**).

Table 1.41 Ramsar Wetlands of International Importance in NSW RFA regions

Wetland	RFA	Date of listing	Area (hectares)
1. Blue Lake	S	17 March 1996	338
2. Little Llangothlin Nature Reserve	NE	17 March 1996	258
3. Hunter Estuary Wetlands	NE	21 February 1984	2,968
4. Myall Lakes	NE	14 June 1999	44,612

Notes:

RFA region: S – Southern, NE – North East, E – Eden

Source: Environmental Resources Information Network Species of National Environmental Significance Database.

Blue Lake⁴⁶

Blue Lake and Hedley Tarn within Kosciuszko National Park are a rare example of a near-natural alpine wetland within the South-East Coast Drainage Division. Blue Lake is one of only four cirque lakes found on the Australian mainland, and Blue Lake is the deepest of these alpine lakes which contain the freshest water in Australia. It is listed under Ramsar criteria 1, 2 and 3.

A number of rare or threatened plants are found within the Ramsar site, including the branched caraway (*Oreomyrrhis brevipes*), wedge oschatzia (*Oschatzia cuneifolia*) and the snow-wort (*Abrotanella nivihena*) and it supports the endangered ecological community of montane peatlands and swamps.

Threatened animal species found around Blue Lake include the mountain pygmy possum (*Burramys parvus*) and the broad tooth rat (*Mastacomys fuscus*).

The Ramsar site contains the only high altitude alpine wetlands in Australia. In addition to supporting nationally threatened species, the site supports other populations of plant and animal species important for maintaining the biological diversity of this particular biogeographic region. This has been acknowledged through the inclusion of Kosciuszko National Park as a biosphere reserve in the UNESCO man and the biosphere program.

Site Management

Management of this Ramsar site is guided by scientific information available from Australian Wetland Database, and a range of management plans. This includes the site's Ramsar

⁴⁶ DoEE 2016, *Australian Wetlands Database: Blue Lake*, www.environment.gov.au/cgi-bin/wetlands/ramsardetails.pl?refcode=48 (accessed 27 April 2018)

information sheet, its ecological character description, and the plan of management for Kosciuszko National Park.

Little Llangothlin Nature Reserve⁴⁷

The Little Llangothlin Nature Reserve Ramsar site is located between Armidale and Glen Innes on the New England Tablelands in north-eastern NSW. The Ramsar site comprises all of the 257.6 hectare Nature Reserve which is managed by the NSW NPWS. It is listed under Ramsar criteria 1, 2 and 4.

The site supports terrestrial habitat including about 44 hectares of eucalypt woodland with grass understorey, including patches of the nationally threatened ecological community 'New England peppermint (*Eucalyptus nova-anglica*) grassy woodlands' and cleared areas that are predominantly grasslands containing kangaroo grass (*Themeda australis*) and exotic pasture species (Benson and Ashby 2000). The grasslands support the nationally endangered Austral toadflax (*Thesium australe*), a small plant which parasitises the roots of kangaroo grass.

The site regularly supports large numbers of waterbirds and waders, and is an important drought refuge for waterbirds. The nationally endangered Australasian bittern (*Botaurus poiciloptilus*) has been recorded twice at the site in recent years and is suspected to breed there.

Little Llangothlin Nature Reserve was traditionally used by Indigenous peoples and numerous artefacts have been found at the site. Currently the Ramsar site is used for scientific research, teaching, and nature-based recreation.

Site Management

Management of this Ramsar site is guided by scientific information available from Australian Wetland Database, and a range of management plans. This includes the site's Ramsar information sheet, its ecological character description, and a plan of management for Little Llangothlin Nature Reserve.

Hunter Estuary Wetlands⁴⁸

The Hunter Estuary Wetland Ramsar site is currently in two parts - *Kooragang Nature Reserve* (now part of Hunter Wetlands National Park) that was listed under the Ramsar convention in 1984, and *Hunter Wetlands Centre* that was added in 2002. The site is listed under criteria 2, 4 and 6.

The Kooragang component of the Hunter Estuary Wetlands Ramsar site is located in the estuary of the Hunter River, approximately 7 km north of Newcastle on the coast of NSW. Hunter Wetlands Centre Australia is 2.5 km from Kooragang. Although the sites are not

⁴⁷ DoEE 2016, *Australian Wetlands Database: Little Llangothlin Nature Reserve*, www.environment.gov.au/cgi-bin/wetlands/ramsardetails.pl?refcode=45 (accessed 27 April 2018)

⁴⁸ DoEE 2016, *Australian Wetlands Database: Hunter Estuary Wetlands*, www.environment.gov.au/cgi-bin/wetlands/ramsardetails.pl?refcode=24 (accessed 27 April 2018)

contiguous they have significant linkages, both hydrologically and by a wildlife corridor consisting of Ironbark Creek, the Hunter River and Ash Island.

Hunter Wetlands Centre Australia is a small but unique complex of wetland types surrounded by urban development along three boundaries. Previously degraded, this urban wetland has been restored. Habitat types at the Hunter Wetlands Centre Australia include restored semi-permanent/seasonal freshwater ponds and marshes, natural semi-permanent/seasonal brackish ponds and marshes, freshwater swamp forests and a coastal estuarine creek.

The Hunter Estuary Wetlands Ramsar site supports three species that are nationally and internationally listed. The estuary stingray (*Dasyatis fluviorum*) listed as vulnerable on the IUCN Red List (Version 2009.1) and the green and golden bell frog (*Litoria aurea*) listed as vulnerable under the EPBC Act have been found within the Kooragang component of the Ramsar site. The Australasian bittern (*Botaurus poiciloptilus*), listed as endangered on both the EPBC Act and the IUCN Red List (Version 2009.1), has been found at both components of the Ramsar site.

The Hunter Estuary Wetland Ramsar site supports 112 species of waterbirds and 45 species of migratory birds listed under international agreements, including the great egret (*Ardea alba*), cattle egret (*Ardea ibis*), terns (*Sterna* spp.), glossy ibis (*Plegadis falcinellus*) and white-breasted sea-eagle (*Haliaeetus leucogaster*). It also provides refuge for waterbirds such as ducks and herons during periods of inland drought and regularly supports one per cent of the population of the eastern curlew (*Numenius madagascariensis*) and the red-necked avocet (*Recurvirostra novaehollandiae*).

Site Management

Management of this Ramsar site is guided by scientific information available from Australian Wetland Database, and a range of management plans. This includes the site's Ramsar information sheet, its ecological character description, a plan of management for Hunter Wetlands Centre, which is on private land, and a plan of management for Kooragang Nature Reserve. A plan of management is being prepared for Hunter Wetlands National Park, which now incorporates Kooragang Nature Reserve.

Myall Lakes⁴⁹

The Myall Lakes Ramsar wetland is located within the Myall Lakes National Park, approximately 75 kilometres north of Newcastle on the NSW mid-north coast. Myall Lakes National Park comprises four main lakes (the Bombah Broadwater, Boolambayte, Two Mile and Myall Lakes), together with the lesser areas of Nerong Creek, sections of the Upper and Lower Myall River, Boolambayte Creek, Fame Cove Inlet and Broughton Island. The Ramsar site incorporates a number of distinct wetlands associated with the waterways and dune systems. It is listed under Ramsar criteria 1, 2 and 3.

⁴⁹ DoEE 2016, *Australian Wetlands Database: Myall Lakes*, www.environment.gov.au/cgi-bin/wetlands/ramsardetails.pl?refcode=52# (accessed 27 April 2018)

The site supports a high diversity of animal species, with 298 birds, 58 mammals, 44 fish species, 37 reptiles and 29 amphibians recorded from the Ramsar site (NSW Wildlife Atlas). Many of the site's fauna are found in a wide range of wetland types, including estuarine waters; intertidal forested wetlands; coastal freshwater lagoons; permanent rivers, streams or creeks; freshwater tree dominated wetlands; and shrub dominated wetlands.

The Myall Lakes Ramsar site supports five wetland dependent species which are listed as nationally threatened under the EPBC Act, or listed as internationally threatened in the IUCN Red List, including the Australasian bittern, Freycinet's frog, green and gold bell frog, green thighed frog and stuttering frog.

The site is important for providing habitat for migratory birds, with 22 species listed in agreements between Australia and Japan, China and the Republic of South Korea recorded from the site. Migratory species listed under international agreements which breed in the Ramsar site include little tern (*Sterna albifrons*), sooty shearwater (*Puffinus griseus*), short-tailed shearwater (*Puffinus tenuirostris*) and wedge-tailed shearwater (*Puffinus pacificus*).

The site's vegetation is particularly diverse, with 946 species of terrestrial flora, two mangrove species (*Avicennia marina* and *Aegiceras corniculatum*), 10 species of submerged aquatic flora recorded including *Vallisneria gigantea*, *Ruppia megacarpa*, *Myriophyllum salsugineum* and *Najas marina*, and saltmarsh species such as *Sarcocornia quinqueflora*, *Suaeda australis*, *Baumea juncea* and *Juncus kraussii*. The terrestrial species occur in a wide range of vegetation communities, from rainforest and wet sclerophyll vegetation to heathland and sand dune vegetation.

Site Management

Management of this Ramsar site is guided by scientific information available from Australian Wetland Database, and a range of management plans. This includes the site's Ramsar information sheet, its ecological character description, a plan of management for Myall Lakes National Park, Little Broughton Island Nature Reserve and Stormpetrel Nature Reserves, and a zoning plan for those parts of the Ramsar site within the Port Stephens–Great Lakes Marine Park.

Nationally Important wetlands

There are 198 Nationally Important Wetlands in NSW, of which almost half (48.5 per cent) are within NSW RFA regions (Appendix 2). A wetland may be considered nationally important if it meets at least one of six criteria covering factors such as their ecological role, their social and cultural values and the flora and fauna that rely on them⁵⁰.

Non-Ramsar wetland areas in RFA regions and the extent in terrestrial ecosystems, and in the CAR Reserve system

⁵⁰ OEHL, Other protected wetlands, www.environment.nsw.gov.au/topics/water/wetlands/protecting-wetlands/other-protected-wetlands (accessed 2 May 2018)

Spatial data for NSW wetlands shows there are 172 thousand hectares of non-Ramsar wetlands in the four NSW RFA regions. Wetlands include coastal lagoons and lakes, estuarine wetlands, floodplain wetlands, freshwater lakes, and reservoirs.

By NSW RFA regions, there are 82 thousand hectares in the Lower North East RFA region, 50 thousand hectares in the Southern RFA region, 35 thousand hectares in the Upper North East RFA region, and 5.2 thousand hectares in the Eden RFA region.

Of the non-Ramsar wetland area of 172 thousand hectares, 24 thousand hectares (14 per cent) are in the CAR reserve system and 148 thousand hectares (86 per cent) are outside the CAR reserve system.

Of the total non-Ramsar wetland area of 172 thousand hectares, 23 thousand hectares are contained in Forest Ecosystems, of which 7.9 thousand hectares (34 per cent) are also in the CAR reserve system. Additionally, there are 9.5 thousand hectares of non-Ramsar wetlands that are contained in Non-Forest Ecosystems, of which 6.0 thousand hectares (63 per cent) are also in the CAR reserve system. The total area of non-Ramsar wetlands within the RFA terrestrial ecosystems is 33 thousand hectares, of which 14 thousand hectares (42 per cent) are in the CAR reserve system.

However, the majority of non-Ramsar wetlands areas in RFA regions (139 thousand hectares) are located not within RFA terrestrial ecosystems. Examples include coastal lagoons such as Lake Macquarie and Tuggerah Lake on the NSW Central Coast in the Lower North East RFA region, and reservoirs such the network of reservoirs that form the Snowy Hydro Scheme in the Southern RFA region. Of this area of non-Ramsar wetlands in RFA regions that are not within RFA terrestrial ecosystem, 10 thousand hectares (7 per cent) are in CAR reserves and 129 thousand hectares (93 per cent) are outside CAR reserves.

A full summary of the extent of wetlands in each RFA region, by land type, including terrestrial ecosystems, and the extent in the CAR Reserve system is in **Table 1.41**.

Table 1.42 Extent of non-Ramsar wetlands, by land type and extent in CAR reserves

RFA region and land type ¹	Total area ('000 hectares) ²	Wetland area ('000 hectares) ³		
		In CAR reserve system on public land ⁴	Not in CAR reserve system on public land	Total
Upper North East				
Forest Ecosystems	2,167	2.9	3.5	6.4
Non-Forest Ecosystems	61	2.4	1.8	4.2
Total terrestrial ecosystems	2,228	5.3	5.3	10.6
Not in terrestrial ecosystem	1,682	1.7	22.7	24.4
All land types	3,910	6.9	28.0	35.0
Lower North East				
Forest Ecosystems	3,175	2.5	6.0	8.5

RFA region and land type ¹	Total area ('000 hectares) ²	Wetland area ('000 hectares) ³		
		In CAR reserve system on public land ⁴	Not in CAR reserve system on public land	Total
Non-Forest Ecosystems	39	2.1	0.8	2.9
Total terrestrial ecosystems	3,213	4.6	6.8	11.4
Not in terrestrial ecosystem	2,576	5.2	65.3	70.5
All land types	5,789	9.8	72.1	81.9
Southern				
Forest Ecosystems	2,446	2.5	5.8	8.2
Non-Forest Ecosystems	113	1.1	0.5	1.5
Total terrestrial ecosystems	2,558	3.5	6.2	9.8
Not in terrestrial ecosystem	1,958	3.2	36.9	40.1
All land types	4,516	6.7	43.2	49.9
Eden				
Forest Ecosystems	533	0.1	0.1	0.2
Non-Forest Ecosystems	18	0.5	0.4	0.8
Total terrestrial ecosystems	552	0.5	0.5	1.1
Not in terrestrial ecosystem	262	0.3	3.8	4.1
All land types	814	0.8	4.4	5.2
All RFA regions				
Forest Ecosystems	8,320	7.9	15.4	23.3
Non-Forest Ecosystems	231	6.0	3.5	9.5
Total terrestrial ecosystems	8,551	13.9	18.9	32.8
Not in terrestrial ecosystem	6,478	10.3	128.8	139.0
All land types	15,029	24.2	147.7	171.9

Notes:

¹ The areas of 'Forest Ecosystems' and 'Non-Forest Ecosystems' together form the total 'Terrestrial ecosystems' area for an RFA region (both classes are reported in both the CRA reports and the RFA data tables). The remaining land area (being agricultural, horticultural and urban land) described as 'Not in terrestrial ecosystem' is not reported in the CRA reports of the RFA data tables.

² Area derived by ABARES from spatial data associated with the Forest Ecosystem CRA reports published in 1998-2000.

³ Area derived by ABARES from wetlands area dataset provided by OEH NSW, also available at <https://sdi.nsw.gov.au/nswsdi/catalog/search/resource/details.page?uuid=%7BD4FDC636-DE36-443E-8B09-4AB275A71EE7%7D>

⁴ CAR reserve system on public land only. This includes the NPWS estate (formal reserves); informal reserves; and values protected by prescription identified from Forest Management Zone datasets at 2016, together with additional Regional Prescriptions from Integrated Forestry Operations Approvals where available.

Totals may not tally due to rounding

Non Ramsar wetland data collection methodology

The NSW wetland information in **Table 1.41** has been sourced OEH and records of spatial extent and attributes for natural wetlands and reservoirs.

The NSW wetland areas dataset was captured by OEH using existing wetland datasets, digitised wetland maps and outputs from remote sensing methods to detect presence of water from satellite imagery. Coding of wetland types was completed by visual assessment of wetland areas overlaid over satellite imagery.

For this analysis, wetland records covering the Ramsar list of wetlands of international importance are excluded. Ramsar wetlands are also recorded in the NSW wetland areas dataset, and four of these which were identified as occurring within an RFA region were subsequently excluded (see above for information on Ramsar wetlands).

The non-Ramsar wetland spatial coverage was overlaid with original CRA spatial data on terrestrial (Forest and Non-Forest) ecosystems as well as land not included in the terrestrial ecosystem datasets, including agricultural and urban land. These datasets were also overlaid on the spatial coverage of the CAR reserve system as at June 2016.⁵¹

The areas of individual terrestrial ecosystems identified during the CRA process (1995-2000) have not been updated since that time. The data presented therefore do not take into account of any additional area of terrestrial ecosystems subsequently identified, or any areas that no longer form a terrestrial ecosystem, or any areas that have previously been misclassified into the wrong terrestrial ecosystem.

Indicator 4.1a Area of forest land managed primarily for protective functions

The area of forest land where priority is given to protecting soil and hydrological functions provides an indication of the emphasis being placed by society on the conservation of these values. This indicator includes areas managed to protect soil and water by excluding incompatible activities.

Throughout the NSW RFA regions, soil and water resources are protected through the allocation of land for conservation and maintenance purposes. The area of forest land where priority is given to protecting soil and hydrological functions provides an indication of the emphasis being placed by society on the conservation of these values. This indicator includes areas managed to protect soil and water by excluding incompatible activities.

In NSW, the area managed for protective functions comprises all public nature conservation reserves; catchments managed specifically for water supply; and those parts of multiple-use public forests in which wood harvesting and road construction are not permitted.

⁵¹ This approach has not been undertaken before, and has not been peer-reviewed or made public, and its assumptions have not been checked.

Forested catchments are highly valued as sources of drinking water because forest vegetation, soil and litter serve as natural filters, and the quality of water flowing from such catchments is therefore usually very high. In NSW, as of 2014 approximately 180,000 hectares of forest are managed specifically for water supply in closed catchments from which human disturbance activities are excluded. Another 83,000 hectares of forest in closed water catchments are available for wood harvesting, subject to scientifically based mitigation measures to protect soil and water values.

An IFOA can be made to cover forestry operation on State forests or other Crown-timber lands covered by a NSW Forest Agreement. IFOAs include an Environment Protection Licence (EPL) issued by the NSW EPA.

The EPL requires FCNSW to assess NSW State forests soil erosion and water pollution hazards prior to the commencement of wood harvesting. The principle of environmental care requires that soil, water catchment, cultural and landscape values are protected by careful planning, location, construction and maintenance of roads and tracks, and regulation of their use.

The NSW Government also implements a PNF Code that sets minimum operating standards for harvesting on private lands⁵².

The total area of land protected or excluded from wood harvesting for the purpose of soil and water protection across all categories of land in 2014 was 263,424 hectares, as shown in **Table 1.42**.

Table 1.43 Soil and water management – area of land protected, 2005–2014⁵³

Year ended 30 June	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Fully protected (hectares)	231,334	196,049	182,619	183,752	183,752	177,635	178,366	178,356	180,200	180,200
Partly protected (hectares)	95,162	53,587	62,839	60,295	76,709	75,191	79,846	83,256	83,224	83,224
Total protected (hectares)	326,496	249,636	245,458	244,047	260,461	252,826	258,212	261,612	263,424	263,424

Source: Forests NSW, FCNSW

Indicator 4.1b Management of the risk of soil erosion in forests

⁵² 2013 figures sourced from NSW EPA

⁵³ Note: For this indicator, data is only available at the State level to 2014.

This indicator assesses the extent to which the risk of soil erosion has been explicitly identified and addressed in forest management. Water quantity is important for ecosystem health and water supply for human use.

The avoidance of soil erosion reflects the extent to which associated values, including soil fertility and water quality, are protected.

FCNSW has a comprehensive soil assessment program for forestry operations, consisting of four modules: inherent soil erosion and water pollution assessment, mass movement assessment, dispersibility assessment, and seasonality. Where an EPL is active FCNSW is required to apply all four assessment modules during a pre-operational planning phase, which precedes commencement of any forestry activities.

Legally binding instruments are in place in NSW that establish a regulatory framework for the maintenance of soil values. In NSW, the significantly lower risk of erosion assessed for nature conservation reserves means that prescriptions in that tenure are not as stringent as in multiple-use public forests.

The *Protection of the Environment Operations Act 1997* (NSW) (POEO Act) prohibits the pollution of waters in NSW. The IFOAs contain EPLs which have best management practices to prevent the pollution of waters. FCNSW has the ability to turn the EPLs on or off. Where FCNSW chooses to turn on the EPL, forestry operations must meet the best management practice requirements contained in the EPL. The EPL requires FCNSW to undertake comprehensive soil assessments which identify the hazard category (risk of soil erosion and water pollution) and determine the level of protection required at each site to conserve soil and water values (**Table 1.43**).

Table 1.44 Area of multiple-use public forest where disturbance activities were planned, proportion assessed for risk of soil erosion, and assessed category, 2010–11

Disturbance activity	Metric	NSW
Native forest harvesting and silviculture	Area (hectares)	27,484
	Proportion assessed for risk of soil erosion (%)	100
	Assessed category ¹	Category 1 (That the soil erosion risk assessment system comprehensively takes account of rainfall intensity, slope, soil erodibility and management practices that could contribute to soil disturbance.)
Plantation operations	Area (hectares)	14,068
	Proportion assessed for risk of soil erosion (%)	100
	Assessed category ¹	Category 1
Road construction and maintenance	Area (hectares)	n.r.
	Proportion assessed for risk of soil erosion (%)	n.a.
	Assessed category ¹	n.a.
Fire management	Area (hectares)	36,936
	Proportion assessed for risk of soil erosion (%)	100
	Assessed category ¹	Category 1

Source: Various NSW agencies, SOFR 2013. Note: For this indicator, data is only available at the State level.

Table notes: n.a. = not applicable; n.r. = not reported

(1) Assessed category rating refers to a four-tier category system in SOFR 2013, Table 4.5, ranging from Category 1 to Category 4, which assesses the level of planning processes.

Summary and future management of environmental values

Old Growth Values

Old growth values were one of the criteria used to establish the CAR reserve system under the NSW RFAs. Of the 2.54 million hectares of old-growth forest identified as part of the CRA process in the three NSW RFA regions, a total of 1.1 million hectares (45 per cent) was already protected under formal reservation (the NPWS (NPWS) estate) before the NSW RFAs were signed.

By mid-2001, after all three NSW RFAs came into effect, a total of 1.9 million hectares (78 per cent) of the old-growth forest identified in the CRA process was protected under the CAR reserve system (which includes Formal Reserves, Informal Reserves, and Regional Prescriptions for forest management on public land). By mid-2016 a total of 2.0 million hectares (80 per cent) of the identified old-growth forest is protected under the CAR Reserve system.

The renewed NSW RFAs will continue to protect old growth values in both the CAR reserve system and through ecologically sustainable forest management in State forests through the NSW Forest Management Framework. The draft NSW IFOA explicitly states that forestry operations are prohibited from all old growth forests in RFA regions.

Wilderness Values

Over 92 per cent of the Delineated Wilderness identified according to JANIS criteria as part of the CRAs, is protected by formal reserves in all three NSW RFAs, totalling 1.6 million hectares. In the Eden RFA region over 99 per cent of Delineated Wilderness is protected in formal reserves. The JANIS reservation targets were for 90 per cent or more of wilderness to be protected in formal reserves.

The 20 year rolling extensions to the NSW RFAs will provide for the continued protection of wilderness values through ecological sustainable forest management across the NSW RFA regions predominantly through the CAR reserve system and NSW Forest Management Framework, specifically the requirements under the *Wilderness Act 1987* (NSW). Declared Wilderness must be managed in a way that maintains its wilderness values as set out in Section 9 of the *Wilderness Act 1987* (NSW). Nearly all Delineated Wilderness is within the national parks system and is managed by OEH. The aim is to protect these large natural areas, the functioning of their ecosystems, and their processes of evolution with a minimum of human interference.

Pest animal control, weed control and bushfire management all occur as part of wilderness management. Where possible, management strategies that minimise the impacts and unintended effects of these activities on wilderness values are employed.

Endangered Species Values

The NSW RFAs address the conservation of endangered species through a system of conservation reserves and the management of habitat in areas outside the reserve system, including through a series of management prescriptions in harvest areas. Endangered

species are further protected under the BC Act (following repeal of the TSC Act in 2017), *Fisheries Management Act 1994* (NSW) (FM Act) and provisions in the IFOAs.

There are currently 412 threatened species and 8 non-threatened migratory birds listed under the EPBC Act that are known or likely to occur within the NSW RFA regions. Almost all listed species (99.5%) have a conservation advice and/or recovery plan to assist recovery. There are also 28 EPBC Act listed threatened ecological communities in the NSW RFA regions. All have conservation advices, recovery plans or both in place to assist in management and recovery. Since the signing of the first NSW RFA (Eden - 26 August 1999), 81 additional species in NSW have been listed as threatened under national legislation. Table 1.8 shows figures by NSW RFA region.

The renewed NSW RFAs will continue to provide for the protection of endangered species through the CAR reserve system and the NSW Forest Management Framework incorporating adaptive management and continual improvement. Research on endangered species will continue to be an important part of the adaptive management of forests in NSW RFA regions. Proposed research priorities to be listed in the renewed NSW RFAs include Matters of National Environmental Significance (which includes endangered species), forest ecology and the effectiveness of management prescriptions. Results of this research will be incorporated into management responses for a range of environmental values and will likely benefit the management of threatened species into the future.

The NSW IFOAs for public lands and PNF Codes for private lands contain measures designed to mitigate the impact of forestry operations on threatened species and threatened ecological communities. Threatened ecological communities, as listed by the NSW Threatened Species Scientific Committee, are not available for timber harvesting as the NPW Act prohibits the picking or harming of all threatened ecological communities⁵⁴. The current IFOAs do not authorise any forestry operations in threatened ecological communities.

The renewed RFAs will require that Matters of National Environmental Significance are reported on in each five yearly review. The proposed rolling extension mechanism in the renewed NSW RFAs creates an incentive for the continual improvement and adaptive management of endangered species values in NSW RFA regions.

National Estate Values

The amended RFA will continue to provide for the protection of national estate values through a combination of the National and Commonwealth Heritage Lists, the NSW Heritage Register and the Heritage Codes of local planning schemes. The expiration and repeal of parts of the EPBC Act and the *Australian Heritage Council Act 2003* (Cth) relating to the Register of National Estate did not diminish protection of Commonwealth heritage places. These parts were superseded by stronger ongoing heritage protection provisions under national environment law.

⁵⁴ S118A of the NPW Act was revoked in August 2017. The relevant provision is now Clause 2.2 of the BC Act.

For the past 20 years, the NSW forest management systems have provided for the protection of National Heritage Values of National Heritage Places in accordance with National Heritage Management Principles. This will continue under the renewed NSW RFAs, and will incorporate new information and adapt to changing circumstances.

There are 6 places on the National Heritage List and 21 places on the Commonwealth Heritage List within the NSW RFA regions.

The NSW RFAs will continue to ensure the forest management framework in NSW and CAR reserve system provide for the protection of National and Commonwealth heritage values. The modernised and renewed NSW RFAs have been drafted to reflect current heritage concepts and definitions consistent with the EPBC Act.

World Heritage Values

There are three World Heritage properties located within, or partly within, the NSW RFA regions – all within the North East RFA region. These are now managed cooperatively by the NSW and Australian governments in accordance with the 2009 Australian World Heritage Intergovernmental Agreement.

Both the Greater Blue Mountains Area and Australian Convict Sites (Old Great North Road) World Heritage properties were listed after the signing of the North East RFA on 31 March 2000. The Gondwana Rainforests of Australia was listed before the signing of the North East RFA in December 1994. These are being maintained and managed for multiple values under the NPW Act. There are no World Heritage properties currently within the Southern or Eden RFA regions.

Under the EPBC Act, World Heritage properties are Matters of National Environmental Significance. The EPBC Act therefore provides protection for World Heritage properties by ensuring that an assessment process is undertaken for proposed actions (including forestry operations). The exemption of forestry operations in RFAs from other Commonwealth assessment and approval requirements under section 38 of the EPBC Act does not apply to operations within World Heritage properties. World Heritage values will continue to be managed and protected through assessment processes for proposed actions under the renewed NSW RFAs.

Biodiversity Values

Biodiversity values were fundamental in establishing CAR reserve system under NSW RFAs and were a focus of the CRAs. The formal reserves in the CAR reserve system form part of the National Reserve System, which aims to secure long-term protection for samples of Australia's diverse ecosystems and the plants and animals they support.

The response of representative species to wood harvesting in NSW has been the subject of study over the past 20 to 30 years. An overview of species responses to pre-RFA harvesting in northern NSW found that 40 species appeared to be significantly disadvantaged by harvesting, another 40 species appeared to be significantly favoured by harvesting, while the remainder (147 species) appeared to be relatively unaffected (Kavanagh and Stanton 2005). The sensitivity of some species to harvesting reinforces the necessity for sustainable forest management practices, especially via prescriptions designed to mitigate impacts on specific species. A recent review of these practices during the RFA period concluded that there is a

considerable body of knowledge supporting their effectiveness at the local level (Slade and Law 2016). This demonstrates that through the life of the RFAs there has been continuous improvement of forest management through the application of new information about biodiversity values. This adaptive management will continue in the renewed NSW RFAs.

Australia's Biodiversity Conservation Strategy 2010—2030 is a guiding policy framework for conserving Australia's biodiversity, which includes genetic diversity.

NSW *Saving our Species* program also considers where it is prudent to 'insure' against future extinction by storing a representative sample of the genetic variation of the species in a way that allows for reintroduction if extinction in the wild occurs.

Prior to the signing of the RFAs, a total of 2.57 million hectares (17 per cent) of the total land area in the RFA regions was protected under formal reservation (the NPWS estate). These data include all land categories, namely Forest Ecosystems, Non-forest Ecosystems. These data exclude areas within the NSW RFA regions that were land not classified as a terrestrial ecosystem such as agricultural land and built up areas.

By mid-2001, after all three RFAs came into effect a total of 4.04 million hectares (27 per cent) of total land in RFA regions was protected under the CAR reserve system (which includes Formal Reserves, Informal Reserves, and Regional Prescriptions for forest management on public land). This represents an increase of 1.47 million hectares of land in protected areas after all three RFAs came into effect.

By mid-2016, a total of 4.22 million hectares (28 per cent) of the total land in RFA regions was protected under the CAR reserve system. This represents an increase of 182,000 hectares of land in CAR Reserves across the four RFA regions since all three RFAs came into effect.

Future RFA five-yearly reviews will be focussed on outcomes and the objectives of the NSW RFAs. Monitoring and reporting arrangements will be strengthened and streamlined, and where possible indicate the impact of management prescriptions. This demonstrates that the renewed NSW RFAs, including the proposed 5 year rolling extension mechanism, will maintain and enhance protections for biodiversity values.

Wetland values

The four Ramsar Wetlands of International Importance in the NSW RFA regions cover approximately 48,176 hectares. These sites are Blue Lagoon (338 hectares) in the Southern RFA, and in the North East RFA are Little Llangothlin Nature Reserve (258 hectares), Hunter Estuary Wetlands (2,968 hectares) and Myall Lakes (44,612 hectares). All four were Ramsar listed before the NSW RFAs were signed. All Ramsar listed wetlands, including those in NSW RFA regions, are protected by Part 3 of the EPBC Act.

The renewed NSW RFAs will continue to provide for the protection of the ecological character of Ramsar listed wetlands through the NSW Forest Management Framework, in accordance with Australia's obligations under the Ramsar Convention. The variations to the NSW RFAs as drafted include specific clauses to this effect.

For the non-Ramsar listed wetlands in the NSW RFA regions, there are 82,000 hectares in the Lower North East RFA region, 50,000 hectares in the Southern RFA region, 35,000 hectares in the Upper North East RFA region, and 5,200 hectares in the Eden RFA region. Of the non-

Ramsar wetland area of 172,000 hectares, 24,000 hectares (14 per cent) are in the CAR reserve system and 148,000 hectares (86 per cent) are outside the CAR reserve system.

While the current NSW RFAs do not include clauses specifically on wetland values, they include the commitments from the NSW Government to implement measures to improve catchment and water management. These measures have largely been met as reported in the independent five-yearly reviews.

The renewed NSW RFAs as drafted include new clauses regarding landscape management where, in line with the NFPS, NSW has agreed to implement forest management practices that seek to ensure the availability of reliable, high quality water supplies from forested land, and to minimise soil compaction and disturbance to minimise downstream impacts. Managing forests in such a way will ensure that forestry operations minimise their impact to wetland values over the life of the RFAs.

Future RFA five-yearly reviews will be focussed on outcomes reporting and specifically the objectives of the NSW RFAs. Monitoring and reporting arrangements will also be strengthened and streamlined, and where possible indicate the impact of management prescriptions. This demonstrates that the renewed NSW RFAs, including the proposed 5 year rolling extension mechanism will maintain and enhance protections for environmental values.

2. Indigenous Heritage Values

Indigenous heritage values⁵⁵ are considered to be the values of a place which are of significance as part of Indigenous practices, observances, customs, traditions, beliefs or history. The extent to which Indigenous people participate in forest management reflects their connection with the land, and the integration of Indigenous values into forest management practice, policy and decision-making.

For clarity, while the RFA Act and the Montréal Process Criteria and Indicators use the term 'Indigenous', the New South Wales Government and community use the term 'Aboriginal' to describe the First Peoples of NSW. This report uses both terms depending on the context.

This section includes the following Montréal Process indicators:

- Indicator 6.4 a – Area of forest to which Indigenous people have use and rights that protect their special values and are recognised through formal and informal management regimes
- Indicator 6.4.c – The extent to which Indigenous values are protected, maintained and enhanced through Indigenous participation in forest management
- Indicator 6.5.d – Resilience of forest dependent Indigenous communities to changing social and economic conditions

Access, management and ownership are key parts of the relationship of Indigenous people with land. The Indigenous estate can be broadly divided into land tenure and management categories based on the degree of Indigenous ownership, management and other rights over the land. Effective Indigenous participation can occur through a variety of direct or consultative mechanisms.

The primary piece of legislation which protects Aboriginal cultural heritage in NSW is the NPW Act. Under the NPW Act it is an offence to harm (destroy, deface, or damage) or desecrate an Aboriginal object or Aboriginal place, or in relation to an object, move the object from the land on which it has been situated.

An Aboriginal Place declaration recognises that places are (or were) of special significance to Aboriginal culture. It gives the land a higher level of protection, to safeguard its significance to Aboriginal people.

Table 2.1 shows the area of forest land in NSW for which Indigenous people have use and rights that protect their special values as recognised through formal management regimes.

⁵⁵ The Term *Indigenous* is used in the national context and in relation to the relevant international Montréal Indicators. In a specifically NSW context the term *Aboriginal* is generally preferred and used, although both terms have been used in this document.

Table 2.1 Area of forest land in NSW to which Indigenous people have use and rights that protect their special values as recognised through formal management regimes, as of June 2016.

Tenure Category	Area of forest formally managed to protect Indigenous people's values (ha)	Proportion of total area of that forest tenure category that is formally managed to protect Indigenous people's values (%)
Special Management Zone - Area managed for Aboriginal cultural heritage – Multiple use State forest	1,140	0.05
Land with recognised Native title (Githabul, Bandjalang and Yaegal) – Multiple use State forest	57,422	2.63
SUBTOTAL Multiple Use state Forest	58,562	2.68
Indigenous Land Use Agreements (ILUA) – Nature Conservation Reserves	461,432	6.2
Memoranda of understanding for joint management– Nature Conservation Reserves	1,903,092	26
Lease-back agreements – Nature Conservation Reserves	99,437	1.4
SUB TOTAL Nature Conservation Reserves ¹	2,463,961	33
TOTAL Multiple Use Forest & Nature Conservation Reserve	2,522,523	34

Notes:

(1) Data provided for Nature Conservation Reserves includes all NPWS estate – not filtered for forest coverage from GIS layer AboriginalCoManagementReserves_P.lyr. This layer was current at February 2014, additions have been made to the attribute table associated with this indicator submission.

(2) Total area nature conservation reserves is 7.2 million hectares

Indicator 6.4a Area of forest to which Indigenous people have use and rights that protect their special values and are recognised through formal and informal management regimes

This indicator monitors the degree to which land is placed under appropriate tenure classifications or management regimes to protect Indigenous peoples' values in forests. An acceptable level of accountability for the protection of Indigenous peoples' cultural, religious, social and spiritual needs and values is an essential part of forest management.

For the purposes of this indicator 'Formally managed' includes management required by legislation, or protection of places through management zones, prescriptions and/or codes of practice where these lead to relevant sites being actively managed or protected on the ground. The four broad categories used to identify Indigenous land are shown in **Table 2.2**

Table 2.2 Categories of Indigenous land

Indigenous land category	Description
Indigenous owned and managed	Freehold lands that are both owned and managed by Indigenous communities
Indigenous managed	Lands that are managed but not owned by Indigenous communities (e.g. Crown reserves and leases); and lands that are owned by Indigenous people, but have formal shared management agreements with Australian and state and territory government agencies (e.g. leased-back nature conservation reserves)
Indigenous co-managed	Lands that are owned and managed by other parties, but have formal, legally binding agreements in place to include input from Indigenous people in the process of developing and implementing a management plan (e.g. nature conservation reserve memoranda of understanding)
Other special rights	Lands subject to native title determinations and active Indigenous land use agreements. These are independent of tenure and, in most cases, do not grant ownership or management rights of land to Indigenous communities. They can provide for the right to access areas of cultural significance, or a legal requirement for consultation with the local Indigenous community before any major development activities take place

Source: Australia's State of the Forests Report 2013

Comprehensive Regional Assessment

The NSW RFAs noted that identification and assessment of National Estate Values for the CRAs were complete with the exception of Indigenous heritage values. The identification and assessment of Indigenous heritage values was intended to be a continuing effort through the period of implementation of the NSW RFAs.

Register of the National Estate (archive)

Records of Indigenous sites were maintained by the Australian Government in the Register of the National Estate (RNE) between 1975 until it was closed in 2007⁵⁶. The RNE was recognised at the time the RFAs came into effect. **Table 2.3** shows the area of Indigenous sites in the RNE as of in each of the four NSW RFA regions, by total land and Forest Ecosystems. A total of 23 thousand hectares of Forest Ecosystems were present on Indigenous sites in the RNE when it was closed.

Table 2.3 Area of Indigenous sites on the Register of the National Estate (2006)

Land cover type	RFA region ¹ ('000 hectares)				Total
	Upper North East	Lower North East	Southern	Eden	
All	3	6	10	7	25
Forest Ecosystems	2	5	9	7	23

Notes: ¹ Areas derived by ABARES from the Register of the National Estate as at 2006

Totals may not tally due to rounding

Australia's State of the Forests Report 2013

Since the RFAs were signed, the area of land, and forest, to which Indigenous communities have legislated rights has increased, as has the availability and accessibility of associated information and spatial data. For Indicators 6.4a and 6.4c of SOFR 2013, the NFI reported Indigenous land interest in four categories (**Table 2.2**) that were developed by ABARES, and populated using information and datasets from national, state and territory governments agencies, and non-government organisations^{57,58}.

The detailed description of land and forest in each category is given in Indicators 6.4a and 6.4c of SOFR 2013 and Dillon et al (2013). The spatial Indigenous forest extent dataset prepared for SOFR 2013 was published by ABARES as *Australia's Indigenous forest estate (2013) v2.0*⁵⁹.

⁵⁶ www.environment.gov.au/heritage/places/register-national-estate

⁵⁷ Montréal Process Implementation Group for Australia and National Forest Inventory Steering Committee, 2013, *Australia's State of the Forests Report 2013*, ABARES, Canberra, December. CC BY 3.0

⁵⁸ Dillon R, Jeyasingham J, Eades S, Read S 2015, *Development of the Australia's Indigenous forest estate (2013) dataset*. ABARES Research report 15.6, Canberra, August. CC BY 3.0.

⁵⁹ agriculture.gov.au/abares/forestsaustralia/publications

NFI Indigenous forest estate as prepared for SOFR 2013

The NFI Indigenous land and forest extent as prepared for SOFR 2013 includes 1.71 million hectares of land and 1.34 million hectares of forest across the four NSW RFA regions (**Table 2.4**).

Table 2.4 Areas of land and forest under Indigenous ownership, Indigenous management, Indigenous co-management and Other special rights ('000 hectares)

NFI Indigenous category	Land cover type	RFA region				Total
		Upper North East	Lower North East	Southern	Eden	
Indigenous owned	All	19	11	7	1	39
	Forest	16	10	7	1	34
Indigenous managed	All	0	5	4	15	23
	Forest	0	2	4	15	21
Indigenous co-managed	All	84	593	305	0	982
	Forest	84	580	267	0	930
Other special rights	All	36	9	618	3	667
	Forest	35	7	314	3	359
Total	All	139	618	933	20	1,711
	Forest	135	598	591	19	1,343

¹ Area derived by ABARES by intersecting *Australia's Indigenous forests estate (2013) v2.0* with RFA regions

Note: Totals may not tally due to rounding

Of the Indigenous forest estate, 0.93 million hectares (69 per cent) are in the Indigenous co-managed category and 0.36 million hectares (27 per cent) are in the Other special rights category. The Indigenous co-managed extent is largely due to the formal co-management arrangements in place for some NSW national parks, for example, Kosciuszko National Park in the Southern RFA region and Wollemi National Park in the Lower North East RFA region. The extent of forest within the Other special rights category is largely due to the Tumut Brungle Indigenous Land Use Agreement that is in place in part of the Southern RFA region.

Indicator 6.4c The extent to which Indigenous values are protected, maintained and enhanced through Indigenous participation in forest management

This indicator measures the extent to which Indigenous people participate in forest management. Active participation in forest management reflects the relationship between people and the land, and the integration of Indigenous peoples values with forest management practise, policy and decision making.

Guidelines

All Aboriginal objects and places on all land tenures are protected under the NPW Act. The NSW OEH manages Aboriginal heritage under a range of policies and procedures, including the Aboriginal Regional Assessment Policy, the Management of Aboriginal Cultural Material Policy and Guideline, and the Aboriginal cultural heritage provisions of the NPW Act.

The NSW OEH is legislatively responsible for the proper care and preservation of Aboriginal objects, including Aboriginal remains in NSW. OEH manages Aboriginal heritage in accordance with the following:

- National Parks and Wildlife Regulation 2009 (NSW)
- Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW (DECCW 2010) Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW 2010)
- Code of Practice for the Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW 2010)
- Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW (OEH 2011)
- Management of Aboriginal Cultural Material Policy (OEH 2012).

These preservation outcomes are primarily delivered through legal requirements for all land managers to comply with the NPW Act. FCNSW has developed Operational Guidelines for Aboriginal Cultural Heritage Management to ensure it complies with the requirements of the NPW Act when conducting forestry operations on State forests and other Crown-timber land. . These guidelines were updated in 2010 in response to changes to the NPW Act. The guidelines represent a due diligence code of practice approach to the identification and protection of Aboriginal heritage. Application of these guidelines is one component of a broader consultation approach with local communities to encourage involvement in the management and use of State forests. Information regarding Aboriginal community consultative processes is reported in FCNSW's annual reports.

Aboriginal involvement in the management of the national parks estate

Aboriginal joint management is one of the main ways that the NSW Government, through OEH, facilitates Aboriginal involvement in managing the national parks estate. This involves a partnership between OEH and Aboriginal communities for the management of a park or reserve. Joint management in NSW has a long history, with the first formal agreement being the

leaseback of Mutawintji National Park, in the far west region north-east of Broken Hill, as an Aboriginal owned park in 1998. Since 1998, OEH has negotiated 31 joint management agreements with Aboriginal communities, covering 2.2 million hectares, or about 25% of the NPWS estate. This is likely to increase in the future. The NPWS estate provides critically important places for Aboriginal communities to connect with their country and practice their culture. Aboriginal joint management has significant benefits, including Aboriginal employment, support for Aboriginal organisations and businesses, opportunities to practise and pass on Aboriginal culture, improved management and interpretation of Aboriginal cultural heritage, enhanced visitor experiences in parks, and improved knowledge and expertise by park managers.

There are three types of Aboriginal joint management arrangements in NSW:

- Aboriginal ownership and lease back arrangements. Under Part 4A of the NPW Act, the legal title to a dedicated reserve is returned to Aboriginal ownership (LALCs to hold on behalf of the Aboriginal Owners) then leased back to the NSW Government under mutually agreed conditions. Lease payments are spent on the care, control and management of the park.
- Indigenous land use agreements (ILUAs), developed in response to Native Title claims made under *Fisheries Management Act 1994 (NSW) Native Title Act 1993 (Cth)*. These are voluntary agreements between the native title group and other key stakeholders in the management of lands and waters pursuant to the *Native Title Act 1993 (Cth)*.
- Memoranda of understanding (MOUs). The most common form of joint management in NSW parks is a non-binding MOU with an Aboriginal community. MOUs recognise the local Aboriginal peoples' cultural association with an area and ensure greater involvement in its management. An advisory committee, which provides advice to the NSW Government on the management of the park, can be established.

Examples of joint Aboriginal management agreements within the NSW RFA regions include:

- Eden – Biamanga (Part 4A)
- North East – Arakwal (three ILUAs), Worimi Conservation Lands (Part 4A), Gaagal Wanggaan (Part 4A), Githabul (ILUA), Saltwater (MOU) and Yarriabini (MOU), Western Bundjalung (ILUA)
- Southern – Gulaga (Part 4A), Tumut and Brungle Gundagai Aboriginal Community (MOU), Southern Snowy Mountains Aboriginal Community (MOU)

There are more than 200 Aboriginal members of boards and committees making decisions about the joint management of parks or reserves of the NPWS estate. In 2016–17, data from 20 of the 31 joint management boards/committees details:

- Over 170 committee/board meetings held
- Over 60 Aboriginal people were employed in joint management in various capacities including rangers, joint management coordinators, field officers, Aboriginal liaison officers, administrative support officers and casual discovery guides.
- More than 20 Aboriginal people were employed through other Aboriginal organisations to work on projects for the joint management committee, boards of management and negotiations.

- Approximately 100 committee / board / Aboriginal community members attended training sessions, which included Indigenous land management, governance, job application, resume writing and job interview skills training and basic firefighting training. Many achieved accreditations such as Certificate 3 in Aboriginal Land Management, Senior First Aid, Level 1 Crosscut Chainsaw Operator Certificate, *Chemcert* chemical accreditation, or Office of the Registrar of Indigenous Corporations governance certificate.
- Committees, boards and Aboriginal community members carried out a range of cultural heritage assessments, including, Archaeological survey Clarkes Beach and Tyagarah middens. Committee members delivered training including cultural awareness.
- Committees, boards and Aboriginal community members participated in many film productions including a short news piece for French TV on world's most beautiful beaches and a film *The Mountains Call Us Home* a film about the Biamanga and Gulaga Board that has been shown at community events and staff training and induction days, and posted on ABC Open website.
- At least 8 Aboriginal businesses contracted for work in excess of \$75,000. The contracted work included Aboriginal sites Survey Assessment work, cultural fire assessment survey, weed control and meeting facilitation.

OEH administers the Aboriginal Park Partnerships Funding Program, a contestable annual funding program for Aboriginal/OEH partnerships across all parks and reserves including those which are co-managed or jointly managed. The program has run from 2008/09 and funded 200 projects during this time. In 2016/17, the projects involved, either directly or indirectly, over 350 Aboriginal community members supporting a diverse range of activities including culture camps, cultural burning workshops, Aboriginal business support, and cultural heritage identification and mapping within parks.

Aboriginal involvement in the management of State forests

The FCNSW's Aboriginal Partnerships Team works with Aboriginal communities throughout NSW protecting, nurturing and managing Aboriginal cultural heritage and significant sites whilst creating sustainable partnerships with the Aboriginal community. These partnerships, built on trust and transparency, aim to return the community to the bush and the bush to the community. The team's vision is, in partnership with Aboriginal people and organisations, to build Aboriginal enterprises that manage significant areas of the forest with a focus on sustainability, profitability and strong partnerships.

The team works to conserve the qualities and attributes of places that have spiritual, historic, scientific or social value for past, present and future generations. This includes finding, protecting and managing Aboriginal Cultural sites prior to FCNSW operations including road works, harvesting and regeneration works. The team liaises with Aboriginal Land Councils, Elders and community members to gain an understanding of their spiritual connection with the land and to ascertain evidence of past Aboriginal activities in the forest.

FCNSW engenders partnerships with Aboriginal community groups, Land Councils, Native Title Claimants and Aboriginal organisations on a regular basis. Partnerships include permits for activities, land permits for joint management, MOU's, joint management of Aboriginal Places,

joint management initiatives with native title holders and permits for community enterprise developments.

The types of partnerships FCNSW include:

- Access and joint management to areas of significance
- Access to traditional resources and materials including bark for canoe making and firewood
- Land for teaching and camping including purpose built culture camps
- Development of visitor experiences and access to areas for tourism enterprises
- Cultural burning
- Support for caring for country activities
- Aboriginal cultural heritage survey and assessment
- Sponsorship of events such as the Koori Knockout and NAIDOC week events

FCNSW is in the process of formalising many partnerships by issuing land based permits to Aboriginal groups to manage specific areas of land. However, we remain flexible on permit type arrangements to suit the needs of community groups including minimising costs for different organisations (e.g. rates and insurance costs).

FCNSW recognises Aboriginal values on all hardwood State forests and plantations. FCNSW welcomes the opportunity to provide equivalent native title rights (the right to camp, teach, utilise bush resources, conduct cultural activities etc.) on extinguished lands and to recognise and support native title in conjunction with the all of government approach on all lands where native title is granted.

FCNSW currently has contracts with 28 Aboriginal organisations for Aboriginal Cultural Heritage survey and assessment. These contracts are mostly with Land Councils and they ensure the management of Aboriginal cultural heritage is carried out locally with the Aboriginal community supporting the Aboriginal Partnerships Team. FCNSW encourages and supports the caring for country projects undertaken by green teams within Aboriginal Organisations and Land Councils including applications for grants for their activities.

Providing access and joint management to areas of significance for Aboriginal people is an important role played by FCNSW. For example, a partnership has been maintained with the Darkinjung LALC since the early 1990s for joint management of the Warre Warren Aboriginal Place in McPherson State Forest on the central coast of NSW. In recent years, FCNSW provided a large shelter, water tanks and toilet facilities within Warre Warren, providing the basic facilities for cultural teaching and camps focused on training children and young people in their Aboriginal heritage. Also in McPherson State Forest, Bara Barang Aboriginal Corporation has a permit for cultural camping, teaching and tourism as well as seed collection for the Bara Barang traditional plant nursery.

Bulahdelah Mountain Aboriginal Place is jointly managed by FCNSW and Karuah LALC. The place has walking tracks and two lookouts which attract around 5000 visitors per year. In recent years, a plan has been implemented to improve the visitor facilities focusing on sharing cultural values through interpretation including contemporary carved trees. A series of sculpture workshops sponsored by FCNSW resulted in the tree carving on the mountain. Karuah LALC has joint management of the area under a permit for culture camps, teaching and tourism. Future

aspirations for Karuah LALC include cultural tours supported by the visitor facilities that have been upgraded, development of a carving small business and cultural burning with FCNSW.

Access to traditional resources and materials is an important part of our approach of returning the bush to the community. Free firewood permits are provided state wide for Aboriginal people and are managed by the Aboriginal Partnerships Team Leader. Another arrangement exists with Purfleet-Taree LALC where FCNSW delivers and donates several truckloads of salvage timber prior to each winter. Young members of the community cut and split firewood and deliver it to elders for use as home heating. Biripi Aged Care has a permit over nine State forests to collect wood for making traditional wooden tools with youth and in Western region permits have been provided for the collection of miscellaneous wood off the forest floor. Bark for canoe making, from harvesting operations, is provided on request free of charge to community groups, the Saltwater Freshwater Arts Alliance Aboriginal Corporation, NSW Department of Education and Sydney Maritime Museum. Each year a new canoe is made for Corroboree and featured at the Australian Museum.

FCNSW has another partnership with the Anaiwan Aboriginal Traditional Owners for over 10 years at Riamukka State Forest near Walcha. The Anaiwan Traditional Owners use a former forestry depot for cultural teaching and camping. This arrangement has been very successful, with the Anaiwan managing the site and FCNSW providing new water tanks, a teaching shelter, new toilets and a ride-on mower.

In 2014, a permit was issued to Keepa Keepa Inc for cultural heritage teaching and camps on Heaton State Forest on the Sugarloaf Range near Newcastle. Keepa Keepa Inc is affiliated with Awabakal LALC. FCNSW assists with improved security at the site, removal of dangerous trees and provision of a teaching shelter, new toilet and water tanks.

In Githabul traditional country FCNSW has an ILUA in place and has been working in partnership which included the setting up of a dedicated camping and teaching shelter. FCNSW has been supporting the Githabul rangers working on country which has included weed management, cultural burning and road maintenance projects in Toonumbar State Forest. The Western Bundjalung ILUA has recently been finalised with ILUA's between the Bandjalang and Yaegl Peoples being negotiated. FCNSW aims for these ILUA's to develop into strong partnerships.

At Coffs Harbour FCNSW has developed strong partnerships with the local Aboriginal community. Gumgali track is a Gumbaynggirr interpretive walk to Korora lookout which was developed in partnership with the community and includes sculpture, street art and a sound bar which tells the story of Gumgali, the black goanna, in Gumbaynggirr and English. The walk attracts around 10 000 visitors per year and has led to the running of cultural tours by Bularri Muurlay Nyanggan Aboriginal Corporation (BMNAC) as a tourism venture. BMNAC has also set-up a café under permit at Sealy Lookout. Sealy Lookout attracts around 200 000 visitors per year and the café has become a successful enterprise which financially supports the language revitalisation work by BMNAC. FCNSW also works closely with Coffs Harbour LALC supporting the Darrunda Wajaarr green team through multiple bushland regeneration projects and cultural burning. In 2017/2018 around 1500 hectares of country was burnt together including two very special community led burning celebration days.

FCNSW has a close relationship with Eden LALC and is working on a group of projects together. Eden LALC has a permit for part of East Boyd State Forest for cultural, teaching and tourism. This includes a culture camp where FCNSW has installed toilets and undertaken significant road works including a concrete causeway and bitumen road to allow access by 2WD cars. The

Bundian Way is a cross-agency project where Eden LALC aims to develop a walking and camping experience connecting the coast at Eden to the high country around Mount Kosciuszko. FCNSW has been working closely with Eden LALC on this project supporting their tourism and economic aspirations including the identification and potential development of camp sites and facilities on State forest. Cultural burning is another important element of this partnership and in 2017 eight Eden LALC Land and Sea Rangers attended FCNSW fire camp for one week and were trained as forest firefighters to national standards. The first joint cultural burn was carried out in 2018 at East Boyd State Forest in the Eden LALC permit area. This is area is one site in an adaptive management and monitoring project being led by FCNSW investigating the benefits of cultural burning to forest health and chronic Eucalypt decline which is occurring across the east coast of Australia. The Land and Sea Rangers are assisting with the monitoring of this project. More joint burning is planned in the future including FCNSW assisting in the burning of Eden LALC lands.

FCNSW has a number of Aboriginal partnerships in the Grafton area. In partnership with Acmena Juvenile Justice Centre (JJC), FCNSW is supporting the rehabilitation of Aboriginal young people through the provision of timber for wood working and projects in State forests that demonstrate potential career opportunities. FCNSW is also currently working with Grafton-Ngerrie LALC and other Aboriginal groups to protect a significant massacre site discovered during highway pre- construction surveys. Finally, in a lovely project, FCNSW has developed a cultural camp, including a timber teaching shelter, toilets and landscaping in Ramornie State Forest for the Djinders women's group. Djinders aim to use the area for healing and support of Aboriginal women affected by violence. Young people from Acmena JJC helped with the construction of the timber shelter and have built outdoor tables for the place demonstrating the links that can be made through strong partnerships.

Indicator 6.5d Resilience of forest dependent Indigenous communities to changing social and economic conditions

This indicator provides a measure of the extent to which forest dependent Indigenous communities are able to respond and adapt to change successfully. Resilient forest dependent Indigenous communities will adapt to changing social and economic conditions, ensuring they prosper into the future.

Forest dependence

All Aboriginal communities, including those in the areas now covered by the three NSW RFAs, were forest dependent prior to, and for many years after, European settlement. Aboriginal people are the most disadvantaged group in NSW, including in the RFA regions, experiencing shorter lives and higher rates of unemployment, illness, violence, and incarceration than other people in NSW. Aboriginal communities have demonstrated resilience by continuing to live in forested regions and other places that have been subject to enormous changes in social and economic conditions, including land dispossession and forced relocations. Contemporary Aboriginal communities continue to rely on forested landscapes for food, materials, recreation, employment, and economic, spiritual and social wellbeing.

It is recognised that access to native forests enables Aboriginal people to practise and maintain cultural values, leading to an improved sense of well-being, and personal and community resilience. However, it is also understood that the dependence of Aboriginal communities on native forests has social, cultural and economic aspects that vary in intensity depending on the local context, and the connections and values of each Aboriginal community (SOFR 2013).

The information presented in this section – largely drawn from the series of Australia’s State of the Forest Reports – informs an understanding of resilience based on forest access, community adaptive capacity and economic dependence on forests. It should be noted that the data presented here does not capture aspects of resilience that relate to the Aboriginal cultural context, such as traditional skills and knowledge, kinship networks and other aspects of Aboriginal culture.

Economic dependence

Aboriginal economic dependence on forest-based activities is difficult to quantify because of a lack of data on Aboriginal involvement in the forest sector (SOFR 2013). The information in this section should therefore be considered in this context.

Analysis in the 2003, 2008 and 2013 SOFRs covering the 1996-2011 reporting period indicates that Aboriginal people have taken up mainstream employment in forestry industries at about the same rate as the non-Aboriginal population (see; SOFR 2003). This employment spans a variety of industries including timber processing, plantation management, agroforestry, heritage surveys of crown timber production forests, and ecotourism, collection and sale of fuelwood, contract road building, the manufacture of furniture, charcoal burning and nursery management (SOFR 2008).

Table 2.5 Mainstream employment of Indigenous and non-Indigenous people in NSW forestry-related industries

Total indigenous population of employment age (15-64 years)		Number of Indigenous and non-Indigenous people employed in forestry industries			
1996	2001	1996		2001	
		Indigenous	Non-Indigenous	Indigenous	Non-Indigenous
59300	70703	63	2155	60	2723

Source ABS (1996, 2001), cited in SOFR 2003

The most recent available SOFR data (2013), provides information on Aboriginal communities and the Aboriginal workforce employed in the forest and wood products industries in selected NSW regions. The number of people directly employed in the forest and wood products industries is used here as an indicator of the economic dependence of Aboriginal communities on these industries. It should be noted that this data refers only to employment in the forest industry, the data does not provide information on Aboriginal people employed in management of parks or caring for country.

Table 2.6 shows that only a small proportion (<1.40%) of the total Aboriginal Workforce across the NSW RFA regions were employed in the forest and wood products industries in 2011. The table also shows that the number of the Aboriginal workforce employed in these industries had decreased across the NSW RFA regions during the 2006-2011 reporting period, however, this is comparable with overall workforce participation in the forestry industry.

Table 2.6 Characteristics of Aboriginal communities and workers in NSW regions with more than 0.4% of the Aboriginal workforce employed in forest and wood products industries 2011

Indigenous Region ¹	Community characteristics – employment dependence				Characteristics of indigenous workers in forest & wood products industries				Land tenure	
	Number of indigenous people employed in forest and wood products industries	Proportion of indigenous workforce employed in forest and wood products industries (%)	Change in number employed, 2006-11 ² (%)	Indigenous people in population (%)	Median age (years)	Secondary school qualification ³ (%)	Non-school qualification (%)	Unskilled workers (labourer) (%)	Indigenous-owned or managed land ('000 hectares) ⁴	Forest in indigenous-owned or managed land ('000 hectares) ⁴
South Eastern NSW	37	1.38	-0.48	3.5	41	11.1	44.7	34.2	28	27
North Eastern NSW	42	1.13	-0.34	8.8	27	26.7	17.1	43.9	21	14
NSW Central and North Coast	128	0.96	-0.24	3.8	35	31.7	25.6	41.6	28	22

Source: SOFR 2013 (ABARES)

Notes:

- (1) Aboriginal Regions are geographical units used by the ABS. These do not directly align to NSW RFA regions.
- (2) Difference in per centage employed from 2006 to 2011.
- (3) Secondary school qualification is defined as Year 12 or equivalent as highest year of school completed.
- (4) Includes Aboriginal-owned land and Aboriginal-managed land as described in Indicators 6.4a and 6.4c. Aboriginal co-managed land and land with other special rights have not been included because they are less suitable for the forest and wood products industry, due to restrictions on resource extraction based on tenure type or land ownership.

Cultural dependency and resilience

Beyond their immediate economic value, most Aboriginal people, even those living significant distances away, are likely to have some cultural dependence on forests, particularly where the forest is part of the traditional country for which a particular group has customary responsibility. Native forests are places where new generations of Aboriginal people can learn about cultural practices and laws. Access to the forests is critical for the continuation and maintenance of cultural values; conversely, loss of access to or use of forests and their products may lead to a diminution of culture and therefore of resilience.

It is recognised that resilience is a complex indicator to quantify, and no single measure of resilience is possible. It is believed, however, that successful Indigenous forest-sector projects

can deliver both social and economic benefits, strengthening the resilience of Indigenous communities in the face of social and economic change.

Summary and future management of Indigenous heritage values

During the early years of the NSW RFAs, data collection and monitoring of Indigenous heritage values was not well coordinated or centralised, although many programs existed at both the state and National level to protect these assets.

While acknowledging the difficulties in collection and coordination, since 2013 the Australian State of the Forests report has attempted to improve capture of Indigenous heritage information which will allow more meaningful analysis in the future and better management of Indigenous heritage values in NSW forests.

Future RFA five-yearly reviews will be focussed on outcomes and the objectives of the NSW RFAs. Monitoring and reporting arrangements will also be strengthened and streamlined, and where possible indicate the impact of management prescriptions. This demonstrates that the five year rolling extension mechanism to be incorporated in renewed NSW RFAs will maintain and enhance protections for Indigenous heritage values.

In the proposed variations to the NSW RFAs the Australian and NSW governments support an ongoing Aboriginal involvement in forest management, including the protection of significant sites and places of Aboriginal cultural heritage. The governments also recognise in the draft variations the *United Nations Declaration on the Rights of Indigenous Peoples*, including the right for the Aboriginal people of NSW to practise and revitalise their cultural traditions and customs.

As discussed in this chapter, access, management and ownership are key parts of the relationship of Aboriginal people with land and culture. The draft variations to the NSW RFAs includes acknowledgement of Aboriginal land rights beyond the native title rights acknowledged in the current NSW RFAs. The draft NSW RFAs also include recognition that there may be potential land claims of Crown lands by LALCs under the *Aboriginal Land Rights Act 1983* (NSW) to compensate for historical dispossession, and to support social and economic development. The governments agree in the draft NSW RFA variations that the provisions in the RFAs do not restrict the rights of LALCs to make these land claims.

The renewed NSW RFAs will continue to provide for the protection of Indigenous Heritage values, through the CAR reserve system and Forest Management Framework. The Forest Management Framework provides a framework for the protection of Aboriginal heritage values that aligns with the NSW legislative framework for Aboriginal cultural heritage management. This includes consultation and ongoing involvement with Aboriginal people and managing the impacts of forestry operations on Aboriginal cultural heritage values. As the NSW Forest Management Framework under the NSW RFAs is adaptive and responsive to new information and changing circumstances it will provide for the protection of Indigenous heritage values during the life of the RFAs.

3. Economic Values

A key goal of sustainable forest management is to maintain the productive capacity of native and plantation forests. This allows for the provision of the forest goods and services required by society without compromising the ability of future generations to meet their own needs. Maintaining the output of both wood and non-wood forest products through harvesting therefore requires, among other things, forest regeneration or establishment, and the maintenance of ecosystem health.

Productive capacity needs to be matched with actual production, consumption, and investment to produce efficient markets and contribute optimally to the broader economy.

To fully consider the economic values relating to forests, both quantitative resource metrics and value metrics are required. Together, these illuminate the complex interactions affecting environmentally and economically sustainable forest management. The indicators in this section support these concepts.

Criteria 2 and 6 of the Montréal Process Working Group on Criteria and Indicators for the Conservation and Sustainable Management of Temperate and Boreal Forests are concerned with economic values. Specifically these criteria are listed as 'Maintenance of productive capacity of forest ecosystems' and 'Maintenance and enhancement of long-term multiple socio-economic benefits to meet the needs of societies'.

Criterion 2 measures the ongoing productive capacity of forests by monitoring the area of native forests and plantations available for producing timber and other forest products. Areas covered include native forest area available for wood production, area harvested, growing stock of merchantable and non-merchantable tree species, age class of plantations, annual removal of wood products compared to the volume determined to be sustainable for native forests and future yields for plantations, annual removal of non-wood forest products compared to the level determined to be sustainable, area of native forest harvested and the proportion of that effectively regenerated, and the area of plantation clear-felled and the proportion of that effectively re-established.

Criterion 6 monitors and reports across five sub-criteria relevant to how the forest sector provides multiple socio-economic benefits to society. Areas covered relevant to this chapter include the production and consumption of forest products, investment in the forest sector and forest-related employment and community needs.

This section includes the following Montréal Process indicators:

- Indicator 2.1a – Native forest available for wood production, area harvested, and growing stock of merchantable and non-merchantable tree species
- Indicator 2.1b – Age class and growing stock of plantations
- Indicator 2.1c – Annual removal of wood products compared to the volume determined to be sustainable for native forests and future yields for plantations
- Indicator 2.1d – Annual removal of non-wood forest products compared to the level determined to be sustainable
- Indicator 2.1e – The area of native forest harvested and the proportion of that effectively regenerated, and the area of plantation harvested and the proportion of that effectively re-established
- Indicator 6.1a – Value and volume of wood and wood products

- Indicator 6.1b – Values, quantities and use of non-wood forest products
- Indicator 6.1c – Value of forest based services
- Indicator 6.1d – Production and consumption and import/export of wood, wood products and non-wood products
- Indicator 6.1e – Degree of recycling of forest products
- Indicator 6.2a – Investment and expenditure in forest management
- Indicator 6.2b – Investment in research, development, extension and use of new and improved technologies.

Indicator 2.1a Native forest available for wood production, area harvested, and growing stock of merchantable and non-merchantable tree species

This indicator reports the capacity of forests to sustainably produce wood to meet society's needs into the future. The area of native forest available for wood production, the nature of the growing stock, and the area harvested over time provide means to demonstrate the sustainability of forest management.

The public production forest estate within the NSW RFA regions is managed by FCNSW and comprises the State forest and other Crown-timber land estate. All State forest areas are assigned a Forest Management Zone (FMZ), including native forest, and hardwood and softwood plantations. The FMZ is a land classification system which sets out in map format the way FCNSW intends to manage forest areas across the entire State forest estate. The FMZ system is based on nationally agreed reserve criteria and clearly differentiates between those areas of State forests which are specifically set aside for conservation and those areas that are available for other activities including harvesting for wood production. The FMZ system provides the basis for allocating the area available for wood production on public forests in NSW.

The Forest Resource and Management Evaluation System (FRAMES) was developed by FCNSW in 1997 as a strategic planning tool. The key purpose of FRAMES is to provide ongoing capacity to model and review growth and yield in the production native forests at a strategic level.

Native forest area available for wood production within the NSW RFA regions

As of 2016-17, within the NSW RFA regions, there was a total native State forest area of 1,368,871 hectares as shown in **Table 3.1**. Of this, 786,826 hectares (or 57 per cent of the total native State forest area) was available for wood production after deductions for harvesting exclusions (**Table 3.2**)

Table 3.1 Total native State forest area within NSW RFA regions

NSW RFA region	Total native State forest area – 2016/17
North East	903,162
Southern	311,499
Eden	154,210
Total	1,368,871

Source: FCNSW data 2016–17

Table 3.2 Native forest area within NSW RFA regions available for wood production

NSW RFA region	2004/05 ¹	2006/07 ¹	2011/12 ²	2016/17 ²
North East	544 779	555 678	528 359	477 719
Southern	245 741	224 950	243 794	193 325
Eden	145 701	146 486	146 898	115 782
Totals	936 221	927 114	919 051	786 826

Sources: NSW RFAs Implementation Report 2004–14, Tables 62 to 65; FCNSW data for 2011–12 and 2016–17. Figures for 2004–5 and 2006–7 are gross harvestable area. Figures for 2011–12 and 2016–17 are net harvestable area, that is, after allowing for estimated exclusions for operational and code of forest practices requirements for stream-side reserves, slope restrictions, wildlife habitat protection and other factors. Net harvestable area figures are not available for prior to 2011–12.

Notes:

1. Gross harvestable area

2. Net harvestable area

The area of private native forest available for wood production within the NSW RFA regions has not been comprehensively mapped, therefore is not able to be reported. DPI commissioned a two and half year research project on private native forests on the North Coast of NSW. This research was completed in 2017 and found that 60 per cent of the 9.7 million hectares of land in the North Coast region was forested. Of this area, about 2.9 million hectares of the North Coast region's forests are in private ownership. The research found that a large portion of the properties surveyed could be actively managed for sustainable wood production.

Native forest area harvested in NSW public forests – including NSW RFA regions

In 2016-17, the total native forest harvestable area in NSW State forests was 996,973 hectares and the area harvested was 17,482 hectares or less than two per cent. **Table 3.3** provides an overview of the area of native forest available for harvesting and area harvested from 2005 to 2017 which is captured on a state-wide basis and not for each RFA region. There has been a consistent downward trend in the area harvested on native forests within NSW public managed forests. From 2004-05, the area of native forest harvested was 42,923 hectares and this area did increase slightly in the next two years and reached a peak in reporting period of 45,945 hectares in 2006-07. The area harvested began a gradual decline post 2006/07 and has remained fairly constant under 20,000 hectares since 2013-14.

Of note is the area available for harvesting within NSW in 1995-96, which was 2,352,000 hectares prior to the signing of the NSW RFAs. This reduced dramatically following the signing of the three RFAs between 1999 and 2001, to 1,516,000 hectares in 2000-01.

Table 3.3 Native forest area harvested and area available for harvest in NSW public forests

Year	Harvestable area (ha) ¹	Area harvested (ha) ²
1995/96	2,352,000 ⁴	NA ⁴
2000/01	1,516,000 ⁴	50,351 ⁴
2004/05	1,155,496	42,923 ³
2005/06	965,571	43,709 ³
2006/07	1,008,150	45,945 ³
2007/08	1,100,948	39,953
2008/09	993,225	29,452
2009/10	1,380,132	31,134
2010/11	1,278,585	23,652
2011/12	1,228,391	16,610 ⁵
2012/13	1,230,224	21,511 ⁵
2013/14	1,233,439	17,123 ⁵

Year	Harvestable area (ha) ¹	Area harvested (ha) ²
2014/15	1,023,530	19,825 ⁵
2015/16	1,019,609	13,278 ⁵
2016/17	996,973	17,482 ⁵

Notes:

(1) Comprised of forest management zones – 3b (Special prescriptions – available for harvest), 4 (General) and 8 (Land for further assessment)

(2) Comprised of alternate coupe (modified shelterwood system); commercial regrowth thinning; group selection; single tree selection and in some instances, non-commercial thinning

(3) Includes cypress pine and river red gum harvesting in western region (not within NSW RFA regions).

(4) Figures derived from the 2013 SOFR: figures were rounded to the nearest thousand.

(5) Includes river red gum harvesting in western region (not within NSW RFA regions)

The downward trend in area harvested at a NSW state-wide basis is consistent with the area harvested in the NSW RFA regions, for the period 2002-2016. The total area harvested in the NSW RFA regions was 21,669 hectares in 2002 and has reduced to 16,350 hectares in 2016 as per **Table 3.4**. There have however been fluctuations in the area harvested, for instance in 2013 the North East RFA region recorded the lowest total area harvested of 8,270 hectares, however, in 2016 the total area harvested rose to 12,640 hectares in 2016.

Table 3.4 Native State Forest areas (hectares) harvested by NSW RFA region, 2002-2016

Year ending June	North East	Southern	Eden	Totals
2002	14,723	4,188	2,758	21,669
2003	16,294	4,248	3,646	24,188
2004	13,780	5,438	3,062	22,280
2005	17,472	3,876	2,418	23,766
2006	16,623	1,823	2,016	20,462
2007	14,454	4,110	2,289	20,853
2008	15,514	3,576	1,829	20,919

Year ending June	North East	Southern	Eden	Totals
2009	8,984	3,451	651	13,086
2010	12,757	1,961	768	15,486
2011	9,542	1,956	922	12,420
2012	18,821	2,685	681	22,187
2013	8,270	2,616	994	11,881
2014	11,717	2,567	1,387	15,671
2015	9,376	1,823	1,111	12,310
2016	12,640	2,512	1,199	16,350

Source: FCNSW corporate database; discrepancies with annual report data arise when data for a particular year are completed or corrected after annual report data are published.

This reduction is commensurate with an increase in the area of nature conservation reserves as a result of tenure changes agreed in the NSW RFAs which impacted on available wood yields. Consequently, areas required to supply wood yields have reduced in response to lower wood supply commitments.

Growing stock of merchantable and non-merchantable tree species

Information on the growing stock is not available for all tenures and therefore cannot be reported on for this Assessment Report.

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Indicator 2.1b Age class and growing stock of plantations

This indicator uses the area, age class and growing stock of native and exotic species plantations to assess the volume of timber that Australia's plantation forests can supply now and into the future.

This indicator provides a state-wide summary of the progress of plantation establishment of native and exotic species over time. An increase in the size and quality of the plantation estate is a significant element in longer-term sustainability, wood supply security, and the growth of the forest industry in New South Wales.

In March 1995, the NSW Government established a forestry policy which set targets for plantation establishment of 10,000 hectares of eucalypt plantations per annum from 1997-98 with the aim of doubling the size of softwood plantations (approximately 200,000 hectares at the time). The NSW Government also passed the *Timber Plantations (Harvest Guarantee) Act 1995* (NSW) to remove impediments to the harvesting of plantation timber and to encourage investment in plantation development.

The CRAs for NSW RFA regions, completed as part of the RFA process, encourage the increased production of plantation-grown timber to supplement the wood supply from native forests.

The New South Wales RFAs list a number of plantation expansion actions under clause 70(b)(i) of the Eden RFA, 75(b)(i) of the North East RFA and clauses 74(b)(i) and 86 of the Southern NSW RFA. The expected contribution of plantations to sustainable sawlog and pulpwood supply is addressed independently in twenty year Wood Supply Agreements developed by NSW.

At the time of the NSW CRAs, there was 234,600 hectares of softwood plantation (primarily radiata pine), and 25,540 hectares of hardwood plantation (primarily Eucalypt species) growing in the NSW RFA regions.

The plantation area in NSW in 2016-17 was 394,000 hectares, of which 307,000 hectares were softwoods and 87,000 hectares were hardwoods (Downham and Gavran 2017).

Between July 2004 and June 2014, just under 50,000 hectares of softwood plantation and 63,000 hectares of hardwood plantation were established. Plantation development for hardwoods has largely ceased since the collapse of managed investment schemes and for the public softwood estate, has tapered to minimal additions.

Between 1994 and 2005, there was significant investment by the NSW Government through FCNSW in hardwood plantation establishment on the North Coast (North East RFA region) on both purchased land as State forest and in joint ventures with private land-owners.

The post-1994 plantation estate managed by FCNSW in the North East RFA region was 28,452 hectares as at June 2014. The predominant species were blackbutt (*Eucalyptus pilularis*), Dunn's white gum (*E. dunnii*) and spotted gum (*Corymbia maculata*). The establishment program peaked in the 1997-2001 period. The large proportion of area established to Dunn's white gum and spotted gum was a result of cheaper land prices in areas suited to these species. Whilst two-thirds of the area established was on previously cleared agricultural land acquired and dedicated as State forest or on second rotation establishment in existing State forest plantations, the balance was planted on private land

under either an annuity or crop share (joint venture) arrangement. Government funding for new plantation establishment ceased in 2004 and the FCNSW program slowed to primarily second rotation establishment.

Under the *Plantations and Reafforestation Act 1999* (NSW) (PR Act), all new plantations (except for plantations of less than 30 hectares which do not otherwise require development approval) must be authorised prior to their establishment. In addition, any existing unauthorised plantations are required to be authorised prior to commencement of forestry operations in excess of 30 hectares.

Table 3.5 provides information from 2003-04 on new plantation authorisations for both hardwood and softwood by each NSW RFA region. Information prior to 2003-04 isn't readily available but the figures indicate that most new plantations were established prior to 2009-10 and there have been minimal new plantings since that period. In terms of the NSW RFA regions, most softwood has been planted in the Tumut sub-region, Southern RFA region with a modest program in the Eden RFA region while hardwoods have been predominantly in the North East RFA region.

In 2012–13, there was a small area of plantation authorisations that were cancelled in the Eden and Southern RFA regions, totalling 266 hectares of softwood and 123 hectares of hardwood. When a plantation authorisation is cancelled, plantation operations (including establishment, management and harvesting) must cease.

In 2014-15, there was a significant area of plantation authorisations cancelled in the North East RFA region as a result of the managed investment schemes (MIS) collapse, totalling 2,600 hectares of softwood and 27,100 hectares of hardwood plantation.

Significant areas of eucalypt plantation were established in NSW RFA regions under MIS. Since the collapse of MIS around 2009, plantation development on new land has largely ceased. Further information on the forestry MIS can be found in the report from the Senate inquiry released in March 2016, *Agribusiness managed investment schemes: Bitter Harvest* (Commonwealth of Australia 2016).

The majority of these plantations where the authorisation was cancelled were cleared and the timber was burnt on site (poorly growing *E. dunnii*). The properties were subsequently converted to agriculture (e.g. grazing). There were a few plantations harvested before cancellation, with wood chip or small logs being produced. Some of the cancelled authorisations were attached to land that had never been planted.

Table 3.5 provides an overview of the plantation areas by NSW RFA region in 2001, 2005 and 2011 as provided by the National Plantation Inventory's five year periods for spatial data. The decline in area from 2001 to 2005 is partly due to the 2001 data including areas that were not planted and the 2005 plantation layer missing some plantations that may have been within the plantation estate but were fallow land.

Table 3.5 NSW plantations by RFA region (2001, 2005, 2011, 2015)

RFA region	Plantation type (hectares)			Total (hectares)
	Hardwood	Softwood	Unknown	
<i>2001 plantations by RFA region (hectares)</i>				
Eden	1,181	36,703	635	38,519
Lower North East	20,187	11,077	772	32,036
Upper North East	22,701	12,939	737	36,377
Southern	4	126,089	3,149	129,241
Total	44,072	186,807	5,293	236,173
<i>2005 plantations by RFA region (hectares)</i>				
Eden	206	35,538	1	35,745
Lower North East	7,768	10,077	5	17,849
Upper North East	29,116	14,350	981	44,447
Southern	8	117,664	1	117,673
Total	37,098	177,629	988	215,715
<i>2011 plantations by RFA region (hectares)</i>				
Eden	1,832	37,780	40	39,652
Lower North East	27,114	11,416	1,064	39,595
Upper North East	57,429	15,191	1,509	74,129 [#]
Southern	16	133,107	36	133,159
Total	86,392	197,494	2,650	286,535

RFA region	Plantation type (hectares)			Total (hectares)
<i>2015 plantations by RFA region</i>				
Eden	5,301	40,713	-	46,014
Lower North East	26,797	11,522	41	38,360
Upper North East	56,905	16,058	42	73,005
Southern	47	142,474	-	142,521
Total	89,050	210,767	83	299,900

Source: National Plantation Inventory Database, ABARES 2016

Note: Totals may not tally due to rounding. The decline in area from 2001 to 2005 is partly due to the 2001 data including areas that were not planted and the 2005 plantation layer missing some plantations that may have been within the plantation estate but were fallow land.

the large apparent increase in FCNSW plantation area from 2005 to 2011 is probably because the north coast pre-1990 plantations were not included in the 2005 figures.

Table 3.6 Area of new plantations authorised in NSW RFA regions

RFA region	Eden		Southern		North East		Total	
	Softwood (ha)	Hardwood (ha)	Softwood (ha)	Hardwood (ha)	Softwood (ha)	Hardwood (ha)	Softwood (ha)	Hardwood (ha)
2003-04	576	78	2,882	36	788	1,989	4,246	2,103
2004-05	536	205	10,445	208	29	8,361	11,010	8,774
2005-06	333	527	13,626	11	548	10,092	14,507	10,630
2006-07	1,649	-	7,229	251	-	11,798	8,878	12,049
2007-08	148	116	7,272	230	-	16,299	7,420	16,645
2008-09	601	-	50	21	2,009	11,242	2,660	11,263
2009-10	-	-	110	21	429	200	529	221

RFA region	Eden		Southern		North East		Total	
2010-11	-	-	140	-	170	196	310	196
2011-12	-	-	-	-	-	705	-	705
2012-13	20	-	-	-	28	137	48	137
2013-14	-	2	319	-	-	128	319	130
2014-15	-	-	276	-	-	83	276	83
2015-16	-	-	39	-	-	300	39	300
2016-17	22	-	67	-	-	52	89	52
Total	3,885	928	42,445	778	4,001	61,582	50,341	63,288

Source: National Plantation Inventory Database, ABARES 2016

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Indicator 2.1c Annual removal of wood products compared to the volume determined to be sustainable for native forests and future yields for plantations

This indicator measures the harvest levels of wood products in relation to sustainable and predicted yields. The capacity to implement strategies to deal with changing demand for forest products based on predicted yields from both native and plantation forests is an integral part of sustainable forest management

Sustainable yield from native forests

Calculated sustainable yield is the estimated volume of wood that can be removed each year while ensuring maintenance of functions within native forest systems as a whole. Sustainable yield volumes vary over time according to changing management strategies and utilisation standards, improved resource data, and changes in the net area of native forest available for wood harvesting.

The total area of State forest, including plantations, in the North East, Southern and Eden RFA regions is approximately 1.66 million hectares. FCNSW's native forest component covers approximately 1.37 million hectares of which some 786,000 hectares (or 57%) are estimated to be available for harvest.

Harvest volumes in public native forests are set according to forecast sustainable yields and are influenced by market conditions. Hardwood log production from native forests in NSW in 2013–14 totalled 877,000 m³ (ABARES 2016), which includes sawlogs and pulplogs. This harvested volume is the lowest since NSW RFAs commenced and is a consequence of a variety of factors including lower demand for some products in some regions; revised estimates of forest area, inventory and growth and yield due to improved information; and the impacts of occasional, intense broad-scale wildfires.

Wood volumes permitted to be harvested by FCNSW are designated in the NSW Forest Agreements (FAs) and RFAs (**Table 3.7**). An annual variation from the designated volume is permissible to accommodate changes in environmental and economic circumstances. This provision, as identified in the IFOAs, allows for harvest volumes in any one year to vary from the committed volume by 25%, but not exceed 5% over a five-year period. Committed volumes designated in the agreements and approvals are made up of high quality large sawlogs and large veneer logs.

Wood volumes harvested from FCNSW native forest and hardwood plantations have not exceeded the annual volumes permitted under the terms of the NSW FA and IFOA for each NSW RFA region.

Large veneer logs and high-quality large sawlogs are referred to as 'quota sawlogs' which comprise committed volumes harvested under the terms of the NSW FAs and IFOAs. Other log types do not make up committed volumes under the agreements and approvals, and are referred to as 'non-quota sawlogs'. Pulp-grade logs do not form part of committed quota volumes except in the Eden RFA region. Quota pulp-grade logs are hardwood only, obtained from either native forest or plantation. State forests in the Eden RFA region do not have any harvestable hardwood plantation areas, so all hardwood is obtained from native forests.

Table 3.7 Wood Volumes in NSW RFAs

Log type	Eden RFA volume	North East – UNE volume	North East – LNE volume	Southern – South Coast volume	Southern – Tumut volume
Quota logs/high-quality large sawlogs (HQL) – may include large veneer logs	Minimum 25,000 cubic metres quota logs for the first five years, then 24,000 cubic metres (Eden to get 1000 cubic metres quota sawlogs from Ingebirah SF in Tumut)	HQL harvest 109,000 cubic metres (plus 20,000 cubic metres to come from LNE region)	HQL harvest 160,000 cubic metres (but 20,000 cubic metres goes to UNE region)	HQL 48,500 cubic metres	HQL 48,000 cubic metres (an additional 1000 cubic metres from Ingebirah SF in Tumut to go to Eden RFA region)
High-quality small sawlogs (HQS)	-	Will be supplied at 1999 levels or greater	-	4850 cubic metres	3085 cubic metres
Low-quality sawlogs (LQS); other forest products (OFP)	Non-quota sawlogs 23,000 cubic metres (from pulp)	OFP – Existing supply arrangements and future supply		OFP – in accordance with current and future demands	
Pulpwood/pulp-grade logs	345,000 tonnes	30,000 tonnes	152,000 tonnes	97,000 tonnes	-

North East RFA region

While the North East RFA provides for an annual harvest of 269,000 m³, the North East RFA region Wood Supply Agreement (WSA) commits FCNSW to provide considerably lower volumes.

This variance between sustained yield volume and contracted volume is primarily due to key timber availability assumptions in ‘buffer-on-buffer’ areas that were to be independently tested after the agreements were signed, and also ongoing improvements to sustainable yield calculations since that time.

A Timber Availability Study was commissioned in 2002 by the then Resource and Conservation Division⁶⁰ focusing on the buffer-on-buffer effect on wood availability on the North Coast (North East RFA region).

⁶⁰ The Resource and Conservation Division ceased operation in 2007

In 2004, FCNSW undertook a review of wood resources on the North Coast i.e. within that incorporated the North East RFA region results of the Timber Availability study. This review provided a revised sustained yield of high quality large sawlog volume of 232,000 m³ p.a. for the first five years (2003-2007) and then 220,000 m³ p.a. from Year 6 to Year 20.

In 2012, two actions resulted in further reductions to wood supply commitments under the WSAs in the North East RFA region. In the first, a customer sold back its Walcha–Styx River allocation in the lower north east (LNE) RFA region, thereby reducing the committed WSA volume by 23,723 m³. In the second, a NSW Government review of wood supply under the WSAs and subsequent customer negotiations reduced annual allocations of HQL sawlogs from 220,000 m³ p.a. to about 178,600 m³ p.a. (around two-thirds of the North East RFA's annual commitment of 269,000 m³).

Actual harvest levels in the North East RFA region have been consistently about the same or slightly below WSA commitments for each year i.e. well below the calculated sustained yield.

FCNSW harvested wood from the following sources to meet its commitments: native forests within State forests supply approximately 85% of high quality wood in the North East RFA region, hardwood plantations within State forests supply 14%, and private native forests provide the remaining 1%.

Southern RFA region

The Southern RFA region includes two sub-regions: South Coast and Tumut.

The Southern RFA commits the NSW Government to supply a minimum of 48,500 m³ p.a. of HQL logs from the South Coast sub-region and 48,000 m³ p.a. from the Tumut subregion for 20 years from 1 January 2001.

South Coast

In 2005, the NSW government identified minor additions to nature conservation reserves. While undertaking this transfer to nature conservation reserves, negotiations on IFOA provisions were completed to ensure wood availability was not compromised despite the additional nature conservation reserve areas. This work confirmed that wood availability gains balanced the volumes transferred to permanent nature conservation reserve.

For each year in the 2004–05 to 2013–14 period, wood was supplied at the levels specified in the WSAs or at a lower volume by agreement with WSA customers.

On 1 July 2013, the largest south coast WSA customer closed one of its three sawmills and renegotiated a reduction in its HQL WSA allocation. FCNSW subsequently sought spot sales of this unallocated HQL volume to other customers in 2013 and 2014.

For the entire 2004–05 to 2013–14 period, the supply of HQL met or exceeded the commitment level in the WSA.

Tumut

The Southern RFA commits the NSW Government to supply a minimum of 48,000 m³ p.a. of HQL logs from the Tumut sub-region for 20 years from 1 January 2001.

From 2005 to 2009, WSAs were largely met at WSA allocation levels, which are significantly lower than the Southern RFA commitment levels. Those allocations were only for alpine ash

(*Eucalyptus delegatensis*), as there was little market interest for mixed mountain hardwood and little capacity to process it.

In 2010, an endangered population of yellow-bellied gliders (*Petaurus australis*) on the Bago Plateau was nominated to the NSW Scientific Committee for protection. The nomination area took in most of the alpine ash supply area in the Tumut sub-region. As a result of the nomination, supplies of alpine ash were disrupted. Wood harvesting largely ceased in State forests on the Bago Plateau for three years while the committee considered submissions and negotiations were conducted.

During the same period, closure of the largest WSA customer's sawmill for alpine ash HQL meant there was no HQL market.

In 2011, wood availability forecasts were updated, reducing total high quality large sawlog availability down to around 30,000 m³ p.a. (first 20 years).

In 2013, a Population Management Plan for the yellow-bellied glider was implemented which allowed ongoing access for wood harvesting on the Bago Plateau. Since then sales have steadily increased, totalling around 21,000 m³ p.a. in 2017.

Eden RFA region

The Eden RFA commits the NSW Government to provide an annual allocation of 25,000 m³ of HQL for the first five years, and 24,000 m³ for the remaining years. The annual allocation was made available in each year.

A change in yield simulation systems and updated scheduling tools in 2002-03 determined that the WSA for the Eden region could be maintained.

The Eden WSA has a single HQL customer who conducts stumpage operations as part of integrated harvesting for sawlogs and pulpwood. The WSA and Eden RFA commitments are the same. Under the terms of the WSA, the customer is not required to harvest the entire allocation and, in some years, not all of the allocation was harvested due to inadequate contractor capacity and lower market demand for HQL and residue (pulpwood). The customer has exercised the right provided in the WSA to carry forward accumulated undercuts to be harvested when markets pick up for both products.

The WSA customer's allocation is augmented by 1,000 m³ p.a. of HQL alpine ash (*E. delegatensis*) from Ingebirah State Forest in the Tumut sub-region of the Southern region. An average of around 600 m³ p.a. was made available under this allocation.

Private land

The NSW Government is committed to supporting the sustainable development of plantation forestry throughout the state. Over the period of the New South Wales RFAs, the strategy for private forest management has been to maintain, if not increase the forested area, recognising that infrastructure and agriculture expansion will continue to act as a reducing agent on forest area. The total private-forest resource, in both spatial and product terms, varies as forest is harvested and reforested or converted to agricultural uses, and as agricultural land is converted to plantations. Because of these variations, most of the production from private land in the medium to long-term is likely to be based on planted forests.

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Table 3.8 Wood Production, North East RFA region 2000-2017

Year ended 30 June	Large sawlog		Small sawlog		Pulp	
	WSA	actual	WSA	actual	WSA	actual
2000	190,150	272,596	49,672	112,032	175,000	107,747
2001	190,150	211,803	49,672	85,492	175,000	272,126
2002	190,150	270,788	49,672	45,644	175,000	113,375
2003	190,150	226,398	49,672	51,220	175,000	153,954
2004	190,150	225,332	49,672	59,124	175,000	135,138
2005	190,150	187,610	49,672	54,830	175,000	120,622
2006	190,150	194,156	49,672	62,206	175,000	116,560
2007	190,150	166,308	49,672	61,572	175,000	134,267
2008	190,150	170,181	49,672	65,261	175,000	143,373
2009	190,150	163,139	49,672	65,608	175,000	191,104
2010	190,150	165,137	49,672	58,662	175,000	182,720
2011	190,150	128,650	49,672	47,524	175,000	195,737
2012	172,150	162,946	58,049	56,963	175,000	193,916
2013	172,150	149,281	58,049	49,316	175,000	85,782
2014	172,150	149,393	58,049	47,451	175,000	13,534
2015	172,150	134,427	58,049	46,420	175,000	15,735
2016	172,150	135,863	58,049	54,405	175,000	25,247
2017	172,150	134,915	58,049	48,464	175,000	31,073

Table 3.9 Wood production, Southern RFA region 2003-2017

Year ended 30 June	Large sawlog		Small sawlog		Pulp	
	WSA	Actual	WSA	actual	WSA	actual
2003	66,053	65,384	7,090	5,635	75,000	63,236
2004	66,053	72,496	7,090	6,980	75,000	78,291
2005	66,053	58,376	7,090	7,669	75,000	85,582
2006	66,053	62,539	7,090	9,307	75,000	109,691
2007	66,053	61,762	7,090	9,437	75,000	126,109
2008	66,053	70,538	7,090	7,472	75,000	115,319
2009	66,053	61,645	7,090	6,261	75,000	98,787
2010	66,053	39,826	7,090	5,238	75,000	82,219
2011	66,053	40,876	7,090	6,987	75,000	99,418
2012	66,053	41,661	7,090	7,705	75,000	74,658
2013	66,053	42,298	7,090	6,283	75,000	68,289
2014	66,053	41,643	7,090	5,671	75,000	28,103
2015	66,053	51,483	7,090	6,877	75,000	30,381
2016	66,053	45,629	7,090	5,729	75,000	30,089
2017	66,053	58,350	7,090	5,451	75,000	36,074

Table 3.10 Wood Production, Eden RFA region 2000-2017

Year ended 30 June	Large sawlog		Small sawlog		Pulp	
	WSA	actual	WSA	actual	WSA	actual
2000	22,080	23735	1,920	1950	504,000	352,282
2001	22,080	27056	1,920	2067	504,000	337,434
2002	22,080	25329	1,920	1125	504,000	279,854
2003	22,080	22018	1,920	1692	504,000	279,017
2004	22,080	26,441	1,920	1,262	504,000	320,681
2005	22,080	25,023	1,920	1,273	504,000	296,976
2006	22,080	24,806	1,920	1,765	504,000	310,603
2007	22,080	20,455	1,920	2,374	504,000	352,916
2008	22,080	23,191	1,920	2,608	504,000	316,067
2009	22,080	18,478	1,920	1,573	504,000	221,215
2010	22,080	20,788	1,920	1,237	504,000	246,705
2011	22,080	19,910	1,920	1,326	504,000	220,465
2012	22,080	18,598	1,920	2,510	504,000	194,338
2013	22,080	19,030	1,920	1,262	504,000	169,839
2014	22,080	21,387	1,920	2,118	504,000	217,636
2015	22,080	19,967	1,920	1,856	504,000	225,443
2016	22,080	18,743	1,920	3,169	504,000	198,243
2017	22,080	12,650	1,920	3,138	504,000	207,160

Indicator 2.1d Annual removal of non-wood forest products compared to the level determined to be sustainable

This indicator is used to assess the sustainability of the harvest of non-wood forest products. These products can represent a significant asset base supporting the livelihoods of remote communities.

While there are some state-wide data for this indicator available on removal of non-wood forest products, the data on sustainable yields of these products are very limited. The different levels of available data reflect market driven responses where demand for particular non-wood forest products determines what, if any, monitoring systems are developed.

There are no data available on indigenous resources collected or used for cultural activities.

In NSW, the NPW Act protects all native fauna (mammals, birds, reptiles and amphibians) and flora both inside the RFA regions and in other parts of the state. A licence is required to take protected fauna or flora. Regulation of non-native fauna is under the control of the *Non-Indigenous Animals Act 1987* (NSW). The TSC Act and the *Environmental Planning and Assessment Act 1979* (NSW) also have provisions relevant to the harvesting of non-wood forest products.

Apiary products are another important animal non-wood forest product. NSW has a significant beekeeping industry, and hives are placed in forest ecosystems based on the annual availability of flowering tree and understorey resources. The dependency of the beekeeping industry on forest resources is estimated at 70–90% in south-eastern Australia. NSW regulates apiarists through issuing permits and licences for apiary sites and hives. In 2007, NSW had 3,195 beekeepers, with 265,474 hives. A substantial percentage of hives are in multiple-use public forest.

Forests provide many products and services other than wood that is processed in sawmills. FCNSW monitors the supply and sale of specific non-wood forest products from State forests to help understand the extent to which native forests remain an important multiple-use resource, supplying a variety of products sought by the community.

Indicator 2.1e The area of native forest harvested and the proportion of that effectively regenerated, and the area of plantation harvested and the proportion of that effectively re-established

This indicator reports on the extent of native forest harvested and the success of re-establishing regeneration on harvested sites. It also compares the area of plantation clear-felled with the area effectively replanted, and gives an indication of the success of the planting effort. This indicator is used to assess the success of the re-establishment of forests after harvesting. Re-establishment is critical to the maintenance of the productive capacity of the forest.

Native forest

Effective regeneration of native forest after wood harvesting is a fundamental component of sustainable forest management, since regeneration determines the long-term productivity, growth, dynamics and composition of forest stands. In this situation, regeneration is the establishment of a new tree crop following the harvesting event from natural seed fall, lignotubers or coppice.

This indicator is relevant to the public forest estate as there are no statistics for regeneration on harvested private property. For native forests, annual information is provided on the total area harvested, the area harvested where regeneration is a targeted outcome and the proportion of area effectively regenerated (**Table 3.11**).

Some types of silviculture practised on the public native forest estate do not include regeneration as a prescribed outcome of the harvesting intervention where the residual stand will contain adequate stocking of commercial species.

The major regeneration system for native forest within State forests is Single Tree Selection (STS) which has been modified for NSW conditions to provide for varying intensities (light, medium or heavy) of canopy removal, barring of mineral earth and retention of regrowth trees or stands of trees. Other regeneration systems practised are Australian Group Selection (AGS) for mixed age forest where groups of trees are removed in small patches large enough to allow regeneration to establish and grow without competition from overstorey trees, and seed tree or shelterwood systems which remove a substantial proportion of the stand but retain habitat trees, seed trees and well-formed regrowth trees. The latter system is practised mainly in the mixed age stands of the Eden RFA region as alternate coupe harvesting (FCNSW, 2015). Thinning systems do not seek to regenerate the stand but to thin out competing trees to allow retained trees to grow on to form higher value products.

Thinning and light-medium STS harvesting areas are generally not surveyed by the FCNSW for regeneration, as sufficient trees remain so that regeneration is not a primary objective from harvesting.

Regeneration oriented harvesting activity comprises alternate coupe harvesting in Eden RFA region and AGS or heavy STS in the other RFA regions (NSW EPA, 2017) With these silvicultural systems, regeneration assessments are essential for sustainable forest management, and it is a requirement of the IFOAs that regular and periodic assessments of

regeneration are carried out. These assessments are usually conducted from nine to twenty four months after harvesting was completed. In May 2010, the *Forest Practices Circular 2010/04 Regeneration Assessment in Native Forests* was released providing clear and consistent guidelines. This framework is designed to provide precise, unbiased estimates of regeneration success (OEH, 2010).

For harvested State forest areas under STS heavy, AGS or alternate coupe regeneration systems, NSW considers that successful regeneration has occurred when 65 per cent or more of plots in a harvested area are stocked with regeneration of commercial Eucalypt species. In NSW RFA regions, effective regeneration in multiple-use public native forests for the period 2004–05 to 2013–14 was generally above 70 per cent.

Low regeneration rates may be due to a range of factors including poor seed bank, unfavourable weather conditions including drought and competition from weeds. If the regeneration rates are generally low or low in specific locations within a harvested area, remedial action is undertaken where such areas are planted with seedlings of commercial species extant to the harvested area; hazard reduction burning is used to promote seedfall or stimulate the seed bank; or mechanical disturbance is used to stimulate the dormant seed bank.

FCNSW's commitment to regeneration of State forests following harvesting is embedded in its forest management systems. The forest zoning system has been implemented by the FCNSW for many decades and has, as a management guideline for Zone 4 General Management, 'the establishment and development of effective regeneration in native forest' (SFNSW, 1999).

Also, the *Forest Management Plan for the Coastal Forests of NSW* (FCNSW, 2016a) indicates that FCNSW has an obligation for ecologically sustainable wood supply to 'maintain forest cover by using appropriate silviculture during harvesting and ensure natural regeneration or rehabilitation where appropriate'

Eden RFA region

Information at the RFA region level reports only on overall per centage regeneration rate with no reference to the type of regeneration system(s), the area harvested under such system(s), or the forest type treated by the regeneration system.

From 1999/2000 to 2009/10 reporting was available⁶¹ on the RFA region with the regeneration per centages having varied from the high-60 per cent to 100 per cent with no regeneration surveys conducted in 2001/02, 2004/05, 2005/06, 2007/08, 2008/09 and 2009/10 (DECCW, 2008).

From 2010/11 onwards, reporting has been undertaken at the state level as presented in **Table 3.11**.

North East RFA region

Information at the RFA region level reports only on overall per centage regeneration rate with no reference to the type of regeneration system(s), the area harvested under such system(s) nor the forest type treated by the regeneration system. For the North East RFA region, it is reported under its two constituent regions – UNE and LNE.

From 1999/2000 to 2009/10 reporting was available on the RFA region with the regeneration per centages having varied from the low 50s to 100 with no regeneration surveys conducted in 2000/01, 2001/02 and 2004/05. For all except one year in UNE, the per centages have been over 80 per cent with about half at 100 per cent (DECCW, 2008). Over all of the years surveyed, LNE has consistently attained between 80 and 100 per cent regeneration while UNE has been 100 per cent except for 2006/07.

From 2010/11 onwards, reporting has been undertaken at the state level as presented in **Table 3.11**.

Southern RFA region

Information at the RFA region level reports only on overall per centage regeneration rate with no reference to the type of regeneration system(s), the area harvested under such system(s) or the forest type treated by the regeneration system.

From 2002/03 to 2009/10 reporting was available on the RFA region with the regeneration per centages having varied from the low-40s per cent to 100 per cent with no regeneration surveys conducted in 2006/07 and 2009/10 (DECCW, 2008). Between 2004/05 and 2008/09, there has been between 90 to 100 per cent regeneration for the years surveyed.

From 2010/11 onwards, reporting has been undertaken at the state level as presented in **Table 3.11**.

⁶¹ FCNSW Forest Agreement annual reports and EPA environmental reports

Plantation

Effective establishment of a plantation either on land not previously under plantation (afforestation) or as re-establishment of a previous plantation after clearfell harvesting (reforestation) is a fundamental component of sustainable plantation management in order to provide for long term and consistent wood volumes required by wood-processing industries.

In terms of monitoring plantation establishment on public forests, the planted area includes both new plantation establishment and plantation re-establishment. Establishment is measured one year after planting; the rate applies to the planted area in the previous year. Monitoring the effectiveness of the establishment of newly planted forest is undertaken by surveys of seedling survival in the first year after planting. If survival rates are generally low or low in specific locations mainly due to drought or frost, the failed areas are replanted. Secondary survival counting is sometimes undertaken if plant health, disease or adverse weather conditions warrant further examination.

Successful establishment is attained where 80 per cent of softwood seedlings and 90 per cent of hardwood seedlings survive. Follow-up replanting occurs as required to fully stock the planted site.

The data in **Table 3.12** is provided at a State level as there is no meaningful information provided by RFA region. The success in establishing and re-establishing public plantations in New South Wales varied widely for both softwood and hardwood plantations. In the case of the low 2009 hardwood establishment rate, much of the plantation estate was just below the 90% guideline threshold and required only a low level of supplementary planting to adequately stock the planted area.

Based on the most recent Statement of Corporate Intent (FCNSW, 2018) from FCNSW, there is a strategic objective to expand the public softwood plantation estate which assumes the continued re-establishment of clear felled areas into the future. As part of this objective, FCNSW acquired an 11,000 hectare softwood plantation estate in the Tumut and Oberon regions during 2017.

Also, the *Softwood Plantations Division Forest Management Plan* (FCNSW, 2016b), has a commitment that to meet a sustainable timber supply, it 'maintains the plantation estate by ensuring timely re-establishment'.

There is no RFA regional level information covering re-establishment of plantations or new plantations. This is essentially a state level reporting metric. Both hardwood and softwood plantations are measured for effectiveness of establishment whether re-establishment or new plantations.

For the public softwood plantations, over the 18 year period in **Table 3.12**, the per cent area successfully established has ranged from the low 70s to 100 (or fully stocked). Due to drought in 2006, establishment success was only 37% and re-planting was required. The period has also seen over 70 per cent of calendar years achieve 80 per cent or higher for establishment success.

For the hardwood plantations over the 18 year period in **Table 3.12**, the per cent of area successfully established has ranged from 70 to 100 (or fully stocked). There was one outlier year in 2009 where it was only 13 per cent. The period has also seen nearly 80 per cent of

calendar years achieve 80 per cent or higher for establishment success noting that records were not available for four years of the period.

Table 3.11 Native forest regeneration

Year	Area of native forest harvested ^a (hectares)	Area of native forest harvested in RFA regions (hectares)	Area of native forest surveyed for regeneration (hectares)	Proportion of area effectively regenerated (%)
1999-00	56,900	n.d.	3,644	98
2000-01	64,166	n.d.	2,157	95
2001-02	50,351	n.d.	1,325	68
2002-03	49,062	n.d.	5,410	87
2003-04	45,746	25,817	4,406	86
2004-5	42,923	25,649	3,878	83
2005-6	43,709	25,588	4,881	74
2006-7	45,945	34,672	3,709	63
2007-8	57,631	26,075	5,375	94
2008-9	31,252	16,751	3,616	81
2009-10	38,784	n.d.	3,845	95
2010-11	27,864	n.d.	5,382	92
2011-12	22,921	n.d.	7,837	77
2012-13	31,221	n.d.	5,812	69
2013-14	n.d.	n.d.	6,268	67
2014-15	n.d.	n.d.	n.r.	81
2015-16	n.d.	n.d.	n.r.	91

Notes:

^a Areas extracted from SEEing Reports (or equivalents), FCNSW; includes areas outside of RFA regions i.e. Cypress Pine and River Red Gum harvesting

n.d. no data

n.r. not recorded

Table 3.12 Public softwood and hardwood plantation planting in NSW, 2004–2017

Age class	Planted area (hectares)		Proportion successfully established (%)	
	Softwood plantation	Hardwood plantation	Softwood plantation	Hardwood plantation
1999	N/A	N/A	98	100
2000	N/A	N/A	96	95
2001 ¹	5,951	2,005	95	n.r.
2002	5,500	1,680	81	97
2003	6,506	1,529	80	78
2004	6,764	1,164	93	100
2005	6,547	267	94	100
2006 ²	7,260 [6,547]	889 [264]	37 [94]	n.r. [100]
2007	6,037	462	74	n.r.
2008	9,874	945	74	n.r.
2009 ³	10,581	1,979	71	13
2010	9,942	1,104	78	91
2011	8,969	592	88	70
2012	7,813	470	77	95
2013	7,138	404	82	88
2014	9,285	132	80	100
2015	7,991	224	100	98
2016	7,712	275	85	100

Notes: n.r. not recorded
N/A not available

Source:

1. Figures to 2005 taken from corresponding Social, environmental and economic report (SEEing report) e.g. 2001/02, State Forests of NSW available at

www.forestrycorporation.com.au/__data/assets/pdf_file/0006/281229/State-Forests-Seeing-Report-2001-2002.pdf

2. Bracketed figures from 2005-06 SEEing report

www.forestrycorporation.com.au/__data/assets/pdf_file/0009/279828/seeing-report-05-06.pdf

3. FCNSW Annual Report 09/10 shows 9102 hectares are provided for softwood plantings and 2160 hectares are provided for hardwood plantings.

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Indicator 6.1a Value and volume of wood and wood products

This indicator presents information on the value and volume of wood and wood products that are directly generated by the forest and wood products industries and enables socio-economic benefits to be monitored by ascertaining trends in value and volume of wood production.

State Summary

Log harvesting from the hardwood native forest and plantation estate as well as the softwood plantation estate over the period of the NSW RFAs has changed significantly both in terms of volume and composition.

Log volume

Due to changes in the availability of data and terms utilised within the industry over the period of the NSW RFAs, the reporting format for the volume of harvested logs has varied and provides some challenges to interpret the data over time.

Table 3.13 presents data on annual log volumes for all of NSW (from both public and private land both within and outside the RFA regions) for the 1999-2000 to 2015-16 period. This table is an overall view of log production at the whole of state level by the three major forest sources; however, individual RFA regional level production is presented and discussed in the next section at a finer scale but restricted to the hardwood estate only.

During the 1999-2000 to 2015-2016 period, the total volume of logs harvested in the hardwood sector has shown a general decline from the native forest estate with annual between year fluctuations which has been augmented by a variable supply from hardwood plantations but generally trending downwards as well.

However, there is evidence of a long-term increase in softwood log production from the mid two million cubic metres per annum to the mid four million cubic metres per annum over the period.

Overall, NSW has increased its log output from the mid four million cubic metres per annum in 2000-01 to the mid five million cubic metres per annum in 2015-16 having reached high points of over six million cubic metres in 2007-08 and 2010-11.

Of the three major forest sources, the mix of products i.e. sawlog, pulplog and other log, on an annual basis, has fluctuated over the 1999-2000 to 2015-16 period with sawlog being the predominant product over the three product types usually over 50%, followed by pulplog varying between 30% and 40% and other logs generally running in single digit figures.

Over the 2005-06 to 2015-16 period, the per centages at the five year points of 2005-06, 2010-11 and 2015-16 were:

- Hardwood native forest sawlog – 69%; 49% and 65%
- Hardwood native forest pulplog – 28%; 47% and 30%
- Hardwood native forest other log – 3%; 4% and 5%
- Hardwood plantation sawlog – 50%; 51% and 55%
- Hardwood plantation pulplog – 39%; 46% and 44%
- Hardwood plantation other log – 11%; 3% and 1%

- Softwood saw log – 62%; 58% and 55%
- Softwood pulplog – 36%; 36% and 43%
- Softwood other log – 2%; 6% and 2%

The increasing softwood plantation log production reflects the steady growth in the housing market, the requirements of engineered wood product plants, and the expansion of the Visy pulp and paper mill in Tumut from a mature plantation estate which is re-establishing all harvested areas to ensure an ongoing and increasing supply of logs.

The decline in the total harvest of logs from the hardwood estate reflects the lack of markets from pulp grade logs following the global financial crisis, collapse of the north coast pulp log market, the finite plantation resource with age class distribution affecting availability of logs on an annual basis and various restrictions impacting on native forest yields.

Log value

The wood-processing industry in NSW is comprised of many different components from solid wood processing through engineered wood products to pulp and paper. Reporting on the value of this industry in relation to log production is available at the state level only with no figures available for each RFA region. Also, reporting methodology on the value of the industry has changed over the period of the NSW RFAs making direct comparisons difficult.

Over the 1999-2000 to 2015-16 period, the gross value of production for NSW saw a steady increase from the high \$200 million to the mid \$400 million by the end of the period. The lowest value during the period was \$247 million in 2001-02 with the highest value of \$466 million.

As it is gross value for all log production, there is no breakdown into the components or the sources that have increased or decreased in value. Overall, the industry has increased in value by 63 per cent from the 1999-2000 value as at the end of the period.

Data is available from 2006-07 to 2015-16 to provide some indication of the relative contribution of the three forest sources to the value of the industry with the:

- softwood sector showing an increasing contribution on a yearly basis through the period with the expectation of increasing higher value sawlogs contributing to the value increase
- hardwood native forest sector declining from around mid-\$140 million to just over \$100 million with the cut moving from multi-aged forests to regrowth forests and a diminishing log size and changing species mix
- hardwood plantation sector fluctuating between \$5 million and \$20 million which would indicate a wide variation in log quality i.e. mix of high quality and low quality sawlogs as well as pulplogs on a yearly basis (AFWPS, 2016).

Based on the data, it can be projected that the trajectories would be maintained into the future with the hardwood component contributing around 20 - 25 per cent of the overall value and the softwood component providing the balance.

Wood products

New South Wales' wood products include the sawmilling, wood-based panels, and paper and paperboard product sectors.

Hardwood sawnwood production has steadily declined from 522.6 thousand cubic metres in 2004-05 to 275.9 thousand cubic metres in 2012-13. Only national level data is available for 2013-14 and 2014-15.

In terms of softwood sawnwood production, it has steadily increased from 1043.5 thousand cubic metres in 2004-05 to 1298.5 thousand cubic metres in 2007-08 and can be inferred to have continued to increase through latter years but this cannot be confirmed due to combining of data for certain states not allowing separation for NSW.

Volume

This section and associated tables examine the three RFA regions and the provision of hardwood wood products only, in line with volume commitments made in RFAs which relate exclusively to hardwood volumes.

The seven categories of wood products align with detailed data captured by the state's forest management agency.

Eden RFA region

The wood resource in the Eden RFA region can be categorised into two main components:

- the multi-aged forest of unlogged or very selectively logged forest; and
- the essentially even-aged regrowth forest originating from broad area bushfires especially in the years of 1952, 1968, 1972 and 1980.

The Eden RFA region has mainly produced various grades of hardwood sawlogs and pulpwood with virtually no poles, piles and girders, and veneer as well as miscellaneous grades of wood products as presented in **Table 3.14**.

The high quality large sawlog (HQL) commitment from the Eden RFA was for 25 000 m³ p.a. for the first five years of the RFA followed by 24 000 m³ per annum for the balance of the RFA, from native forest only. The commitments have only been achieved in four years with supply generally running under commitment, but has averaged around 23 400 m³ p.a. for the middle and latter part of the period. Despite being less than RFA commitments, supply generally met customer demand in most years.

The Eden RFA HQL volume has been augmented by 1 000 m³ p.a. of Alpine Ash (*Eucalyptus delegatensis*) logs from Ingebirah State forest within the Tumut sub-region. This volume has been supplied just under the allocation including small sawlogs and pulpwood but on a variable basis as the viability of an operation in the remote location requires aggregating a number of years of committed volume to be harvested in a single operation in a short timeframe based on weather and access conditions.

As a consequence of the HQL commitment, small sawlogs and low quality sawlogs have been supplied with small sawlogs at a low but constant rate and low quality sawlogs at a high level in the first half of the RFA period but declining in the latter half. It should be noted

that the small sawlog supply has increased in the four years since 2013/14 and is an indication of the future resource from the RFA region based on even-aged regrowth forest.

Except for two years, there has been no supply of poles, piles and girders (PPG) and veneer logs as the resource doesn't have suitable species for PPG over the most of the State forest estate and the region is too remote from any veneer customers.

The pulpwood commitment from Eden RFA region was for a minimum of 345 000 tonnes per annum but this was achieved in only two years with the supply generally declining over the period especially with the change in resource with the near completion of harvesting in the multi-age forest resource and the increase in output from the thinned regrowth forest resource but constrained by number of operations in suitably aged forest.

There was a very low output of miscellaneous wood product grades in the first half of the period but this has increased in the latter half of the period.

North East RFA region

The wood resource of the North East RFA region is based on a significant number of both coastal and tablelands species which have been utilised for many years by customers in supplying well established markets. They are renowned for strength, durability and appearance for end products.

The resource on State forest is mainly from selectively harvested stands with a range of treatments ranging from single tree selection through to extensively harvested followed by supplementary seeding or planting of valued forest types e.g. Blackbutt (*E. pilularis*), Flooded Gum (*E. grandis*) or Sydney Blue Gum (*E. saligna*) where natural regeneration falls below accepted levels.

The North East RFA region has mainly produced high volumes of low quality sawlogs and declining pulpwood volumes with a steady supply of poles, piles and girders, and veneer as well as a variable supply of miscellaneous grades of wood products based on market requirements as presented in **Table 3.15**.

The high quality large sawlog (HQL) commitment from the North East RFA region (combined sub-regions) was initially for 269 000 m³ per annum. The commitments were not achieved up to 2006 with sawlog supply running under commitment from both native forest and hardwood plantations. As a consequence of land tenure transfers, changes to the volumes from the North East RFA region occurred during the period to move the contracted HQL volume to 209 500 m³ per annum. A further reduction occurred in 2012, to reduce the volume to 185 777 m³ per annum. Even with the two reductions, the supply didn't meet commitments over the reporting period.

As a consequence of the HQL commitment, small sawlogs and low quality sawlogs have been supplied with small sawlogs commencing at a high level but declining to around 50 per cent and less by the end of the period and low quality at a high level which was sustained to 2012/13 before a slight decline before increasing to a figure above the contracted HQL supply in the latter half of the period.

The PPG and veneer logs supply has been constantly in the high 20 000 to 30 000 m³ with some years over 40 000 m³ from both native forest harvesting and hardwood plantation

thinning or clearfells. There has also been a steady supply of between 10 000 to 20 000 m³ of veneer logs which has the same basis as PPG in source.

The pulpwood commitment from North East RFA region was for 182 000 tonnes per annum but this was achieved only once in the first half of the period but supply generally increased in the early years of the second half of the period before declining significantly at the end of the period. The decline would be attributed the closure of the woodchip export facility at Kooragang Island, Newcastle.

There was a highly variable output of miscellaneous wood product grades in the period with volumes ranging from a low of 964 m³ to a high of 38 882 m³ but this has generally been between 5 000 to 15 000 m³ per annum based on market requirements.

Southern RFA region

The data presented in **Table 3.16** has full regional level coverage from 2002/03. It should also be noted that the Southern RFA region figures show combined volumes for the South Coast and Tumut sub-regions.

The Southern RFA region contains a mosaic of different forest types varying from the Alpine Ash forests of the Tumut/Tumbarumba region through to the Spotted Gum (*Corymbia maculata*) forests of Batemans Bay. Some types are dominated by a single species, but most are a mixture of eucalypts. These forest types give rise to either wet or dry sclerophyll forests. The majority of these forests have been subjected to selective harvesting especially on the coastal areas and the Bago/Maragle Alpine Ash resource.

The Southern RFA region has mainly produced various grades of hardwood sawlogs and pulpwood with minor volumes of poles, piles and girders, and veneer as well as an increasing volume of miscellaneous grades of wood products.

The HQL commitment from the Southern RFA region (combined sub-regions) was for 96 500 m³ per annum. The commitments have not been achieved over the period with supply running below commitments from native forest only. Supply was generally met for commitments to sawmill customers in the South Coast sub-region but was not to the levels envisaged in the Southern RFA.

As reported in the second and third five-yearly review report, the volume from Tumut sub-region declined dramatically in 2009-10 due to issues around the listing of yellow-bellied gliders (*Petaurus australis*) on the Bago Plateau as an endangered population and changes in sawmill customer base. The yellow-bellied gliders issue was resolved in 2013 and volumes have been steadily increasing since 2014-15. While the Southern RFA region has commitments in the Tumut sub-region by Alpine ash and mixed hardwoods, the volumes in the HQL figures aren't differentiated by species.

As a consequence of the HQL commitment, small sawlogs with a commitment of 7935 m³ per annum and low quality sawlogs have been supplied with small sawlogs at a constant but moderately high rate including two years that achieved over the commitment. Low quality log supply was at a high level in the first half of the RFA period but declined in the latter half by around 50-60 per cent of the HQL volume on a yearly basis.

PPG and veneer logs have been supplied at a constant but low rate mainly on an as available supply based on suitable species for PPG and market conditions for veneer logs.

The pulpwood commitment from Southern RFA region was for 97 000 tonnes per annum but this was achieved in only five years with the supply generally declining over the period to around 30-50 per cent of commitment at the end of the period. As with the HQL sawlogs from the Tumut sub-region, the supply of pulpwood crashed to zero in some years and has only been supplied at low volumes as the resource has come back on stream following the resolution of the yellow-bellied glider issues.

There was a low output of miscellaneous wood product grades in the first half of the period but volumes have increased significantly in the latter half to between 25-50 per cent of the volume produced for HQL on a yearly basis.

Table 3.13 New South Wales volume and value of logs

Log type	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08
Hardwood native ('000 m ³)	N/A	1850	1749	1904	1906	1846	1881	1836	1706
Hardwood plantation ('000 m ³)	N/A	116	91	131	142	187	137	129	229
Softwood ('000 m ³)	N/A	2485	2970	3304	3298	3519	3634	3827	4071
Total volume ('000m ³)	4920	4452	4810	5340	5346	5551	5652	5792	6005
Total value (\$m)	281	255	247	294	307	330	343	350	379

Notes: N/A

Not available

Table 3.14 New South Wales volume and value of logs (continued)

Log type	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16
Hardwood native ('000 m ³)	1441	1355	1080	1119	914	883	924	876
Hardwood plantation ('000 m ³)	228	216	174	108	98	66	57	63
Softwood ('000 m ³)	3766	4324	4828	4518	4397	4449	4575	4651
Total volume ('000 m ³)	5435	5895	6082	5745	5409	5398	5556	5590
Total value (\$m)	353	375	380	373	334	428	466	458

Table 3.15 Eden RFA region – volume of logs

Log type	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08
High quality large sawlog (m ³)	23 735	27 056	25 329	22 018	26 441	25 023	24 806	20 455	23 191
High quality small sawlog (m ³)	1950	2067	1125	1692	1262	1273	1765	1277	688
Low quality sawlog (m ³)	4089	9303	9294	10 909	18420	14 365	12 464	9413	7762
Poles, piles and girders (m ³)	-	-	-	-	-	-	-	-	-
Pulp-grade logs (tonnes)	352 282	337 434	279 854	279 017	320 681	296 976	310 603	352 916	316 067
Miscellaneous grades ¹ (m ³)	-	221	279	9	43	280	-	160	-

Note: 1 –Miscellaneous grades includes products which have been classified as ‘residue’ in five-yearly implementation report and ‘fencing, landscape and sleepers (sawn)’ in EPA annual reports.

Table 3.16 Eden RFA region – volume of logs (continued)

Log type	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17
High quality large sawlog (m ³)	18 478	20 788	19 910	18 598	19 030	21 387	19 967	18 743	12 650
High quality small sawlog (m ³)	1573	1237	1326	2510	1262	2118	1856	3169	3138
Low quality sawlog (m ³)	5309	3856	2246	3348	3203	2888	1668	1130	1234
Poles, piles and girders (m ³)	237	79	-	-	-	-	-	-	-
Veneer (m ³)	62	50	-	-	-	-	-	-	-
Pulp-grade logs (tonnes)	221 215	246 705	220 465	194 338	169 839	217 636	225 443	198 243	207 160
Miscellaneous grades ¹ (m ³)	23	49	132	920	233	1481	1067	1326	4430

Table 3.17 North East RFA region – volume of logs

Log type	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08
High quality large sawlog (m ³)	272 596	211 803	270 788	226 398	225 332	187 610	194 156	166 308	170 181
High quality small sawlog (m ³)	112 032	85 492	45 644	51 220	59 124	54 830	62 206	61 573	65 261
Low quality sawlog (m ³)	243 438 ^a	200 127	230 955	233 315	255 802	234 113	227 747	221 296	266 886
Poles, piles and girders (m ³)	28 325 ^a	38 747	29 462	24 913	32 328	33 081	38 474	38 224	38 175
Veneer (m ³)	13 377	15 296	8192	418	3794	12 378	12 824	15 538	16 621
Pulp-grade logs (tonnes)	107 747 ^a	272 126	111 375	153 954	135 138	120 623	116 560	134 267	143 372
Miscellaneous grades (m ³)	21 779	3280	38 882	1403	1009	964	1888	2989	1532

Note: 1 –Miscellaneous grades includes products which have been classified as ‘residue’ in five-yearly implementation report and ‘fencing, landscape and sleepers (sawn)’ in EPA annual reports.

Table 3.18 North East RFA region – volume of logs (continued)

Log type	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17
High quality large sawlog (m ³)	163 139	165 137	128 650	162 947	142 282	149 394	134 427	135 863	134 915
High quality small sawlog (m ³)	65 608	58 663	47 475	56 963	49 316	47 450	46 420	54 405	48 464
Low quality sawlog (m ³)	236 868	238 247	242 178	234 1350	197 405	208 930	193 479	187 841	150 272
Poles, piles and girders (m ³)	36 418	35 574	40 803	48 870	44 669	30 585	32 385	31 778	42 329
Veneer (m ³)	16 283	14 975	10 940	12 690	15 477	13 585	6667	14 937	16 783
Pulp-grade logs (tonnes)	191 104	182 720	195 737	193 915	85 782	13 534	15 735	25 247	31 073
Miscellaneous grades (m ³)	3570	6879	6943	14 756	25 716	14 471	11 976	13 034	11 377

Table 3.19 Southern RFA region – volume of logs

Log type	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08
High quality large sawlog (m ³)	N/A	N/A	N/A	65 384	72 496	58 376	62 539	61 761	70 538
High quality small sawlog (m ³)	N/A	N/A	N/A	5635	6980	7669	9307	9437	7472
Low quality sawlog (m ³)	N/A	N/A	N/A	59 299	53 210	62 214	52 675	40 009	42 283
Poles, piles and girders (m ³)	N/A	N/A	N/A	-	155	180	522	1337	819
Veneer (m ³)	N/A	N/A	N/A	-	173	27421	181	244	569
Pulp-grade logs (tonnes)	N/A	N/A	N/A	63 236	78 291	85 582	109 691	126 109	115 319
Miscellaneous grades (m ³)	N/A	N/A	N/A	-	620	2223	3150	3805	8794

Note: 1 –Miscellaneous grades includes products which have been classified as ‘residue’ in five-yearly implementation report and ‘fencing, landscape and sleepers (sawn)’ in EPA annual reports.

Table 3.20 Southern RFA region – volume of logs (continued)

Log type	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17
High quality large sawlog (m ³)	61 644	39 827	40 876	41 661	42 298	41 643	51 483	45 629	58 350
High quality small sawlog (m ³)	6261	5238	6987	7705	6283	5671	6877	5729	5451
Low quality sawlog (m ³)	34 693	24 831	26 826	23 395	25 540	32 136	28598	28 984	29 556
Poles, piles and girders (m ³)	796	798	1082	540	1057	601	819	257	143
Veneer (m ³)	358	-	181	376	290	183	288	212	-
Pulp-grade logs (tonnes)	98 787	82 219	99 418	74 658	68 289	28 103	30 381	30 089	36 074
Miscellaneous grades (m ³)	8853	11 518	13 351	28 966	20 996	14 442	16 292	31 693	30 200

Notes: N/A Not applicable

Reference: AFWPS (2016). Australian forest and wood products statistics: September and December quarters 2016, ABARES, 2017

Indicator 6.1b Values, quantities and use of non-wood forest products

This indicator enables socio-economic benefits to be monitored by ascertaining trends in quantities, values and usage of non-wood forest products against management objectives.

Monitoring the supply and sale of specific non-wood forest products from forests helps forest managers understand the extent to which forests remain an important multiple-use resource, supplying products sought by the community.

Discussion

The non-wood forest products or activities sourced from or utilised on State forest vary by RFA region. While there are biological and non-biological (inert) products, there are also man-made structures or infrastructure that contributes to the socio-economic fabric of the RFA region as well as providing financial gain for the forest manager and regional or local employment opportunities.

For the purpose of measurement against this indicator, non-wood forest products in State forests have been determined to be those products that are not supplied to sawmills or wood-based processing plants. Non-wood forest products may be for personal use or as part of a commercial enterprise.

The main products range from firewood, wood chop blocks, seed, gravel, sand and hard rock with activities and infrastructure including apiculture, grazing, communication sites, powerlines/pipelines/cables and other infrastructure sites. Other less common non-wood forest products which are utilised for specific commercial purposes include charcoal, craft timbers, eucalypt leaf/oil, bark and native (protected) plants including tree ferns and wildflowers. There are other non-wood forest products that are collected for personal use and usually without cost e.g. wild berries and mushrooms, with no statistics maintained over collections.

Over the period of the three NSW RFAs, the types of data collected for non-wood forest products from State forest, and the levels of monitoring by relevant agencies has varied significantly. This implies that consistent reporting and assessment of this indicator across the reporting periods is neither complete in data nor feasible to interpret relevant trends. Accordingly, information on this indicator is presented in varying formats for different time periods.

While the information in the tables presented for this indicator is from State forest, a significant non-wood forest product derived from the NPWS estate is honey from around 916 sites used by apiarists in the three RFA regions. It is estimated that three per cent of NSW's NPWS estate is accessed by bees from these apiary sites in any one year with around 25 sites in Eden RFA region, 548 sites in North East RFA region and 343 sites in Southern RFA region.

It should be noted that native plants are protected in New South Wales by the BC Act. Under the BC Act, it is an offence to pick, possess, buy or sell native plants listed in the BC Act for

commercial purposes without a licence. Licensing, through OEH, helps regulate the cut-flower and whole-plant industries to sustainably harvest and cultivate protected native plants for sale

Overall, the availability of data varies with complete data from 1999/00 to 2008/09, partial data for 2009-10 and only State-level data for 2010-2011 to 2015-16 (which hasn't been included as it would not be compatible with data at the RFA region level). FCNSW and its predecessor's record or recorded most of these non-wood forest products through a Permits and Licence System.

The value of the non-wood forest products resource isn't reported at RFA region level but as a state based metric i.e. it covers the value of other products not sourced from RFA region as well as RFA region value. As an example of the value that non-wood forest products generates, in 2005-06 it provided \$6.242M in revenue and peaked at \$6.461M in 2006/07 but had declined by 2010-11 to \$5.037M in revenue. Due to changes in reporting over the period, there are no value figures prior to and post these examples.

Eden RFA region

The Eden CRA report revealed that the Eden RFA region has a low level of non-wood forest products mainly as a consequence of low populations in the region, large distance to major markets for commonly produced products and a limited range of products.

The main products sourced from the Eden RFA region prior to the RFA signing were:

- Firewood at 700 – 1000 tonnes per annum
- Fencing and landscape timbers at 150 – 200 cubic metres per annum using red wood species as well as Yellow Stringybark (*Eucalyptus muelleriana*)
- Variable seed sales depending on eucalypt flowering with Shining Gum (*E. nitens*) and Maidens Gum (*E. maidenii*) as the principal species
- Grazing was noted as a minor usage based on low demand which was satisfied by existing Crown leases or occupation permits for specific time periods on suitable forest sites
- Apiary activities dependent upon Eucalypt species producing honey and bees wax from 64 sites within State forest.

The main and consistent non-wood forest products sourced over the life of the Eden RFA and currently from or utilised in the State forest of the Eden RFA region are:

- Apiary sites for honey production and bees wax
- Firewood collected by individuals or commercial collectors for domestic use in heating at mainly the local community level
- Grazing of sheep or cattle on selected forested sites based on suitable grass cover under existing Crown leases or occupation permits for specific time periods
- Quarrying of hard rock and removal of gravel and sand with a permanent hard rock quarry accounting for much of the production
- Infrastructure – communication sites on selected elevated sites; other structures for community or specific usage and powerlines/pipelines/cables traversing the region to provide services both within and without the region.

Other opportunistic non-wood forest products are wood chop blocks and seed collection which depend on local agricultural shows and suitable species availability or a bountiful seeding season for certain eucalypt species respectively.

In the case of the nature conservation estate, there has been a regular use of apiary sites since 1999-2000 with between 21 to 25 sites occupied each year.

Over the life of the Eden RFA, firewood, grazing and infrastructure have been fairly consistent and in line with the levels of pre-RFA operations. The apiary industry had expanded over that time but in the mid period there seems to have been a crash or reporting isn't accurate considering the previous data trend. The major increase in products has come from quarrying of hard rock and removal of gravel and sand which, while varying in some years, has ramped up production significantly.

Based on an analysis of the trends from **Table 3.18**, the flow of non-wood forest products into the future would seem to be consistent with the past levels whilst accounting for yearly fluctuations based on seasonal issues or demand.

North East RFA region

While the Eden CRA report had a small amount of detail on non-wood forest products, the North East CRA report(s) provided minimal detail on the type and extent of non-wood forest products in the North East RFA region. It can be gleaned from CRA reports that the following non-wood forest products were identified during the assessment, although annual monitoring by the forest regulator reveals a wider range:

- Sleeper logs for railway sleepers – a small volume which was decreasing due to harvesting regulation and reduced demand for timber sleepers
- Wood chop blocks – increasing volume with the sport gaining in popularity but dependent on the agricultural show circuit
- Fencing and landscape timbers – an ongoing demand for local/regional use especially for the durable species of Tallowwood (*E. microcorys*), the Ironbarks (*E. paniculata*, *E. siderophloia* and *E. sideroxylon*), Grey Gums (*E. punctata* and *E. propinqua*) and White Mahogany (*E. acmenioides*)
- Apiary activities with high level of usage based on Eucalypt resource with about 4000 sites in UNE of which 24 per cent were on State forest and about 1400 sites in LNE of which 30 per cent were on State forest – also, the region is used for overwintering bees and in spring for building up queen bee breeding populations
- Grazing over extensive areas of State Forest with over 385 000 hectares in UNE and over 141 000 hectares in LNE, all for beef cattle, usually for around six months a year, with State forest grazing integrated with grazing of private holdings of lessees or permits on other crown lands.

The main and consistent non-wood forest products sourced over the life of the North East RFA and currently from or utilised in the State forest of the North East RFA region are:

- Grazing of selected forested sites based on suitable grass cover and tenure classification i.e. Crown leases or where forest permits are issued for grazing over State Forest
- Apiary sites for honey production and bees wax
- Firewood for domestic use in heating at mainly the local community or regional levels

- Quarrying of hard rock and removal of gravel and sand
- Infrastructure – communication sites on selected elevated sites; other structures in specific locations associated with approved usage of the area or complementing adjoining land usage and powerlines/pipelines/cables
- Protected plant species salvaged in conjunction with wood harvesting operations and sold under a biodiversity conservation licence with NPWS tags to verify legality of origin.

Other opportunistic non-wood forest products based on availability are craft timbers from sought after species or from trees with specific wood properties salvaged in harvesting operations; burls from selected fallen trees and bark.

Opportunistic non-wood forest products based on seasonality are seed which depends on a bountiful seeding season for certain eucalypt species, or based on scheduling are wood chop blocks required for local agricultural shows.

Over the life of the North East RFA, apiary activities, firewood, grazing and infrastructure have been fairly consistent although fluctuating on a yearly basis but in line with the levels of pre-RFA. The quarrying of hard rock and removal of gravel and sand and salvaging of protected plants have shown substantial fluctuations over the period in response to demand or supply respectively. Burls, craft timber, leaf/oil, seed and wood chop blocks have all declined over the period but are supplied when available or there is a demand.

Based on an analysis of the trends from **Table 3.18**, the flow of non-wood forest products into the future would seem to be subject to yearly fluctuations for the lesser utilised products based on seasonal issues or demand, but the major products demonstrate a year on year availability.

Southern RFA region

The Southern CRA reporting repeats the minimal details of the North East CRA reporting with the following information made available:

- Wood chop blocks – increasing volume with the sport gaining in popularity but dependent on the agricultural show circuit
- Fencing and landscape timbers – an ongoing demand for local/regional use especially for the durable species of the Ironbark (*E. tricarpa*), Wollybutt (*E. longifolia*), Coastal Grey Box (*E. bosistoana*) and Yellow Stringybark
- Apiary activities with a significant level of usage based on Eucalypt resource with about 785 sites on State forest and 157 sites on Crown land used by 175 apiarists with Eucalypts accounting for 70 per cent of honey production – also, the region is used for overwintering bees and in spring for building up queen bee and package bee sales.

The main and consistent non-wood forest products sourced over the life of the Southern RFA and currently from or utilised in the State forest of the Southern RFA region are:

- Firewood for domestic heating at the local community level and supply to the Canberra market
- Grazing of selected forests based on suitable grass cover and tenure classification i.e. Crown leases or where forest permits are issued for grazing over State Forest
- Apiary sites for honey production

- Seed collection for select eucalypt species for nurseries or re-vegetation programs
- Infrastructure – communication sites on selected elevated sites; other structures like dams and water towers and powerlines/pipelines/cables as linear features that require access through State forest e.g. water and gas pipelines, electricity lines, telecommunication cables
- Wood chop blocks for agricultural shows especially the Royal Easter Show in Sydney

Other opportunistic non-wood forest products based on availability are craft timbers from sought after species salvaged in harvesting operations, protected plant species salvaged in conjunction with wood harvesting operations and sold with NPWS tags to verify legality of origin and quarrying of hard rock and removal of gravel and sand.

Over the life of the Southern RFA, honey, grazing, infrastructure and seed have been fairly consistent products although displaying yearly fluctuations but in line with the levels of pre-RFA. The firewood industry has expanded over that time most likely due to its proximity to the Australian Capital Territory and a higher population in the region. There has been low level output, which also has fluctuated, for craft timber, protected plants and quarrying of hard rock and removal of gravel and sand. The only product to have declined was leaf/oil.

Allowing seasonal and with demand based variation, data in **Table 3.18** suggests that the flow of non-wood forest products into the future would be consistent with the past levels.

Apiculture

Honey bees play an essential role in agriculture, not only producing honey and beeswax but also pollinating a vast number of food crops.

Beekeeping is a unique primary industry, depending on native flora for about 80 per cent of its production. Nectar and pollen are produced seasonally and beekeepers must often move their hives large distances to be successful (NSW DPI, 2018). The main honey-producing plants that beekeepers use flower irregularly, with most species flowering once every 2–4 years.

Beekeepers have traditionally had access to native plants on public and private land. When Crown land containing existing beekeeping sites is reserved or added to a park, NPWS may permit the beekeeping operations to continue if they are compatible with the park's conservation values and the needs of other park users.

Table 3.21 Proportions of honey production from public and private land, NSW, 2015–16

Land tenure	Proportion of honey production, 2015–16 (%)
State forests	26
National parks	14
Other public land	1
Total public land	41
Private land	59
Total	100

Source: van Dijk *et al.* (2016).

Table 3.22 Eden RFA region – non-wood forest products

Non-wood forest product¹	99/ 00	00/ 01	01/ 02	02/ 03	03/ 04	04/ 05	05/ 06	06/ 07	07/ 08	08/ 09	09/ 10
Apiculture (sites)	56	57	84	159	164	162	102	164	1	1	
Grazing (hectares) ²	7151	4876	7545	9647	8515	8721	7037	6636	9243	10 730	
Firewood (tonnes)	691	n.d.	937	935	384	865	689	700	505	993	
Wood chop blocks (number)	86	90	90	112	-	-	-	-	-	-	
Communication sites (number)	6	5	8	8	7	8	8	8	5	2	7
Powerlines (km)	21	50	50	50	50	50	50	50	50	50	50
Other structures (number)	6	-	2	3	7	7	7	7	3	3	7
Gravel, sand & hard rock (tonnes)	21 000	24 892	25 016	43 236	76 203	54 103	56 616	47 829	57 770	22 574	76 203
Seed (kg)	n.d.	n.d.	n.d.	n.d.	-	-	-	-	4	2	-

Notes: n.d. No data

1. Data only available at a regional level for the period 99/00 to 08/092. Includes dedicated Crown Leases, Grazing Permits and Occupation Permits

Table 3.23 North East RFA region – non-wood forest products

Non-wood forest product	99/ 00	00/ 01	01/ 02	02/ 03	03/ 04	04/ 05	05/ 06	06/ 07	07/ 08	08/ 09
Apiculture (sites)	1357	1356	1399	608	639	1369	1316	1286	1001	1029
Grazing (hectares)	347 787	351 603	287 944	360 742	196 610	298 673	255 369	255 332	249 929	247 614
Firewood (tonnes)	5239	n.d.	3705	1800	2297	2216	1858	1004	2173	1948
Wood chop blocks (number)	1295	-	-			-	-	-	-	-
Communication sites (number)	67	69	70	77	56	83	83	79	83	93
Powerlines (km)	475	517	490	107	104	98	66	28	26	24
Other structures (number)	92	60	54	72	175	67	56	57	87	66
Gravel, sand & hard rock (tonnes)	23 141	13 659	9876	11 000	11 212	812	300	1268	17 369	10 777
Seed (kg)	216	2353	40	-	13	11	3	-	-	-
Craft timber (m ³)	17	13	161	3	2	-	3	-	12	-
Protected plants (pieces)	149 178	9680	4313	3406	12 582	102 464	3767	[3494]	[414]	[435]
Leaf/oil (kg)	6050	-	-	-	-	-	-	n.d.	n.d.	n.d.

Non-wood forest product	99/ 00	00/ 01	01/ 02	02/ 03	03/ 04	04/ 05	05/ 06	06/ 07	07/ 08	08/ 09
Bark (tonnes)	35	10	8	5	4	-	-	n.d.	n.d.	n.d.
Burls (tonnes)	6	12	1	3	1	-	-	n.d.	n.d.	n.d.

Notes: n.d. No data

Table 3.24 Southern RFA region – non-wood forest products

Non-wood forest product	99/ 00	00/ 01	01/ 02	02/ 03	03/ 04	04/ 05	05/ 06	06/ 07	07/ 08	08/ 09
Apiculture (sites)	n.d.	n.d.	n.d.	1055	1055	1148	1193	1238	17	17
Grazing (hectares)	n.d.	n.d.	n.d.	82 750	73 243	84 615	112 353	100 496	56 753	37 401
Firewood (tonnes)	n.d.	n.d.	n.d.	5011	6838	4673	5786	4087	3881	3344
Wood chop blocks (number)	-	-	-	4500	4226	-	3750	3750	-	-
Communication sites (number)	n.d.	n.d.	n.d.	11	20	34	31	36	12	11
Powerlines (km)	n.d.	n.d.	n.d.	533	534	394	1052	762	122	2
Other structures (number)	n.d.	n.d.	n.d.	12	20	29	25	22	7	2
Gravel, sand & hard rock (tonnes)	n.d.	n.d.	n.d.	-	-	51 722	42	1895	1513	14
Seed (kg)	-	n.d.	n.d.	25	512	290	50	50	96	165
Craft timber (m ³)	n.d.	n.d.	n.d.	-	4	5	3	30	-	13
Protected plants (pieces)	n.d.	n.d.	n.d.	50	1375	888	53	[50]	[40]	[1250]
Leaf/oil (kg)	n.d.	n.d.	n.d.	1000	81	-	-	-	-	

Notes: n.d. No data

Indicator 6.1c Value of forest based services

This indicator measures forest-based services such as ecosystem services, carbon credits, salinity mitigation and ecotourism. Forest-based services provide economic values and contribute to the sustainability of forests by providing significant social and environmental benefits.

In general, there is limited data on the value of forest based services (ABARES, 2013).

Five-yearly NSW RFAs reviews

The first five-yearly RFA review progress with implementations report did not report on this indicator or “forest based services”, however, does mention the NSW greenhouse gas abatement scheme, which is an example of a payment for a forest based service:

“The expansion of Forests NSW plantation estate, which takes place largely on land previously managed for agriculture, is also creating long-term change in land use and a new store of carbon. It not only maintains equilibrium, but also takes extra carbon out of the atmosphere, thereby providing a positive contribution to the environment. This extra carbon can be used to create certificates under the NSW Greenhouse Gas Abatement Scheme.

In addition to developing a carbon accounting system that is sufficiently robust to gain accreditation under the NSW Greenhouse Abatement Scheme, Forests NSW has been heavily involved in developing state, national and international standards and guidelines to enable carbon accounting and trading.”

The combined second and third five-yearly review progress with implementation report stated that forests in NSW provide a range of services, such as carbon sequestration, soil conservation, watershed protection, ecotourism and biodiversity conservation. Markets exist for few of these services.

In July 2008, the NSW Government introduced the Biodiversity Banking and Offsets Scheme (OEH 2016) (BioBanking) to help address the loss of biodiversity values, including threatened species, due to habitat degradation and loss.

BioBanking is a market-based scheme that provides a streamlined biodiversity assessment process for land use development, a rigorous and credible offsetting scheme as well as an opportunity for rural landowners to generate income by managing land for conservation.

BioBanking enables ‘biodiversity credits’ to be generated by landowners and developers who commit to enhance and protect biodiversity values on their land or site through a biobanking agreement. These credits can then be sold, generating funds for the management of the land or site. Credits can be used to counterbalance (or offset) the impacts on biodiversity values that are likely to occur as a result of development. The credits can also be sold to those seeking to invest in conservation outcomes, including philanthropic organisations and government.

A new Biodiversity Offsets Scheme under the BC Act commenced on 25 August 2017. The Biodiversity Offsets Scheme creates a transparent, consistent and scientifically based approach to biodiversity assessment and offsetting for all types of development that are likely to have a significant impact on biodiversity (OEH 2017).

Domestic visitation to NSW national parks

In 2016, national park visitation was estimated at a total of 51.77 million visits, accrued from 42.49 million adult and 9.28 million child visits. This is an increase of 31.3% on 2014 results.

Table 3.25 National Park visitation 2008-2016

NPWS Park Visitation by Year	2008	2010	2012	2014	2016
Adult Visitation	31,128,875	27,262,279	28,745,337	31,466,415	42,495,513
Child Visitation	6,798,741	6,581,347	6,750,287	7,700,954	9,281,310
Total Visitation	37,927,616	33,843,626	35,495,624	39,167,370	51,776,823

Source: <http://www.environment.nsw.gov.au/research/NSWparkspopularity.htm>

Table 3.26 Bushwalking visitors to major forested tourism regions

'National landscapes' Region	Annual average numbers of bushwalkers ('000) 2011–12 to 2015–16			
	National visitors, overnight trips	National visitors, day trips	International visitors	Total
Australian Alps, NSW and Victoria	424	199	14	637
Greater Blue Mountains, NSW	350	791	60	1201
Northern NSW and south-east Queensland	196	283	122	601

Source: Tourism Research Australia, Australian Trade and Investment Commission; derived from survey data based on Tourism Australia's "national landscapes" regions.

Indicator 6.1d Production and consumption and import/export of wood, wood products and non-wood products

This indicator measures the consumption of forest-based products in Australia. Consumption trends over time provide a measure of the ability of Australian forest and timber industries, through both domestic production and importation, to meet Australian society's demand for forest-based products and the industries contribution to the economy.

This indicator provides a measure of the trends in the production and consumption of wood and wood related products in Australia (including imports), and the export of those products from Australia. Within NSW, ongoing access to interstate and international markets is fundamental in ensuring the viability of the forestry and forest-based industries sector.

Information on the production, consumption and trade of non-wood forest products is often difficult to obtain because of the generally small size of industries based on these products and their dispersed nature. Non-wood forest products can include honey, flowers, water, minerals, animal skins and bark.

Australian consumption data

SOFR 2013 states that Australia is a net importer of wood and wood products. The trade deficit in wood products increased slightly from \$1.91 billion in 2006-07 to \$1.93 billion in 2010-11. This was attributed to an increase in sawn wood and wood-based panel imports, linked to the strong Australian dollar, and an international oversupply of wood products, because of a slowdown in the United States housing market.

In 2010-11, the highest proportion of imported wood products into Australia, by value, was printing and writing paper at 30.6%. The production of paper products in Australia declined in 2010-11 by 1.4% compared to 2006-07 production. The consumption of paper products still exceeded Australia's production of paper products, despite this consumption declining by 4.3% over the 2006-07 to 2010-11 period.

Woodchips were the highest value export category for wood products in 2010-11, at \$884.4 million. The majority of export woodchips went to Japan over the 2006-07 to 2010-11 period, but in recent years exports to China have increased.

Sawn wood consumption in Australia decreased by 6% from 5.3 million cubic metres in 2006-07 to 5.0 million cubic metres in 2010-11. This was due to a downturn in hardwood sawn wood consumption from 1.23 million cubic metres to 748 thousand cubic metres over the period. Consumption of softwood sawn wood increased, from 4.1 million cubic metres to 4.3 million cubic metres.⁶²

Uses of New South Wales forest products

Sawn timber or other sawn or processed products from NSW forests is used for a variety of applications including furniture, housing construction, flooring, weatherboards, railway sleepers, bridge girders, wharf piles, electricity and telephone poles, fence posts; props for underground mining and pulpwood for paper and building boards⁶³. According to FCNSW, in 2010-11 one in four houses in Australia was built using their pine plantation timber⁶⁴. Other non-wood forest products sourced from NSW State forest include fuel wood, essential oils for medicinal and industrial use, charcoal, brush for brush fencing, seeds, nuts and honey (NSW DPI, 2008). The values and quantities of these non-wood forest products are reported on in Indicator 6.1b of this report.

⁶² Data in this section sourced from ABARES – State of the forest report 2013

⁶³ NSW Department of Primary Industry (DPI) 2008. Primefacts 687, Forests and Forestry in NSW. Accessed on 16 May 2018 at

www.forestrycorporation.com.au/__data/assets/pdf_file/0010/420859/Forests-and-forestry-in-NSW.pdf

⁶⁴ Forests NSW, Undated. Forests NSW Facts and Figures 2010-11. Accessed on 16 May 2018 at www.forestrycorporation.com.au/__data/assets/pdf_file/0007/438460/Facts-and-Figures-2010-11.pdf

Five-yearly reviews of NSW RFAs

This indicator was not reported on in the first five-yearly review of NSW RFAs. The Independent Assessor also did not mention this indicator or consumption trends in their report⁶⁵.

The combined second and third five-yearly RFA review progress with implementation report briefly reported on this indicator, using Australia wide information from the SOFR series, as follows:

“Apparent consumption in Australia, calculated as domestic production plus imports and minus exports, is changing over the period 2005–06 to 2014–15. Hardwood, particleboard, and newsprint, printing and writing paper consumption has been falling. Softwood, plywood, medium density fibreboard, sanitary, household and packaging and industrial paper consumption has been rising. Total sawn wood and wood-based panel consumption has been rising, while total paper and paperboard consumption has been falling.”⁶⁶⁶⁷

⁶⁵ Spencer, S. 2009. Final Report on Progress with Implementation of NSW Regional Forest Agreements: Report of Independent Assessor November 2009. Available from www.agriculture.gov.au/forestry/policies/rfa/publications/annual-reports/nsw

⁶⁶ NSW EPA 2017, *A report on progress with implementation of the New South Wales Regional Forest Agreements: Second and third five-yearly reviews, July 2004 to June 2014*, NSW Environment Protection Authority, Sydney. Accessed on 16 May 2018 at www.epa.nsw.gov.au/your-environment/native-forestry/about-public-native-forestry/regional-forest-agreements-assessments/review-regional-forest-agreements

⁶⁷ NSW EPA 2017, *A report on progress with implementation of the New South Wales Regional Forest Agreements: Second and third five-yearly reviews, July 2004 to June 2014*, NSW Environment Protection Authority, Sydney. Accessed on 16 May 2018 at www.epa.nsw.gov.au/your-environment/native-forestry/about-public-native-forestry/regional-forest-agreements-assessments/review-regional-forest-agreements

Indicator 6.1e Degree of recycling of forest products

This indicator measures the extent to which recycling or reuse of forest products occurs. As global demand for forest products increase, there is a growing need to meet societal demands for recycling of forest products.

Background

Information of the levels of recycling or reuse of forest products in Australia and more specifically in NSW is limited and dependent on the type of product i.e. solid, processed or paper/paperboard. The existing data is not available for each of the NSW RFA regions, and therefore the data quoted in this report is for the whole of NSW. As forest products produced in one region often end up in many different areas of the State, inter-state and also exported to other countries, assigning recycling levels to one region is problematic. Recovery options include direct recycling into other wood products, indirect recycling into non-wood products (e.g. mulch), reuse and energy generation (FWPA 2008). As indicated in the NSW RFA review report (NSW EPA 2017): "forest and mill residues and waste are generally sold as woodchips. Some residue is also used as fuel in mill boilers for generation of heat and electricity, and for gardening, animal bedding or domestic fuel." In this section "wood" includes wood and wood products (e.g. engineered wood products).

Recycling or reuse of forest products varies significantly depending on the product type and available markets. Estimates of recycling or reuse rates of wood vary over time but are typically much lower than for paper/paperboard products. The majority of the wood in the waste stream is derived from construction and demolition (C&D) and commercial and industrial (C&I) sources (NSW EPA 2017a). Typically types of wood salvaged from building demolitions works include roof beams, ceiling battens, sub-floor timbers and flooring, interior wall framing timbers (if not contaminated with asbestos) and others. Approximately 77% of wood that is reused is used in new dwelling construction as flooring, internal wall and ceiling panelling, and external cladding. The rest is mostly used in outdoor furniture, mulch, animal bedding and firewood (Ximenes et al 2008). Recycling of paper products is more easily tracked and the estimates available are more consistent over time than values available for wood.

Statistics on recycling of wood in NSW

Early reports (e.g. C4ES 1999) point to discrepancies in wood disposal data available in NSW, suggesting that defining a reliable baseline then was not possible. There are challenges in estimating total volumes of wood waste generated, volumes of wood sent to landfills, and also in tracking the variety of different applications. These challenges may explain fluctuations in estimates over time, with recycling figures for wood ranging from 16 to 34% between 2002 and 2009. In 2002, it was suggested that for the Sydney metropolitan area, 16% of the wood waste generated was recycled (Resource NSW 2002) – Sydney accounts for approximately 80% of the waste generated in NSW. A report by the then NSW Department of Environment and Conservation suggested that 29% of the wood waste was recovered in NSW in 2002-03 (DEC 2004). In 2006-07, it was estimated that approximately 70,000 tonnes of C&D wood was recycled in NSW (NTPSG 2008). A 2007 review of utilisation of post-consumer wood found that almost 500,000 tonnes was utilised for mulch, biofuel, salvaged

from demolitions or used to make chicken bedding or particleboard. The overall recovery rate for wood in NSW was estimated to be approximately 20% (NTPSG 2007). In 2008-09, recovery rates for wood in the C&I stream were estimated at 16% (DECCW 2010).

There have been efforts to increase recycling levels for specific wood product types such as pallets and electricity poles, as these products have well-defined supply chains and collection points. For example, the National Timber Product Stewardship Group (NTPSG) was an initiative of the timber and wood products industry to increase recycling levels, with focus on products such as pallets and electricity poles (NTPSG 2007). It was estimated that 636,000 cubic metres of wood were used to make wood packaging in Australia in 2005-06 (NTPSG 2007). While a high proportion of this packaging is reusable pallets, it was estimated that 290,000 tonnes of wood packaging is disposed of to landfills around Australia each year (NTPSG 2007). A survey carried out in 2008 found that 140,000 tonnes (49%) of wood in the mixed C&I waste stream was made up of mainly wood pallets and crates (NTPSG 2012). A protocol was developed in 2008 (TDA 2008) to “provide guidance to infrastructure managers and dedicated timber recyclers to improve the recovery of timber from the demolition of timber bridges and renewal of power distribution infrastructure in New South Wales”.

In Table 3.23 the most recent figures for recycling of wood in NSW are presented. The recycling figures for 2014-15 were the highest reported, confirming the overall trend for an increase in recycling rates for wood, notwithstanding some fluctuation in the actual values over time.

Challenges in increasing recycling levels of wood in NSW

A barrier to growing the recycling and reuse market in NSW is the increasing mechanisation of demolition works, which makes it more difficult for salvage operations to take place, and increases the potential for high value timbers to be damaged (Hyder Consulting 2011). Some large demolition contractors have established specialised timber recovery operations to address this issue, where it is economically viable to do so (Hyder Consulting 2011).

Another challenge in increasing recycling rates for wood products such as sawn timber used in residential construction is the difficulty in separating untreated from preservative-treated wood. Treated wood is estimated to account for around 6% of total C&D waste wood in NSW, and contamination with even small levels of treated material presents a barrier to recovering more from the mixed wood waste stream (Hyder Consulting 2011). Also the presence of resins in engineered wood products such as particleboard and plywood is restrictive for some uses. The NSW EPA does not allow engineered wood products to be used as mulch (EPA 2016). Nor does it allow any treated wood, most painted or coated wood, or most engineered wood products to be used as replacement fuel sources (EPA 2016a).

Statistics on recycling of paper and paper products in NSW

Nationally, ABARES publishes statistics on recycling of paper products at a national level (ABARES 2018). A range of reports have included estimates for paper recycling levels in NSW over the years. In NSW, recycling levels for newsprint in 1990 were low at 28% (NTPSG 2007a). In 2002-03, recycling of newsprint had increased substantially to 77%, while 51% of the total paper and cardboard waste was recovered for recycling (DEC 2004). The total

estimated amount of paper recycled in 2006-07 was 58% (DECC 2008), whereas for 2008/09 it was estimated recovery rates for paper and cardboard was 53% (DECCW 2010).

More recent figures for paper recycling in NSW are included in the NSW EPA *Waste Avoidance and Resource Recovery (WARR)* reports. Although recycling rates for paper products are still high, there was an overall decline for the most recent year reported (2014-15). This drop seems to have been driven largely by a reduction in recycling levels for office paper compared to the previous year reported. Overall, the trajectory of recycling of paper products in NSW has been of growth, especially when compared to the recycling levels reported in the early 2000's.

Table 3.27 Recycling levels for wood and paper products in NSW

Products	Recycling (%)		
	2010/11	2012/13	2014/15
Wood	24.8	33.3	41.0
Paper & cardboard			
Cardboard	84.0	76.2	78.6
Liquid paperboard	66.6	69.2	69.2
Newsprint / magazines	87.3	84.6	85.2
Office paper	47.9	62.2	45.6
Total Paper	78.6	76.4	64.5

Challenges in increasing recycling levels for paper in NSW

A proportion of the paper currently recovered in Australia and, in NSW, has been exported to China, as the export market for waste materials has grown substantially in the last ten years (ABS 2013). Approximately 1.5 million tonnes of scrap paper and paperboard were exported for the 2017 calendar year (Australian Packaging Covenant Organisation 2018). However, a recent ban imposed by China on imports of low-grade waste has had an impact on export volumes to that country – during the first half of 2017, China and Hong Kong were the dominant markets for Australian exports of paper or paperboard (62.8% by weight); during the second half of 2017 this fell to 45.3% of paper or paperboard. This shortfall has been for the moment largely absorbed by other countries, though with substantial dropping in prices, and fears that other nations will follow China in restricting imports of waste material (Australian Packaging Covenant Organisation 2018). In the long-term however, industry analysts believe that waste paper exports will trend upward again as more processing is undertaken in Australia before exporting (www.businessinsider.com.au/council-rates-china-waste-recycling-2018-2).

NSW recycling strategy

In November 2009, the environment ministers of the Australian, state and territory governments endorsed the National Waste Policy (DoEE 2010), which aims to reduce the amount of waste that is generated and disposed of by industry and households. The policy includes strategies to increase the recycling of waste products.

The *NSW Waste Avoidance and Resource Recovery Strategy 2014–2021* (WARR Strategy) sets objectives and targets for NSW to avoid and reduce waste generation (NSW EPA 2014). Areas for priority recycling action cover forest products, including paper/cardboard and timber wastes (from both C&I, and C&D waste streams). Progress in recycling and diversion across all waste sectors is reported every two years in the WARR Strategy Progress Report.

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Indicator 6.2a Investment and expenditure in forest management

This indicator quantifies investment and expenditure in developing, maintaining, and obtaining goods and services from forests. It provides an indication of the long-term and short-term commitment to forest management, further processing and other forest uses.

Summary

Sustainable forest management is an evolving process and the manner in which it is conducted changes over time based on scientific information and the needs and aspirations of the community. The NFPS provided a framework that integrated environmental, social and commercial objectives to ensure a balanced return from all forest uses. This enables the governments to achieve cooperatively their vision for sustainable management of Australia's forests. The NFPS laid the foundation for the creation of the RFAs. The CRAs of the environment, heritage, social and economic uses and values of the forests underpinned how the forests were to be managed based on their values within the RFA regions.

Essentially forest management in NSW can be broadly described as the management of native and plantation forests on public and private land. For the purposes of this indicator the description of forest management will be largely confined to the public forest estate.

In NSW, individual statutes regulate the national park estate, plantation forests, public native forests and private native forestry (PNF). The relationship between these statutes is outlined in **Figure 3.1**. While other statutes may impact upon specific forest management activities (such as workplace health and safety or the control of pests and feral animals), the following discussion focusses on the principal Acts which regulate forest management activities.

The NPW Act regulates forest management within national parks and nature reserves, which constitute the majority of the NSW NPWS estate as well as other reserves in that estate.

Both softwood and hardwood plantations, are regulated under the PR Act.

The *Forestry Act 2012* (NSW) (Forestry Act) establishes the FCNSW as a State Owned Corporation (SOC), subject to the *State Owned Corporations Act 1989* (NSW), and regulates forest management on Crown-timber land, including State forests.

The Forestry Act is primarily administered by the NSW Forestry Minister. Exceptions are parts 5A and 5B of the Act relating to FAs and IFOAs, which are administered by the NSW Minister for the Environment.

PNF in NSW must comply with the requirements of the BC Act, the Forestry Act, and the PNF Code⁶⁸.

The current framework of the principal legislative and other regulatory instruments for forest management in NSW is shown schematically in **Figure 3.1**.

⁶⁸ PNF in NSW was previously regulated under the NV Act. With repeal of the NV Act, the regulatory requirements for PNF have been incorporated into the LLS Act through the insertion of a new Part 5B.

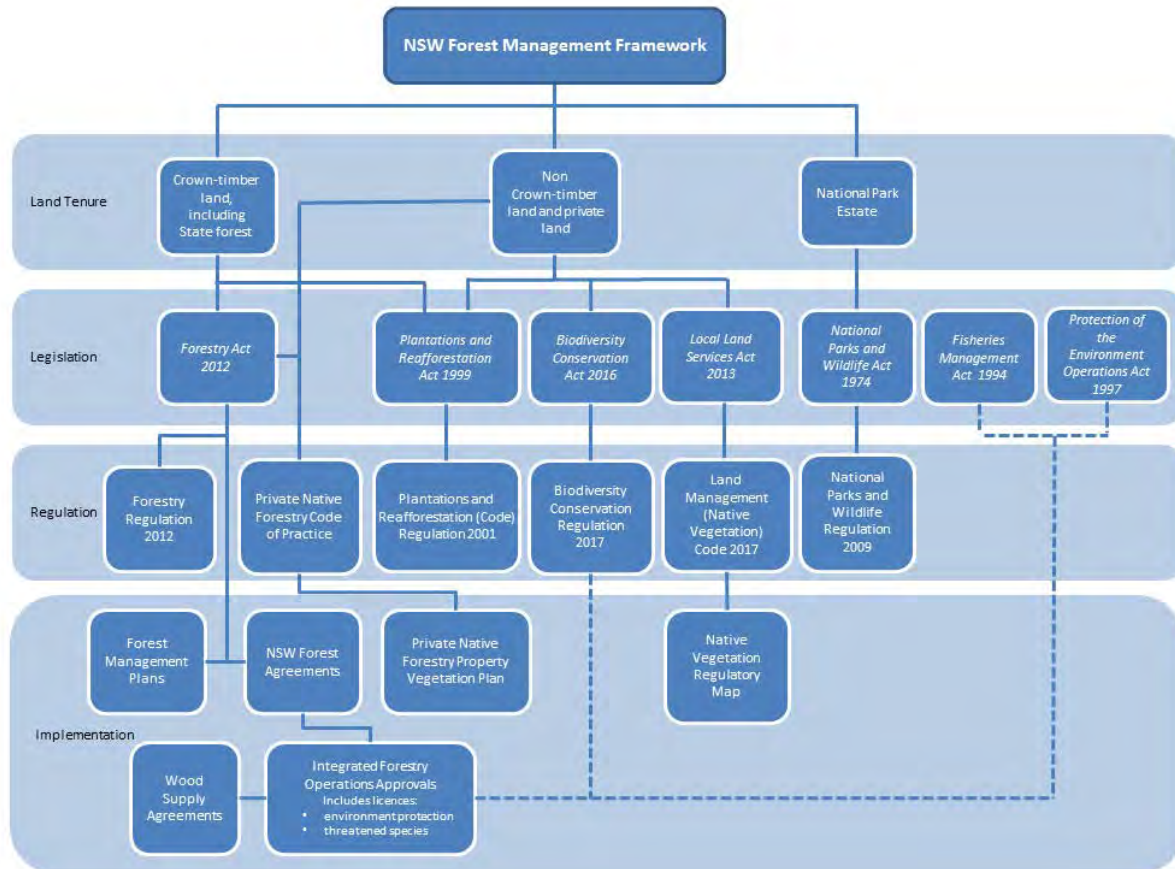


Figure 3.1 Forest management framework

Agencies involved in forest management in NSW

Several NSW Government agencies are involved in aspects of public and private forest management.

Office of Environment and Heritage

OEH, through the NPWS, is responsible for managing the NPWS estate, including the forests which lie within it. It advises the NSW Minister for the Environment and administers programs to protect vulnerable species and communities.

The NPWS manages about eight per cent of the total land area of NSW, or seven million hectares of NPWS estate. This includes 870 reserves which are comprised of forest and non-forest areas. The operational management of these reserves includes; fire and incident management; pest and weed management; Aboriginal and historic heritage; threatened species and communities; soils and water; infrastructure and asset maintenance; and visitor services. In 2016/17, the NPWS total expenses, excluding losses, was \$513 million.

The NPW Act is the key statute for management of the NPWS estate in NSW. The NPW Act sets out the framework for managing the broad range of protected areas in NSW, including forest ecosystems. The objects of the NPW Act are the conservation of nature, the conservation of objects, places and features of cultural value in the landscape, fostering public appreciation of nature and cultural heritage, and providing for the management of land preserved under the NPW Act.

Department of Primary Industries

DPI (Forestry) advises the NSW Minister for Lands and Forestry and the NSW Minister for Primary Industries on forestry policy, undertakes forest science research, and is responsible for the development and application of plantations policy and regulation.

DPI (Fisheries) advises the NSW Minister for Primary Industries on matters related to the FM Act including those related to threatened species licences, which form part of the IFOAs.

NSW Environment Protection Authority

EPA is the primary environmental regulator in NSW. It leads development of environment protection policy and statutory instruments administered by the Minister for the Environment, and implements priority research and compliance programs. It is an independent statutory body.

The NSW EPA is responsible for regulation and compliance of native forestry operations on both public (Crown) land and private land in NSW. EPA monitors the operations of FCNSW to ensure that native forest operations on public land are undertaken in accordance with the IFOAs and their licences. It also monitors compliance⁶⁹ of private landholders with the requirements of their PNF Private Vegetation Plans⁷⁰ and PNF Code.

NSW Local Land Services

NSW Local Land Services (LLS) are a regionally based NSW Government agency delivering services to:

- improve agricultural productivity
- control and regulate management of declared pests
- maintain market confidence in agricultural products
- manage and improve our natural resources.

LLS is governed by the LLS Chair and Board of Chairs, who are responsible for the performance of the organisation across NSW. Regionally, local Boards set the local strategic direction and are an important link to local communities.

Monitoring and compliance functions in relation to PNF are currently being transferred to LLS as part of NSW forestry legislative reform.

Independent Pricing and Regulatory Tribunal and Natural Resources Commission

The Premier may request advice on issues related to forest management from the Independent Pricing and Regulatory Tribunal (IPART) or the Natural Resources Commission (NRC).

IPART is an independent statutory authority which advises the NSW Government on issues relating to the level and structure of prices, industry structures and competition, particularly with regard to NSW Government services. The NSW Government may ask IPART to

⁶⁹ Monitoring and compliance is in the process of being transferred to NSW Local Land Services

⁷⁰ Private vegetation plans have now been replaced by private native forestry plans under the BC Act.

undertake investigations. IPART also undertakes a range of regulatory and licensing functions.

The NRC is an independent statutory authority. Section 12 of the *Natural Resources Commission Act 2003* (NSW) provides that the NRC is to provide the NSW Government with independent advice on natural resource management (NRM). For example while outside the RFA regions, in 2009, the Premier asked the NRC to recommend sustainable land use and water requirements in the Riverina river red gum (*Eucalyptus camaldulensis*) and south west cypress pine (*Callitris glaucophylla*) forests.

Forestry Corporation of NSW

FCNSW is a SOC established by the Forestry Act, with:

- principal objectives that include being a successful business and operating in compliance with the principles of ecologically sustainable development; and
- functions that include carrying out forestry operations on Crown-timber land; selling, supplying or processing timber; establishing and maintaining plantations; and managing forestry areas.

This allows forestry operations to be undertaken by an entity that has neither a regulatory role nor responsibility for policy development and implementation. As noted above, the EPA is responsible for forestry regulation management and DPI (Forestry) is responsible for forestry industry policy advice.

Table 3.28 Expenditure (\$, 000) on forest management by FCNSW in NSW State forests

Activity	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
Harvest Management	6 157	6 009	6 219	5 164	5 561	5 454	5 184	5 750	6 580	7 358	5 458	5 902	6 378
Supervision and environmental compliance – native forests													
Harvest management	N/A	N/A	N/A	N/A	3 997	4 755	5 022	5 729	5 471	5 275	4 469	5 049	5 635
Harvest planning and pre-harvest surveys													
Other forest management activities	2 200	1 400	3 050	1 800	1 000	2 400	100	300	1 800	N/A	N/A	N/A	N/A
Firefighting and fire prevention – wildfire													
Other forest management activities	6 700	6 800	8 180	9 800	9 600	8 300	5 700	6 200	8 200	N/A	N/A	N/A	N/A
Hazard reduction burning													
Other forest management activities	669	963	779	597	899	1 125	1 019	1 506	1 421	1 014	1 114	1 125	981
Weed management													
Other forest management activities	546	688	586	546	585	591	392	872	717	694	653	855	578

Activity	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
Animal pest management													
Recreation and tourism	2 409	1 918	2 721	2 092	2 437	2 547	2 408	2 537	2 538	N/A	N/A	N/A	N/A
Recreation and tourism													
Training and employee development	1 920	2 920	2 260	2 200	1 800	1 850	2 680	1 890	1 390	N/A	N/A	N/A	N/A
Training													

Notes: N/A not available

Native forest management

FCNSW manages about 1.8 million hectares of native forest, which is comprised of more than 200 forest ecosystems. It also manages timber harvesting on other Crown-timber lands. FCNSW must abide by the conditions within the IFOA as a component of its forest management. An IFOA integrates the regulatory regimes for environmental planning and assessment, protection of the environment and threatened species conservation. The IFOAs integrate licensing under each of the POEO Act, the BC Act (or previously the TSC Act and the FM Act, allowing FCNSW to conduct forestry operations, provided they comply with terms of the IFOA. They also include non-licence conditions relating to forestry and logging operations, ongoing forest management, ancillary road construction and other activities.

The overall expenditure on harvest management and planning in **Table 3.24** has remained reasonably constant in recent years. There have been advances in the use of technology for harvesting operations, such as the introduction of electronic harvesting plans which are contained on suitable hardware within the cabin of the mechanical harvester.

Plantation forest management

Both softwood and hardwood plantations, are regulated under the PR Act.

Forest plantation management includes the establishment phase which involves planting, fertilising and weed control where required. Some plantations are grown on short rotations of 10-12 years for pulpwood production. This is the case with the majority of hardwood plantations. There are a proportion of hardwood plantations grown on long rotations of 25 to 35 years for high quality log products at clear fall age with poles and low quality logs produced as intermediate thinnings.

However, the majority of softwood plantations are grown on longer plantations of about 30-40 years. These longer rotation plantations can be thinned on up to three occasions prior to the final clear-fall. Once clear felled the plantation rotation cycle re-commences with the establishment phase.

As at 2015-16, the total area of forest plantation in NSW was 394,400 hectares, comprised of 87,100 hectares of hardwood plantations, 307,100 hectares of softwood plantations and just under 200 hectares of other plantations. As the largest forestry plantation manager in NSW, FCNSW manages 257,787 hectares of plantations, comprised of 223,405 hectares of softwood plantations and 34,382 hectares of hardwood plantations.

The establishment of new plantations by FCNSW has decreased significantly, with no new plantations established since 2012 as per Table 3.25. The last period of significant plantation establishment by FCNSW was in 2009-2010 which was the year of the collapse of the forestry managed investment scheme (MIS) in Australia.

Table 3.29 Area and cost of plantings in state-owned plantations managed by FCNSW

Activity	Age class (calendar year)										
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
New plantation established (hectares)	1,350	370	1,596	472	352	206	50	0	0	0	0
Re-established plantations (hectares)	6,799	6,129	9,223	12,088	10,694	9,355	8,232	7,862	9,417	8,215	7,985
Total established plantations (hectares)	8,149	6,499	10,819	12,560	11,046	9,561	8,282	7,862	9,417	8,215	7,985
Cost (\$' million)	15.8	13.7	20.8	20.9	17.2	14.5	13.9	13.9	16.3	16.1	16.1

Indicator 6.2b Investment in research, development, extension and use of new and improved technologies

This indicator monitors the investment in, and adoption of, new or improved technologies in forest management and in forest-based industries. It also quantifies the level of research and development. Investment in research, development and new technologies can significantly underpin continual improvements to forest management practices.

Australian Bureau of Statistics (ABS) data shows that, between 2005–06 and 2008–09, total expenditure on research and development (R&D) reported by businesses in the forest and wood product sector declined from \$164 million to \$137 million (ABARES 2013) - this is a decline of \$27 million (16%) from 2005–06. As only partial data on R&D expenditure are available from the ABS for 2009–10 and 2010–11, it could not be reported. Forest-sector business R&D expenditure declined as a proportion of total business R&D expenditure from 1.6% in 2005–06 to 0.8% in 2008–09.

From 2005–06 to 2010–11, the ABS reported that business R&D expenditure increased from \$15.6 million to \$33.2 million in the forestry and logging subsector, but decreased from \$76.3 million to \$62.4 million in the wood product manufacturing subsector. Business R&D expenditure in the pulp, paper and converted paper product manufacturing subsector declined from \$72.2 million in 2005–06 to \$53.8 million in 2008–09 (ABARES 2013) with no figures available for 2009–10 and 2010–11. Adjusted for inflation, expenditure on forestry and forest products R&D declined by 13.4% between 1981–82 and 2007–08.

Table 3.30 Business R&D expenditure in the forest and wood products sector, and proportion of total business R&D expenditure, 2005-06 to 2010-11

Parameter	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
Forestry and logging (\$ million)	15.6	20.1	22.0	26.0	37.6	33.2
Wood product manufacturing (\$ million)	76.3	55.2	51.3	57.1	57.5	62.4
Pulp, paper and converted paper product manufacturing (\$ million)	72.2	70.7	71.1	53.8	—	—
Total research expenditure in forestry (\$ million)	164	146	144	137	—	—
Total business expenditure in Australia (\$ million)	10,434	12,639	15,047	17,264	16,685	17,880
Proportion of expenditure that is forestry expenditure (%)	1.6	1.2	1.0	0.8	—	—

— = not available

Note: Totals may not tally due to rounding.

Source: ABARES SOFR 2013

Chronology of NSW RFA related R&D priority settings

A significant amount of forest ecology research was undertaken prior to the signing of the NSW RFAs as part of the CRA process, covering specific forest flora, fauna and impacts on forest ecology such as fire and climate change.

The initial CRA process (1999) identified that the major priority of future research in NSW would be an understanding of the environmental impacts forest management practices and the development of appropriate mechanisms to monitor and continually improve their sustainability.

Since then, the refocusing and development of research priorities has been an ongoing process and continues to be a feature of forest R&D activity. In the initial five year period since the signing of the RFAs, a number of priority themes for future forest management research in NSW were identified. These themes included:

- Silviculture
- Flora and fauna conservation
- Fire ecology
- Stem defect and wood quality in regrowth forests
- Climate change
- Biological inventory
- Value added end use
- Sustainability indicators
- Aboriginal and non-aboriginal heritage.

State-wide research has continued along these themes. After the formation of the DPI in July 2004, the then Forests NSW (now FCNSW) was established and retained two of five original programs (Tree Breeding and Silviculture), while three programs (Forest Health, Forest Ecology and New Forests) were transferred to the Resources Research Branch, NSW DPI Science & Research which was to later to become the Forest Resources Research Unit.

From 2004-2009, the forest research sub-program delivered by the Forest Resources Research Unit included three themes which together covered research activities in forest ecology and sustainability, forest resource assessment and security, and forest carbon, bioenergy and biofuels. During 2009-2014, Forests NSW was dissolved and FCNSW was established as a SOC on 1 January 2013. Beyond this period, current R&D themes are developed by interactions with industry, funding bodies and government priorities. Research priorities for NSW and the changing R&D environment has been reported annually through the progress reports on the implementation of NSW FAs and IFOAs. In addition, FCNSW published an annual report on its forest research activities, which includes a compilation of all publications and conference papers by FCNSW staff published throughout the year.

Major collaborative programs for R&D matured or emerged from 2004 to 2014. These included the Cooperative Research Centre (CRC) for Forestry and the National Primary Industries Research, Development and Extension (RD&E) framework. These initiatives developed sector strategies for R&D for the forest and wood products sector but limited progress was made due to constraints on resources.

Forest and Wood Products Australia (FWPA) was established in 2007 as an industry owned company, replacing the Forest and Wood Products Research and Development Corporation. FWPA promotes joint R&D projects, which continue to be a feature of R&D activity. The

forest and wood products forum in 2014–15 initiated a process of strategy development designed to ensure that RD&E meets the future needs of the forest and wood products sector and the Australian public. NSW was a core partner in the development of many of these strategies. They were compiled on the basis of extensive stakeholder consultation with representatives of the forest and wood products sector, government, and the providers and funders of forest and wood product R&D. Industry levies are matched by a Commonwealth contribution and are allocated by FWPA to R&D priorities for industry development.

In addition to these developments, the CRC for Forestry began operating in late 2005, following the conclusion of operations of the CRC for Sustainable Production Forestry (1997–2005).

Resource allocation for conservation forest science research priorities is generally funded by state-based agencies with specific and targeted interests

Summary and future management of economic values

A key goal of sustainable forest management is to maintain the productive capacity of native and plantation forests. To fully consider the economic values relating to forests, both quantitative resource volume and value metrics are required. Together, these illuminate the complex interactions affecting environmentally and economically sustainable forest management.

Over the period of the NSW RFAS there has been significant change in the structure of the production forest estate and its management.

The area available for harvesting within NSW in 1995–96 (before the RFAs were entered into) was 2,352,000 hectares. This reduced dramatically following the signing of the three RFAs between 1999 and 2001, to 1,516,000 hectares in 2000–01 – a reduction of 836,000 hectares.

In 2004–05, the annual area of native forest harvested was 42,923 hectares and this area did increase slightly in the next two years and reached a peak in reporting period of 45,945 hectares in 2006–07. The area harvested began a gradual decline post 2006–07 and has remained fairly constant, at less than 20,000 hectares since 2013–14.

In 2016–17, the state-wide, public native forest area harvestable in NSW was 996,973 hectares and the area harvested was 17,482 hectares or less than two per cent. There has been a consistent state-wide downward trend in the area harvested of NSW public managed forests. This is consistent with the NSW RFA regions, in the period 2002–2016. The total area harvested in the NSW RFA regions was 21,669 hectares in 2002 and has reduced to 16,350 hectares in 2016, resulting both from additional reservation and adaptive management taking additional areas out of production.

This reduction is commensurate with an increase in the area of nature conservation reserves as a result of tenure changes agreed in the NSW RFAs which impacted on available wood yields. The removal of significant areas of production forests has not diminished the responsibility of the governments to ensure that the productive capacity of remaining production forests, and certainty of resource access, is maintained.

Nevertheless, reduced areas required to supply wood yields have resulted in lower wood supply commitments. However, NSW research completed in 2017 found that about

2.9 million hectares of the North Coast region's forests are in private ownership. The research found that a large portion of the properties surveyed could be actively managed for sustainable wood production.

In addition, plantations are also able to support economic development objectives of the RFAs. At the time of the NSW CRAs, there was 234,600 hectares of softwood plantation (primarily radiata pine), and 25,540 hectares of hardwood plantation (primarily Eucalypt species) growing in the NSW RFA regions. The plantation area in NSW in 2016-17 was 394,000 hectares, of which 307,000 hectares were softwoods and 87,000 hectares were hardwoods (Downham and Gavran 2017). Between July 2004 and June 2014, nearly 50,000 hectares of softwood plantation and 63,000 hectares of hardwood plantation were established, though only modest increases have since been made.

The Australian and NSW governments have committed to harvesting at or below sustainable yield of the available production estate over the period of the NSW RFAs. The periodic analysis and independent review of sustainable yield from public forests, undertaken in accordance with commitments under the NSW RFAs, confirms that harvesting from public land has remained at or below the sustainable yield of public forests managed for wood production. Actual harvest levels in the NSW RFA regions has been consistently about the same or slightly below wood supply commitments to industry each year, and well below the calculated sustainable yield.

The decline in the total harvest of logs from the hardwood estate also reflects the structural changes in the industry and the lack of markets for pulp grade logs following the global financial crisis, collapse of the north coast pulp log market, the finite plantation resource with age class distribution affecting availability of logs on an annual basis, and various restrictions impacting on native forest yields. Sawn timber or other sawn or processed products from NSW forests support economic activity which results in wood products being used in a variety of applications including furniture, housing construction, flooring, weatherboards, railway sleepers, bridge girders, wharf piles, electricity and telephone poles, fence posts; props for underground mining and pulpwood for paper and building boards⁷¹.

Over the 1999-2000 to 2015-16 period, the gross value of production for NSW forests saw a steady increase from around \$200 million to more than \$400 million by the end of the period. Overall, the industry has increased in value by 63 per cent from 1999-2000 to 2015-16. The hardwood native forest sector however, has declined from over \$140 million to just over \$100 million with reduced areas available, the cut moving from multi-aged forests to regrowth forests, and a diminishing log size and changing species mix.

Throughout the NSW RFAs period, publicly-owned production forests in the RFA regions have remained available for multiple-uses. Non-wood related forest products continue to be sourced from NSW's forests. The monitoring of productive capacity, particularly in relation to the collection of non-wood products remains difficult. Available evidence indicates that all monitored removals of non-wood products remain within environmental limits based on species populations and dispersal.

⁷¹ NSW Department of Primary Industry (DPI) 2008. Primefacts 687, Forests and Forestry in NSW. Accessed on 16 May 2018 at www.forestrycorporation.com.au/_data/assets/pdf_file/0010/420859/Forests-and-forestry-in-NSW.pdf

A significant non-wood forest product derived from the nature conservation estate is honey. Apiarists use around 916 sites in the three RFA regions. It is estimated that three per cent of NSW's nature conservation estate is accessed by bees from these apiary sites in any one year with around 25 sites in the Eden RFA region, 548 sites in the North East RFA regions and 343 sites in the Southern RFA region.

Forests in the RFA regions are also becoming increasingly important elements of the visitor and tourism economy. As areas are transferred from wood production tenures to the reserve estate, the economic contribution shifts somewhat from predominantly direct wood sales and wood products processing value chains, to other sectors such as tourism and the visitor economy. It is important to note however that the economic contribution of production forests, while dominated by wood production, may also be based on a range of activities including apiary, tourism, and other aspects of the visitor economy.

Expenditure in forest management and investment in new operations is ongoing, with responsibility for forest management dispersed between NSW public and private land owners and managers. Market conditions generally drive investment in the sector and this has been strongly influenced by, in the case of private land owners, owner intent.

Improved forest management and harvesting strategies will be implemented in the renewed NSW RFAs as a result of ongoing investment in research and development. From 2005-06 to 2010-11 private investment in forestry industry research and development increased from \$15.6 million to \$33.2 million. A proportion of this will have been matched and leveraged with government co-contributions. In June 2018, the NSW Government announced a \$9.2 million investment in world class mapping and monitoring to underpin a sustainable forestry industry.

The renewed NSW RFAs will cover the period in which new, innovative wood products and technologies will develop. Through R&D investments, the renewed NSW RFAs will aim to support an internationally competitive wood production and wood products industry into the future.

The renewed NSW RFAs intend to support the NSW forest industry so that it has a strong and sustainable future and to provide additional certainty to industry and the community into the future. The updated documents seek to maintain a stable regulatory and investment environment, which will assist in providing for socio-economic stability and opportunities for additional competition, productivity increase and market growth.

The renewed NSW RFAs will continue to support ongoing access by the forest industry to public native forests and plantations for wood production. Further, the renewed RFAs will continue to require periodic review of the sustainable yield of high quality sawlogs to reflect changes in forest inventory and management initiatives. The renewed NSW RFAs will also continue to ensure NSW's RFA forests remain accessible for a range of recreational and tourism related pursuits, as well as other uses such as apiary and the harvesting of non-wood forest products. This demonstrates that the renewed 20 year RFAs with five year rolling extensions will maintain and enhance economic values.

Future RFA five-yearly reviews will be focussed on outcomes and the objectives of the NSW RFAs. Monitoring and reporting arrangements will also be strengthened and streamlined, and where possible indicate the impact of management prescriptions.

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4. Social Values

Indicators in this section illustrate the extent to which NSW forests contribute to local and state economies, benefit personal and community wellbeing, and support cultural values. Socio-economic data are important measures of the monetary and non-monetary value and benefits of forests to society. In addition, local communities, especially Indigenous communities, have strong social, spiritual and cultural attachments to forests, whether for traditional needs, provision of wood and non-wood forest products and other benefits, direct and indirect employment, or active and passive recreation.

Social values include:

- Production and consumption
- Investment
- Tourism and recreation
- Cultural, spiritual and social values
- Employment, worker welfare, and community resilience.

This section includes analysis of the following Montréal Process indicators:

- Indicator 6.3.a – Area of forest available for general recreation/tourism
- Indicator 6.3.b – Range and use of recreational/tourism activities available
- Indicator 6.4.b – Registered places of non-indigenous cultural values in forests that are formally managed to protect those values
- Indicator 6.4.d – The importance of forests to people
- Indicator 6.5.a – Direct and indirect employment in the forest sector
- Indicator 6.5.b – Wage rates and injury rates within the forest sector
- Indicator 6.5.c – Resilience of forest dependent communities to changing social and economic conditions

Indicator 6.3a Area of forest available for public recreation and tourism

This indicator measures the area of forest available for use by the community for recreation and tourism purposes. This provides an indication of the emphasis placed by society on the management of forest for recreation and tourism.

Analysing the area and proportion of forests available for recreation and tourism assists in understanding the emphasis placed by society on managing forests for recreation and tourism uses, and the extent to which forest management is providing for the recreational needs of local and regional communities. An area of forest is considered to be available for recreation and tourism if there is no formal prohibition on access for recreation and tourism activities.

During the initial CRAs for NSW RFA regions, recreational and tourism values of public native forests were considered on a regional scale. Since then, the proportion of public forest available for recreation and tourism has been broadly reported on a state-wide basis.

As reported in the first five-yearly *Draft Report on Progress with Implementation of the New South Wales Regional Forest Agreements (RFAs) (2009)*, the overwhelming majority of both multiple-use public forest and nature conservation reserves in NSW were available for recreation and tourism at the time of the first five-yearly independent review. 96 per cent of the State forest estate was considered available for forest-related recreational activities, with visitation rates high across the four NSW RFA regions.

SOFR 2013 stated 99% (2,002,000 hectares) of multiple-use public forest and 88% (4,911,000 hectares) of nature conservation reserves were available for recreation and tourism. In 2018, 7 million hectares of other public land are considered available for recreation across NSW (Waller, 2018). Virtually all State forest is open for recreational use, and the vast majority of land reserved under the NPW Act allows for recreation and tourism activities (NSW and Australian Governments, 2017).

FCNSW has generally increased the area of State forest managed specifically for, or with an emphasis on recreation and visual aesthetics over the reporting period in line with multiple-use objectives (Table 4.1.).

Whilst access to areas of certain public forest is restricted at times due to harvesting operations, fires, natural hazards or disease (DAFF, 2008). There is a lack of data relating to area of private forests available for recreation and tourism.

Overall, during the period of the NSW RFAs, there has been an increase in total forest area available for recreation and tourism across NSW public forests, with the vast majority of both the nature conservation reserves and multiple-use public forests now accessible for recreation and tourism activities.

Table 4.1 State forest managed by FCNSW for recreation and visual aesthetics (hectares)

Year ended 30 June	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Area zoned primarily for recreation	4,754	2,406	2,329	2,002	2,017	3,147	4,323	4,490	4,749	6,164	6,090	4,741	4,696	4,744	4,799	4,789
Area zoned primarily for visual aesthetics	n.r.	n.r.	n.r.	n.r.	n.r.	n.r.	n.r.	n.r.	n.r.	n.r.	31,109	40,233	39,957	40,187	40,900	40,187
Expenditure (\$ '000)	n.d.	2,085	1,681	1,688	2,121	1,918	2,409	2,721	2,092	2,437	2,547	2,408	n.r.	n.r.	n.r.	n.r.

Notes: n.r. = not reported

n.d. = no data

Indicator 6.3b Range and use of recreation/ tourism activities available

This indicator assesses the range and number of recreation and tourism facilities provided in forests, their level of use and their contribution to the broader tourism sector. Appropriate and well managed facilities help to optimise visitor satisfaction as well as minimising environmental impacts associated with recreation and tourism.

A range of recreation and tourism activities and facilities may be made available in public forests, and the frequency of their use may vary widely. Activities may be provided for at a specific location or localities, such as campgrounds or self-guided forest drives, or be generally allowed without being related to a specific site, including scenic touring and swimming. Likewise, facilities may be provided to directly meet the needs of tourists and visitors (i.e. picnic facilities, toilets, BBQs, walking and riding tracks), or indirectly support recreational uses alongside other management value (i.e. roads).

During the initial social and economic reports for the CRAs of NSW RFA regions, stakeholders expressed a growing interest in tourism and recreation activities in forests in the Eden, North East and Southern RFAs. In the Southern RFA region, bushwalking was seen as a high importance activity in both State forests and national parks, alongside camping and educational activities (JCRFASC, 2000). Off-road recreation and hunting showed comparatively low community support across forest tenures, with a similar sentiment expressed in the Eden RFA region (Gillespie Economics, 1997). Here, it was found that people were attracted to the 'quiet and restful atmosphere' of national parks. Noisy activities such as off-road vehicle use and trail biking were seen as incompatible with this atmosphere, even in State forests (Gillespie Economics, 1997). Ecotourism was, however, seen as a growing use of the forested estate, and this was echoed in the North East RFA region, and it was noted that the progress of such activities in RFA regions would be dependent on the development of appropriate facilities into the future (NSW PWS, 1998).

During the initial CRAs, both State forest and national Parks were found to provide a range of recreation opportunities such as bushwalks, camping, picnicking, swimming, four wheel driving, horse riding, mountain bike riding, mushrooming, fossicking, authorised hunting, and fishing. These uses continue today, though activities such as hunting and fossicking permitted only in certain land tenures. It is interesting to note that while off road vehicle use, trail bikes and use of generators were seen as incompatible with the 'peace and quiet' being sought in national parks and State forests in the Eden CRA (Gillespie Economics, 1997), they continue to bring large numbers of visitors to the public forest estate. Community consultation for renewal of the NSW RFAs has revealed further alternative uses of forests in the state. There was significant interest in using forests for ecotourism in areas including Lismore and Bateman's Bay. This would, however, also limit the range of recreational activities able to be undertaken in such areas, as the conservation estate allows different activities compared to State forests.

Most activities have seen increases over time, particularly bushwalking. Available facilities have varied across years in State forest and national parks (Table 4.3). This variation is also evident on spatial scales; while some areas may contain simple unpaved walking tracks in remote locations, others offer suspended walkways and visitor centres, reflective of the

numbers and types of visitors generally associated with proximity to major population centres.

There has been significant investment in, and recognition of, a number of tourism ventures across NSW forests. Several national parks have won tourism awards, including Cape Byron State Conservation Area (SCA) (Tourist Attractions, Gold Award, 2012), and Arakwal Dolphin Dreaming, (Cape Byron SCA, Indigenous Tourism, Silver Award, 2014).

Similarly, State forests have been recognised for their tourism initiatives. Strickland State Forest has become a well-recognised and award-winning ecotourism destination in the LNE RFA region (NSW and Australian Governments, 2017). The 'Friends of Strickland' initiative has allowed a group of volunteers to care for the protected flora, fauna and heritage values of the forest, increasing community engagement with the work of FCNSW. Similarly, the newly created Gumgali Track, the first Aboriginal interpretive walk in a State forest, has allowed partnerships to form between Coffs Harbour and District LALC, Coffs Elders Group, FCNSW and the general public in the Coffs Harbour area of UNE RFA region (FCNSW, 2017). Old Bottlebutt, the largest Red Bloodwood (*Corymbia gummifera*) tree in Australia found in the Burrawan State Forest near Wauchope, has similarly shown the success of tourism projects in NSW State forest. The Old Bottlebutt Walking Track run by FCNSW was awarded the gold winner for best new tourism development at the 2014 NSW Tourism Awards and the 2014 North Coast Tourism Awards, and has increased community understanding of the natural values managed in State forestry operations.

The total number of permits issued by then Forests NSW showed no consistent trend from 2004-2012, varying between approximately 300 to 550, a variance largely attributable to changes to public liability insurance and increasing premiums for 'high risk' activities (NSW and Australian Governments, 2009). Permits were issued for activities including car rallies and club sporting events, with the greatest number of permits issued for fossicking in State forests (**Table 4.5**).

Despite this, visitation to tourist destinations in NSW public forests has generally increased over time, largely centred on the nature conservation reserve estate. The associated range of uses for forest areas remains varied, with increases in certain activities originally considered inappropriate or inapplicable (i.e. off-road driving) suggesting further unexpected uses may become of interest into the future.

Table 4.2 Facilities provided by Forestry Corporation of NSW at designated recreation sites

Year ended 30 June	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Camping area	266	115	160	87	86	79	78	61	57	74	93	45	49	48	48	48	48
Caravan site	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	29	16	16	19	19	19	19	19
Fireplace/bbq	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	92	84	61	59	59	61	57	n.r.
Picnic area	119	87	64	63	53	50	60	63	63	67	103	65	67	67	69	65	n.r.
Rubbish collection	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	76	48	32	27	27	30	26	n.r.
Toilets	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	60	62	58	60	60	61	58	n.r.
Water (not for drinking)	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	39	87	40	n/r	40	40	41	n.r.
Wheelchair accessible toilets	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	12	11	8	6	7	6	6	n.r.

Source: Sustainability Supplements to the Annual Report.

Notes: Data are for all forests managed by FCNSW;

n.r. = not reported.

n.d. = other metrics were measured for these years

Table 4.3 Facilities provided by NPWS at designated recreation sites?

Year ended 30 June	2012	2016
Camping sites	485	524
Picnic area	851	857

Source: Office of Environment and Heritage, New South Wales

Table 4.4 Use of nature conservation reserves for recreation and tourism activities on land managed by NPWS, 2011–12 and 2015–16

Activity	Number of visitors (thousands)	
	2011–12	2015–16
Riding or walking animals	n.d.	500
Cycling	1,400	1,900
Driving (includes motorbikes)	700	1,400
Walking or running	17,300	23,500
Climbing, caving and canyoning	1,000	1,000
Enjoyment and appreciation of nature	1,000	1,400
Camping (includes roofed accommodation)	1,700	2,900
Picnicking and playing	6,200	6,700
Snow activities	700	1,000
Water-based recreation	6,200	9,600

n.d. = no data reported due to inadequate sample size.

Source: NPWS, Office of Environment and Heritage; derived from commissioned market research and park visitation data; data are for all nature conservation reserves managed by the NPWS and therefore include use of non-forested areas.

Table 4.5 Number of permits issued by Forests NSW for organised recreational activities in NSW State forests

Activity	1999-2000	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
Bow hunting/ archery	20	14	1	2	-	2	-	2	2	3	2	10	4
Bushwalking	8	21	2	6	6	16	14	8	6	5	8	7	4
Car and bike rallies/ events	42	39	36	32	33	43	44	49	54	32	40	48	17
Ecotourism/ four-wheel drive	87	50	41	41	25	33	12	21	5	21	7	14	8
Education/ outdoor education	272	575	20	31	32	33	27	49	46	27	11	9	7
Fossicking ¹	n.r	n.r	n.r	n.r	n.r	n.r	n.r.	44	22	116	152	320	275
Horse, trail and endurance	32	45	32	22	30	31	23	29	25	24	24	28	9
Mountain bike rallies	5	20	17	17	14	31	16	35	46	51	38	42	22
Orienteering/ mountain runs	34	21	16	9	24	21	14	22	29	22	26	24	9
Training/ exercises	84	79	68	52	35	45	43	29	17	35	34	56	17
Other	29	28	55	79	76	62	55	125	288	181	126	10	34
Total	613	892	283	291	275	317	248	413	540	517	468	568	406

Source: FCNSW SEEing reports, annual reports (Part 1) and sustainability supplements to annual reports

Table notes: Number of permits issued is not reported in annual reports after 2011–12, i.e. 2012–13 and 2013–14.

n.r. – not reported in the source document

(1) The number of fossicking permits has increased over time, partly because permits are now issued to individuals rather than groups; the actual number of participants may not have increased.

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Indicator 6.4d The importance of forests to people

This indicator measures the range of attitudinal values that communities and individuals place on their forests. The importance of forests to society is exemplified through the value that people place on biodiversity, clean air and water, social equity or simply the knowledge that Australia's forests exist.

Management of New South Wales' forest estate provides a range of benefits to society, based on the environmental, social and economic values within the forest estate. The current management approach reflects changes in community priorities and values over time, including a greater emphasis on conservation, while also developing a robust forest practices system to ensure sustainable supply of woodland non-wood forest products.

Forests are valued in the community for a range of attributes, from a source of inputs to processing facilities income and job security to broader values encompassing renewable resources, biodiversity, climate change mitigation, clean air and water.

This was acknowledged in the first five-yearly NSW RFA independent review report, where the Independent Assessor highlighted *"the importance of both forestry activities and forest related recreational and cultural considerations in the fabric of the NSW community, especially but not limited to, non-metropolitan NSW"*⁷²⁷³.

Forests also hold important spiritual, cultural, historic, scientific and social values for Aboriginal communities throughout NSW⁷⁴.

In the wider Australian community, more than 40% of the respondents to an Australia-wide series of surveys agreed with a survey statement that Australia's native forests were being managed sustainably⁷⁵. The proportion of respondents who agreed that 'we should not be cutting down any trees for wood products' decreased between 2009 and 2012, and the proportion of respondents who agreed that 'we should use more wood because it is more environmentally friendly than alternative materials' increased.

The level of understanding about the role of forests in carbon storage is high and increasing. In 2012, more than 90% of respondents to the same series of Australia-wide surveys agreed that trees absorb carbon dioxide, and 71% (up from 52% in 2008) agreed that 'carbon is stored in wood, even after the tree is harvested'.

⁷² Spencer 2009, Final Report on Progress with Implementation of NSW Regional Forest Agreements: Report of Independent Assessor November 2009. Available from

www.agriculture.gov.au/forestry/policies/rfa/publications/annual-reports/nsw

⁷³ Spencer, S 2009, Final Report on Progress with Implementation of NSW Regional Forest Agreements: Report of Independent Assessor November 2009, available from

www.agriculture.gov.au/forestry/policies/rfa/publications/annual-reports/nsw

⁷⁴ Forestry Corporation NSW, 2017, Aboriginal Partnerships. , available from

<http://www.forestrycorporation.com.au/management/aboriginal-partnerships> (accessed on 14 May 2018)

⁷⁵ ABARES, 2013, *Australia's State of the Forest Report 2013*, available from

www.agriculture.gov.au/abares/forestsaustralia/sofr/sofr-2013 (accessed on 9 November 2016)

About 80% of respondents to a survey in south and central rural NSW indicated that they would consider planting trees for carbon sequestration, and nearly 70% indicated that being paid for carbon sequestration would increase the likelihood that they would plant trees for purposes such as reducing land degradation and providing shelter for stock.

Studies on Social attitudes to forests

As part of the NSW CRAs, peoples' attitudes to environmental issues and forests were surveyed. These included broad surveys across the state of NSW as well as region-specific surveys in the Eden, Southern, UNE and LNE RFA regions.

In all four region-specific CRA social attitudes studies, the environmental issues of primary concern to survey respondents were pollution and forest related issues⁷⁶ as identified in the Joint NSW/Commonwealth CRA/RFA Steering Committee, 1999a⁷⁷ and 1999b⁷⁸; and the Joint Commonwealth NSW RFA Steering Committee, 2000⁷⁹).

Respondents to the NSW CRA surveys indicated the main reason they valued forests was for aesthetics; the beauty, space and natural experiences forests provide. The next most popular reason was the conservation of forest ecosystems; valuing the knowledge that they exist and are able to survive. The third most popular in all the regions was spiritual; with respondents valuing forests for the way they make them feel. The fourth most popular reason differed across the regions. In the Eden and Southern RFA regions, it was economic; valuing forests for its provision of income and employment. In the North East RFA region, it was intergenerational equity; valuing forests as they can be enjoyed and used by future generations.

Across all the studies it was found that *"forests have a very strong symbolic environmental value that people want to preserve"* but whether they were willing to trade off other sustainability outcomes for this varied in the NSW RFA regions.

In the Eden and Southern RFA regions: *"the general trend was that unemployment was a high priority as a macro-scale issue but the distinctions became less clear at a micro-scale or when put in a forest context. Forests have strong symbolic environmental values that people want to*

⁷⁶ DPIE, 1998. Social Values of Forests Eden CRA region; a report undertaken for the NSW CRA/RFA Steering Committee. Accessed on 14 May 2018 at www.agriculture.gov.au/SiteCollectionDocuments/rfa/regions/nsw-eden/social-economic/nsw_ed_ne02es_1.pdf

⁷⁷ Joint NSW/Commonwealth CRA/RFA Steering Committee, 1999a. Social Assessment NSW Upper North East CRA Regions. Accessed on 14 May 2018 at www.agriculture.gov.au/SiteCollectionDocuments/rfa/regions/nsw-north-east/social-economic/social-assessment/lower-ne-nsw/social-assessment-report-lne.pdf

⁷⁸ Joint NSW/Commonwealth CRA/RFA Steering Committee, 1999b. Social Assessment NSW Upper North East CRA Regions. Accessed on 14 May 2018 at www.agriculture.gov.au/SiteCollectionDocuments/rfa/regions/nsw-north-east/social-economic/social-assessment/upper-ne-nsw/social-assessment-report-une.pdf

⁷⁹ Joint Commonwealth NSW Regional Forest Agreement Steering Committee, 2000. Social Assessment Report Southern Region New South Wales. Accessed on 14 May 2018 at www.agriculture.gov.au/SiteCollectionDocuments/rfa/regions/nsw-southern/social-economic/nsw_sthn_sar.pdf

preserve. The only time the majority of the sample considered it justified to conciliate these environmental values was when the social structures and services of small local communities became jeopardised."

In the UNE and LNE RFA regions, the respondents valued environmental objectives at a macro-scale more highly than economic objectives such as employment. This was also reflected in the prioritisation of environmental values at the micro-scale in the forest context. In these regions the respondents wanted to preserve the symbolic environmental values of forests even if it is seen to cause economic and social difficulties.

In all of the RFA regions, the majority of respondents valued the conservation and the preservation of animal and plant species over economic objectives such as jobs and forestry products.

The majority of respondents in all NSW RFA regions, however, disagreed with the statement 'environmental protection cannot co-exist with forestry industries' meaning the majority of those surveyed felt that environmental protection can co-exist with forestry industries.

Public consultation

Public comments, as part of the combined independent second and third five-yearly review of the NSW RFAs, were sought on the progress with implementation of the NSW RFAs between 18 December 2017 and 23 February 2018. In total, 5245 submissions were received from individuals and organisations, including form submissions.

In addition, the NSW and Australian Governments sought the views of all stakeholders on further improvements to the sustainable management of NSW native forests and the renewal of NSW RFAs. Consultation included a public submissions process from 24 January until 12 March, as well as a series of stakeholder meetings and community drop in sessions across the state throughout February 2018. These meetings and drop in sessions were independently facilitated, and conducted in Lismore, Coffs Harbour, Bulahdelah, Eden, Batemans Bay and Tumut, as well as stakeholder meetings in Sydney. In total, over 3200 submissions were received and approximately 255 people attended the stakeholder meetings and drop-in centres.

Indicator 6.5a Direct and indirect employment in the forest sector

This indicator measures the level of direct and indirect employment in the forest sector. Employment is an important measure of the contribution of forests to viable communities and the national economy.

Direct employment

Direct employment in the forest sector is split into two categories; forestry and wood products industry and, non-wood forests products and services. The ABS generates employment statistics for the first category only.

The forestry and wood products industry

Over 17,500 people are directly employed in the New South Wales forestry and wood products industry (ABS 2016 Census). Employment in the industry comprises a diverse range of job types with 23 distinct employment fields recognised by the ABS. For reporting purposes, these employment fields are grouped into five employment categories:

- Forestry and Logging
- Forestry Support Services
- Wood Product Manufacturing
- Pulp and Paper Product Manufacturing
- Timber Wholesaling.

Employment in this industry is widely distributed with jobs in 83% (n=108) of all NSW LGAs (n=132). Dependence on the industry for jobs is much greater in regional areas than it is in metropolitan areas with 19 of the top 20 most forestry and wood products industry dependent LGAs located within regional NSW (**Figure 4.1**).

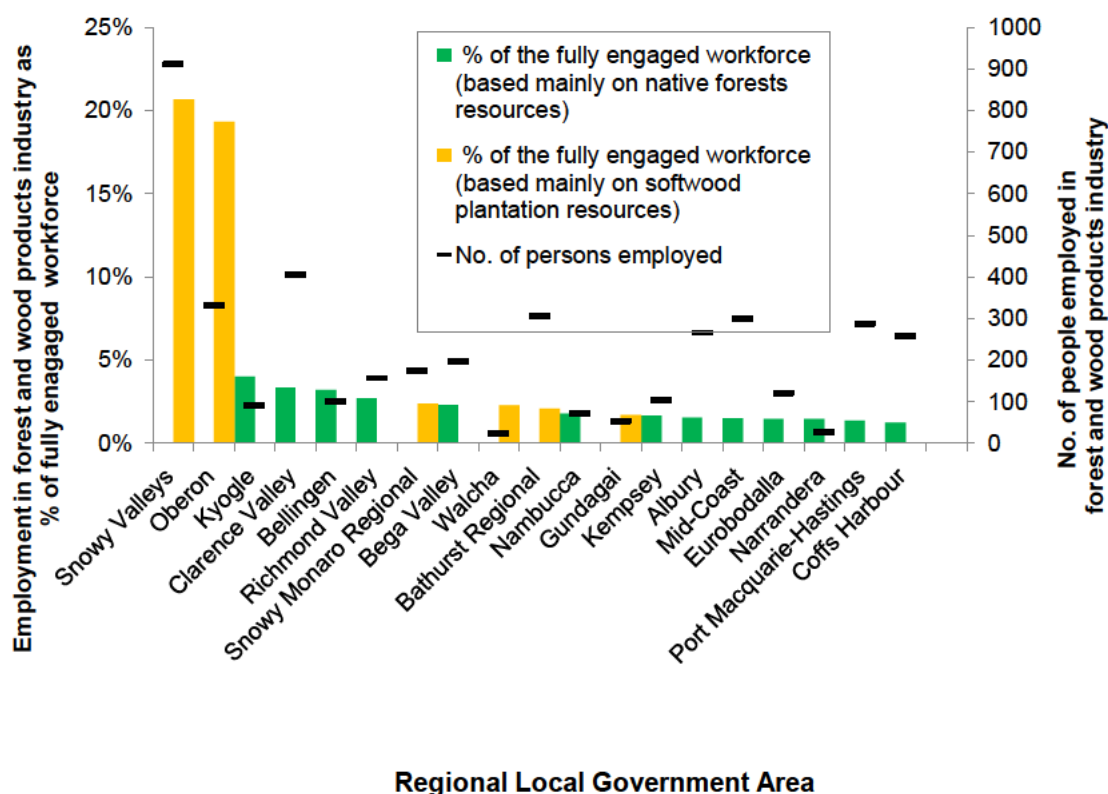


Figure 4.1 Direct employment in the forest and wood products industry in dependent regional local government areas (data source: 2016 Census)

Over one third (35%) of the people employed in the industry reside in one of the three RFA regions (Eden, Southern and North East). Within the three NSW RFA regions, wood product manufacturing is the single largest employment category supporting over 3,500 jobs. Within this group the largest employment fields are ‘log sawmilling’, and ‘wooden structural fitting & component manufacturing’.

Outside the NSW RFA regions, the greatest concentration of forestry and wood products jobs is on the Central Coast and in western Sydney. The LGAs with the highest number of jobs include Central Coast, Fairfield and Blacktown followed by Liverpool, Penrith, Canterbury-Bankstown and Campbelltown. The bulk of these jobs are in ‘wooden structural fitting & component manufacturing’.

This assessment is principally concerned with employment that is based on native forests and hardwood plantations within the NSW RFA regions. Employment statistics collected by the ABS do not, however, differentiate between wood types and all three NSW RFA regions are known to include both hardwood and softwood timber industry jobs. Hardwood and softwood industry jobs can be differentiated to some degree using finer scale geographic boundaries. For example, within the Eden RFA region, the softwood sector is reasonably represented by the job statistics for the Snowy Monaro LGA while the native industry is best represented by Bega Valley LGA data. Similarly, in the Southern RFA region, the softwood industry is concentrated around Tumut which is within the Snowy Valleys LGA while the hardwood sector can be reasonably represented by data for Eurobodalla, Shoalhaven and Queanbeyan-Palerang Regional LGAs. In the North East RFA region, the softwood plantation sector is much smaller and mostly confined to the Walcha and Richmond Valley LGAs.

Unfortunately, both these LGAs also support hardwood industry jobs that prevent them from being extracted.

Changes in employment over the term of the NSW RFAs have been captured through the national five-yearly Census. Employment data for 2001 is not readily retrievable so trends are limited to the last 10 years (2006, 2011 and 2016).

In the Eden RFA region, employment in the native industry (represented by Bega Valley LGA) declined by 39% over the 10 year monitoring period (**Figure 4.2**). Job losses principally occurred in wood product manufacturing.

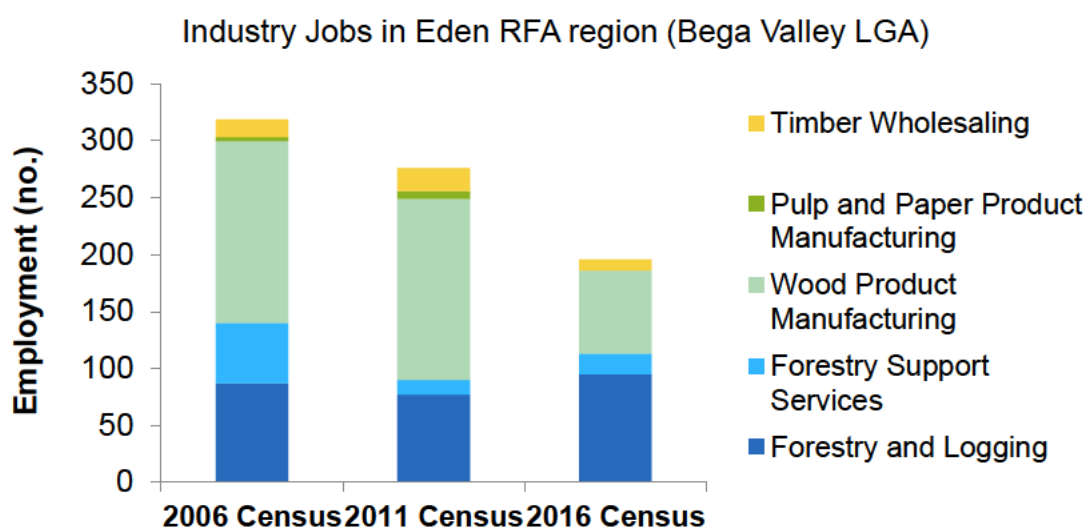


Figure 4.2 Direct employment in the forest and wood products industry in the Bega Valley LGA which covers the coastal native forests within the Eden RFA region

In the Southern RFA region, employment in the native forest industry (represented by Eurobodalla, Shoalhaven and Queanbeyan-Palerang Regional LGAs) also experienced a decline. Over the 10 year period, the decline in employment was 27% when pulp and paper product manufacturing jobs (which are not based on native forest wood) were excluded (**Figure 4.3**).

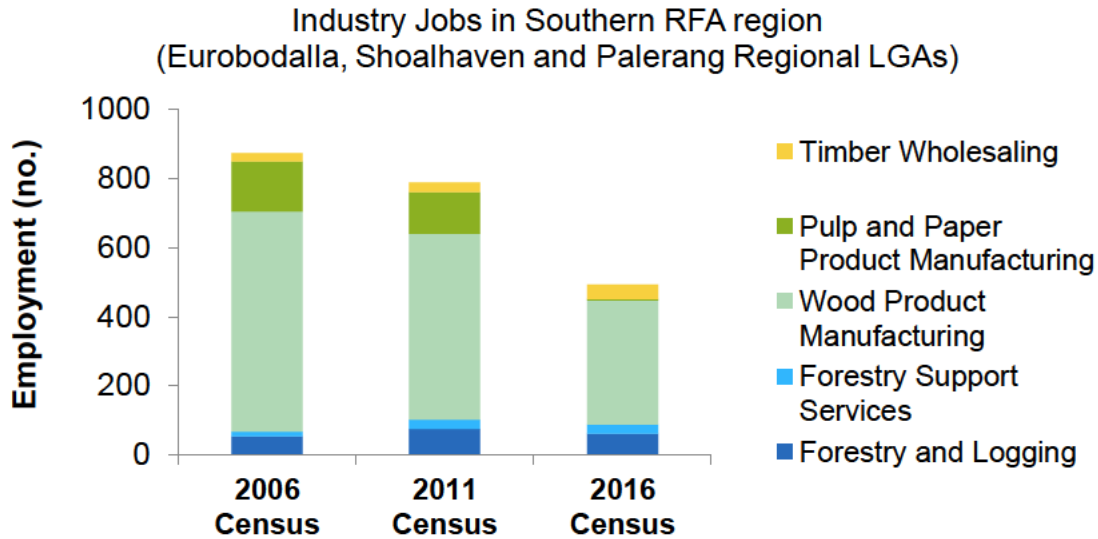


Figure 4.3 Direct employment in the forest and wood products industry in the Southern RFA region

Of the three NSW RFA regions, employment in the North East RFA region is the most significant with over 4,000 direct jobs. Industry employment in this region has fluctuated, peaking in the 2011 Census. Between 2006 and 2016, there has been an overall reduction in employment of 14% (**Figure 4.4**).

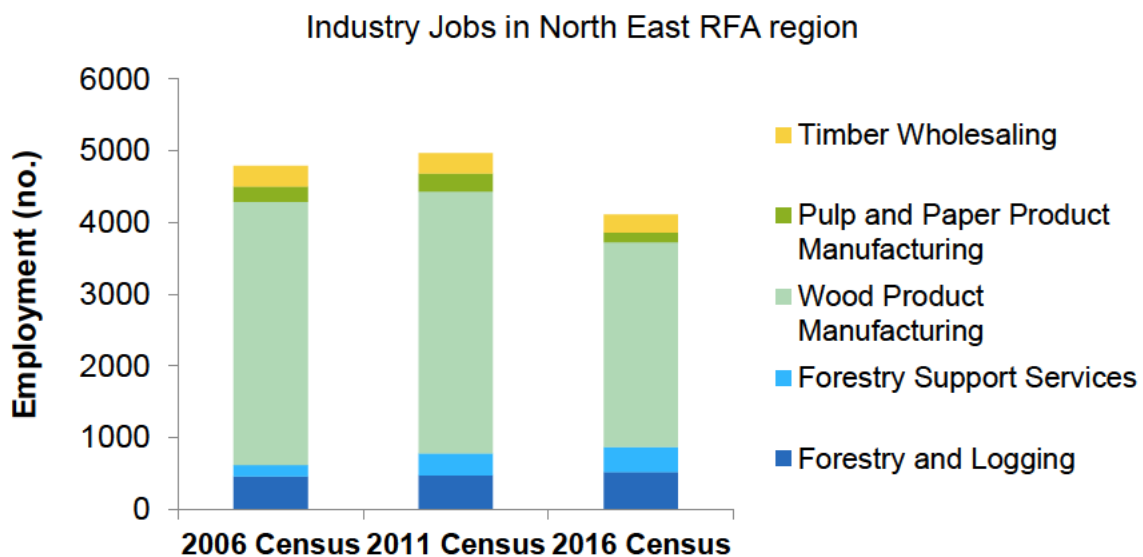


Figure 4.4 Direct employment in the forest and wood products industry in the North East RFA region (27 LGAs represented)

Declines in employment across all three NSW RFA regions have been most pronounced within the wood product manufacturing sector (**Figure 4.5**).

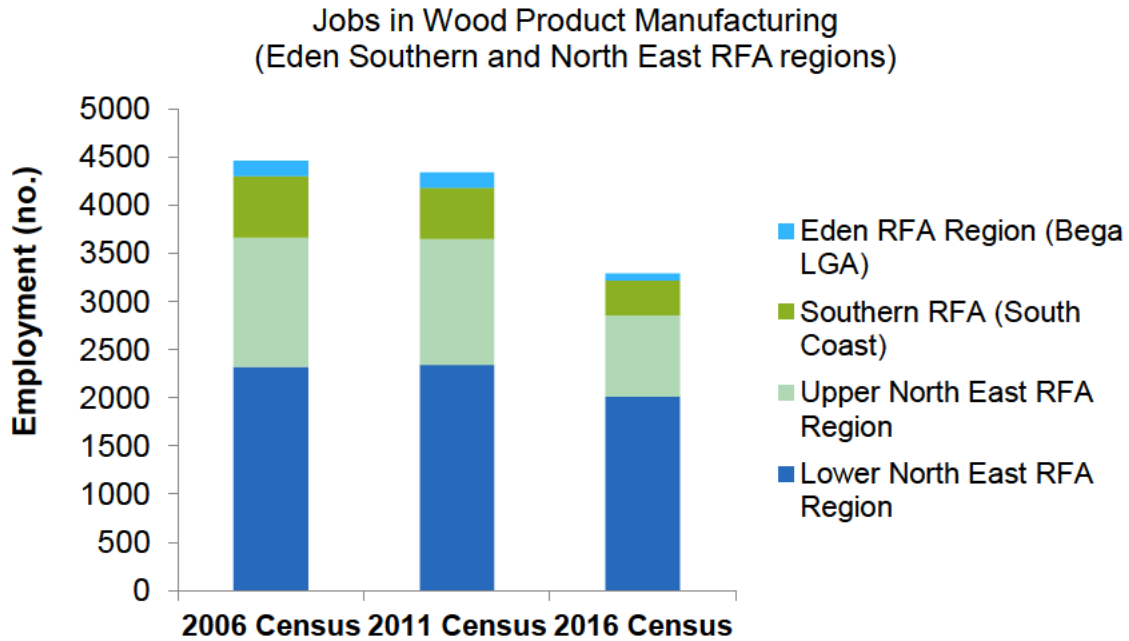


Figure 4.5 Direct employment in wood product manufacturing over 10 years (3 national census surveys) in native forest LGAs within the Eden, Southern and North East RFA regions

The wood product manufacturing sector comprises both primary and secondary wood processing jobs. State wide, secondary wood processing facilities supports around three times more jobs than primary processing facilities. Within the NSW RFA regions the job ratio between secondary processing and primary processing is about two to one. Job losses over the last three Censuses were experienced in both primary and secondary processing. When compared with the rest of NSW, the NSW RFA regions performed better, than those regions not covered by an RFA losing a higher number and higher proportion of jobs (Figure 4.6 and Figure 4.7).

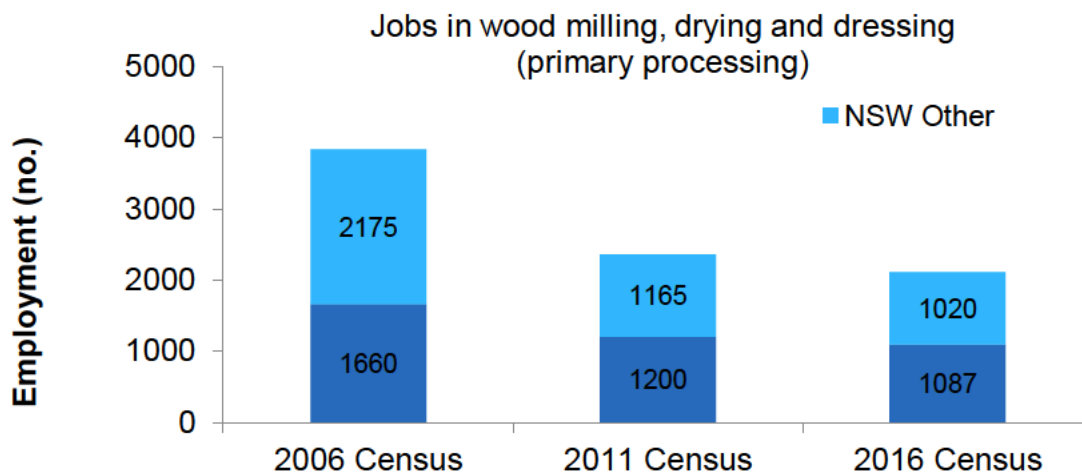


Figure 4.6 Direct employment in primary processing (milling, drying and dressing) over 10 years (3 national census surveys) in NSW RFA regions (native LGAs) and the NSW Other.

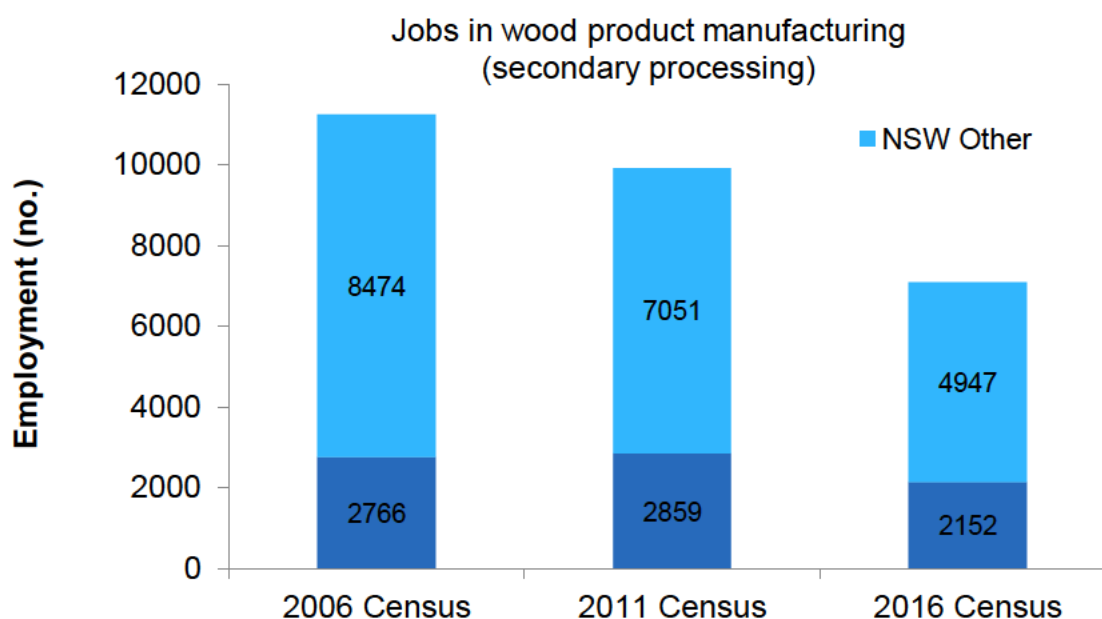


Figure 4.7 Direct employment in secondary processing (wood product manufacturing) over 10 years (3 national census surveys) in NSW RFA regions (native LGAs) and in NSW Other.

The decline in employment in the wood manufacturing sector jobs is consistent with a general decline in Australian manufacturing. This decline has been attributed to increasing international competition, particularly from developing countries that have lower labour costs. The 2009 global financial crisis also had an effect on wood manufacturing jobs as a consequence of reduced demand. In the lead up to the last Census (2016) demand for hardwood wood products rebounded and has remained strong in 2017. The fall in wood manufacturing jobs between 2011 and 2016 occurred mainly in secondary processing which is more exposed to international competition. Job losses in primary processing jobs were much smaller and may be mainly attributed to reductions in available supply.

FCNSW is the State's largest supplier of wood to the wood-processing industries and the industry's largest employer of forestry workers. Over the last twenty years, employment within the organisation has steadily fallen. Between 2000 and 2012, employment reductions were roughly in line with reductions in the forest area under management⁸⁰. Since the organisation was corporatised in 2012, the forest area under management has remained relatively stable while the number of people employed has continued to decline. This decline has seen a steady increase in the area of State forest per employee (**Figure 4.8**). This trend is largely due to the organisation's greater focus on financial performance.

⁸⁰ Between 2000 and 2012, the total area of the forest estate went from 3,073,320 hectares to 2,204,315 hectares. The total area of the forest estate in 2017 was 2,185,383 hectares.

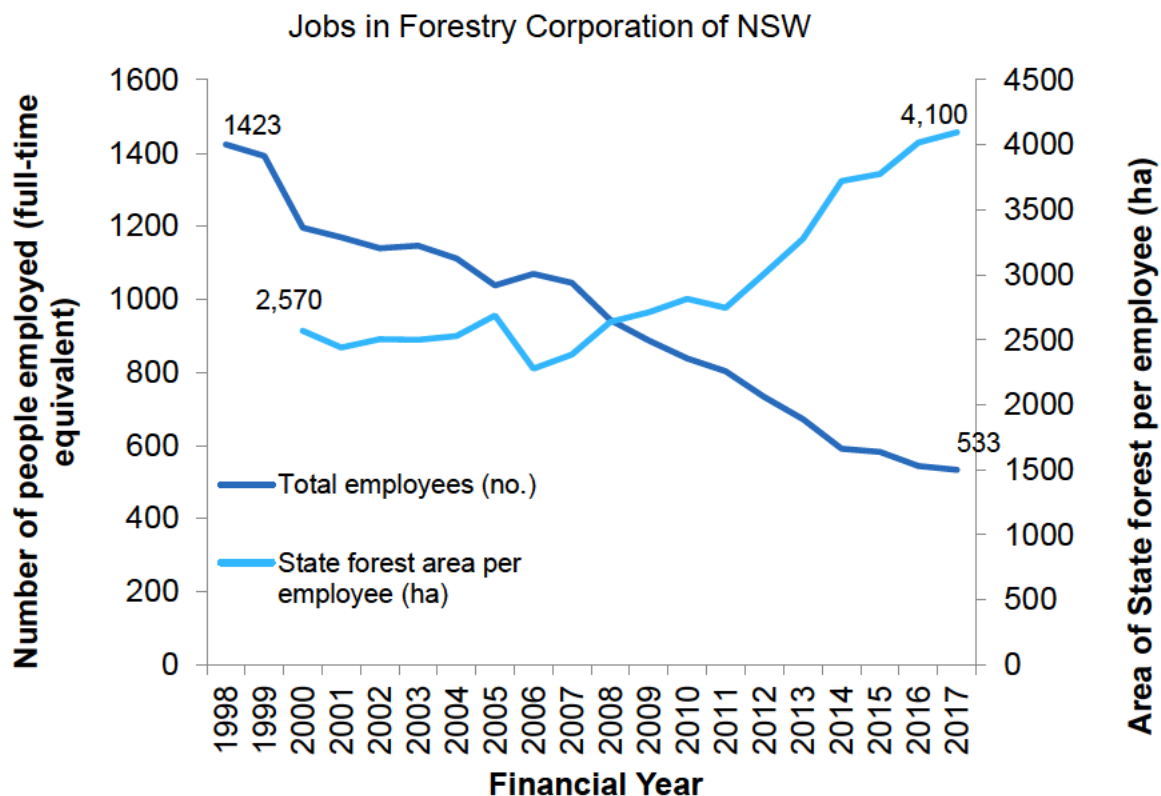


Figure 4.8 Change in employment by FCNSW over the RFA period (data source: FCNSW annual reports)

There are numerous industry job types which are not captured by forestry and wood products employment statistics. Examples include; forestry sector haulage which is mostly classified by ABS in the 'transport' industry; road maintenance and construction contractors; wood craft; firewood wholesaling; retail timber sales; import/export of timber products; wooden furniture and upholstered seat manufacturing, and; forest policy development.

Non-wood forests products and services

As indicated previously, the forest sector produces many products and services other than forestry and wood products. These include; apiary, grazing, sand, rock and gravel extraction, telecommunication sites, and forest based tourism. Employment associated with the collection, processing and sale of these other products and services is classified by ABS in non-forestry categories that cannot be isolated.

Within the three NSW RFA regions, 70% of the dedicated public forest (3.5 million ha) is in nature conservation reserve estate. The balance (30% or 1.5 million ha) is in State forest. The NPWS provide direct employment for the management of national parks and other conservation reserves. These jobs are additional to those generated by the forest and wood products industry.

Employment data for the NPWS is based on agency records which are incomplete. Available data is shown in **Figure 4.9**. At the state level, the data reveals that between 1999 and 2017 the number of direct jobs has increased by 18.5%. During the same period, the area under NPWS management increased by 44%⁸¹.

In 2017 the area of national park and other conservation reserves per employee (for the whole of NSW) was 3,844 hectares. This figure is similar to the area of State forest per FCNSW employee which is 4,100 hectares.

⁸¹ In 2000, the NPWS managed 5,099,674 hectares. In 2017, the NPWS had 7.3 million hectares of land under management

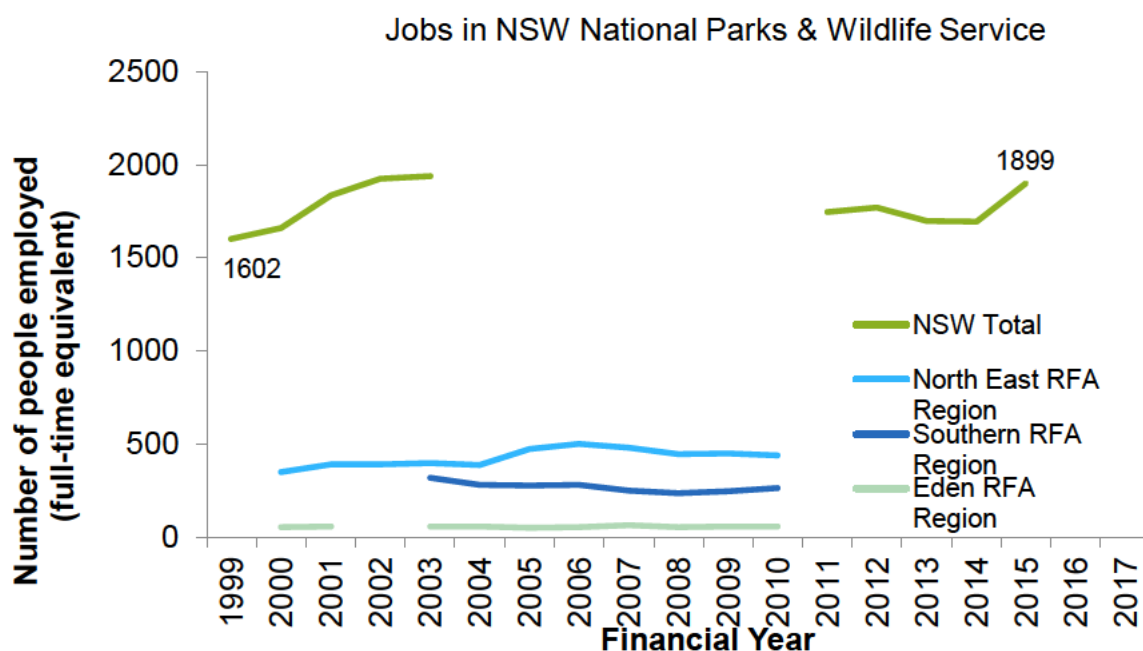


Figure 4.9 Employment in NSW National Parks & Wildlife Service for the whole of NSW and by RFA region (note gaps in data are due to incomplete records) (data source: OEH annual reports and NSW Forest Agreement Implementation reports)

Indirect employment

Like any economic activity, the forest sector creates indirect ('flow on') employment as a result of spending by forest sector businesses and workers.

There is limited up to date data on indirect employment for the forest sector. Many input-output studies have been undertaken to identify downstream impacts of the industry as a whole for a defined region, but this has still resulted in reasonably limited coverage of different regions, and has rarely examined the downstream impacts of native forest and plantation related activities separately (Schirmer et.al. 2008).

The most comprehensive input-output study undertaken for the forest and wood products industry was undertaken in 1995 by Margules Groome Poyry Pty Ltd. This study found that flow on impacts varied considerably between regions and between employment fields. In the study's coastal native forest regions (which were similar to NSW RFA regions) it was found that between 0.47 and 0.74 indirect jobs were created for every direct job. Following the signing of the NSW RFAs (1999-2000), there was considerable investment in value-adding of native forest timbers and this is known to have had a positive effect on indirect employment. Further work is needed, however, to understand the magnitude of the downstream impacts.

Since 1998, the OEH and its predecessors has produced a number of studies using input-output analysis to estimate the flow-on impacts of individual parks and other reserves on local economies. One of these was undertaken on the regional economy of north-east NSW (Gillespie Economics, 2006). Another study (Powell et. al., 2006) was focused on Eurobodalla and Bega Valley LGAs which are located, respectively, within the Southern and Eden RFA regions. In the north-east region study, it was estimated that the national parks and other

conservation reserves in the area were visited by almost six million people each year and that visitor spending represented the equivalent of 1,650 indirect regional jobs. For the Eurobodalla and Bega Valley LGAs it was estimated that visitor spending helped generate the equivalent of 813 indirect jobs. Together these studies highlight the connection which exists between the public forest sector and the broader regional service industry.

Census employment data for the accommodation and food and beverage service sector shows consistent growth within the RFA regions highlighting that opportunities may exist to create more employment in forest-based tourism and recreation.

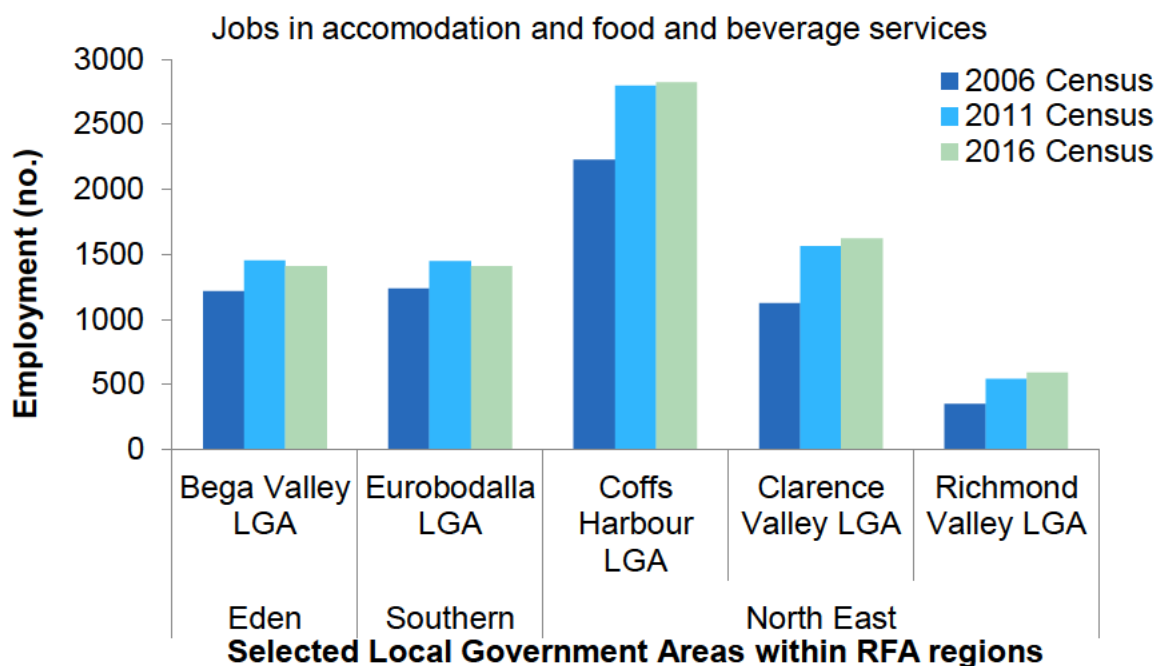


Figure 4.10 Employment trends in the accommodation and food and beverage service industry within Local Government Areas that have large public native forest estates

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Indicator 6.5b Wage rates and injury rates within the forest sector

This indicator measures the level of wage and injury rates in the forest sector. A sustainable industry will ensure high levels of workforce health and welfare and wage rates comparable with national averages for other occupations.

Wage rates

Individuals aged 65 and under typically receive the majority of their income from a salary or wages earned from a job. Information on wage rates in the forest sector contributes to an understanding of employment opportunities in the sector and the contribution it makes to the economy.

Knowing about industry wage rates is also important to employers including those who run commercial businesses. Earnings paid to employees typically represent a significant component of operating costs. Changes in wages can impact on the productivity of a business and its competitiveness in a global market. Changes in average earnings can also reflect the impact of the economic cycle on the labour market, or sectors within the labour market (ABS, 2017).

How much an individual earns from wages and salaries and other sources⁸² (personal income) affects their well-being.

The national minimum wage is set at \$694.90 per 38 hour week or \$36,135 per year before tax (Fairwork Ombudsman, 2017) noting that on 1 July 2018, the Fairwork Commission increased the national minimum wage by 3.5% to \$719.20. The original concept of a minimum wage was an income sufficient to support a wage earner in 'reasonable and frugal comfort'⁸³. Wage levels above the minimum wage provide individuals with more economic discretion. Individuals on higher wages have greater life choices than those on lower wages, including the opportunity to become financially secure more quickly.

The ABS collects earnings data using a range of employer and household surveys. This particular assessment is limited to data collected by the ABS through the Census of Population and Housing. The Census is a national household survey undertaken every five years.

⁸² Other sources include: bonuses (irregular, one-off); salary sacrificed amounts; non-cash benefits (including wages and salary in-kind) - free or subsidised goods and services from an employer such as the use of motor vehicles and subsidised housing; and severance and termination payments. It can also include other monetary receipts such as government pensions and benefits, investment income, profit or loss from an unincorporated business, and private transfers (such as superannuation, child support etc).

⁸³ The term 'reasonable and frugal comfort' was coined in 1907 by J. Higgins J. in a Court of Conciliation and Arbitration ruling known as the 'Harvester Judgement'. In this ruling employers were challenged to formulate wages on the basic needs of their employees rather than being solely concerned with the company's profits.

Weekly earnings are affected not only by changes in the rate of pay, but also by any changes in the composition of the workforce, including: diversity of employment arrangements; number of hours worked; the extent of part-time and casual employment; and mix of industries and occupations (ABS, 2017). Analysis of these factors was unable to be undertaken as part of this assessment due to constraints on scope.

Within the forest sector, there are two distinct employment categories; forestry and wood products industry, and non-wood forests products and services.

Wages in non-wood forests products and services come principally from the NSW public sector. In 2017, the median salary of persons employed full time in the NSW public sector was \$83,689 (Public Service Commission, 2017). Employment in the NSW public sector accounts for just over 10% of the total number of people employed in the State (Public Service Commission, 2017). A similar proportion of NSW public sector workers make up the forest sector workforce. The principal employer of this workforce is the NPWS. A lesser number of people are employed by NSW Department of Industry – Crown Lands. No wage data is available for the private sector.

The forestry and wood products industry is the principal source of wages within the forest sector. Wages paid by FCNSW are included within this category. The distribution of personal income within the forestry and wood products industry is similar to other NSW industries with one notable difference; income is more concentrated in the middle income brackets (i.e. between \$650 and \$1,249 per week or between \$33,800 and \$65,000 per year). This concentration results in a smaller proportion of people with either very low or very high personal incomes (Figure 4.11).

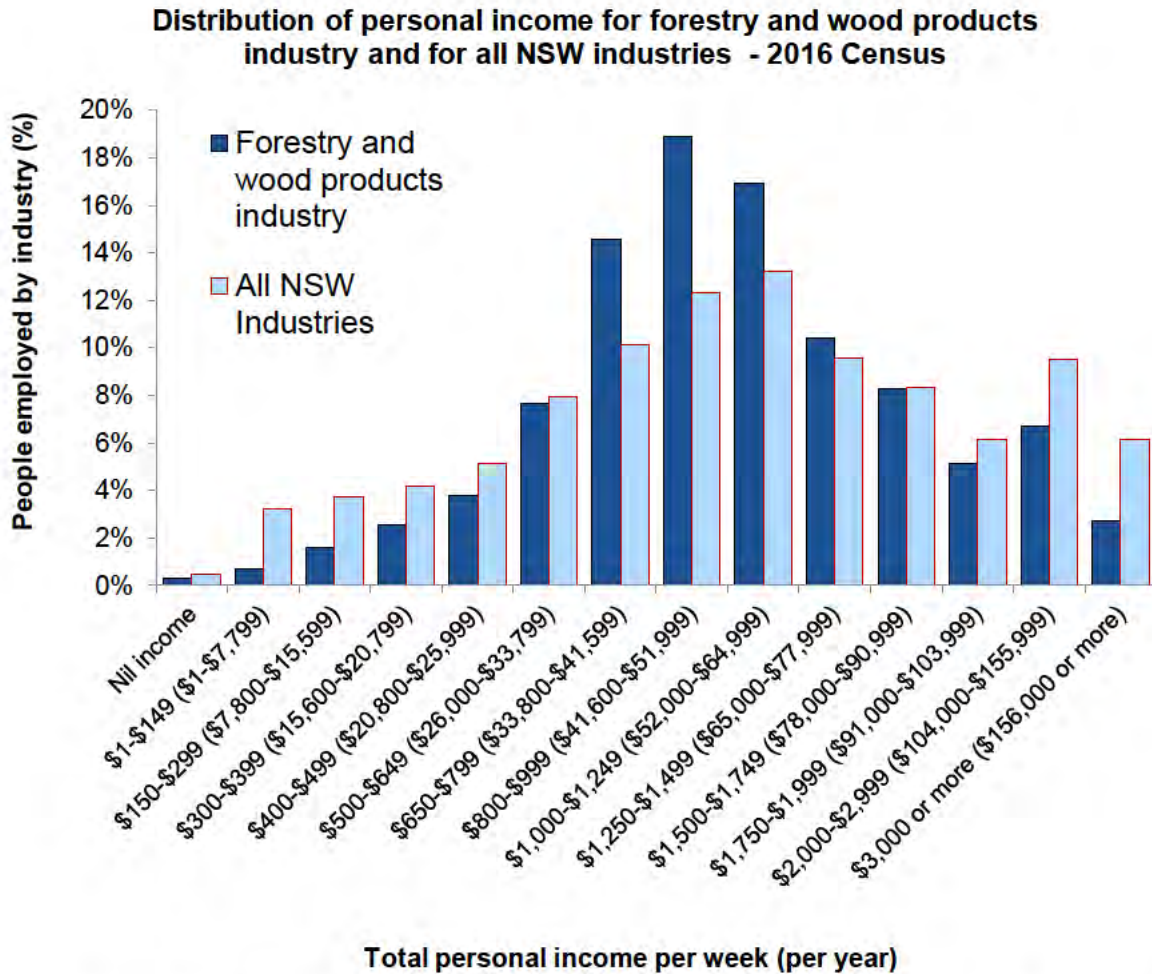


Figure 4.11 – Distribution of personal income for employees in the NSW forestry and wood products industry and for all NSW industry employees.

Personal incomes in the forestry and wood products industry are higher than those in the agriculture and fishing industries (Figure 4.12). When compared to the mining industry, however, personal incomes are much lower. It is generally accepted, however, that the mining industry does not enjoy the same level of employment stability as the other primary industries.

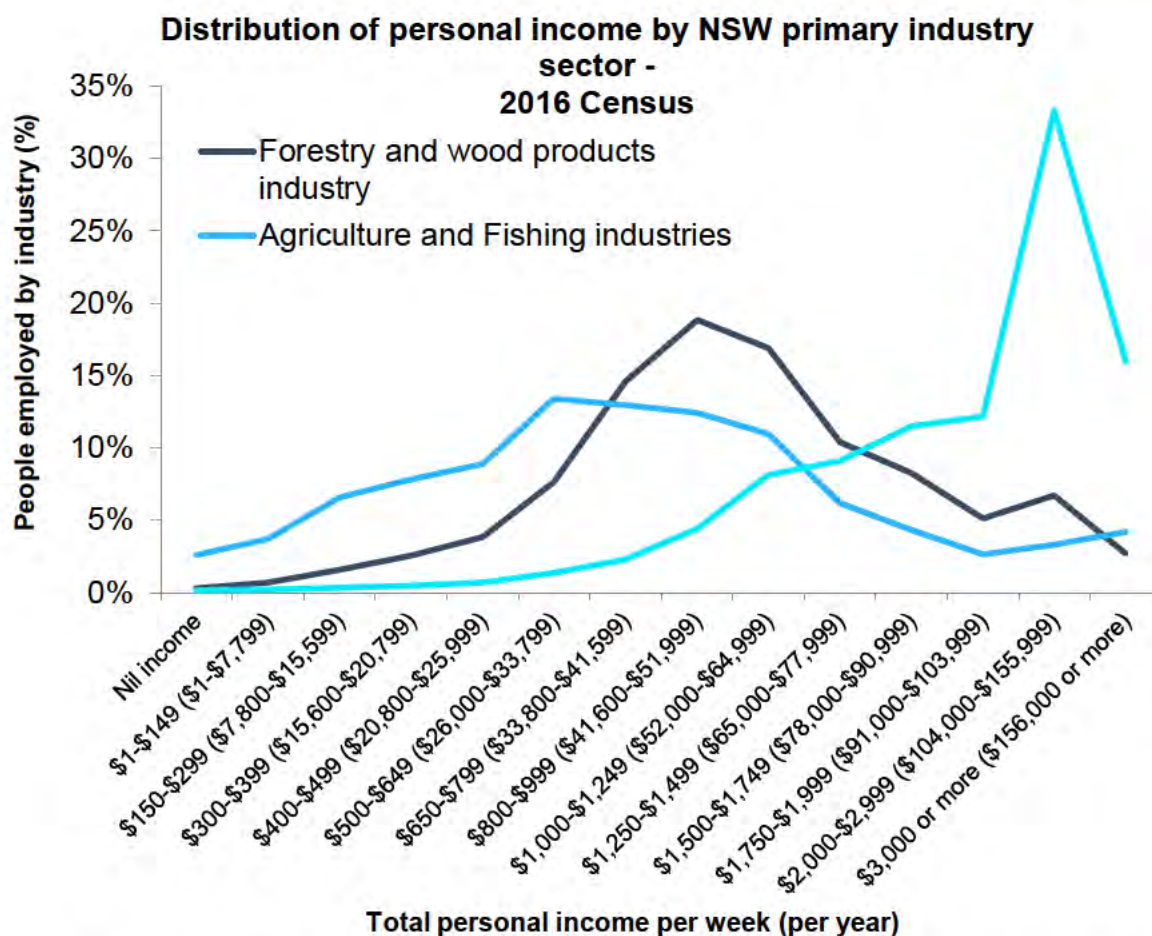


Figure 4.12 – Comparison of the distribution of personal income in the NSW forestry and wood products industry with the NSW agriculture and fishing industry and the NSW mining industry

Over the last ten year period, personal incomes in the forestry and wood products industry have grown, capturing the benefits of Australia’s growing economy. Over the same period, the distribution of personal income has flattened out with a higher proportion of people in the higher income brackets (i.e. > \$1,250 per week or > \$65,000 per year) (Figure 4.13). This trend in wages makes the industry more attractive to workers seeking higher incomes.

Differences in personal income exist between the various sectors which make up the forestry and wood products industry. Of the four recognised employment categories – forestry support services, logging, primary processing, and secondary processing; workers employed in forestry support services and logging earn more on average. Workers employed in forestry support services in particular have higher personal incomes with 36% of the workforce earning more than \$1,500 per week (or \$78,000 per year) (Figure 4.14).

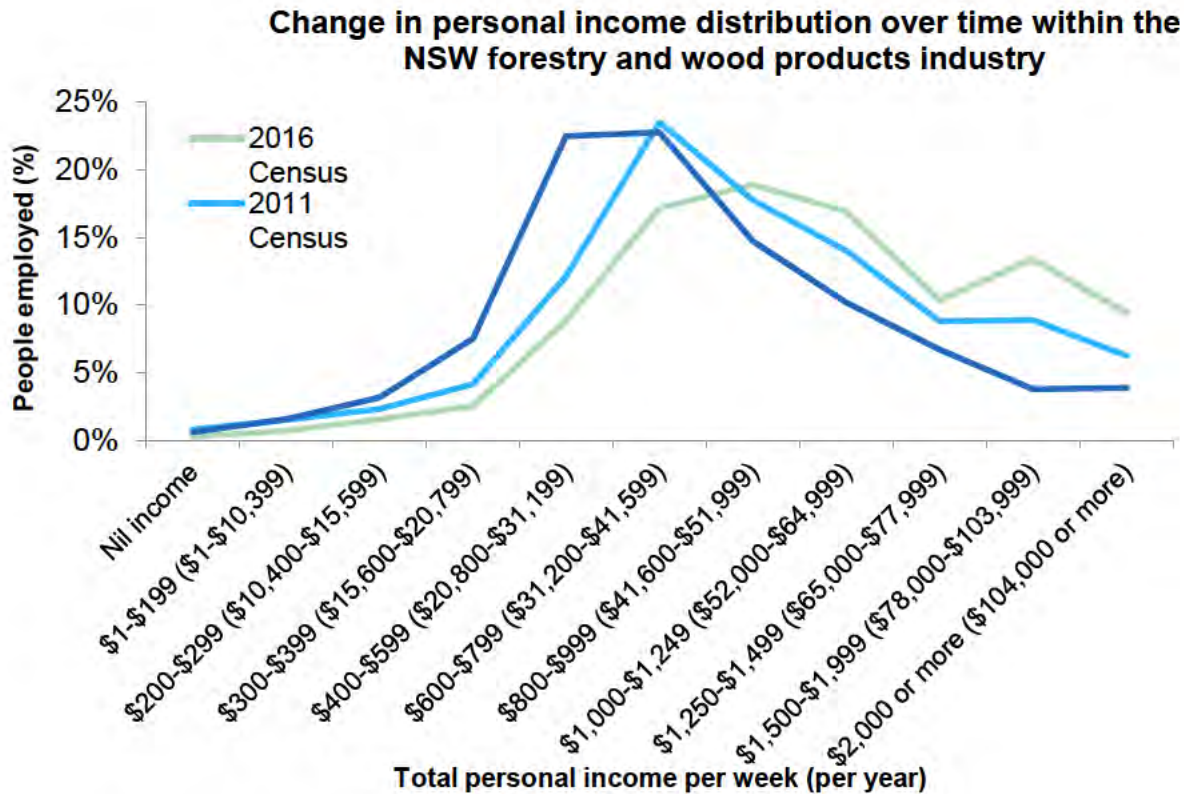


Figure 4.13 – Change in the distribution of personal income in the NSW forestry and wood products industry between 2006 and 2016

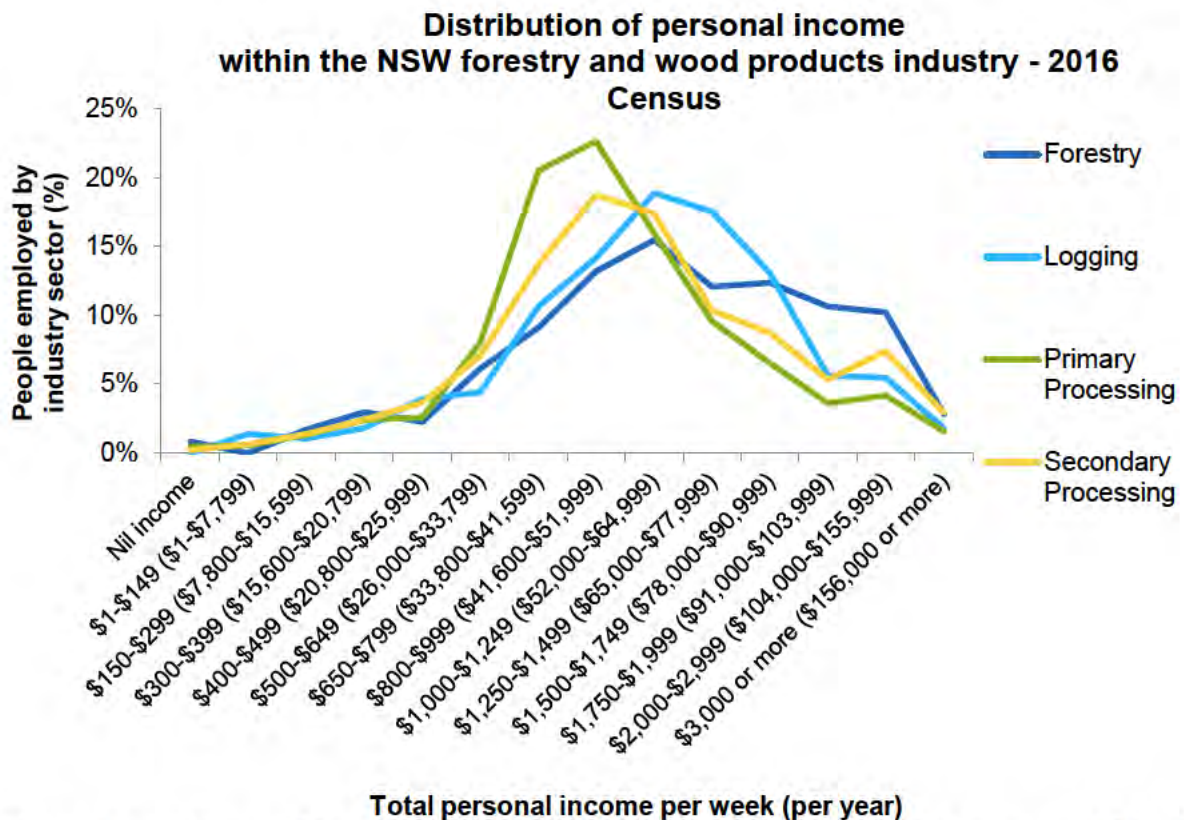


Figure 4.14 - Comparison of the distribution of personal income for sectors within the NSW forestry and wood products industry

Within regional NSW, the forestry and wood products industry provides a valuable source of personal income.

In Bega Valley LGA which covers the Eden RFA region’s coastal forests, the average personal income⁸⁴ is \$762 per week and two thirds all income earners receive less than \$800 per week (\$41,600 per year). In contrast, the average income of forestry and wood products industry workers in the LGA is \$1,326 per week and 78% of these workers have personal incomes that exceed \$800 per week (Figure 4.15).

The economic contribution of the forestry and wood products industry is even more pronounced within the Snowy-Monaro LGA which covers the Eden RFA region’s tableland forests. In this LGA, the average income of a forestry and wood products industry worker is \$1,323 per week and 70% of workers have personal incomes of more than \$1000 per week (\$52,000 per year). In comparison, the average personal income of all persons that receive income in the LGA is \$907 per week and 69% of these people earn less than \$1,000 per week (Figure 4.16). It should be noted that industry employment in Snowy-Monaro LGA is based on both plantation softwood and native forest resources.

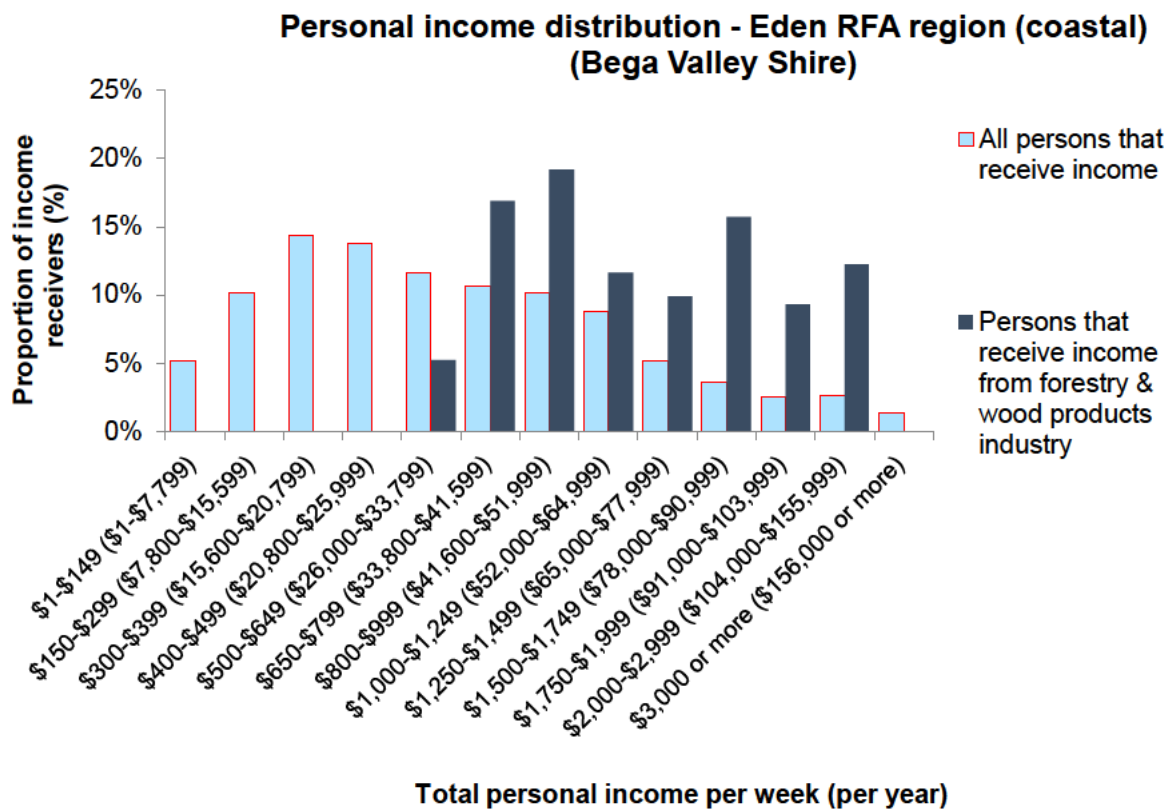


Figure 4.15 – Personal income distribution in Eden RFA region (coastal) for persons in the forestry and wood products industry and for all persons that receive income

⁸⁴ Average personal income is a derived estimate or approximation. It is based on 2016 Census – Employment, Income and Education data which has been grouped into 13 personal income brackets. To calculate average personal income the midpoint of each income bracket was multiplied by the number of people within that bracket. The total for each bracket was then summed and divided by the total number of income receivers to generate an average personal income. Note for a person earning \$3,000 or more per week the assumed average income was assumed to be \$3,500.

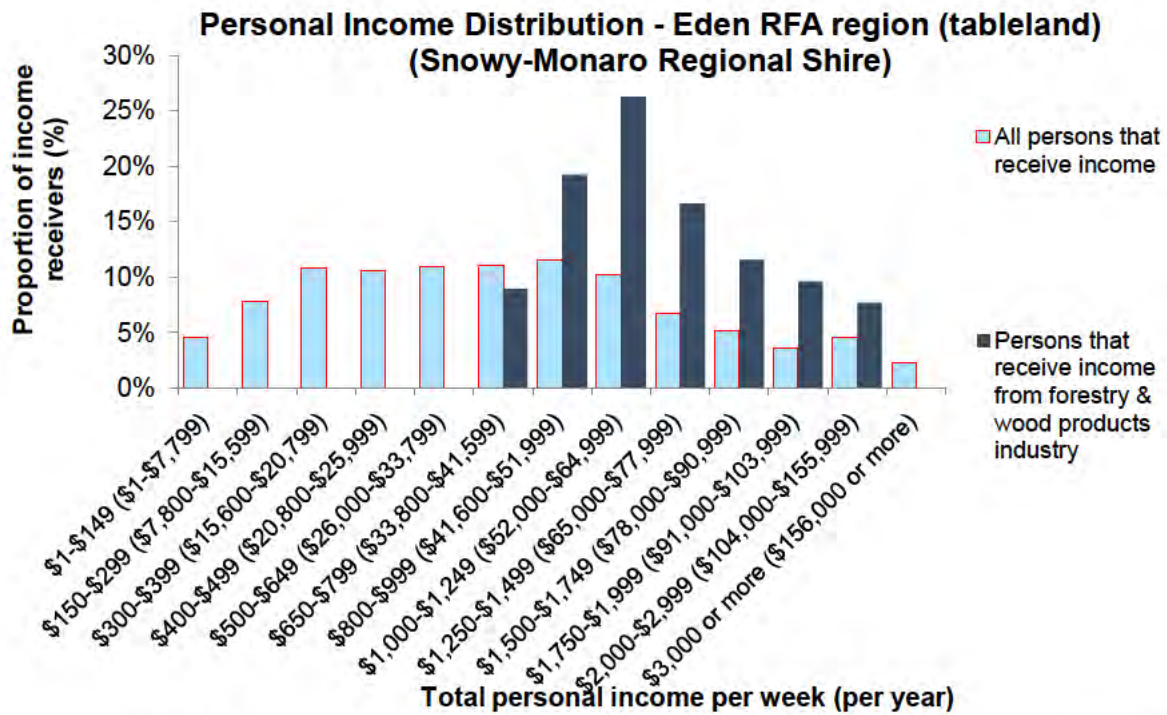


Figure 4.16 – Personal income distribution in Eden RFA region (tableland) for persons in the forestry and wood products industry and for all persons that receive income

The south coast forests of the Southern RFA region are covered by three LGAs – Eurobodalla, Shoalhaven and Queanbeyan-Palerang Regional. The average personal income a forestry and wood products industry worker receives in these LGAs is \$1,039 per week or \$54,023 per year. In comparison the average personal income of all people within these LGAs is \$884 per week or \$45,986 per year (Figure 4.17).

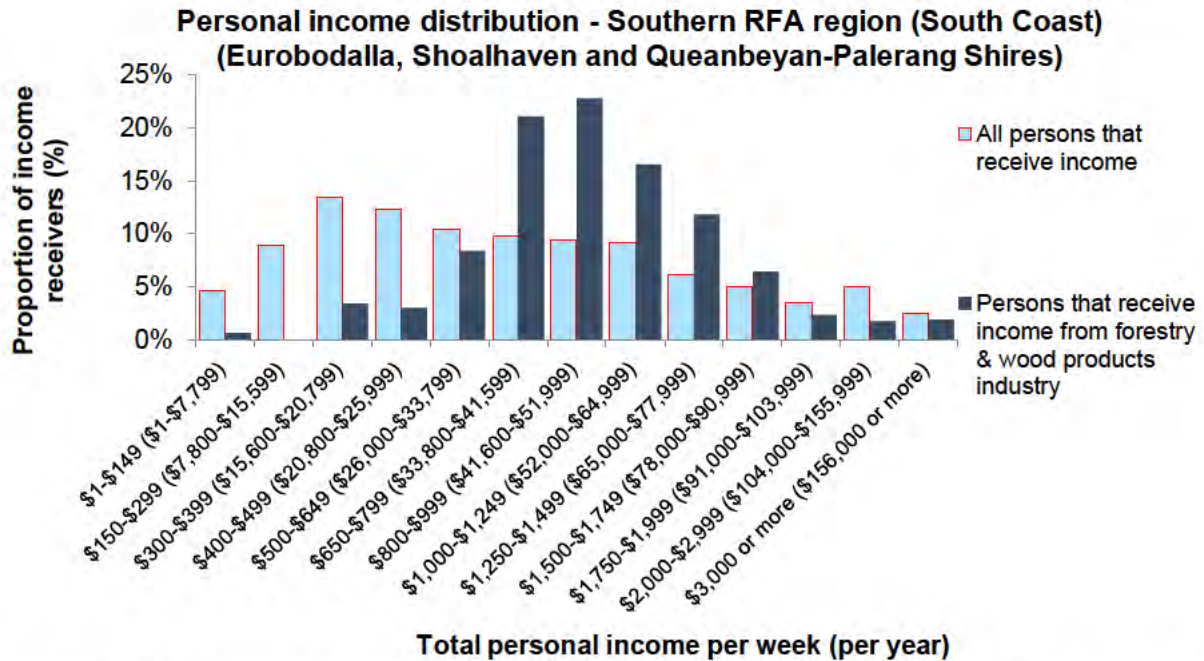


Figure 4.17 – Personal income distribution in Southern (South Coast) RFA region for persons in the forestry and wood products industry and for all persons that receive income

The Tumut sub-region forests of the Southern RFA region fall within the Snowy Valleys LGA. The economic contribution of the forestry and wood products industry in this LGA is more pronounced than any other within the state. In this LGA, employment is predominantly plantation softwood based with native forest resources playing a minor role. In the Snowy Valleys LGA the average personal income of forestry and wood products industry workers is \$1,444 per week or \$75,086 per year and 72% of workers have personal incomes of more than \$1000 per week (\$52,000 per year). In contrast the average personal income of all income earners in the LGA is only \$842 per week or \$43,769 per year (Figure 4.18).

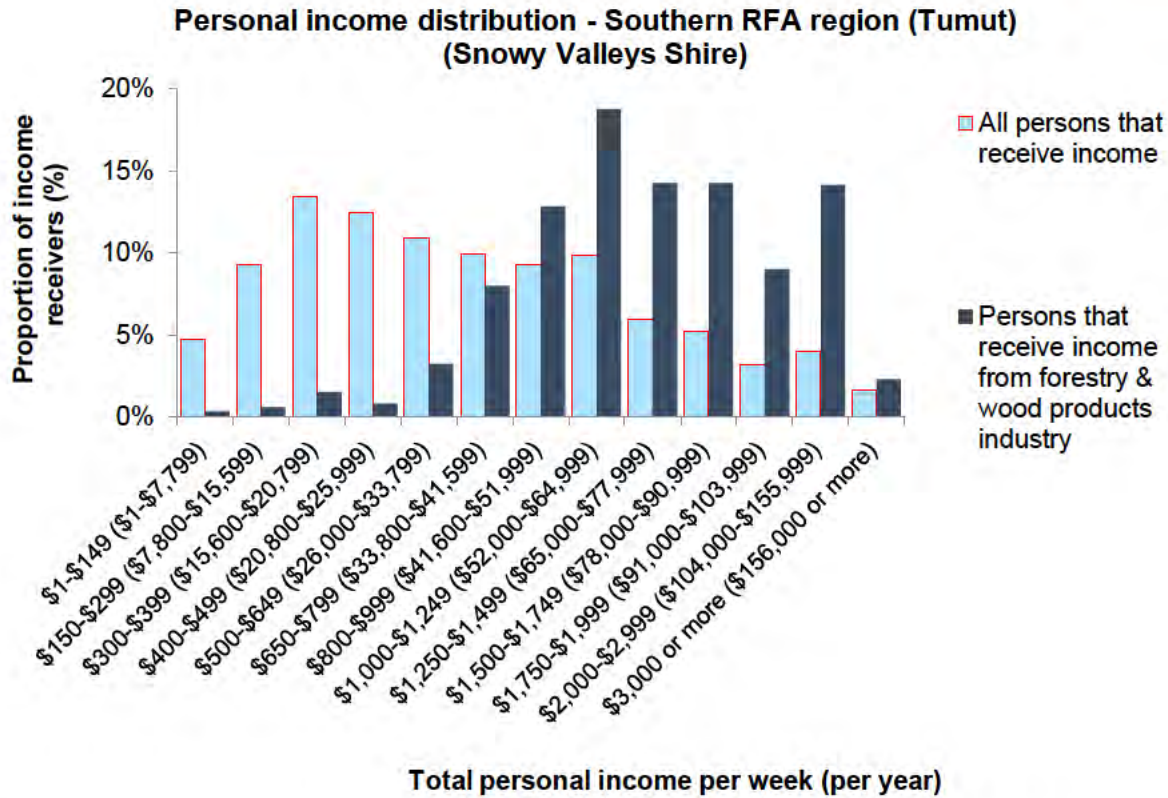


Figure 4.18 – Personal income distribution in Southern (Tumut) RFA region for persons in the forestry and wood products industry and for all persons that receive income.

The North East RFA region is the largest regional employer of forestry and wood products industry workers with employment based largely on native forest resources. In this region, the average personal income of forestry and wood products industry workers is \$985 per week or \$51,206 per year. In contrast the average income of all persons that receive income is \$804 per week or \$41,829 per year (Figure 4.19).

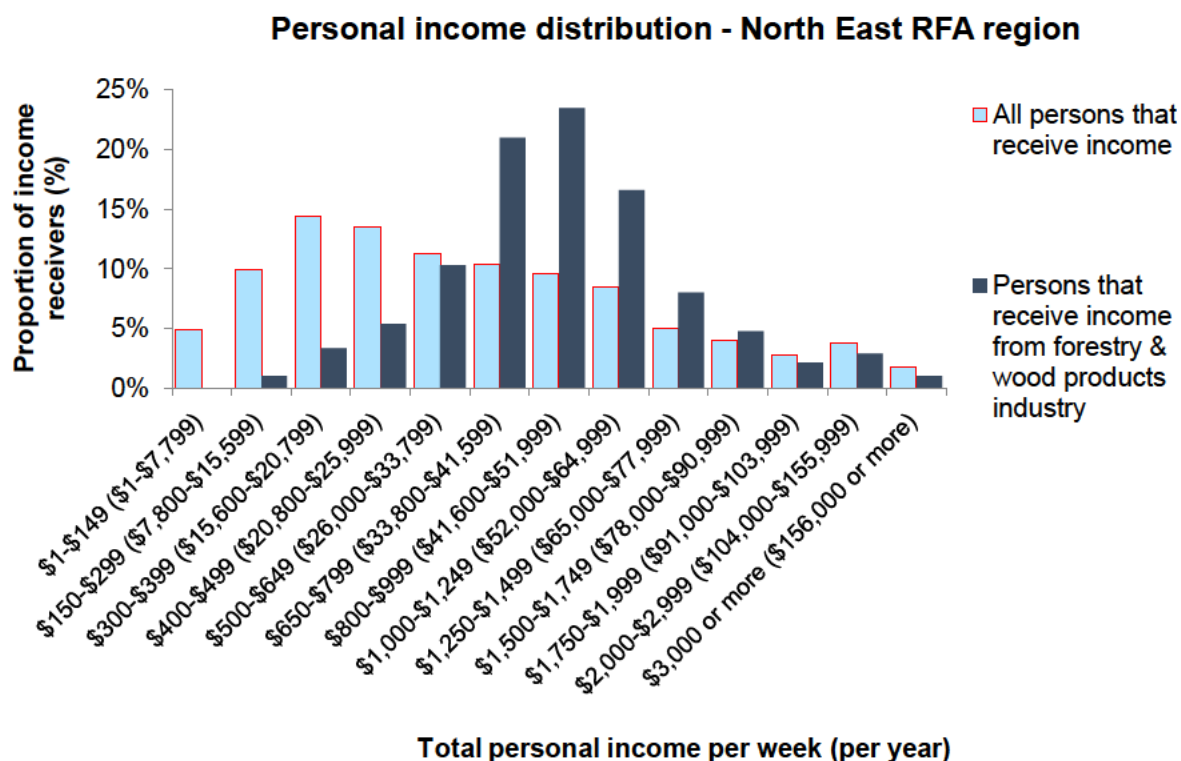


Figure 4.19 – Personal income distribution in the North East RFA region for persons in the forestry and wood products industry and for all persons that receive income.

In summary, the forestry and wood products industry is comparable to other NSW industries in terms of personal income distribution with a slightly greater concentration of wages in the middle income brackets (\$650 to \$1,249 per week or \$33,800 to \$65,000 per year). When it comes to regional employment, the industry is far more highly valued with much higher average wages paid by the industry than in other sectors.

Injury rates

Work-related injuries have a wide-ranging impact at both an individual and macro-economic level. NSW workers compensation injury statistics allow employers, workers, regulators and insurance and service providers to better understand and manage workplace health and safety risks.

In NSW, over 30,000 people incur major work-related injuries each year costing \$547 million⁸⁵ (State Insurance Regulatory Authority, 2015). Around 400 of these injuries (1.3%) are attributed to the forestry and wood products industry.

There are 20 recognised industry categories that are used to report injury statistics in NSW. The forestry and wood products industry is split between two categories – Agriculture, Forestry and Fishing, and Manufacturing. Within Agriculture, Forestry and Fishing, the

⁸⁵ Gross incurred cost comprising \$391 million in compensation payments and \$126 million in estimated liability

subcategory relevant to the industry is forestry and logging. Within Manufacturing, the relevant subcategory is wood and paper product manufacturing⁸⁶.

The rate at which workplace injury incidents occur (no. of injuries per 1,000 employees) is a recognised way of comparing the performance of different industries and their sectors. Figure 4.20 shows how injury incident rates have changed between 1999 and 2015 for forestry and logging, wood and paper product manufacturing, in comparison to the agricultural industry, mining industry and all NSW industry.

Figure 4.2 shows that there has been a clear downward trend in injury incident rates for mining, agricultural, and all NSW industry. This same trend has not been achieved in the forestry and logging sector where injury incident rates have fluctuated quite markedly. In particular, forestry and logging injury incident rates have spiked in recent years. This trend should be treated with caution, however, as it is based on limited data that has a high relative standard error (between 25% and 50%).

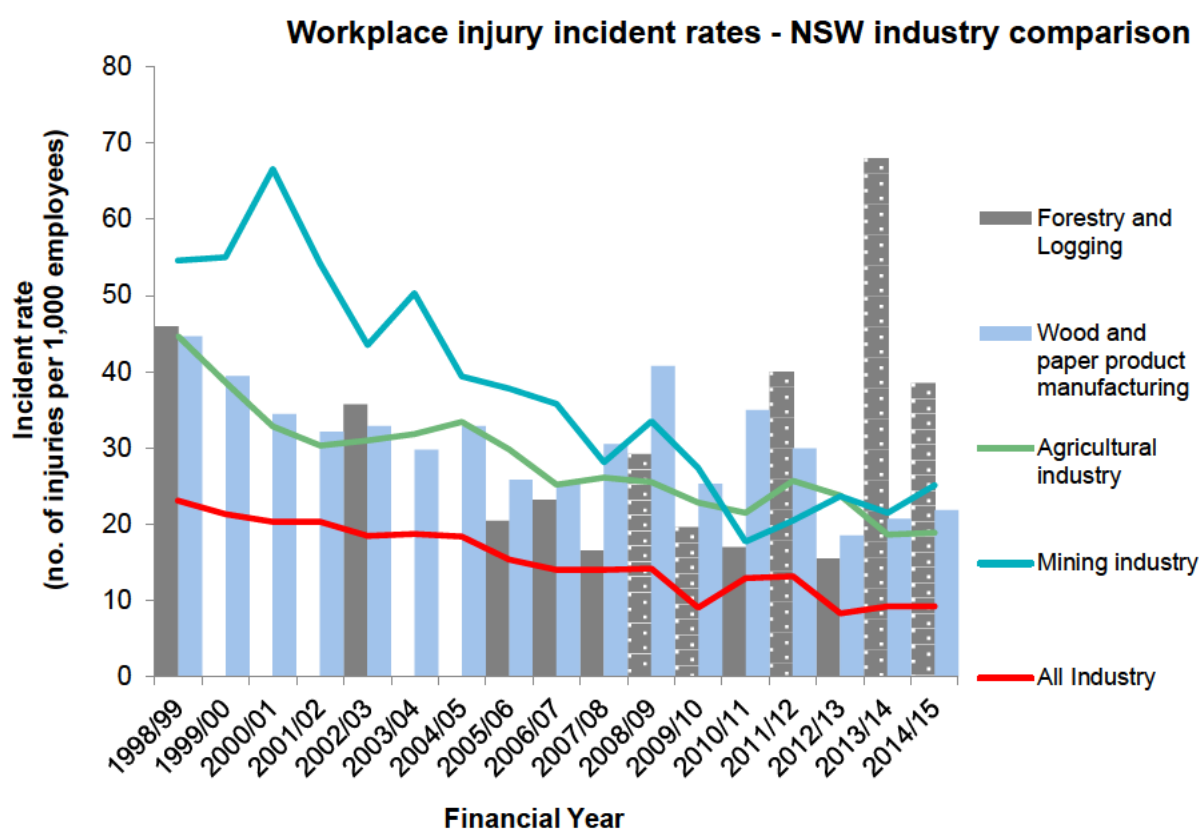


Figure 4.20 – Workplace injury incident rates between FY1999 and FY2015 for forestry and logging; wood and paper product manufacturing; agricultural industry; mining industry; and all NSW industry. Note, columns coloured dark grey with white dots have a relative standard error of between 25% and 50%.

⁸⁶ More recently wood and paper product manufacturing injury statistics have been split into wood product manufacturing and pulp, paper and converted paper product manufacturing.

Injury incident rates for wood and paper product manufacturing has been trending downward since 1999 in a similar fashion to agriculture however (unlike agriculture) there has been some notable exception years where injury incident rates have spiked (i.e. 2009, 2011 and 2012).

Analysis of the number and severity of workplace injuries in the forestry and wood products industry reveals a more positive trend with fewer injuries and a declining proportion of serious injuries (ones that result in death or permanent disability) (Figure 4.21).



Figure 4.21 – No. and severity of workplace injuries in the NSW forestry and wood products industry.

The average cost of a workplace injury is another key performance indicator. For the forestry and wood products industry, average costs have declined in real terms over a seventeen year period (Figure 4.22). Within the industry, wood and paper manufacturing has performed better than forestry and logging with respective average costs of \$26,959⁸⁷ and \$33,022⁸⁸ per injury. Since 2012, wood product manufacturing, and pulp, paper and converted paper products manufacturing have been reported separately. Over a four year period, the average cost of injury was \$16,334⁸⁹ for wood product manufacturing and \$19,562⁷ for pulp, paper and converted paper products manufacturing.

⁸⁷ Average over 13 years, data indexed to \$2015s using all groups all cities CPI

⁸⁸ Average over 17 years, data indexed to \$2015s using all groups all cities CPI

⁸⁹ Average over 4 years, data indexed to \$2015s using all groups all cities CPI



Figure 4.22 – Average incurred cost of workplace injuries by sector in the forestry and wood products industry. Note all values are in \$2015s.

In summary, over the duration of the NSW RFAs the performance of the forestry and wood products industry has improved with workplace injuries reducing in number, severity and average cost. Workplace incident rates have, however, remained high, particularly when benchmarked against other NSW industry. This trend suggests that there is scope for improvement, particularly in the forestry and logging sector.

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State Insurance Regulatory Authority (1998/99 to 2014/15 inclusive) Statistical Bulletins.

NSW Public Service Commission (2017) Workforce Profile Report 2017.

Fairwork Ombudsman (2017) Website <https://www.fairwork.gov.au/how-we-will-help/templates-and-guides/fact-sheets/minimum-workplace-entitlements/minimum-wages>

Indicator 6.5c Resilience of forest dependent communities to changing social and economic conditions

This indicator provides a measure of the extent to which forest dependent communities are able to respond and adapt to change successfully. Resilient forest dependent communities will adapt to changing social and economic conditions, ensuring they remain viable into the future.

This indicator considers only the dependence of communities on the forest and wood products industries, and not on other forest activities or services such as tourism or grazing.

In 2016, the NSW Forestry Industry Roadmap committed the NSW Government to ensuring regional economies are stronger and more diverse, for the overall wellbeing and resilience of communities. The roadmap states that forestry jobs are crucial in ensuring communities' economic diversity and sustainability, with over 42% of forestry and wood products jobs in 2016 in NSW being based in regional areas⁹⁰.

This indicator was not reported on in the first five-yearly NSW RFAs review, in both the draft implementation report and independent assessors report⁹¹.

In the combined second and third RFA Review Progress with Implementation ⁹²Report⁹³, the information for this indicator was sourced from SOFR 2013 (ABARES 2013), which is again presented in this section. Information for this indicator is currently being updated by ABARES for SOFR 2018.

There is currently no clear measure of the resilience of communities in adapting to change. To inform the understanding of community resilience, information about the characteristics

⁹⁰ NSW Government, 2016, NSW Forestry Industry Roadmap, available at at www.dpi.nsw.gov.au/_data/assets/pdf_file/0005/711851/nsw-forestry-industry-roadmap.pdf (accessed on 14 May 2018)

⁹¹ State of NSW and Commonwealth of Australia, 2009, A draft report on progress with implementation of the New South Wales Regional Forest Agreements, Research and Conservation Unit, NSW Department of Environment and Climate Change NSW, Sydney, available at at www.environment.nsw.gov.au/resources/forestagreements/09200draftdfa.pdf (accessed on 16 May 2018)

⁹² NSW EPA 2017, A report on progress with implementation of the New South Wales Regional Forest Agreements: Second and third five-yearly reviews, July 2004 to June 2014, NSW Environment Protection Authority, Sydney. Accessed on 16 May 2018 at www.epa.nsw.gov.au/your-environment/native-forestry/about-public-native-forestry/regional-forest-agreements-assessments/review-regional-forest-agreements

⁹³ NSW EPA 2017, A report on progress with implementation of the New South Wales Regional Forest Agreements: Second and third five-yearly reviews, July 2004 to June 2014, NSW Environment Protection Authority, Sydney, Accessed on 16 May 2018 available at www.epa.nsw.gov.au/your-environment/native-forestry/about-public-native-forestry/regional-forest-agreements-assessments/review-regional-forest-agreements (accessed on 16 May 2018)

of communities and workers in the forests and wood products industries that may affect their capacity to adapt is presented.

The proportion of people directly employed in an industry can indicate the level of a community's economic dependence on that industry. Beyond those directly employed in the forest and wood products industries, it is difficult to determine the economic dependence on forests of forest users such as apiarists, graziers, ecotourism operators, training providers and transport contractors, and potentially some personnel involved in forest management. Since these categories are not included in this assessment of forest dependence, forest-related employment is potentially underestimated by the available figures.

Communities are considered to show medium-to-high relative community dependence on the forest and wood products industries when employment in the sector is at least 4% of total community employment. In NSW there are seven Statistical Local Areas (SLAs) that satisfy this condition (**Table 4.6**).

Table 4.6 also assigns these seven SLAs with an Adaptive Capacity Ranking from 2006 ABS data (the latest data available for SOFR 2013). This ranking indicates the community's ability to accommodate change, which is influenced by their economic dependence on the forests and wood products industries and the level of resources they can draw on to assist their response to change. This Adaptive Capacity Ranking incorporates human and social capital, and economic diversity. Though this is a simplified measure as the adaptive capacity of communities is a complex concept that a single metric cannot capture, particularly when specific communities undergo rapid change.

A 'lower' Adaptive Capacity Ranking indicates that a community, in this case SLA, has a low capacity to respond to changes. The adaptive capacity of a community and its dependence on the forest and wood products industries can help indicate where assistance may be required for communities adapting to change.

Six of these NSW SLAs that show medium-to-high relative community dependence on the forest and wood products industries are in NSW RFA regions: Bombala (lower adaptive capacity ranking) is in the Eden RFA region; Tumut LGA (middle) and Tumbarumba (lower) are in the Southern RFA region; and Clarence Valley – Balance (lower), Clarence Valley - Grafton (middle) and Kyogle (lower) are all in the North East RFA region. Oberon is not in an RFA region.

Table 4.6 Characteristics of NSW Statistical Local Areas with more than 4% employment dependence on, and more than 20 workers employed in, the forest and wood products industries

Statistical Local Area ¹	Employed in forest and wood products industries				All industries	Adaptive capacity ranking ⁴ 2006
	Number of people 2011	Proportion of workforce 2011 (%)	Change in employment 2001–06 ² (%)	Change in employment 2006–11 ³ (%)	Change in total employment 2006–11 (%)	
Oberon	394	17.45	8.65	-7.73	-0.66	Middle
Bombala	163	15.22	-0.64*	4.49*	-1.47	Lower
Tumut Shire	717	15.22	1.65	-3.24	4.06	Middle
Tumbarumba	185	13.08	2.56*	-7.50	-5.35	Lower
Clarence Valley-Balance	113	5.30	7.19*	-24.16	5.33	Lower
Clarence Valley-Grafton	412	4.81	27.83	-6.58	4.92	Middle
Kyogle	135	4.03	-46.85	14.41	0.72	Lower
Australia ⁵	73,267	0.75	7.2	-14.1	9.7	-

Source: ABS (2011a) *Census of Population and Housing*, ABS, Canberra.

Table notes: SLA = Statistical Local Area

(1) 2001 and 2006 comparative data are based on 2006 SLA boundaries, and 2011 data are based on 2011 SLA boundaries. There are no significant boundary differences for the SLAs listed.

(2) & (3) Percentage change calculated from change in absolute employment numbers between census years. Changes of 10 or fewer individuals are indicated by *.

(4) Adaptive capacity ranking is only currently available from 2006 census data. 'Lower', 'middle' and 'higher' refer to the adaptive capacity index relative to all SLAs with 20 or more forest-sector workers. The adaptive capacity index combines sub-indices for human and social capital, and economic diversity.

(5) Data based on total aggregated SLAs across Australia.

* Indicates changes of 10 or fewer individuals.

Independent Reviewers report:

The Independent Reviewer of the combined second and third five-yearly review mentioned that most of the areas which had a high dependence on the forest and wood products industry experienced a decline in employment over the period of 2004-2014. As this was less than the decline in the overall employment, the Independent Reviewer assessed that this indicated that the forest and wood products industry improved community resilience (Waller, 2018).

Community resilience in the Southern and Eden RFA regions

The NSW Government commissioned a 2017 study on the *Socio-economic impacts of the softwood plantation industry in the South West Slopes and Bombala region, NSW*⁹⁴ (Schirmer et al, 2017) which provides insight into the resilience of communities in parts of the Southern and Eden RFA regions.

The softwood industry is a significant component of the South West Slopes and Bombala region's economy, with its contribution to the Gross Regional Production (GRP) being \$1,014 million in 2015-16, including \$580 million from flow-on effects. As of February 2017, the industry directly employed 1917 people in the region, with 66 per cent of these in the wood and paper processing sector. When adding flow on jobs, the softwood industry of the South West Slopes and Bombala region employs 5375 people in the region and 6026 across NSW. The softwood industry directly injected \$115 million into the region through household incomes in 2015-16⁹⁵.

The study found that in the Snowy Monaro Regional Council LGA and Snowy Valley Council LGA, the softwood plantation industry is a significant employer, with 22% and 18% of jobs are directly dependent on the softwood plantation industry respectively.

The study found that from 2011 to 2017 there was approximately a 5% decline in the amount of jobs directly dependent on the softwood plantation industry in this region. The study states this is "not surprising" as a large amount of the jobs are dependent on the manufacturing sector which reduces jobs as a result of new technology and companies introducing efficiencies to maintain competitiveness by reducing employment while increasing production.

NSW RFAs renewal consultation

During the public consultation as part of the NSW RFA renewals many stakeholders were worried about the future of local communities if there was a downturn in the forestry industry or there were more reserves created from the existing native forest production estate. This was raised specifically as a concern in most of the sites where stakeholder meetings and drop-in sessions were facilitated including Bellingen, Batemans Bay and Lismore regions.

⁹⁴ Jacki Schirmer, Diana Gibbs, Mel Mylek, Anders Magnusson and Julian Morison, 2017. Socio-economic impacts of the softwood plantation industry in the South West Slopes and Bombala region, NSW. Published by NSW Department of Industry, Lands & Forestry Division. Accessed on 14 May 2018 at www.dpi.nsw.gov.au/_data/assets/pdf_file/0005/721724/socio-economic-impacts-of-the-softwood-plantation-industry.pdf

⁹⁵ Ibid

Summary and future management of social values

NSW forests contribute to local and state economies, benefit personal and community wellbeing, and support cultural values for local communities, including Indigenous communities.

During the initial social and economic reports for the CRAs of NSW RFA regions, stakeholders expressed a growing interest in tourism and recreation activities in forests in the Eden, North East and Southern RFAs. As reported in the first five-yearly Draft Report on Progress with Implementation of the New South Wales Regional Forest Agreements (2009), the overwhelming majority of both multiple-use public forest and nature conservation reserves in NSW were available for recreation and tourism at the time of the first five-yearly independent review. Ninety-six per cent of the State forest estate was considered available for forest-related recreational activities, with visitation rates high across the four NSW RFA regions.

Visitation to tourist destinations in NSW forests has generally increased over time, largely centred on the nature conservation reserve estate. There has been significant investment in, and recognition of, a number of tourism ventures across NSW forests with several national parks having won tourism awards. This is also reflected in a recent 26.4 per cent increase in number of visitors on land managed by NPWS from 2011-12 to 2015-16.

In 2016, over 17,500 people were directly employed in the New South Wales forestry and wood products industry (ABS 2016 Census). Employment in this industry is widely distributed with jobs in 83% of all NSW LGAs. Dependence on the industry for jobs is much greater in regional areas than it is in metropolitan areas with 19 of the top 20 most forestry and wood products industry dependent LGAs located within regional NSW.

There has been a decline in direct employment in the forest and wood products industry across all three NSW RFA regions in both primary and secondary wood processing. The fall in wood manufacturing jobs between 2011 and 2016 occurred mainly in secondary processing which is more exposed to international competition. Job losses in primary processing jobs were smaller and may be attributed to reductions in available supply. When compared with the rest of NSW however, the NSW RFA regions performed better – with regions not covered by an RFA losing a higher number and higher proportion of jobs.

The indirect employment impact of the NSW RFAs varies considerably between regions and between employment fields. In one study, prior to the RFAs being entered into, it was found that between 0.47 and 0.74 indirect jobs were created for every direct job in the coastal native forest regions. Following the signing of the NSW RFAs (1999-2000), there was considerable investment in value-adding of native forest timbers and this is known to have a positive effect on indirect employment. Further work is needed, however, to understand the magnitude of the downstream impacts.

Personal incomes in the forestry and wood products industry are higher than those in the agriculture and fishing industries. Over the last ten years, personal incomes in the forestry and wood products industry have grown, capturing the benefits of Australia's growing economy.

Submissions to the public consultation on both the renewal and combined second and third five yearly review to the NSW RFAs reflect the broad range of views the community holds

about forests values and uses. Local communities, especially Aboriginal communities, have strong social, spiritual and cultural attachments to forests, whether for traditional needs, provision of wood and non-wood forest products, a source of income and job security, or for tourism and recreation.

People also value forests for broad environmental reasons, including for biodiversity, clean air and water, carbon storage and sequestration, and as a source of renewable resources. Community consultation for the renewal of the NSW RFAs has revealed further potential alternative uses of forests in the state. There was significant interest in using creating additional national parks for ecotourism in areas including Lismore and Bateman's Bay. This could, however, also limit the range of social benefits as the recreational activities able to be undertaken in areas set aside for low impact ecotourism, may be limited when compared to State forests.

Future RFA five-yearly reviews will be focussed on outcomes and the objectives of the NSW RFAs. Monitoring and reporting arrangements will also be strengthened and streamlined, and where possible indicate the impact of management arrangements.

The varied NSW RFAs will continue to ensure New South Wales' forests remain accessible for a range of uses, and support and deliver social benefits. The renewed NSW RFAs will continue to provide an adaptive framework that can incorporate new information and changes in community attitudes and circumstances, which will maintain and enhance social values into the future. This demonstrates that the renewed 20 year RFAs with five year rolling extensions will maintain and enhance social values of forests in NSW.

5. Principles of Ecologically Sustainable Management

As a party to the National Forest Policy Statement, NSW is committed to the principles of ecologically sustainable development. The NSW RFAs define Ecologically Sustainable Forest Management (ESFM) as 'forest management and use in accordance with the specific objectives and policies for ecologically sustainable development as detailed in the National Forest Policy Statement'.

The three NSW RFAs include the following five ESFM principles⁹⁶:

1. Maintain or increase the full suite of forest values for present and future generations across the NSW native forest estate
2. Ensure public participation, access to information, accountability and transparency in the delivery of ESFM
3. Ensure legislation, policies, institutional framework, codes, standards and practices related to forest management require and provide incentives for ecologically sustainable management of the native forest estate
4. Apply precautionary principles for prevention of environmental degradation
5. Apply best available knowledge and adaptive management processes.

This section includes analysis of the following Montréal Process indicators:

- Indicator 7.1a – Extent to which the legal framework supports the conservation and sustainable management of forests
- Indicator 7.1b – Extent to which the institutional framework supports the conservation and sustainable management of forests
- Indicator 7.1c – Extent to which the economic framework supports the conservation and sustainable management of forests
- Indicator 7.1d – Capacity to measure and monitor changes in the conservation and sustainable management of forests
- Indicator 7.1e – Capacity to conduct and apply research and development aimed at improving forest management and delivery of forest goods and services
- Indicator 3.1.a: – Scale and impact of agents and processes affecting forest health and vitality
- Indicator 5.1a – Contribution of forest ecosystems and forest industries to the global greenhouse gas balance

Management of the formal reserve system

The NPW Act sets out the framework for managing protected areas, including forest ecosystems, in NSW. The objects of the NPW Act are: the conservation of nature, the conservation of objects, places and features of cultural value in the landscape, fostering

⁹⁶ See appendix 5 for full definitions of the ESFM principles found in the NSW RFAs

public appreciation of nature and cultural heritage, and providing for the management of land preserved under the NPW Act.

The NPW Act includes several categories of protected area, which allow different levels of sustainable visitor use. Reserve categories include national parks, historic sites, state conservation areas, regional parks, karst conservation reserves, nature reserves and Aboriginal areas. Permissible activities in these reserves are determined by a set of management principles for each reserve category and by plans of management which must be prepared for each reserve.

The NPW Act outlines the functions of the Chief Executive of the NPWS relating to reservation of land including proposals for adding land to the reserve system. In considering proposed additions, the Chief Executive must have regard to whether the proposal is consistent with the establishment of a comprehensive, adequate and representative reserve system.

Management of State forests: IFOAs

The Forestry Act provides that the Minister for Forestry and Lands and the Minister for the Environment may jointly make an IFOA. An IFOA integrates the regulatory regimes for environmental planning and assessment, for the protection of the environment and for threatened species conservation. It describes the forestry operations covered by the approval, and sets out conditions subject to which those operations are to be carried out. The IFOAs include licences issued under the POEO Act, the TSC Act and the FM Act.

The EPA's compliance program

The EPA monitors FCNSW's native forestry operations to ensure they comply with the conditions in the IFOAs. The EPA's reports annually on the compliance results. The EPA also undertakes regular proactive audits which aim to identify good and poor forestry practices. In addition, the EPA conducts investigations when non-compliances are identified. The EPA regularly responds to questions and concerns raised by the community, which sometimes result in detailed investigations. The EPA's regulatory program includes:

- Monitoring, assessing and reporting on compliance with the conditions in IFOAs, including targeted audits and investigations
- Periodic reviews of compliance strategies
- Development of guidelines and procedures for forestry operators
- Responding to incidents reported by the community.

EPA staff have expertise in environment protection, threatened species, soil, water, policy and regulation. They work closely with specialists in science and ecology, and legal services to audit compliance with IFOAs.

FCNSW's management of forests

FCNSW's management of State forests is certified to the Australian Standard for Sustainable Forest Management (AS4708–2013)⁹⁷. This standard has been recognised through the international Programme for the Endorsement of Forest Certification (PEFC), which states that: 'PEFC promotes this independent certification and provides assurance mechanisms to demonstrate to consumers that the wood used in their products comes from sustainably managed forests'⁹⁸.

FCNSW's Environmental Management System (EMS) sets the framework for achieving and continually improving its environmental performance by systematically measuring and monitoring performance. The EMS is currently certified to ISO 14001:2004 (Environmental management systems).

FCNSW's Forest Management Plans⁹⁹ (FMPs) include ESFM commitments and ESFM management outcomes.

The Plantations and Reafforestation (Code) Regulation 2001¹⁰⁰ (NSW) (PR Code) contains standards for plantation establishment and management and for harvesting operations on authorised plantations.

In addition, FCNSW prepares an annual Sustainability Supplement to its annual report, which reports on many indicators which demonstrate ESFM.

Private forests

In NSW, PNF is currently regulated under the Forestry Act, the *Local Land Services Act 2013* (NSW) (LLS Act) and the BC Act. PNF operations require an approved private native forestry plan under the Forestry Act and must comply with the PNF Code.

The PNF Code is an important component of the regulatory framework for the ecologically sustainable management of PNF operations. The PNF Code sets minimum operating standards for harvesting in private native forests.

The PR Code contains standards for plantation establishment and management and for harvesting operations on authorised plantations.

⁹⁷ Standards Australia 2013, *Home*, accessed July 2017 www.forestrystandard.org.au/

⁹⁸ PEFC 2017, *Requirements & Criteria*, accessed July 2017, www.pefc.org/standards/sustainableforest-management/requirements-criteria

⁹⁹ FCNSW 2016h, *Forest Management Plans*, accessed 9 November 2016, www.forestrycorporation.com.au/management/sustainable-forest-management/esfm

¹⁰⁰ DPI n.d., *Plantation forestry*, accessed 30 July 2018, <https://www.dpi.nsw.gov.au/forestry/forestry-operations/plantation-forestry>

Indicator 7.1a Extent to which the legal framework supports the conservation and sustainable management of forests

This indicator outlines the support that the legal system gives to the sustainable management of forests. A legal system that ensures transparency and public participation in policy and decision-making processes supports the continuous improvements in sustainable forest management.

Forest management in NSW is subject to both Commonwealth and state laws which have evolved as a result of ongoing work to improve the balance between environmental and economic demands, and in response to other factors affecting resource availability, and economic and social needs.

The NFPS, signed by the Commonwealth, and state and territory governments, has underpinned Australian forest policy. This Statement outlines agreed objectives and policies for the future of Australia's public and private forests. It aims to coordinate forest management while maintaining the tradition of managing public and private native forests for multiple uses.

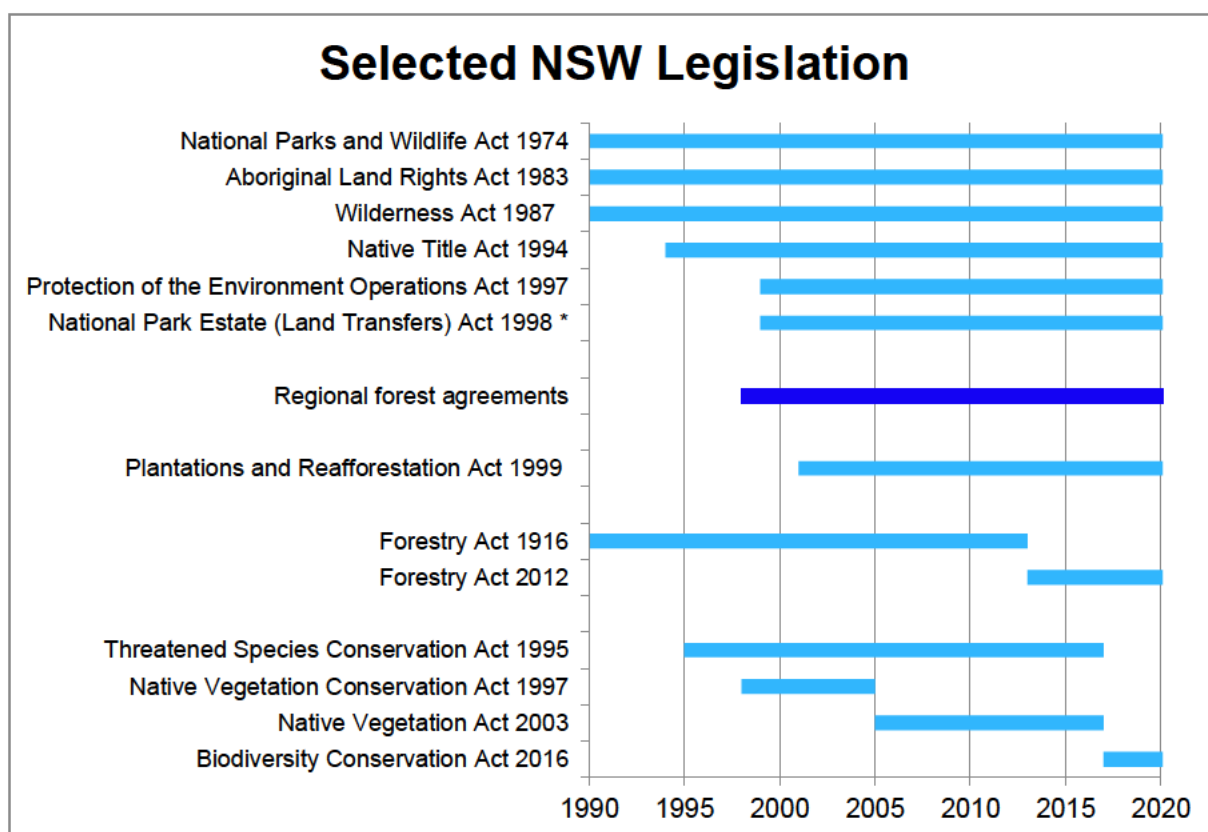
Commonwealth Legislation

Commonwealth legislation that supports the conservation and sustainable management of forests includes:

- The EPBC Act – encapsulating and promoting the principles of ecologically sustainable development, and providing for assessment of likely significant impacts to nationally protected matters by the Commonwealth Minister for the Environment.
- The *Export Control Act 1982 (Cth)* – which establishes a broad framework under which goods for export are regulated, recognises RFAs in allowing unprocessed wood and woodchip export when sourced from native forestry operations in an RFA region. This is also permitted from plantations which have an approved Code of Practice to satisfactorily protect environmental and heritage values.
- The RFA Act – which legislates for the creation and operation of RFAs. These agreements provide a streamlined approach to satisfying Commonwealth environmental legislative requirements for conducting sustainable productive forest management.

NSW Legislation

NSW legislation relating to the conservation and sustainable management of forests on public and private lands in NSW has evolved and continues to evolve including the NPW Act, PR Act, Forestry Act, BC Act, *Wilderness Act 1987 (NSW)* and the LLS Act. Some of these acts have remained in force (with amendment) over the life of the current NSW RFAs, while others have been the product of major reform to provide contemporary settings. This evolution is shown in **Figure 5.1**.



* Formerly known as the Forestry and National Park Estate Act 1998

Figure 5.1 Evolution of key legislation affecting sustainable forest management in NSW

National Parks and Wildlife Act 1974

The *NPW Act* regulates forest management within national parks, nature reserves and other conservation reserves, which constitute the majority of the NSW NPWS estate. The *NPW Act* also provides for management of Aboriginal land and objects.

Wilderness Act 1987

The *Wilderness Act 1987* (NSW) creates a management overlay for land that is generally in pristine condition. Wilderness in NSW is declared over existing nature conservation reserves, although it can be applied to any form of land tenure.

Protection of the Environment Operations Act 1997

The *POEO Act* commenced operation in 1999, repealing the *Clean Air Act 1961* (NSW), the *Clean Waters Act 1970* (NSW), the *Environmental Offences and Penalties Act 1989* (NSW), the *Noise Control Act 1975* (NSW), and the *Pollution Control Act 1970* (NSW). The *POEO Act* covers environmental protection policies, licensing, regulation, investigation and enforcement activities.

Plantations and Reafforestation Act 1999

In 2001, the *PR Act* commenced. The *PR Act* promotes and facilitates the development of timber plantations on essentially cleared land. It provides a streamlined and integrated

scheme, for the establishment, management and harvesting of timber and other forest plantations, consistent with the principles of ecologically sustainable development. The PR Act was amended later to clarify and improve the process for authorising plantations, and the enforcement and compliance provisions within it. The PR Act regulates both softwood and hardwood plantations on all tenures to support the sustainable development of plantation forestry throughout NSW.

Biodiversity Conservation Act 2016 and Local Land Services Act 2013

In 2005, the former *Native Vegetation Act 2003* (NSW) (NV Act) replaced the *Native Vegetation Conservation Act 1995* (NSW), introducing changes to end broad scale land clearing and aiming to give greater certainty to farmers and industry.

In June 2014, the Independent Biodiversity Legislation Review Panel was commissioned to conduct a comprehensive review of the NV Act, TSC Act, *Nature Conservation Trust Act 2001* (NSW) and those parts of the NPW Act that relate to native plants and animals and private land conservation.

The NSW Government accepted all 43 recommendations of the Independent Biodiversity Legislation Review Panel and implemented an integrated package of reforms to deliver on commitments to cut red tape, facilitate sustainable development and conserve biodiversity.

As a part of these reforms, the NV Act and the TSC Act were repealed. Provisions regulating clearing of native vegetation in rural areas are now contained in a new part 5A of the LLS Act, and provisions in relation to the private native forestry are contained in a new part 5B of the LLS Act.

Consequently, a BC Act now supports sustainable development and productive farming that responds to environmental risk through a more balanced approach to land management and biodiversity conservation in NSW. This affects sustainable forest management in the areas of private native forestry and plantations

The LLS Act provides a new regulatory framework for the management of native vegetation in NSW to streamline the process for providing private native forestry advice, approvals and extension services for landholders.

Forestry Act 2012

The Forestry Act regulates forest management on Crown-timber land, including State forests and provides for dedication, management and use of State forests and other Crown-timber land for forestry and other purposes. With the repeal on the NV Act, a new Part 5C was inserted to accommodate provisions relating to private native forestry that were previously contained in that Act, which has since been transferred to Part 5B of the LLS Act.

Commencing in 2013, the Forestry Act strengthened the governance arrangements and commercial viability of the then Forests NSW by establishing it as a State-owned corporation—the *Forestry Corporation of New South Wales*. It modernised the former *Forestry Act 1916* (NSW), made consequential amendments to a number of associated Acts, and repealed the *Timber Marketing Act 1977* (NSW) and part of the former *Forestry and National Park Estate Act 1998* (NSW).

The Forestry Act provides for an IFOA for forestry operations on Crown-timber land, including State forests. An IFOA provides the formal approval for and conditions that apply to the undertaking of native forest harvesting activities on Crown-timber land. An IFOA integrates the regulatory regimes for environmental planning and assessment, protection of the environment and threatened species conservation. The IFOAs allow FCNSW to conduct compliant forestry operations consistent with the conditions of relevant licences issued under these other Acts. The IFOAs also include non-licence conditions relating to forestry and logging operations, ongoing forest management, ancillary road construction and other activities.

The NSW Government is currently implementing further changes under its planned biodiversity reforms.

A number of other acts and legal instruments such as Regulations supporting the Acts, codes such as the PNF Code, and NSW planning policies such as the NSW State Environment Planning (Vegetation) Policy 2017, forest agreements and integrated forest operations approvals, also form part of the NSW forestry legal framework.

Other NSW statutes may also impact upon specific forest management activities such as those related to protection of the environment, fisheries management, control of feral animals or work health and safety management.

Indicator 7.1b Extent to which the institutional framework supports the conservation and sustainable management of forests

This indicator examines the institutional frameworks that support sustainable forest management. Institutional frameworks provide mechanisms for engagement of the wider community in the process of continuous improvement and sustainable forest management.

This includes institutional and administrative arrangements that have been put in place for enforcement and compliance with the legal regulatory framework, decision-making in relation to forestry resource management, and community engagement in the broader process of sustainable forest management.

The information outlines NSW Government's overarching vision and strategic plan for sustainable forest management, the roles and responsibilities of relevant NSW agencies and their respective policy mechanisms that contribute towards achieving this vision.

NSW Forestry Industry Roadmap

The 2016 NSW Forestry Industry Roadmap is the NSW Government's strategic action plan to support its vision of a stronger, ecologically sustainable and more competitive forestry industry. The Roadmap outlines a triple bottom line approach to achieving social, ecological (environmental) and economic sustainability through four priority pillars. Under each of these pillars, there are clear actions the NSW Government will implement.

1. Regulatory modernisation and environmental sustainability

The NSW Government is committed to a modern regulatory framework that ensures ecological (environmental) sustainability of NSW forests and balances economic benefits with community expectations through best practice regulation.

The NSW Government has committed to reviews of a range of institutional arrangements over the short, medium and long term to achieve best practice regulation. This includes NSW Government's commitment to ensure no erosion of environmental values and no net change to wood supply in remaking of the four current IFOAs covering the RFA regions into one coastal IFOA. IFOAs are being renewed to improve clarity and enforceability of environment protection conditions, and deliver a contemporary regulatory framework that is fit for purpose. A review of the PNF Codes is also being undertaken, which is a key instrument for guiding PNF operations in NSW that sets the minimum operating standards for wood harvesting in private native forests.

2. Balancing supply and demand

The NSW Government aims to ensure that decisions on balancing resource supply and demand are based on evidence and robust planning, and also provide greater certainty of resource supply for industry to plan investment, recruit and retain employees, and build their business with renewed confidence.

3. Community understanding and confidence

The NSW Government seeks to further build on community engagement through consultation to deliver and enforce a credible, effective and transparent forestry regulation and framework, and to increase community confidence that the forestry industry is sustainable,

complies with requirements of the regulatory framework, and is a supplier of wood and non-wood forest products from legal and ecologically sustainable sources.

4. Industry innovation and new markets

The carbon economy presents challenges and opportunities for NSW. The forestry industry can play an important role in storing carbon and displacing use of higher carbon materials. This may be aided by the development of innovative biomass and bioenergy products, and the establishment of methods for carbon crediting. The Roadmap will ensure the forestry industry is well placed in the global market to capitalise on these opportunities and contribute to Australia's low carbon economy.

The NSW Forest Industries Taskforce was established in 2012 to provide members of the softwood and hardwood timber industries with an opportunity to consider issues affecting those industries and provide advice to the Minister responsible for forestry. The NSW Forest Industries Taskforce meets four times a year, is currently chaired by the Parliamentary Secretary for Natural Resources, and consists of 15 other members.

Relevant NSW Agencies – roles and policy mechanisms

The following NSW agencies work towards providing a seamless institutional framework that supports the conservation and sustainable management NSW forested estate.

Roles and responsibilities of each of these agencies, including their respective regulatory, decision-making and other policy mechanisms, are broadly outlined below.

Office of Environment and Heritage (OEH)

OEH is responsible for managing the nature conservation reserve estate, including the native forests which lie within it. It advises the NSW Minister for the Environment and administers programs to protect threatened species and communities.

The NSW OEH has adopted an EMS to ensure a consistent approach to the many measures it implements to minimise environmental impacts of managing the nature conservation reserve estate.

The EMS is comprised of the Park Management Framework (PMF) and the Park Management Program (PMP) as well as management elements such as guidelines and legislation. The PMF and the PMP are complementary. Together, they form an EMS that is consistent with the Australian Standard for Environmental Management Systems (ISO 14001:2004).

The PMF provides a holistic and strategic approach to OEH's environmental policy, plans and actions. In developing the PMF, OEH used the ISO 14001: 2004 Self-Assessment Checklist and adapted the IUCN's Management Effectiveness Framework.

This model supports continual improvement in the management of NSW's nature conservation reserve estate. The PMF ensures that all key elements required in a management cycle are considered. The PMF is delivered by the PMP, which coordinates the major park management programs.

Department of Primary Industries (DPI)

DPI (Forestry) advises the NSW Minister for Lands and Forestry and the NSW Minister for Primary Industries on forest policy, undertakes forest science research, and is responsible for the development and application of plantations policy and regulation.

DPI (Fisheries) advises the NSW Minister for Primary Industries on matters related to the FM Act including those related to threatened species licences, which form part of the IFOAs.

Plantation operations on both Crown land (including State forests) and freehold land are regulated and supported by DPI. Plantation forestry involves planting trees which may be managed for commercial timber production or environmental purposes.

DPI NSW forest research group carries out the majority of its forest research projects through a service level agreement with FCNSW. Improved information derived from research results drives the adaptive management and continuous improvement process that is critical to ecologically sustainable forestry management. These projects are reported through the publication of the FCNSW's Annual Report.

Regulation occurs through the PR Act, and the PR Code. Plantations officers provide support and advice to the industry, both through the authorisation process and at other times. The authorisation process for individual plantations or plantation estates involve a single application, replacing the need for multiple licences and permits, and includes a streamlined assessment process with pre-application inspections undertaken to resolve issues in advance of formal application.

NSW Environment Protection Authority (EPA)

EPA is the primary environmental regulator in NSW. It is an independent statutory body, responsible for regulating native forestry operations on both public (Crown) land and private land in NSW. The EPA monitors the operations of FCNSW to ensure that native forest operations on public land are undertaken in accordance with the IFOAs and their licences. It also monitors compliance¹⁰¹ of private landholders with the requirements of their PNF Plans¹⁰².

National Parks and Wildlife Service

The NPW Act undertakes functions of the Chief Executive of the NPWS relating to reservation of land and the powers and functions of the NPWS. One of the functions of the Chief Executive, under section 7 of the NPW Act, is to consider proposals for the addition of land to the nature conservation reserve estate. In considering any proposals, the Chief Executive is to have regard to criteria including whether the proposal is consistent with the establishment of a CAR reserve system.

Under the NPW Act, the Chief Executive of NPWS is responsible for the care, control and management of all national parks, historic sites, nature reserves, reserves, Aboriginal areas and state game reserves in NSW. State conservation areas, karst conservation reserves and regional parks are also administered under the NPW Act.

Functions and duties of the National Parks and Wildlife Advisory Council and the Aboriginal Cultural Heritage Advisory Committee are also outlined in the NPW Act. Advisory groups provide stakeholder advice to the Minister and Chief Executive on achieving the objects of the NPW Act.

¹⁰¹ Monitoring and compliance is in the process of being transferred to NSW Local Land services

¹⁰² Under the BC Act, private native forestry plans replace Private vegetation plans

Forestry Corporation of NSW

FCNSW is a SOC established by the Forestry Act, with the principal objective of being a successful business operating in compliance with the principles of ecologically sustainable development.

Functions of FCNSW include carrying out forestry operations on Crown-timber land, selling, supplying or processing wood, establishing and maintaining plantations, and managing forestry areas. This allows forestry operations to be undertaken by an entity that has neither a regulatory role nor responsibility for policy development and implementation. As noted above, DPI (Forestry) is responsible for forestry industry policy advice.

FCNSW produces a corporate Annual Report which is tabled in the NSW Parliament. In addition, FCNSW publicly reports its performance against a suite of sustainability indicators consistent with reporting commitments under the Montréal Process, the FAs and IFOAs. FCNSW also provides information on annual sustainability indicators within its Annual Report.

Independent Pricing and Regulatory Tribunal

The Premier may request advice on issues related to forest management from the Independent Pricing and Regulatory Tribunal (IPART) or the Natural Resources Commission (NRC).

IPART is an independent statutory authority which advises the NSW Government on issues relating to the level and structure of prices, industry structures and competition, particularly with regard to NSW Government services. The NSW Government may ask IPART to undertake investigations. IPART also undertakes a range of regulatory and licensing functions.

Natural Resources Commission

The NRC is an independent statutory authority. Section 12 of the *Natural Resources Commission Act 2003* (NSW) provides that the NRC is to provide the NSW Government with independent advice on natural resource management. For example, in 2009, the Premier asked the NRC to recommend sustainable land use and water requirements in the Riverina red gum and south west cypress forests.

Local Land Services

The NV Act was repealed in August 2017 and the provisions regulating the clearing of native vegetation in rural areas are now contained in a new Part 5A of the LLS Act.

Part 5A of the LLS Act is administered by NSW Local Land Services. However, the OEHL has responsibility for native vegetation mapping and compliance under that Part of the LLS Act.

Administration of PNF authorisations is currently being transferred from EPA to LLS as part of legislative reforms in forestry.

Indicator 7.1c Extent to which the economic framework supports the conservation and sustainable management of forests¹⁰³

This indicator examines the extent to which government policies support the conservation and sustainable management of forests. Government policies on investment, taxation and trade influence the level of investment in forest conservation, forest establishment and timber processing.

Many of the factors that affect the economic framework in relation to sustainable management of forests occur at the state or national level. These factors have been actively reported on over the life of NSW RFAs in five yearly SOFRs, as well as in NSW reporting such as FA annual reporting.

Investment

Australia has stringent controls over land use changes and industrial development that aim to protect environmental cultural and amenity values. These controls generally apply equally to all land use change and developments. Provided those values are protected, private investment in the forest and forest products industries in Australia is generally free from industry-specific legal and regulatory constraints. Australia's foreign investment policy aims to encourage foreign investment that is consistent with community and economic interests. Foreign investment in Australia is regulated primarily through a regime established under the *Foreign Acquisitions and Takeovers Act 1975* (Cth).

Competition

Australia's National Competition Policy has led to several reforms that affect the competitive climate for Australian forest-based industries, including that commercial state-owned forest entities be competitively neutral with the private sector. FCNSW, a SOC, was established in 2012 and functions as a commercial entity in the competitive market place.

Taxation

Prior to 2002, the tax treatment of forestry activities as primary production created unintended inequities for small scale private investments in forestry due to the seasonal and long-term nature of forestry, and its associated irregular cash flows. Key issues were:

- Inability to offset upfront establishment payments in managed schemes in the payment year
- Immediate tax liability created by forward contracts for timber harvesting rights
- Tax bracket creep with no mechanism to average large harvest incomes over the plantation lifecycle.

¹⁰³ Prior to 2005 effects of the economic framework on sustainable forest management was reported under indicators which were then enumerated as 7.3a and 7.3b.

In 2002, a 12-month prepayment rule was introduced to address the offset issue for investors in prospectus based forestry schemes. This was the only significant tax treatment for forestry investments in managed schemes that was different to investment in other sectors at that time.

Managed Investment Schemes

In July 2007, new taxation arrangements for investment in forestry managed investment schemes came into effect as a result of Plantations for Australia: the 2020 Vision, a strategic partnership between the Australian, state and territory governments and the timber industry. The aim was to enhance regional wealth creation and international competitiveness by increasing Australia's plantation resources by trebling the 1997 area of commercial tree crops by 2020.

Following the Global Financial Crisis and collapse of several large managed investment schemes in 2009 and 2010, these schemes have become a less important financial mechanism for plantation expansion.

Adjustment programs

A joint NSW – Commonwealth adjustment package was made available to assist forest industry businesses and workers in the transition to new arrangements under the NSW RFAs. This comprised \$160 million for those directly affected by the outcomes of the RFAs. This included businesses and workers:

- directly involved in the native forest based industry sector
- directly dependent on the native forest industry, (> 50% of their income from direct supply of goods or services to the forest industry), and rendered financially unviable as a result of RFA decisions.

The adjustment package included:

- Rescheduling Assistance
- Labour Adjustment Package
- Restructuring Assistance
- Business Exit Assistance

Trade policies

Throughout the RFA period, Australian trade policy has continued to support trade liberalisation to improve access for Australian exports in global markets, as well as Australian access to imports. Improved market access has been facilitated through global and multilateral efforts and through the use of free trade agreements (FTAs). Australia is a member of the World Trade Organization, which facilitates multilateral trade negotiations and ensures that the rules of international trade are correctly applied and enforced. FTAs are increasingly important to the forest-based industries.

Investment in environmental services

The Australian Government's Emissions Reduction Fund (ERF), established under the *Carbon Credits (Carbon Farming Initiative) Act 2011* (Cth), allows businesses to earn carbon credits for

storing carbon or reducing greenhouse gas emissions. ERF project participants have an opportunity to sell their emissions reductions to the Government through competitive reverse auctions.

Effectiveness of the economic framework

The effectiveness of the economic framework was not explicitly assessed on a holistic basis prior to SOFR 2011. The inclusion of these metrics with data from 2006 provided a baseline for future analysis of the effectiveness of the economic framework in relation to production forests, management of conservation reserves, bushfires and Indigenous managed lands.

The majority of measures remained consistent between 2006 and 2016 with the exception of understanding and processes relating to indigenous managed land, and conservation reserve processes which showed decline. Notably no items were ranked below partially effective, and no items showed significant improvement in ranking over the period.

Table 5.1 Assessment of understanding, planning, inputs, processes, outputs and outcomes associated with conservation and sustainable management of forests 2001-2016

Category	Production forests		
Year	2001-2006	2006-2011	2011-2016
	Assessment grade and recent trend		
Understanding	N/A	Very effective ↑	Very effective –
Planning	N/A	Very effective –	Very effective –
Inputs	N/A	Effective –	Effective ↓
Processes	N/A	Effective –	Effective –
Outputs and outcomes	N/A	Effective ↑	Effective –
Source		Australian State of the Environment (SOE) report 2011 p359	Australian SOE report 2016

Category	Bushfire		
Year	2001-2006	2006-2011	2011-2016
	Assessment grade and recent trend		
Understanding	N/A	Effective ↑	Effective ↑
Planning	N/A	Effective ↑	Effective ↑
Inputs	N/A	Partially effective ↑	Partially Effective –

Processes	N/A	Very effective –	Very effective –
Outputs and outcomes	N/A	Effective –	Effective ↑
		Australian SOE report 2011 p359	Australian SOE report 2016

Category	Management of conservation reserves		
Year	2001-2006	2006-2011	2011-2016
	Assessment grade and recent trend		
Understanding	N/A	Very effective –	Very effective –
Planning	N/A	Effective ↑	Effective ↑
Inputs	N/A	Effective ↓	Effective ↓
Processes	N/A	Very effective –	Effective –
Outputs and outcomes	N/A	Effective ↓	Effective –
		Australian SOE report 2011 p359	Australian SOE report 2016

Category	Indigenous managed lands		
Year	2001-2006	2006-2011	2011-2016
	Assessment grade and recent trend		
Understanding	N/A	Effective ↑	Partially effective –

Planning	N/A	Partially effective –	Partially effective –
Inputs	N/A	Partially effective ↓	Partially effective –
Processes	N/A	Effective –	Partially effective –
Outputs and outcomes	N/A	Partially effective ↑	Partially effective ↑
		Australian SOE report 2011 p359	Australian SOE report 2016

Notes:

1. Recent trend refers to the direction of change at the time of assessment (End of Period):

↑ improving;

↓ deteriorating;

– stable.

Indicator 7.1d Capacity to measure and monitor changes in the conservation and sustainable management of forests

This indicator examines the capacity of forest owners and agencies to measure and monitor changes in the forest and the impact of forest activities. A comprehensive measurement and monitoring programme provides the basis for forest planning to support sustainable management.

Biodiversity is measured in terms of genetics, species and ecosystems. FCNSW manages its softwood plantation estate primarily for wood production. There are often important opportunities for biodiversity conservation within plantations.

Forestry Corporation of NSW

FCNSW is the SOC that carries out forestry operations in NSW State forests and other Crown-timber lands. It has a Forest Management Policy, which outlines its commitments to conserving and advancing a range of forest values such as biodiversity, forest productivity and carbon sequestration in keeping with the principles of sustainable forest management. The policy is delivered through the Forestry Management System (FMS) that is available on FCNSW website.

The FMS includes processes and procedures that guide day-to-day operations by outlining how FCNSW will plan operations, implement procedures, audit and report operations and review performance to achieve sustainable forest management.

The FMS is tailored to the distinct requirements of each of the organisation's key activities that are undertaken by the operational divisions include wood harvesting, plantation establishment and tending, weed and pest control, prescribed use of fire, road maintenance and construction. These activities are undertaken with specific controls that aim to minimise risks. The FMS ensures FCNSW has controls in place to minimise impact of its key activities on the environment and to continuously improve its operations through regular audits and reviews of its performance management systems and processes.

Australian and International Standards

Both FCNSW's Softwood Plantations Division and Hardwood Forests Division are independently certified to the AS4708:2013. This Australian Standard[®] provides forest managers with economic, social, environmental and cultural criteria and requirements that support management of forests for products and services.

The certification provides objective assurance to FCNSW customers and stakeholders that it is a sustainable and effective forest manager. Certification to AS 4708:2013 also allows end users to identify certified timber at the time of purchase, providing customers with a guarantee that the timber they are buying has been grown and harvested legally from a sustainable forest.

Both divisions are also certified under ISO 14001:2004 for the EMS that they have in place to minimise environmental impacts of their management of native forest and plantations.

Data Collection

FCNSW assesses existing data when planning forestry activities to identify whether further information needs to be collected to assess site-specific impacts of the proposed activity and develop any amelioration measures. FCNSW maintains large and complex databases including an extensive geographic information system (GIS) and a stand record system. These are used to collect, process, store, analyse and report forest information required for planning. Its GIS libraries contain a suite of information on cadastre, mapping context, topography, the environment, forest disturbances and forest management. Other databases linked to the GIS, and which can be represented spatially, include timber inventory, flora and fauna surveys and species location, Aboriginal cultural heritage sites and non-Aboriginal cultural heritage items.

Where existing information is inadequate, additional surveys may be required. Additional information may relate to inventory estimates, flora and fauna, cultural heritage, aquatic habitat, soil and water. All additional data collected is regularly incorporated into FCNSW's databases to ensure strategic and operational planning are based on the most up-to-date information.

New technologies to capture and record data

With the advent of new technologies, particularly mobile devices such as tablets and smart phones, the ability to capture and record information is changing. FCNSW aims to embrace and develop this technology to improve management and business outcomes. To this end, FCNSW has developed a mobile app (application) for staff that is used to capture environmental, planning and incident related information in the field via mobile devices. The app improves data capture through its ease of use, accuracy and the ability to automatically provide a spatial reference which is linked to the GIS. FCNSW will continue to investigate opportunities to improve planning through the use of technology.

Stand Record System

FCNSW maintains a stand record system, which is a spatially-linked record of all plantation areas, site treatments, wood harvesting events and yield monitoring. It provides a snapshot of the current state of the forest and is the starting point for all modelling of future yield predictions.

Estate Modelling

FCNSW calculates the amount of wood available now and into the future using a predictive tool that allows it to evaluate multiple objectives and to explore management options to meet a number of different constraints. Long-term yield predictions based on this modelling are critical for efficient management of plantation forests, policy formulation, strategic planning, and operations management.

FCNSW uses estate modelling tools to determine the areas that can be scheduled for wood harvesting while maintaining a sustainable supply level. Among other things, modelling considers supply commitments, market and product demand, the estimated capacity of the forest, the ability of the forest to support harvesting operations during periods of wet weather and logistical issues.

Estate modelling allows FCNSW to optimise the value of the resource within supply commitment constraints over a timeframe of approximately 70 years, optimise volume of the resource to meet commercial objectives, and identify opportunities for further sales and timber industry growth.

The predictive nature of estate modelling is balanced by real world checks, including on-going review of whether silvicultural strategies met their objectives and comparison of predicted and actual harvest yields. FCNSW implements plot measurement programs that span strategic through to operational (pre-harvest) inventory and also completes assessments for operational control and biometric analysis.

For this to work, growth models and other forest information systems must be compatible and linked efficiently and this is done through a GIS, inventory databases, growth models and yield scheduling and optimising software. FCNSW runs strategic models as required, reviews stratification of planted forest areas to assist future sampling and modelling, refines harvestable area predictions, measures inventory plots in accordance with the inventory framework, maintains the permanent growth plot data system, maintains yield tables and growth models with additional field data, improves growth and mortality models, and

monitors and incorporates progressive yield data between five yearly review periods. FCNSW also has an ongoing program to improve estate modelling.

NSW Office of Environment and Heritage

The OEH, works with the community in protecting NSW's environment and heritage, which includes the natural environment, Aboriginal country, culture and heritage, and built heritage. OEH supports the community, business and government in protecting, strengthening and making the most of a healthy environment and economy in NSW.

New South Wales is home to an amazing diversity of plants, animals and ecosystems – collectively known as biological diversity or biodiversity. There is a need to manage and protect this biodiversity to support the health of the environment and of our communities. Progress on the implementation of the four State-based FAs and IFOAs is reported annually. The reports provide a snapshot of the results of monitoring ecologically sustainable forest management criteria and indicators, wood supply, compliance with IFOAs for each region, and achievement of milestones defined in the four NSW FAs and the IFOAs.

Biodiversity Act 2016

The NSW Government has introduced new legislation for biodiversity conservation and native vegetation management, including the BC Act. One of the main goals of the BC Act is to conserve biodiversity. To help assess the performance of the new legislation, a monitoring program will be established by OEH to assess the status of biodiversity in NSW at the beginning of the BC Act – the baseline – and then at recommended intervals, including contributing to the five-year review of the BC Act.

Biodiversity Baseline Assessment

Biodiversity is the variety of living animal and plant life from all sources, and includes diversity within and between species, and diversity of ecosystems. The Biodiversity Baseline Assessment is a method and program for assessing and reporting on the status and trends in biodiversity and ecological integrity in NSW, as required by the BC Act. It includes all plants, animals, insects, fungi and micro-organisms.

The idea of ecological integrity is central to the maintenance of biodiversity. Ecological integrity is the ability and capacity of natural areas to maintain biodiversity now and in the future. Indicators of biodiversity are statistical measures which help scientists, managers and policy-makers understand the current status of biodiversity and how likely it is to change in the future.

OEH uses scientifically sound and cost-effective methods to gather the necessary information to create a snapshot of the status of all plants and animals across NSW. This includes the analysis of satellite images to assess the size and condition of natural areas in NSW where different types of plants and animals occur. In some cases, existing long-term data sets for particular areas or species can be used to understand how the numbers of species or their habitats have been changing over time.

The method identifies key indicators for biodiversity in NSW. These indicators measure different aspects of biodiversity, including how well our efforts at protecting and restoring threatened species are working, how many species are expected to survive in the future, how

previous loss of habitat has affected biodiversity, the condition of existing natural areas, how well-connected these are to each other, and the level of pressures and threats to biodiversity. These state-wide assessments will be complemented by case studies using data from on-ground monitoring programs in important areas for biodiversity or for important species or ecosystems.

OEH partnered with CSIRO and other experts from the Australian Museum and Macquarie University in developing the peer-reviewed methodology and identifying the best indicators. OEH will publish the results of the biodiversity baseline assessments in a NSW Biodiversity Outlook Report, which will be subject to peer-review.

Access to NSW Environmental Data

The NSW Government's portal for Sharing and Enabling Environmental Data (SEED) has been developed with and for the community of NSW, is a central place where anyone can access, contribute and visualise NSW environmental data. All data that was published via this open data portal is now available in SEED.

NSW government is seeking to simplify access to environmental data, establishing SEED as the primary discovery point as SEED provides a superior map viewing experience.

Department of Primary Industries

NSW Government has funded a \$1.5 million feasibility study project for the DPI to develop a proposal for an ongoing Forest Monitoring program for cross tenure forest monitoring in NSW. The project would generate robust scientific data required to support and benchmark sustainable forest management practice and performance in preparation for a state wide monitoring program.

Within NSW there are 22.2 million hectares of native forest, 40 per cent privately owned, 25 per cent on leasehold land, 25 per cent in national parks and other conservation reserves and 9 per cent State forests. A new multi-value, cross tenure Forest Monitoring program would be of great value in providing a common standard for tracking the condition, productivity and resilience of forests across both private and public tenures over time.

The feasibility project would involve scoping out and developing the technical, operational, financial and resourcing aspects of a new long-term forest monitoring proposal:

- Technical – identification and prioritising of forest monitoring and measurement needs for a cross tenure Forest Monitoring program in NSW, and limitations and challenges around current data.
- Operational – clarity around data management, processing and modelling incorporating ground, LiDAR and satellite data, and production output metrics of sustainable forest management
- Financial - an important element of the feasibility project that would largely depend on the scope of a FM program, its outputs and accuracy. The feasibility project aims to quantify costs and benefits, where possible, of an ongoing Forest Monitoring program
- Resources - the feasibility project would evaluate resources required for the management and administration of a NSW-wide, cross-tenure, long-term Forest Monitoring

program, taking into account research needs and data collection capacity of relevant NSW agencies.

The project will develop a proposal for an ongoing program to measure and monitor changes in the conservation and sustainable management of forests. The new program, once developed and approved, will further enhance NSW's capacity to measure and monitor changes in conservation and sustainable management of forests in NSW.

Indicator 7.1e Capacity to conduct and apply research and development aimed at improving forest management and delivery of forest goods and services

This indicator reports on the scientific understanding of Australian forest ecosystem characteristics and functions needed to underpin sustainable forest management. Research, inventory and the development of assessment methodologies provide the basis for sustainable forest management.

For this indicator, forestry research and development (R&D) covers research in relation to commercial management and protection of forests, including environmental and ecological considerations. It also includes forest products R&D such as production runs in mills, but not work on final product development (e.g. furniture production). This indicator is closely aligned to 6.2b which monitors the investment in, and the adoption of, new or improved technologies in forest management and in forest-based industries.

National capacity for Australian forestry R&D

While research is fundamental to supporting development and improvement in all aspects of forest management, production and sustainability, several recent publications have highlighted the significant decline in national forestry R&D capacity and capability (Kile *et al.* 2014; Turner & Lambert 2015 & 2016). Reasons for the reduction in funding for R&D associated with commercial forestry include the declining relative contribution of the forest industry to the national economy, reduced government involvement in the forestry industry, corporate restructuring, and increased international ownership.

Resource allocation for research priorities in nature conservation reserves is generally funded by state-based agencies or through universities that have received project grants, with specific and targeted interests focused on biodiversity and conservation issues. State conservation agencies are frequently being restructured and forced to having a greater reliance on securing competitive external funding.

Forest products research is broadly considered in terms of utilisation of products from forests (i.e. primary processing, pulp and paper, engineered wood products, bioenergy). National R&D capacity in this area has also declined, notably with the demise of CSIRO's contribution to wood products research. While there has been a decline in forestry R&D by government agencies, a small number of new university-based forestry and/or forest products research centres have recently been established, e.g. the Forest Industries Research Centre at the University of Sunshine Coast, or by the National Centre for Future Forest Industries at the University of Tasmania established under the National Institute for Forest Products Innovation.

Nationally, the number of staff (scientists, technicians, support staff and graduate students) involved in forestry and products research was about 276 in 2013 compared with 794 in the mid-1980s (Turner & Lambert 2016).

NSW capacity for forestry R&D associated with State Forests

Since the commencement of the NSW RFAs, the State forestry agency (previously State Forests NSW, Forests NSW, and now FCNSW) has undergone several significant changes, with subsequent consequences for the R&D program that it supported.

In 2005, the R&D capacity within the Forests NSW was transferred across to DPI. The associated full-time-equivalent (FTE) positions in forest-related R&D decreased from 36 in 2006-07 to 25 in 2010-11. This resulted in a reduction in the areas of research, for example, the loss of expertise in forest soils and nutrition and hydrology. In particular for the NSW RFAs, the restructure resulted in the reduction of scientists within the Forest Ecology team from 8 FTEs to 2 FTEs. This team focuses predominantly on research in native forests. In 2013, the number of FTEs in the Forest Ecology team increased to 3.5 FTEs, supported in part by casual employees funded through external grants.

While numbers in most forest research disciplines have diminished, some disciplines have increased, for example, forest biomass & carbon, and remote sensing. Also most of the remaining forest researchers work opportunistically in both native forests and plantations. In 2015-2016, there were 16 FTEs within the NSW DPI Forest Science team which increased to 18 FTEs with receipt of a two year grant from NSW DPI for three projects based in the UNE and LNE RFA regions. The same amount of funding for a further two years was provided in order to investigate the feasibility of a strategic, cross-tenure, multi-value forest monitoring program. The objective of a long-term forest monitoring program would be to provide robust scientific data suitable for evaluating the effectiveness and performance of forest managers in delivering sustainable forests practices, across forests included within the NSW RFAs. This addresses the NSW RFA research priority of developing appropriate mechanisms to monitor and continually improve the sustainability of forest management practices.

Under a Service Level Agreement (SLA) with DPI, FCNSW invested \$1.7 million in R&D during 2017-18. This was increased to \$1.8 million in a revised SLA for the period 1 July 2017 to 30 June 2019. The NSW DPI Forest Science team currently has scientific and technical expertise in forest ecology and sustainability, forest health and biosecurity, forest resource assessment and spatial modelling, carbon in forests, wood products and bioenergy, biometric and cost-benefit analysis services.

Many of the research projects recently undertaken by the NSW DPI Forest Science team are supported by external funds and conducted in collaboration with other organisations, including other State departments, Commonwealth agencies, the CSIRO and various Universities. Therefore, their projects tend not to focus on specific NSW RFAs but have multi-regional or state-level objectives.

The declines in expenditure and staffing for NSW forestry research are only part of the changes that have occurred. There has also been a reduction or loss of facilities such as regional research centres. FCNSW, for example, have closed their small research centres located in Coffs Harbour, Eden and Tumut.

NSW capacity for forestry R&D associated with National Parks and reserves

As a result of several restructures within the state agency managing NSW national parks and other conservation reserves, it has proven difficult to quantify research work that specifically focused on forests. However, research programs have included studies on biodiversity

conservation, invasive weeds and pests, and fire within native forests. All of these had implications for sustainable forest management but were not necessarily focused just on forests. More recently, the OEH established a R&D program on climate change impacts and adoption. As with the forestry R&D, many of these projects are collaborative and supported by external funding.

Forestry R&D Capacity within NSW Universities

In NSW and the ACT, there are three Universities that reported activities in forest science in 2015: the Australian National University (ANU), Southern Cross University and the University of Western Sydney.

The Fenner School of Environment and Society at the ANU undertakes research on issues related to the management, conservation and sustainability of forest ecosystems while researcher's in the Southern Cross University's Forest Research Centre investigate the ecology of native forests, as well as studying how native forests and plantations can sustainably produce wood products, environmental services and carbon. The Western Sydney University Hawkesbury Institute for the Environment operates the world's only 'free air carbon dioxide enrichment' experiment in native forest.

Review of the NSW RFA Implementation Reports for Indicator 7.1e

During the 20 year period of NSW RFAs, R&D priorities and capacity has undergone significant change. The CRAs of the forest values of the UNE and LNE RFA regions identified a number of areas requiring further research and recommended the establishment of a Research Liaison Committee to identify research priorities relating to forest management. However, the Research Liaison Committee was disbanded in 2002. Subsequently, the parties agreed to consult each other in the development of joint research projects that may affect the NSW RFAs. Unfortunately research projects undertaken were not conducted via this mechanism (NSW EPA 2017) even though an initial principle of the RFA process was that there would be coordinated research by NPWS, the then State Forests NSW and research organisations on threatened species conservation and pest and forest management. Throughout the annual Implementation Reports, there has been a dichotomy in the presentation of the narrative for Indicator 7.1e, with the two relevant agencies presenting their own information.

A chronology of the changes in this R&D environment is summarised in Appendix L of the NSW RFAs Implementation Report 2004-2014 (NSW EPA 2017). It is also noted that the length of the narrative for Indicator 7.1e decreases over time, with reference to Annual Reports or web sites produced by the two forest management agencies and provides minimal commentary on their capacity to conduct and apply R&D.

Although the annual RFA Implementation reports provide limited information on research projects, sufficient information is provided to locate lists of references published by NSW forest researchers. **Table 5.2** summarises a number of peer-review research papers or reports on NSW native forests published by forest science funded by the FCNSW. Identifying research papers related to national parks is more difficult. However, in the 2000-2001 annual implementation report, NPWS published 52 research papers relevant to forest management, and during 2001-2002 NPWS staff produced 78 research papers relevant to the conservation of native forests.

Table 5.2 Numbers of peer-reviewed papers published by researchers with study areas within NSW State forest for the periods 1998-2002, 2003-2007, 2008-2012 and 2013-2014*

	1998-2002	2003-2007	2008-2012	2013-2017
Number of peer-reviewed papers published by researchers within NSW State forest	42	62	65	35

*Source: NSW DPI Forest Science Literature Database (NSW DPI CM9 V17/2112)

References

FCNSW Annual Report 2016-2017.

Kile, G.A., Nambier, E.K.S. & Brown, A.G. (2014) The rise and fall of research and development for the forest industry in Australia. *Australian Forestry* 77: 142-152.

NSW EPA (2017) A report on progress with implementation of the New South Wales Regional Forest Agreements: Second and third five-yearly reviews, July 2004 to June 2014. NSW Environmental Protection Authority, Sydney.

Turner, J., & Lambert, M. (2015) Forestry and Forest Products Research Summary of Changes in Capacity 1985 - 2013. FWPA PRE338-1415

Turner, J. & Lambert, M. (2016) Changes in Australian forestry and forest products research for 1985-2013. *Australian Forestry* 79: 53-58.

Indicator 3.1.a: Scale and impact of agents and processes affecting forest health and vitality

This indicator identifies the scale and impact on forest health of a variety of processes and agents, both natural and human-induced. Through the regular collection of this information, significant changes to the health and vitality of forest ecosystems can be monitored and measured.

Operational aspects of this indicator involve maintaining NSW' forest ecosystem health and vitality through pest and weed monitoring and control, including insect pests, invertebrate pests, and fungal diseases. It follows the principles of ESFM, which requires that forests are managed in an environmentally appropriate, socially beneficial, and economically viable manner, and meet the needs of the present without compromising the needs of future generations^{104,105}.

Native forest programs

- FCNSW instigated a forest health surveillance program in 1996 that conducts annual surveys of its hardwood and softwood plantations.
- Both FCNSW and NPWS monitor and test for *Phytophthora cinnamomi* (and associated dieback) in their native forest estates.
- Targeted aerial and ground surveys for bell miner associated dieback (BMAD) have occurred in Eden in 2002¹⁰⁶, northern NSW in 2004¹⁰⁷ and a more extensive campaign from the Manning River to Queensland border in 2015-2017¹⁰⁸.

None of these programs are structured to systematically assess the scale and impact of agents or processes, which would require repeated wide scale and consistent measures over the same defined sample areas.

To date there have been no such systematic surveys of the health of native forests across any forested tenure. Existing data collected by various land managers for ESFM monitoring is not suitable as it has not been coordinated for this purpose. Thus there is currently no accurate measure of the extent of negative agents across the forest estate.

The most readily available sources of data for native forest are expenditure on control efforts, and area over which these efforts were undertaken. However, this data has not been

¹⁰⁴ Holvert B, Muys B. 2004. Sustainable forest management worldwide: a comparative assessment of standards. *International Forestry Review* 6: 99–122

¹⁰⁵ Washburn MP, Miller KJ. 2003. FSC: Forest Stewardship Council certification. *Journal of Forestry* 101: 8, 10–13

¹⁰⁶ Jurskis V, Walmsley T. 2012. Eucalypt ecosystems predisposed to chronic decline: estimated distribution in coastal New South Wales. Bushfire Cooperative Research Centre.

¹⁰⁷ Carnegie AJ, Price G. 2004. Mapping BMAD in northern NSW. State Forests of NSW unpublished.

¹⁰⁸ Silver MJ, Carnegie AJ. 2017. An independent review of bell miner associated dieback. Final report prepared for the Project Steering Committee: systematic review of bell miner associated dieback.

reported consistently in the annual FA Implementation Reports and little quantitative or qualitative data has been included in these reports from 2010-2011 onwards.

In contrast, more comprehensive data is collected for plantation health, and there is accurate and consistent data on the area affected by damaging agents over the period of the NSW RFAs.

Monitoring of the scale and impact of agents affecting ecosystem health and vitality

From the data gathered over the RFA period, pest and disease monitoring can be seen to be more diligent on State forests than on other tenures¹⁰⁹. Furthermore, monitoring on State forests was mainly concentrated on the plantation estate. Systematic forest health surveillance was conducted annually over the majority of their softwood and hardwood plantations in NSW.

In contrast, general surveillance was the main method of monitoring pests and diseases in native forest estate.

Several programs targeted monitoring and assessment of damage by specific agents, such as BMAD^{5,6,7}, *Phytophthora* species^{e.g.110,111}, and myrtle rust¹¹². For *Phytophthora*, OEH developed a "Statement of intent"¹¹³ to help manage this invasive pathogen, and in some years, had conducted surveys for *Phytophthora* of native plants listed under the TSC Act, and has developed management protocols including monitoring, wash-down facilities, and education for bush walkers and other forest users.

A range of programs targeted monitoring and control of weeds and feral animals on State forests, national parks, and other reserves.

Monitoring and control programs for feral animals in both State forests and national parks targeted pigs (*Sus scrofa*), wild dogs, feral cats, foxes (*Vulpes vulpes*), deer (*Axis axis*, *Cervus elaphus*, *Cervus timorensis*, *Cervus unicolor* and *Dama dama*), goats (*Capra hircus*) and rabbits (*Oryctolagus cuniculus*).

Monitoring and control programs for weeds in both State forests and national parks has targeted blackberry (*Rubus fruticosus* agg.), bitou bush (*Chrysanthemoides monilifera* subsp. *rotundata*), crofton weed (*Ageratina adenophora*), serrated tussock (*Nassella trichotoma*), lantana (*Lantana camara*), willow (*Salix* spp.), giant Parramatta grass (*Sporobolus fertilis*) and groundsel bush (*Baccharis halimifolia*). Expenditure on such programs is available for State forests in the RFA Annual Reports, with annual expenditure ranging from \$400,000 to \$1.9

¹⁰⁹ Protecting our national parks from Pests and Weeds, available at <http://www.environment.nsw.gov.au/resources/parks/SoPPestManagement.pdf> (accessed on 31 May 2018).

¹¹⁰ Burgess TI et al. (2017). Distribution and diversity of *Phytophthora* across Australia. *Pacific Conservation Biology* 23:1–13.

¹¹¹ Scarlett K et al. 2015. *Phytophthora* in the Gondwana Rainforests of Australia World Heritage Area. *Australasian Plant Pathology* 44:335-348.

¹¹² Carnegie AJ et al. (2016). Impact of the invasive rust *Puccinia psidii* (myrtle rust) on native Myrtaceae in natural ecosystems in Australia. *Biological Invasions* 18:127–144.

¹¹³ <http://www.environment.nsw.gov.au/resources/threatenedspecies/08119soipc.pdf>

million. Information for expenditure in national parks is supplied mostly as a narrative in the RFA Annual Reports, but with a figure of \$34 million in 2014-2015.

Management of agents affecting ecosystem health and vitality

There was good evidence of active management — following ESFM principles — of a range of agents that affect ecosystem health and vitality over the period of the RFA. This includes active on-ground management (e.g. mapping, monitoring, and chemical control of invasive weeds), development of management plans and strategies, and involvement in research to improve management of invasive species. A selection of these activities, as reported in the NSW RFAs Implementation Reports and elsewhere, includes:

- NSW Threat Abatement Plan: predation by the red fox (2010) (<http://www.environment.nsw.gov.au/resources/pestsweeds/110791FoxTAP2010.pdf>)
- FCNSW ESFM Plans for State forest in all regions (<http://www.forestrycorporation.com.au/management/esfm>)
- Bell miner associated dieback strategy (2004); developed with input from a broad range of land managers (<http://www.environment.nsw.gov.au/resources/nature/BMADStrategy.pdf>)
- Protecting our National Parks from pests and weeds (2006) (<http://www.environment.nsw.gov.au/pestsweeds/SoPPestManagement.htm>)
- Regional Pest Management Strategies (<http://www.environment.nsw.gov.au/pestsweeds/RegionPestManagement.htm>)
- NSW Invasive Species Plan (2008-2015) (<https://www.pestsmart.org.au/wp-content/uploads/2014/12/nsw-invasive-species-plan.pdf>)
- Biological control of pests in native forest and plantations, including sirex wood wasp and Monterey pine aphid in softwood plantations, and involvement by land managers in the ongoing biological control program for blackberry (e.g. testing new strains of blackberry rust in NSW).
- A range of research projects were conducted on agents that affect ecosystem health and vitality, including BMAD, myrtle rust, and *Phytophthora* species.

Change in the scale and impact of agents affecting ecosystem health and vitality

Table 5.3: provides a summary of changes over time for Indicator 3.1a agents within NSW forests. The only consistent data is for State forest softwood and hardwood plantations, where data is supplied on the area affected by key damaging agents in softwood plantations (dothistroma needle blight, Monterey pine aphid, sirex wood wasp, diplodia canker/drought) and hardwood plantations (herbivorous and sap-sucking insects, leaf and shoot fungi, stem borers). The area affected by these key damaging agents varied across the reporting period.

For softwood plantations, much of this variation was related to climate, with increases in sirex wood wasp, diplodia canker/drought and Monterey pine aphid in years of below-average rainfall, and increases in dothistroma needle blight in years of above-average rainfall.

For hardwood plantations, the variation was associated with the maturity of the plantations estate, with more herbivorous insects and leaf fungi in younger plantations and more stem borers in older plantations.

Monitoring for *Phytophthora cinnamomi* was not conducted in a systematic or consistent manner to identify a trend or change in area affected. Surveys have revealed that *P. cinnamomi* is widespread in native forests in eastern NSW but rarely damaging. Dieback associated with *P. cinnamomi* has been observed in the following Catchment Management Authority (CMA) areas: Hawkesbury–Nepean, Hunter–Central Rivers, Northern Rivers, Southern Rivers and Sydney Metropolitan.

Myrtle rust was detected in 2010 on the NSW central coast and is now widespread along the east coast from Batemans Bay to the Queensland border¹¹⁴. It has been recorded in over 230 species of the Myrtaceae family under natural conditions (native ecosystems or gardens) in Australia, with a further 115 species known to be susceptible under artificial conditions.

In 2014, assessments were made of the impact of myrtle rust on two key rainforest species in NSW, *Rhodamnia rubescens* and *Rhodomyrtus psidioides*. Native populations of these two species were identified across the extent of their native range and assessed for crown health and tree survival. Severe impact as a result of repeated defoliation and dieback from myrtle rust was observed across all populations. Fifty-seven per cent (57%) of *Rhodomyrtus psidioides* trees surveyed had been killed by myrtle rust, and 12% of *Rhodamnia rubescens* trees had been killed. Prior to the arrival of myrtle rust, both species had been listed as Least Concern under the then TSC Act. The NSW Scientific Committee has made a Preliminary Determination to support a proposal to list both *Rhodomyrtus psidioides* and *Rhodamnia rubescens* as Critically Endangered Species as a result of impact from myrtle rust¹¹⁵.

Bell miner associated dieback has been known from NSW for many decades, including early surveys assessing factors associated with BMAD in NSW State forests in the 1990s which identified 2000 hectares affected by BMAD¹¹⁶. BMAD is considered to be expanding in native forests in NSW¹¹⁷, and although likely, there is little quantitative data to support this due to a lack of systematic surveillance. Several projects have conducted aerial surveys of BMAD. Jurskis and Wamsley reported 10,000 hectares of “declining forest” in three coastal regions in southern NSW based on 6 hours of aerial surveillance in 2002. Carnegie and Price conducted aerial surveillance over approx. 100,000 hectares of native forest (all tenures) in northern NSW mapping 20,000 hectares of BMAD. Aerial surveillance from 2015 to 2017 over 1.25 million hectares of native forest (all tenures) from the Manning River to the Queensland border identified 44,770 hectares of BMAD affected forests¹¹⁸. Analysis of the change in area affected from 2004 to 2017 is currently underway.

Whilst there is no indication of a significant overall increase or decrease in scale or impact of the majority of agents affecting forest health and vitality in NSW over the past 20 years,

¹¹⁴ Berthon K et al. 2018. Assessment and prioritisation of plant species at risk from myrtle rust (*Austropuccinia psidii*) under current and future climates in Australia. *Biological Conservation* 218:154-162

¹¹⁵ <http://www.environment.nsw.gov.au/committee/preliminarydeterminationsbydate.htm>

¹¹⁶ Stone C et al. 1995. Survey of crown dieback in moist hardwood forests in the central and northern regions of New South Wales (psyllid/bell miner research programme). Research Paper No. 28. Research Division, State Forests of New South Wales, Sydney, NSW.

¹¹⁷ Wardell-Johnson G et al. 2006. Bell miner associated dieback (BMAD) independent scientific literature review: a review of eucalypt dieback associated with bell miner habitat in north-eastern New South Wales, Australia. Occasional Paper No. DEC2006/116.

¹¹⁸ Carnegie AJ et al. 2018. Change detection and risk mapping of bell miner associated dieback (BMAD). North Coast Forest Project. NSW Department of Primary Industries, Parramatta, NSW.

systematic and consistent monitoring would be required for meaningful conclusions to be drawn.

Changes in area affected by key pests and diseases in softwood and hardwood plantations are consistent with normal variation due to climate (e.g. drought) and silvicultural attributes (e.g. age class-related susceptibility). The increase in area and scale of impact by myrtle rust is consistent with an invasive species expanding its geographic range and encountering native hosts following establishment in a new country, irrespective on any forest management processes.

The reported increase in BMAD from the 1990s in forests across all tenures is likely to have occurred but analysis of systematic surveillance has not been completed to verify or quantify this change. The scale and impact of *Phytophthora cinnamomi* does not appear to have increased significantly in the past 20 years, although several localised areas have been impacted.

The evidence shows that key land managers (FCNSW and OEH) have been using ESFM principles to manage their respective forest estates over the past 20 years. This includes identifying key damaging agents and developing management strategies to limit their spread and reduce their impact. Both agencies, and especially OEH, have worked with private land owners to ensure ESFM principles are utilised in managing forest across all tenures in NSW.

Key criteria relevant to Environmentally Sustainable Forest Management

As an aid to future management of NSW forests, several key criteria from the Forest Stewardship Council¹¹⁹ and the Australian Forestry Standard¹²⁰ are relevant for ESFM under the current RFA process:

- FSC Criterion 6.6: Management systems shall promote the development and adoption of environmentally friendly non-chemical methods of pest management and strive to avoid the use of chemical pesticides.
- FSC Criterion 10.7: Measures shall be taken to prevent and minimise outbreaks of pests, diseases, fire and invasive plant productions. Integrated Pest Management (IPM) shall form an essential part of the management plan, with primary reliance on prevention and biological control methods rather than chemical pesticides and fertilisers.
- AFS Criterion 5.1: Identify damage agents: Ensure that forest managers are cognisant of the relevant and potential damage agents, are able to identify such agents in the field and are able to assess and prioritise the impact in relation to prevention/control measures.
- AFS Criterion 5.2 Maintain health: Ensure that forest managers take appropriate measures to lessen the impact of damage agents.

¹¹⁹ Forest Stewardship Council. 2018. <https://au.fsc.org/en-au/standards/forest-management>

¹²⁰ Australian Forestry Standard. 2018. Sustainable Forest Management – Guidance for the certification of forest management (Guidance Note 01 to AS4708–2013). <https://www.responsiblewood.org.au/>

Table 5.3: Data on scale and impact of agents affecting ecosystem health and vitality in NSW

Agent	1999-2000	2000-2001	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015
Phytophthora cinnamomi in national parks	Present (+)	Present (+)	Present (↔)	Present (↔)	Present (†)											
Armillaria leutobubalina in national parks					Present (+)											
Phellinus noxious in national parks					Present (+)											
BMAD - all tenures	Present (+)	Present (+)	Present (+)	10,000 ha		20,000 ha	Present (+)	Present (+)	Present (+)	Present (+)	Present (+)	Present (+)	Present (+)	Present (+)	Present (+)	44,770 ha
Weed/pest animal management in National parks	narrative	narrative	narrative	narrative	narrative	narrative	narrative		narrative	narrative	narrative			\$34 M		
Weed/pest animal control expenditure in State forest	narrative	\$824,344	\$400,000	\$910,000	\$1.34M	\$1.16M	\$873,000	\$886,831	\$700,000	\$605,000	\$1.7 M					\$1.9 M

Assessment of matters pertaining to renewal of NSW Regional Forest Agreements

Agent	1999-2000	2000-2001	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015
Herbivorous and sapsucking insects in hardwood plantations	25.8%	2.80%	5.80%	7.50%	2.50%	2.00%	2.00%	3.00%	6.00%	2.50%	1.50%	2.50%	1.95%	3.4%	1.50%	4.50%
Leaf and shoot fungi in hardwood plantations	Present (-)	Present (-)	2.40%	1.00%	0.50%	0.50%	2.00%	2.00%	2.00%	0.00%	0.00%	0.10%	0.05%	0.09%	0.00%	0.01%
Phytophthora cinnamomi in plantations	Absent	Absent	Present (-)								Present (-)			Present (+)		
Stem borers in hardwood plantations	0.50%	0.30%	0.14%	0.14%	0.14%	0.25%	0.00%	3.00%	5.00%	11.0%	11.0%	11.0%	11.0%	10.0%	12.0%	
Phytophthora cinnamomi in State forest		Present (-)														
Dothistroma needle blight in softwood plantations	2.30%	2.00%	1.30%	0.9%	0.50%	0.25%	0.25%	0.50%	1.00%	1.00%	0.80%	1.00%	2.00%	4.10%	0.75%	1.60%

Assessment of matters pertaining to renewal of NSW Regional Forest Agreements

Agent	1999-2000	2000-2001	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015
Sirex wood wasp in softwood plantations	0	0.02%	0.01%	0.01%	0.01%	0.01%	0.01%	1.20%	1.50%	0.80%	0.13%	0.20%	0.25%	0.30%	0.20%	0.36%
Diplodia/ Drought/ Ips in softwood plantations	0.10%	0.50%	0.13%	0.01%	0.01%	0.01%	0.01%	6%	15%	4%	4.03%	1.30%	0.01%	1%	5%	3.82%
Essigella pine aphid in softwood plantations						15%	25%	40%	47%	32%	21.5%	9%	1.50%	7.10%	6%	8.63%
Myrtle rust in native environments (all tenures)												Present (t)	Present (t)	Present (t)	Present (t)	Present (t)

Source: DPI

Notes:

Present (+) = present and damaging;

Present (-) = present and not damaging;

Present (t) = present, increasing;

Present (↔) = present, stable

Indicator 5.1a Contribution of forest ecosystems and forest industries to the global greenhouse gas balance

Forest ecosystems and forest industries contribute in a number of positive ways to the global greenhouse balance. When forests are managed sustainably, they generate harvested wood products (HWPs) which also play a significant role in the global greenhouse balance, primarily via carbon storage in long-lived products and in landfills; and also by displacing the use of more greenhouse-intensive materials.

However, these interactions between forest ecosystems and/or forest industries and the global greenhouse balance were not as apparent twenty years ago when the RFA was signed. The original RFA document highlighted a number of areas of research to be targeted to improve knowledge. Since then a number of studies have addressed many of the gaps originally identified, including a strong focus on the life cycle of carbon in HWPs. The majority of the forest-based studies have been conducted in production forests (both native and plantations).

The estimation of forest biomass and carbon has improved with the development of species-specific and generic allometric relationships for a number of important tree species (e.g. Keith et al 2000; Paul et al 2013, 2014 and 2016; Montagu et al 2005; Ximenes et al 2005, 2005b, 2008, 2018). There is a better understanding also of the longevity of biomass in root systems following tree harvest (Ximenes et al 2006). Carbon dynamics in forest ecosystems are affected by the impacts of climate change. These may include more frequent and more severe bushfires, increased incidence of pests and diseases and also changes in growth dynamics due to increased CO₂ levels in the atmosphere. The impact of natural disturbances such as bushfires to the greenhouse balance of forest ecosystems in NSW may lead to large emission pulses for a particular year. However these emissions are typically offset over time by the carbon sequestered when the burnt forests regrow. In NSW, research from Western Sydney University is investigating the impact of increased CO₂ levels on the growth of native Eucalyptus species. Much of this research is conducted through the "Eucalyptus Free-Air CO₂ Enrichment (EucFACE)" experiment started in 2012, the only one of its kind in the world for native forests.

Plantations also contribute significantly to the global greenhouse balance via additional carbon sequestration, especially if planted in previously cleared lands. NSW had its own greenhouse gas abatement scheme (NSW GGAS), which rewarded carbon sequestration in new plantations with carbon credits. Much of the carbon abatement was achieved by the then Forests NSW, which in 2005 became the first body in the world to trade carbon credits from sequestration in forests in a registered greenhouse gas abatement scheme. By the time the NSW GGAS was stopped, FCNSW had sequestered approximately 3.8 million tonnes of CO₂-e in their hardwood plantations that were issued as certificates under the NSW GGAS (IPART 2012). Currently the national ERF presents an opportunity for plantations to obtain credits for carbon abatement

When forests are managed for production, a large proportion of the biomass is left in the forests as residues. There have been a number of studies to determine volumes of residue for a range of species of commercial importance in NSW (e.g. Ximenes et al 2005, 2005b, 2008, 2012a, 2016, 2017b). The carbon dynamics of HWPs in NSW has been the focus of a number

of studies that have significantly improved knowledge of the role wood products in NSW play in climate change mitigation efforts. These include research of carbon flows in sawmills (e.g. Ximenes et al 2005a, 2005b, 2016, 2017b), product substitution impacts due to the use of HWP instead of more greenhouse-intensive options (Ximenes and Grant 2013, Ximenes et al 2016) and the fate of carbon in HWPs in landfills (Ximenes et al 2008b, 2015, 2017). These studies, which have been published in a variety of peer-reviewed journals and national reports, have highlighted the importance of understanding the carbon implications of the use of HWPs – addressing one of the key gaps identified in the original RFA. For example it is widely accepted now that HWPs in landfills represent a carbon reservoir, with minimal likely loss of carbon. This understanding has been reflected in the progressive change in the decay factor adopted in the national greenhouse gas inventory, from 50% in 2006 to 10% in 2016 (AGO 2006; Dept. of Environment and Climate Change 216).

Given the complex nature of the carbon dynamics in forests and HWPs, it is important to adopt a life cycle assessment approach in their assessment, taking into account what the atmosphere actually sees (i.e. actual flows and uptakes of greenhouse gases). This approach is typified by a life cycle assessment conducted for typical houses built in Sydney (Ximenes and Grant 2013), which analysed the greenhouse gas implications of an increase in the use of HWPs in the residential sector. It has also been adopted in studies of the greenhouse balance of native forest management in NSW (Ximenes et al 2012,2016). Ximenes et al (2016) quantified the greenhouse gas impact of a range of different alternative scenarios related to the management of native forests around Eden and also on the mid North Coast of NSW, with greenhouse gas benefits associated with most of the scenarios analysed.

There is insufficient, systematic data available that can be used to estimate the total contribution of forest ecosystems and forest industries in the RFA regions and NSW as a whole to the global greenhouse balance consistently since 1999. However, FCNSW has made publically available estimates of carbon sequestered both in native forests and plantations under their management for a number of recent years (e.g. FCNSW 2018). It is important to note that a significant proportion of forests under management for production are in fact not available for harvest, due to a range of factors (e.g. presence of threatened species, aboriginal values, proximity to riparian zones, rainforest areas). For example, in the latest FCNSW annual report (2016-17), of the 2 million hectares of forests managed by FCNSW, 946,150 hectares (or 47.3% of the total) was deemed as unavailable for harvest due to the reasons given above. This effect is quantified in Ximenes et al (2016) for the forest areas included in that study. There is no available data though that allows a summary of changes in the values over time, partly because of the substantial changes in tenure that have happened in the RFA period. In the period covered by the RFA, an additional 369,114 hectares of State forests were converted to national parks.

For 2016-17, FCNSW estimates that pine plantations sequestered 3.44 million tonnes of CO₂ equivalent per year (Mt CO₂-e/year) – this figure has kept reasonably constant since 1999-2000, as the size of the FCNSW softwood plantation estate has not changed significantly in that period (**Table 5.4**).

Hardwood and cypress forests sequestered 16 Mt CO₂-e in 2016-17. The earliest available figure dates back to 2006-07, when the annual sequestration was estimated at 12.4 Mt CO₂-e/year. Estimates of carbon sequestration in native forests are more variable over time, due to reductions in the total native forest area managed for production as outlined above and also due to changes in the estimation methods over time. The total current estimated standing

volume in hardwood and cypress forests is 1732 Mt CO₂e. This has increased from previous years, largely because of a change in the methodology and scope used for the estimation (**Table 5.4**).

Carbon balance figures related to emissions due to fire are available from 2006-07 and they fluctuate significantly, reflecting the relative variability in wildfire incidence from year to year. The figures presented do not include emissions for forests other than those managed by FCNSW. Emissions due to use of heavy machinery for harvest and haulage are minor compared to the other elements in **Table 5.4**.

The long-term carbon storage in HWP is significant, with carbon in hardwood and softwood HWP representing a cumulative figure of 12.8 Mt CO₂-e. This is comparable to the annual carbon sequestration in the large area of native forests managed by FCNSW (**Table 5.4**). The product substitution figure of 1.44 MtCO₂-e represents the avoided greenhouse emissions associated with the use of hardwood HWP in lieu of more greenhouse-intensive products (e.g. aluminium, steel, concrete and fossil fuels). A similar figure is currently not available for softwood HWP.

Table 5.4 Carbon balance trajectory – NSW production forests (whole estate)

	Year (Mt CO ₂ -e) ¹				
	99/2000	2004/05	2008/09	2012/13	2016/17
Hardwoods and cypress - annual	NA	NA	12.5	11.5	16.0
Plantation softwoods – annual	2.98	2.97	3.18	2.69	3.44
Hardwoods and cypress – standing trees	NA	NA	977	803	1730 ²
Fire - ³	NA	NA	0.53	9.51	2.44
Harvest and haulage emissions	NA	NA	NA	NA	0.02
HWP – all hardwoods and cypress-cumulative ⁴	0.17	0.28	0.4	0.5	0.56
HWP softwoods-cumulative ⁴	3.11	5.64	7.59	9.9	12.27

Product substitution ⁵	NA ⁶	NA ⁶	NA ⁶	NA ⁶	1.44
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¹ Methods used to calculate the values explained in detail in FC Power Bi (FCNSW 2018); ² This figure includes cypress / hardwood plantations and unlike previous figures calculated based on net harvestable figures, hence much higher values; ³ Does not take into account emissions from bushfires outside the FCNSW estate; ⁴ Long-term carbon storage takes into account carbon stored in HWPs in landfills; ⁵ No substitution impact factors available for softwood products in NSW; ⁶ No substitution impact factors available previously for hardwood HWPs in NSW. NA – not available.

Although the trajectory of carbon stocks in NSW forest ecosystems has not been systematically quantified, studies such as Ximenes et al (2012) highlight the fact that over time, the contribution of managed forests to climate mitigation when carbon dynamics in both the forests and in HWPs are taken into account gradually increases when compared to the carbon dynamics of forests managed for conservation purposes alone. This trend is consistent with many studies internationally that have adopted a similar holistic approach in their assessments (for a detailed discussion see Ximenes et al 2016). There are also other studies which have come to different conclusions to those from the NSW DPI studies when analysing the greenhouse gas balance of native forests (e.g. Mackey et al 2008; Keith et al 2015). Ultimately the scope and system boundaries of such studies and robustness of data used to assess the life cycle implications of carbon cycles in forests and HWPs can have a large impact on results obtained.

Snapshots of relevant work

1) Carbon cycles in HWPs in landfills

Since 2000 there has been considerable research undertaken to understand the long-term dynamics of HWPs in landfills in NSW. This is important, as each year approximately 3.0 Mt of wood and wood products (including paper) are disposed of in landfills in Australia (Ximenes et al 2015 and 2017). The Intergovernmental Panel on Climate Change (IPCC) adopts a generic default value of decomposition in landfills of 50%, with approximately half of that loss in the form of methane gas, which is 25 times more potent than carbon dioxide. However the IPCC also states that it is good practice for countries to use decay values specific to waste types rather than generic factors when waste composition data are available (IPCC 2006). The research conducted by NSW DPI has demonstrated that the IPCC generic factor greatly overestimates decay of wood in landfills in Australia (Ximenes et al 2008b, 2015) – for example the most recent research suggests that the maximum carbon loss from wood in landfills for Australia is 1.4% (Ximenes et al in press). The implications of this work are that disposal of wood in landfills in Australia results in long-term storage of carbon, with only minimal conversion of carbon to gaseous end products.

2) ERF - Plantations

The ERF (Australian Government 2018) is one of the Australian Government's key mechanisms to achieve its greenhouse gas emission abatement targets. The ERF rewards abatement in a number of industry sectors using specific methods, and in 2017 a new method was approved to reward carbon abatement in new plantation establishment (under certain conditions) and also in conversion from short to long-rotation plantations.

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Summary of future management of the Principles of Ecologically Sustainable Forest Management

The Australian and NSW governments (the Parties) had regard to CRAs and the Principles of Ecologically Sustainable Management of forests in the development of the NSW RFAs. In the NSW RFAs the Parties have agreed that ESFM is an objective which requires a long term commitment to continuous improvement and that the key elements for achieving it are: the establishment of a CAR reserve system; the development of internationally competitive forest products industries; and integrated, complementary and strategic forest management systems capable of responding to new information. These three elements have been delivered and are being maintained and enhanced where possible in the renewed NSW RFAs.

This chapter has provided a further assessment of the ecologically sustainable management of forests in the NSW RFA regions. Assessment of the ecological sustainability of NSW Forest Management Framework requires evaluation against the five agreed Principles of Ecologically Sustainable Management of forests^[1]:

- 1) *Maintain or increase the full suite of forest values for present and future generations across the NSW native forest estate*

NSW FMF is implemented by a strategic institutional and regulatory system that is adaptable and responsive to new information and changing circumstances. This ensures the full suite of forest values is balanced, maintained and where possible enhanced for the benefit of present and future generations. The NSW RFAs implement an extensive CAR reserve system for the conservation of forest and non-forest vegetation communities in perpetuity. They also ensure that ESFM on the public and private forest estate is practiced to provide for wood and non-wood products for industry development, as well as ecosystem services and other societal benefits.

- 2) *Ensure public participation, access to information, accountability and transparency in the delivery of ESFM*

The NSW RFAs themselves and many of the regulatory instruments within the NSW FMF have requirements for public participation in reviews and implementation with clear lines of responsibility and accountability for decision making. The EPA in particular regularly responds to questions and concerns raised by the community, which sometimes result in detailed investigations into specific forestry operations.

- 3) *Ensure legislation, policies, institutional framework, codes, standards and practices related to forest management require and provide incentives for ecologically sustainable management of the native forest estate*

A robust NSW legal and institutional framework is currently in place that is supported by a range of Acts, Regulations, and policy mechanisms of relevant NSW agencies. NSW FMF is consistent with the requirements of the NFPS and ensures there is a strong regulatory and institutional approach. The EPA monitors FCNSW's native forestry operations to ensure they

^[1] See appendix 5 for full definitions of the ESFM principles found in the NSW RFAs

comply with the conditions in the IFOAs. The EPA reports annually on the compliance results and undertakes regular proactive audits which aim to identify good and poor forestry practices. In addition, the EPA conducts investigations when non-compliances are identified.

4) Apply precautionary principles for prevention of environmental degradation

The precautionary principle and management of risk and uncertainty was applied during the accreditation of the NSW Forest Management Framework, as well as through the development of environmental management systems and the priority placed on Recovery Plans. The Precautionary Principle is an important criterion in the assessment of ecologically sustainable forest management systems and processes.

5) Apply best available knowledge and adaptive management processes.

Research and development is vital for building on the current scientific understanding of NSW forest system characteristics and functions in order for the industry, governments and the community to support sustainable forest management. However, a reduction in R&D has been highlighted in recent publications. This decline in R&D is attributed to declining relative contribution of the forest industry to national economy, reduced government involvement in the industry, corporate restructuring, and increased international ownership.

However, the NSW Budget 2018 delivers a forestry package of \$71.8 million over four years to support the industry. A proportion of this will be dedicated to research, collecting new data and developing and enhancing the NSW Forest Management Framework for the delivery of sustainable management. This will ensure the NSW FMF will continue to be adaptable and responsive to new information and changing circumstances.

The renewed NSW RFAs will provide for the long-term stability of forests and forest industries, a CAR reserve system and the ongoing ecologically sustainable management and use of forested areas in NSW. The NSW Government is committed to the principles of ecologically sustainable development and management that form the basis of the NFPS and the RFAs.

Measuring biodiversity in terms of genetics, species and ecosystems is an important aspect of forest planning for achieving sustainable forest management, and also for identifying opportunities for biodiversity conservations within plantations. FCNSW and NSW agencies continue to maintain and build on their current capacity to measure and monitor changes in forest through collection and evaluation of comprehensive biodiversity data. This includes adopting new technologies to enhance their capacity to capture and record information.

With regard to greenhouse gas reduction, NSW forest ecosystems and forest industry continues to contribute towards national and global efforts towards greenhouse gas abatement. The draft NSW RFA renewal documents include new clauses relating to climate change. Through these variations the Australian and NSW governments recognise the need to manage forests to maintain or enhance the contribution of all elements of the forest estate to the effective management of carbon within the carbon cycle. The governments also acknowledge that climate change adaptation needs to be integrated into forest management to build resilience and manage climate risks, and meet the objectives of ESFM.

ESFM is an objective which requires a long term commitment to continuous improvement. The renewed 20 year RFAs with five year rolling extensions will continue to provide for the ecologically sustainable management and use of forests in NSW RFA regions. They will commit the Parties to the key elements of ESFM, including the maintenance of the CAR

reserve system and an integrated, complementary and strategic Forest Management Framework capable of responding to new information.

Conclusion

The three New South Wales Regional Forest Agreements (RFAs) for the Eden, North East and Southern regions provide an efficient and effective long-term solution for access and use of NSW's forests.

The NSW RFAs establish a framework for forest management, which:

- identifies a comprehensive, adequate and representative (CAR) reserve system and provides for the conservation of those areas
- provides for the ecologically sustainable management and use of forests
- provides long-term stability of forests and forest-based industries.

In August 1999, the Eden RFA was entered into having regard to assessments of the matters now listed in para (a) of the definition of an 'RFA' in the RFA Act being: environmental values, including old growth, wilderness, endangered species, national estate values and world heritage values; indigenous heritage values; economic values of forested areas and forest industries; social values (including community needs); and the principles of ecologically sustainable management.

Assessments of these matters were undertaken through the CRA process that preceded the signing of the Eden RFA. The same assessment process was undertaken when the subsequent North East and Southern RFAs were entered into in March 2000 and April 2001 respectively.

This report has provided a further and updated assessment of the matters listed in para (a) of the definition of 'RFA' in the RFA Act, for all three NSW RFA regions, the outcomes of which are summarised under the relevant headings.

Forest management in NSW is subject to both Australian and NSW laws which have evolved as a result of ongoing work to improve the balance between environmental and economic demands, and in response to other factors affecting resource availability, and economic and social needs. The NSW Forest Management Framework includes legislation, regulations, bilateral agreements, and regulatory instruments subject to NSW law.

Environmental Values

Since NSW's CRA processes in 1998, the area of protected old-growth forest has increased by 851,000 hectares or 76 per cent, with the CAR reserve system and the ecologically sustainable management of State forests providing for the ongoing protection of old-growth forests. Wilderness values are now almost entirely protected within the conservation reserve estate, with the area of delineated wilderness reaching 92 per cent; surpassing the target of 90 per cent reservation (Commonwealth of Australia 1997).

The NSW RFAs address the conservation of endangered species through providing a system of conservation reserves and the management of habitat in areas outside the reserve system. Threatened species are protected through Australian and NSW environmental legislation and the NSW Forest Management Framework. The NSW Forest Management Framework

document has a case study demonstrating how forest management has responded to new information and threats. The NSW Forest Management Framework will be continually reviewed and updated in response to new information.

The register of the National Estate has been phased out, however the values of those places continue to be managed through a range of new management structures including the National Heritage List, the Commonwealth Heritage List, and the NSW Heritage Register. These values include components of the natural or cultural environment in Australia that have been assessed and recognised for their aesthetic, historic, scientific or social significance or other special value for future generations as well as for the present community by the Australian or NSW governments.

World Heritage values are catered for by the Australian and NSW governments in accordance with the Australian World Heritage Intergovernmental Agreement. World Heritage sites have Statements of Outstanding Universal Value that describe the listed World Heritage values of each site. They also have comprehensive management or strategic plans that provide broad management principles for the area, and establish the framework for the integrated management, protection, interpretation and monitoring of the sites. World Heritage sites are managed separately from processes put in place by the NSW RFAs, and continue to be protected by Part 3 of the EPBC Act. The Australian and NSW governments will continue to participate in the assessment and protection of any future World Heritage places consistent with the Australian World Heritage Intergovernmental Agreement.

The 20 year NSW RFAs with five year rolling extensions provide for the continued protection of biodiversity, old growth forests and wilderness values through the CAR reserve system and the ecologically sustainable management of forests as described in NSW Forest Management Framework document. The conservation reserve estate is interconnected, healthy, and capable of supporting genetic and species diversity.

The NSW Forest Management Framework protects the ecological character of Ramsar Wetlands, in accordance with the Ramsar Convention. Any potential indirect or offsite impacts to Ramsar wetlands are managed through the soil and water provisions of the IFOA.

Aboriginal Cultural Heritage

The NSW Forest Management Framework provides for the protection of Aboriginal heritage values that aligns with the NSW legislative framework for Aboriginal cultural heritage management, including in relation to consultation and ongoing involvement with Aboriginal people and managing the impacts of forestry operations on Aboriginal cultural heritage values. In NSW, the principal laws that deal with Aboriginal cultural heritage are the *Heritage Act 1977* (NSW), the NPW Act, and the *Environmental Planning and Assessment Act 1979* (NSW).

Under the NPW Act, it is an offence to harm (destroy, deface, or damage) or desecrate an Aboriginal object or Aboriginal place or move the object from the land on which it has been situated. The NPW Act also protects places of special significance to Aboriginal culture where objects may not be present. Places of importance to Aboriginal individuals and communities can be given legal protection by:

- declaration of new Aboriginal Places

- reservation and management as Aboriginal Areas and national parks
- formal agreements on the joint management of national parks
- formal agreements with land owners (Voluntary Conservation Agreements).

Since the signing of the NSW RFAs, the NSW Forest Management Framework has improved its ability to respond to matters of significance to the Aboriginal community. In consultation with Aboriginal Affairs NSW, the Aboriginal community was consulted on Aboriginal heritage values and the renewal of the NSW RFAs. As the NSW Forest Management Framework under the NSW RFAs is adaptive and responsive to new information and changing circumstances, the NSW RFAs will continue to provide the framework for the protection of Aboriginal heritage values throughout the life of the RFAs. The RFAs commit the Australian and NSW governments to meaningful consultation on forest management with the Aboriginal community.

Economic Values

The forests within the NSW RFA regions are managed to produce a range of forest products, services and environmental benefits. Since the signing of the NSW RFAs there has been significant change in the structure and management of the production forest estate. The area available for harvesting within NSW RFA regions reduced dramatically following the signing of the three RFAs between 1999 and 2001, by 836,000 hectares. The removal of significant areas of production forests has not diminished the responsibility of the governments to ensure that the productive capacity of remaining production forests, and certainty of resource access, is maintained. An independent review of sustainable yield from public forests, confirms that harvesting from public land has remained at or below the sustainable yield of public forests managed for wood production.

Plantations are also able to support economic development objectives of the RFAs. At the time of the CRAs, there was 234,600 hectares of softwood plantation (primarily radiata pine), and 25,540 hectares of hardwood plantation (primarily Eucalypt species) growing in the NSW RFA regions. In 2016-17, the plantation area in NSW in was 394,000 hectares, of which 307,000 hectares were softwoods and 87,000 hectares were hardwoods (Downham and Gavran 2017). Between July 2004 and June 2014, nearly 50,000 hectares of softwood plantation and 63,000 hectares of hardwood plantation were established.

Over the 1999-2000 to 2015-16 period, the gross value of production for NSW forests increased from around \$200 million to more than \$400 million by the end of the period. Overall, the industry has increased in value by 63 per cent from 1999-2000 to 2015-16.

In recognition of the contribution of timber and forest-based industries to the New South Wales' economy, the NSW RFAs will continue to support future growth and development of New South Wales' industries associated with forests and timber products specifically through:

- certainty of resource access for the timber and forest-based industries;
- encouraging increased production of plantation-grown timber to supplement wood supply from native forests;
- facilitating timber and forest-based industry growth and development, in areas such as:

- skills retention and workforce development;
 - research, innovation and extension;
 - strategic marketing, communications and education;
 - essential and strategic infrastructure;
 - resource management and access; and
 - regulatory modernisation;
- providing for other forest based industries, including:
 - security of access to the Mining industry by continuing to recognise defined land tenures which allow for Mineral Exploration and Mining subject to the requirements of NSW and Australian legislation; and
 - facilitating economic opportunities for other non-wood forest product industries, tourism and recreation.

The native forest timber industry in NSW is an important economic component of many rural towns. However, since the transfer of land to the conservation reserve system, parts of the industry have had difficulty adjusting to the change in resource supply necessary to maintain the balance between environmental, economic and social values and uses of NSW RFA forests.

The renewed NSW RFAs will cover the period in which new, innovative wood products and processing technologies develop. Improved forest management and harvesting strategies will also be implemented in the renewed NSW RFAs as a result of ongoing investment in research and development. The renewed NSW RFAs will aim to support an internationally competitive wood production and wood products industry.

The proposed 20 year NSW RFAs with five year rolling extensions intend to support the NSW forest industry so that it has a strong and sustainable future and to provide additional certainty to industry and the community into the future. The variations seek to maintain a stable regulatory and investment environment, which will assist in providing for socio-economic stability and opportunities for market growth.

The renewed NSW RFAs will continue to support ongoing access by the forest industry to public native forests and plantations. Further, the variations will continue to periodically review the sustainable yield of high quality sawlogs to reflect changes in forest inventory and management initiatives. The renewed NSW RFAs will also continue to ensure forests in NSW's RFA areas remain accessible for a range of recreational and tourism related pursuits, as well as other uses such as apiary and the harvesting of non-wood forest products. This demonstrates that the 20 year NSW RFAs with five year rolling extensions will maintain and enhance economic values.

Social Values

The people of NSW hold a variety of views in relation to the use and management of NSW's forest resources. NSW communities have strong social, historical and cultural connections to forests, including for provision of wood and non-wood forest products leading to direct and indirect employment opportunities and nature-based recreation. Strong and differing views

from the community about the role of forests emphasises their ongoing importance to people, whether it be for environmental objectives, income, or recreation.

Local communities have strong cultural and spiritual connections to forests and value them for a range of reasons. Communities are aware of the environmentally friendly nature of wood and the role of forests in carbon storage. Recent investment in forest tourism ventures has increased the number of visitors on NPWS managed land.

Direct employment in the forest and wood products industry is declining across all three NSW RFA regions, and has had a considerable impact on regional communities in NSW. When compared with the rest of NSW however, the NSW RFA regions performed better, with regions not covered by an RFA losing a higher number and higher proportion of jobs.

The varied NSW RFAs will support the NSW forest industry to provide certainty to industry and the community. They seek to maintain a stable regulatory environment which will assist in producing socio-economic stability. The RFAs will also continue to ensure that forests in NSW RFA regions remain accessible for a range of uses and continue to deliver a range of social benefits.

Principles of Ecologically Sustainable Management

In the NSW RFAs the Parties have agreed that ESFM is an objective which requires a long term commitment to continuous improvement and that the key elements for achieving it are: the establishment of a CAR reserve system; the development of internationally competitive forest products industries; and integrated, complementary and strategic forest management systems capable of responding to new information. These three elements have been delivered and are being maintained and enhanced, where possible, in the renewed RFAs.

NSW Forest Management Framework is implemented by a strategic institutional and regulatory system that is adaptable and responsive to new information and changing circumstances. This ensures the full suite of forest values is maintained for the benefit of present and future generations and provides for wood and non-wood products for industry development, as well as ecosystem services and other societal benefits. The Precautionary Principle is an important criterion in the assessment of ESFM systems and processes.

Summary

The NSW RFAs have established an agreed framework for the ecologically sustainable management and use of forests. They provide for regionally specific ecologically sustainable management through the maintenance of the CAR reseserve system; complementary off-reserve management; an integrated, complementary and strategic NSW Forest Management Framework capable of responding to new information; internationally competitive forest product industries which are economically sustainable and provide social and economic benefits; and monitoring through internationally-agreed performance indicators.

Over the past 20 years forest management in NSW has adapted and improved incorporating new information and data. NSW has developed a Forest Management Framework which is a comprehensive system for delivering ESFM. The NSW Forest Management Framework includes overarching policy and legislation, institutional and administrative arrangements, and associated planning and operational systems. It is complemented by an adaptive management and continual improvement process incorporating research findings and feedback processes associated with compliance and enforcement systems, stakeholder engagement and monitoring and review mechanisms.

Improvements to NSW forest management over the past 20 years, that are also described in the NSW Forest Management Framework include:

- NSW OEH Environmental Management System (EMS): NSW OEH has adopted an EMS to ensure a consistent approach to the many measures it implements to minimise environmental impacts of managing the national park estate.
- FCNSW Forest Management System (FMS): FCNSW maintains a Hardwood FMS, which covers public native forestry and hardwood plantation management. The FMS is certified under the Australian Standard for Sustainable Forest Management, AS 4708:2013 and ISO 14001:2004 Environmental management systems - Requirements with guidance for use, which sets the framework for achieving and continually improving environmental performance. The Hardwood FMS is currently transitioning to ISO 14001:2015. FCNSW' softwood plantation management system is also certified to both of these standards, being AS 4708:2013 and ISO 14001:2004.
- New technologies to better deliver ESFM: FCNSW has made a number of significant investments to provide better forest management outcomes, reduce costs and increase the quality of information available for planning, these include:
 - Remote Sensing: The development of LiDAR technology, as a means of remote sensing, has been of significant benefit in delivery of ESFM outcomes. LiDAR has enabled development of a range of products that assist in planning forest management activities including:
 - Accurate digital elevation models that more closely identify landform elements like steep slopes to assist in the application of soil erosion mitigation measures
 - Development of wood volume models that assist with operational, tactical and strategic planning. Canopy height has a strong correlation with the productive capacity of a site. LiDAR, which can produce an accurate ground profile and thus more accurately determine the height of trees, combined with algorithms, can be used to predict areas likely to contain taller trees and provide an indication of the relative density of those trees. This type of information across a landscape provides data that has greatly improved the

ability to optimise wood supply for the long term, more effectively target tactical resource planning and more efficiently undertake wood harvesting.

- Mapping application: During 2012, FCNSW commenced investigation of a map application (referred to as the FCMapApp) for use on mobile electronic devices such as smart phones and tablets. The aim was to develop an App that would complement operational planning processes and allow real-time capture of spatial data that can be stored in a central database and be made available to other FCNSW staff and contractors. Version 1 of the App become operational in December 2013 and has revolutionised the capture and transfer of data used in the planning and implementation of forest management activities.

The application of sustainable yield and the conservation and sustainable use of forest resources for current and future generations has ensured that the health, diversity and productivity of the environment has been maintained for the benefit of future generations. Ecologically sustainable management under the NSW RFAs has provided the framework within which the Australian and NSW governments have systematically provided sustainable outcomes for forests and people in a responsive, adaptable and continually improving manner.

Independent five-yearly reviews of the NSW RFAs report on the matters listed in para (a) of the definition of 'RFA' in the RFA Act. Independent reviewers consider environmental values, indigenous heritage values, economic values of forested areas and forest industries, social values and the principles of ecologically sustainable management within the NSW RFA regions. Review reports are tabled in the Australian Parliament and the Australian and NSW governments respond to any recommendations through joint government responses. Should the NSW RFAs be varied, subsequent five-yearly extensions would be contingent on successful completion of these independent five-yearly reviews.

This report has demonstrated that the Australian and NSW governments have, through a comprehensive and diverse range of processes, formally had ongoing regard to the matters listed in para (a) of the definition of 'RFA' in the RFA Act relevant to the NSW RFA regions. Given the commitments of both governments to continue implementing the ongoing obligations and commitments of the NSW RFAs, while allowing for the forest management framework and implementation mechanisms to be responsive to new information consistent with adaptive management and continual improvement principles, it could be expected that the management of NSW forests in RFA regions would continue within this framework.

6. Appendices

Appendix 1

Alignment of the international Montréal Process indicators with Australia's national indicators used in SOFR since 2005

Source: ABARES State of the Forests Report 2013

Criterion 1 Conservation of biological diversity

International Montréal Process criteria and indicators Indicator number	International Montréal Process criteria and indicators Indicator name	Australian indicator(s) with which each Montréal Process indicator aligns Strong alignment	Australian indicator(s) with which each Montréal Process indicator aligns Partial alignment
1.1	Ecosystem diversity	—	—
1.1.a	Area and per cent of forest by forest ecosystem type, successional stage, age class, and forest ownership or tenure	1.1a	1.1b
1.1.b	Area and per cent of forest in protected areas by forest ecosystem type, and by age class or successional stage	1.1c	1.1b
1.1.c	Fragmentation of forests	1.1d	—
1.2	Species diversity	—	—
1.2.a	Number of native forest associated species	—	1.2a
1.2.b	Number and status of native forest associated species at risk, as determined by legislation or scientific assessment	1.2b	—
1.2.c	Status of on site and off site efforts focused on conservation of species diversity	—	—

1.3	Genetic diversity	—	—
1.3.a	Number and geographic distribution of forest associated species at risk of losing genetic variation and locally adapted genotypes	1.3a	—
1.3.b	Population levels of selected representative forest associated species to describe genetic diversity	—	1.2c
1.3c	Status of on site and off site efforts focused on conservation of genetic	—	1.3a 1.3b
Australia's criteria and indicators Indicator number	Australia's criteria and indicators Indicator name	Montréal Process indicator(s) with which each Australian indicator aligns Strong alignment	Montréal Process indicator(s) with which each Australian indicator aligns Partial alignment
1.1	Ecosystem diversity	—	—
1.1a	Area of forest by forest type and tenure	1.1.a	—
1.1b	Area of forest by growth stage	—	1.1.a 1.1.b
1.1c	Area of forest in protected area categories	1.1.b	—
1.1d	Fragmentation of forest cover	1.1.c	—
1.2	Species diversity	—	—
1.2a	Forest dwelling species for which ecological information is available	—	1.2.a
1.2b	The status of forest dwelling species at risk of not maintaining viable breeding populations, as determined by legislation or scientific assessment	1.2.b	—

1.2c	Representative species from a range of habitats monitored at scales relevant to regional forest management	—	1.3.b
1.3	Genetic diversity	—	—
1.3a	Forest associated species at risk from isolation and the loss of genetic variation, and conservation efforts for those species	1.3.a	1.3.c
1.3b	Native forest and plantations of indigenous timber species which have genetic resource conservation mechanisms in place	—	1.3.c

Criterion 2 Maintenance of productive capacity of forest ecosystems

International Montréal Process criteria and indicators Indicator number	International Montréal Process criteria and indicators Indicator name	Australian indicator(s) with which each Montréal Process indicator aligns Strong alignment	Australian indicator(s) with which each Montréal Process indicator aligns Partial alignment
2.a	Area and per cent of forest land and net areas of forest land available for wood production	2.1a	—
2.b	Total growing stock and annual increment of both merchantable and non-merchantable tree species in forests available for wood production	2.1a	—
2.c	Area, per cent, and growing stock of plantations of native and exotic species	2.1b	—
2.d	Annual harvest of wood products by volume and as a per centage of net growth or sustained yield	2.1c	—
2.e	Annual harvest of non-wood forest products	2.1d	—

Australia's criteria and indicators Indicator number	Australia's criteria and indicators Indicator name	Montréal Process indicator(s) with which each Australian indicator aligns Strong alignment	Montréal Process indicator(s) with which each Australian indicator aligns Partial alignment
2.1a	Native forest available for wood production, area harvested, and growing stock of merchantable and non-merchantable tree species	2.a 2.b	—
2.1b	Age class and growing stock of plantations	2.c	—
2.1c	Annual removal of wood products compared to the volume determined to be sustainable for native forests and future yields for plantations	2.d	—
2.1d	Annual removal of non-wood forest products compared to the level determined to be sustainable	2.e	—
2.1e	The area of native forest harvested and the proportion of that effectively regenerated, and the area of plantation harvested and the proportion of that effectively re-established	—	—

Criterion 3 Maintenance of ecosystem health and vitality

International Montréal Process criteria and indicators Indicator number	International Montréal Process criteria and indicators Indicator name	Australian indicator(s) with which each Montréal Process indicator aligns Strong alignment	Australian indicator(s) with which each Montréal Process indicator aligns Partial alignment
3.a	Area and per cent of forest affected by biotic processes and agents (e.g. disease, insects, invasive species) beyond reference conditions	3.1a	—
3.b	Area and per cent of forest affected by abiotic agents (e.g. fire, storm, land clearance) beyond reference conditions	3.1a 3.1b	—

Australia's criteria and indicators Indicator number	Australia's criteria and indicators Indicator name	Montréal Process indicator(s) with which each Australian indicator aligns Strong alignment	Montréal Process indicator(s) with which each Australian indicator aligns Partial alignment
3.1a	Scale and impact of agents and processes affecting forest health and vitality	3.a 3.b	—
3.1b	Area of forest burnt by planned and unplanned fire	3.b	—

Criterion 4 Conservation and maintenance of soil and water resources

International Montréal Process criteria and indicators Indicator number	International Montréal Process criteria and indicators Indicator name	Australian indicator(s) with which each Montréal Process indicator aligns Strong alignment	Australian indicator(s) with which each Montréal Process indicator aligns Partial alignment
4.1	Protective function	—	—
4.1.a	Area and per cent of forest whose designation or land management focus is the protection of soil or water resources	4.1a	—
4.2	Soil	—	—
4.2.a	Proportion of forest management activities that meet best management practices or other relevant legislation to protect soil resources	4.1b 4.1c	—
4.2.b	Area and per cent of forest land with significant soil degradation	—	—
4.3	Water	—	—
4.3.a	Proportion of forest management activities that	4.1d	—

	meet best management practices, or other relevant legislation, to protect water related resources	4.1e	
4.3.b	Area and per cent of water bodies, or stream length, in forest areas with significant change in physical, chemical or biological properties from reference conditions	—	—
Australia's criteria and indicators	Australia's criteria and indicators	Montréal Process indicator(s)	Montréal Process indicator(s)
Indicator number	Indicator name	with which each Australian indicator aligns	with which each Australian indicator aligns
		Strong alignment	Partial alignment
4.1a	Area of forest land managed primarily for protective functions	4.1.a	—
4.1b	Management of the risk of soil erosion in forests	4.2.a	—
4.1c	Management of the risks to soil physical properties in forests	4.2.a	—
4.1d	Management of the risks to water quantity from forests	4.3.a	—
4.1e	Management of the risks to water quality in forests	4.3.a	—

Criterion 5 Maintenance of forest contribution to global carbon cycles

International Montréal Process criteria and indicators Indicator number	International Montréal Process criteria and indicators Indicator name	Australian indicator(s) with which each Montréal Process indicator aligns Strong alignment	Australian indicator(s) with which each Montréal Process indicator aligns Partial alignment
5.a	Total forest ecosystem carbon pools and fluxes	5.1a	—
5.b	Total forest product carbon pools and fluxes	5.1a	—
5.c	Avoided fossil fuel carbon emissions	—	5.1a

Australia's criteria and indicators Indicator number	Australia's criteria and indicators Indicator name	Montréal Process indicator(s) with which each Australian indicator aligns Strong alignment	Montréal Process indicator(s) with which each Australian indicator aligns Partial alignment
5.1a	Contribution of forest ecosystems and forest industries to the global greenhouse gas balance	5.a 5.b	5.c

Criterion 6 Maintenance and enhancement of long-term multiple socio-economic benefits to meet the needs of societies

International Montréal Process criteria and indicators Indicator number	International Montréal Process criteria and indicators Indicator name	Australian indicator(s) with which each Montréal Process indicator aligns Strong alignment	Australian indicator(s) with which each Montréal Process indicator aligns Partial alignment
6.1	Production and consumption	—	—
6.1.a	Value and volume of wood and wood products production, including primary and secondary processing	6.1a	—
6.1.b	Value of non-wood forest products produced or collected	6.1b	—
6.1.c	Revenue from forest based environmental services	6.1c	—
6.1.d	Total and per capita consumption of wood and wood products in round wood equivalents	6.1d	—
6.1.e	Total and per capita consumption of non-wood products	6.1d	—
6.1.f	Value and volume in round wood equivalents of exports and imports of wood products	6.1d	—
6.1.g	Value of exports and imports of non-wood products	6.1d	—
6.1.h	Exports as a share of wood and wood products production and imports as a share of wood and wood products consumption	—	6.1d
6.1.i	Recovery or recycling of forest products as a per cent of total forest products consumption	6.1e	—
6.2	Investment in the forest sector	—	—
6.2.a	Value of capital investment and annual expenditure in forest management, wood and non-wood product industries, forest-based environmental services, recreation and tourism	6.2a	—

6.2.b	Annual investment and expenditure in forest-related research, extension and development, and education	6.2b	—
6.3	Employment and community needs	—	—
6.3.a	Employment in the forest sector	6.5a	—
6.3.b	Average wage rates, annual average income and annual injury rates in major forest employment categories	6.5b	—
6.3.c	Resilience of forest-dependent communities	6.5c	—
6.3.d	Area and per cent of forests used for subsistence purposes	—	6.5d
6.3.e	Distribution of revenues derived from forest management	—	—
6.4	Recreation and tourism	—	—
6.4.a	Area and per cent of forests available and/or managed for public recreation and tourism	6.3a	—
6.4.b	Number, type, and geographic distribution of visits attributed to	6.3b	—
6.5	Cultural, social and spiritual needs and values	—	—
6.5.a	Area and per cent of forests managed primarily to protect the range of cultural, social and spiritual needs and values	6.4a 6.4b 6.4c	—
6.5.b	The importance of forests to people	6.4d	—

Australia's criteria and indicators Indicator number	Australia's criteria and indicators Indicator name	Montréal Process indicator(s) with which each Australian indicator aligns Strong alignment	Montréal Process indicator(s) with which each Australian indicator aligns Partial alignment
6.1	Production and consumption	—	—
6.1a	Value and volume of wood and wood products	6.1.a	—
6.1b	Values, quantities and use of non-wood forest products	6.1.b	—
6.1c	Value of forest based services	6.1.c	—
6.1d	Production and consumption and import/export of wood, wood products and non-wood products	6.1.d 6.1.e 6.1.f 6.1.g	6.1.h
6.1e	Degree of recycling of forest products	6.1.i	—
6.2	Investment in the forest sector	—	—
6.2a	Investment and expenditure in forest management	6.2.a	—
6.2 b	Investment in research, development, extension and use of new and improved technologies	6.2.b	—
6.5	Employment and community needs	—	—
6.5a	Direct and indirect employment in the forest sector	6.3.a	—
6.5 b	Wage rates and injury rates within the forest sector	6.3.b	—
6.5c	Resilience of forest dependent communities to changing social and economic conditions	6.3.c	—
6.5d	Resilience of forest dependent Indigenous communities to changing social and economic conditions	—	6.3.d
6.3	Recreation and tourism	—	—

6.3a	Area of forest available for public recreation/ tourism	6.4.a	—
6.3b	Range and use of recreation/ tourism activities available	6.4.b	—
6.4	Cultural, social and spiritual needs and values	—	—
6.4a	Area of forest to which Indigenous people have use and rights that protect their special values and are recognised through formal and informal management regimes	6.5.a	—
6.4b	Registered places of non-Indigenous cultural value in forests that are formally managed to protect those values	6.5.a	—
6.4c	The extent to which Indigenous values are protected, maintained and enhanced through Indigenous participation in forest management	6.5.a	—
6.4d	The importance of forests to people	6.5.b	—

Criterion 7 Legal, institutional and economic framework for forest conservation and sustainable management

International Montréal Process criteria and indicators Indicator number	International Montréal Process criteria and indicators Indicator name	Australian indicator(s) with which each Montréal Process indicator aligns Strong alignment	Australian indicator(s) with which each Montréal Process indicator aligns Partial alignment
7.1.a	Legislation and policies supporting the sustainable management of forests	7.1a	7.1b
7.1.b	Cross-sectoral policy and programme coordination	—	7.1a 7.1b
7.2.a	Taxation and other economic strategies that affect the sustainable management of forests	7.1c	—
7.3.a	Clarity and security of land and resource tenure and property rights	—	7.1a
7.3.b	Enforcement of laws related to forests	—	7.1a
7.4.a	Programmes, services and other resources supporting the sustainable management of forests	—	7.1b
7.4.b	Development and application of research and technologies for the sustainable management of forests	7.1e	—
7.5.a	Partnerships to support the sustainable management of forests	—	—
7.5.b	Public participation and conflict resolution in forest-related decision making	—	7.1b
7.5.c	Monitoring, assessment and reporting on progress towards sustainable management of forests	7.1d	—

Australia's criteria and indicators Indicator number	Australia's criteria and indicators Indicator name	Montréal Process indicator(s) with which each Australian indicator aligns Strong alignment	Montréal Process indicator(s) with which each Australian indicator aligns Partial alignment
7.1a	Extent to which the legal framework supports the conservation and sustainable management of forests	7.1.a	7.3.a 7.3.b
7.1b	Extent to which the institutional framework supports the conservation and sustainable management of forests	—	7.1.a 7.4.a 7.5.b
7.1c	Extent to which the economic framework supports the conservation and sustainable management of forests	7.2.a	—
7.1d	Capacity to measure and monitor changes in the conservation and sustainable management of forests	7.5.c	—
7.1e	Capacity to conduct and apply research and development aimed at improving forest management and delivery of forest goods and services	7.4.b	—

— = no such alignment

Appendix 2

EPBC listed species and ecological communities known or likely to occur in NSW RFA regions

Flora

Scientific Name	Common Name	Class	RFA region ¹	EPBC Act listing ²	EPBC listing date effective	Status of conservation advice and recovery plans ³
<i>Acacia bynoeana</i>	Bynoe's Wattle, Tiny Wattle	Plant	NE, S	V	16/07/2000	CA approved, RP required
<i>Acacia constablei</i>	Narrabarba Wattle	Plant	E	V	16/07/2000	CA approved, RP not required
<i>Acacia courtii</i>	Northern Brother Wattle	Plant	NE	V	16/07/2000	CA approved, RP approved, RP required
<i>Acacia georgensis</i>	Bega Wattle	Plant	E, S	V	16/07/2000	CA approved, RP not required
<i>Acacia gordonii</i>		Plant	NE	E	16/07/2000	CA approved, RP not required
<i>Acacia macnuttiana</i>	McNutt's Wattle	Plant	NE	V	16/07/2000	CA approved, RP not required
<i>Acacia phasmoides</i>	Phantom Wattle	Plant	S	V	16/07/2000	RP approved, RP required

Scientific Name	Common Name	Class	RFA region ¹	EPBC Act listing ²	EPBC listing date effective	Status of conservation advice and recovery plans ³
<i>Acacia pubescens</i>	Downy Wattle, Hairy Stemmed Wattle	Plant	NE, S	V	16/07/2000	CA approved, RP approved, RP required
<i>Acacia pubifolia</i>	Velvet Wattle	Plant	NE	V	16/07/2000	CA approved, RP not required
<i>Acacia pycnostachya</i>	Bolivia Wattle	Plant	NE	V	16/07/2000	CA approved, RP not required
<i>Acacia ruppii</i>	Rupp's Wattle	Plant	NE	E	16/07/2000	RP approved, RP required
<i>Acronychia littoralis</i>	Scented Acronychia	Plant	NE	E	16/07/2000	CA approved, RP not required
<i>Allocasuarina defungens</i>	Dwarf Heath Casuarina	Plant	NE	E	16/07/2000	CA approved, RP not required
<i>Allocasuarina glareicola</i>		Plant	NE, S	E	16/07/2000	CA approved, RP not required
<i>Allocasuarina simulans</i>	Nabiac Casuarina	Plant	NE	V	16/07/2000	CA approved, RP not required
<i>Allocasuarina thalassoscopica</i>		Plant	NE	E	16/07/2000	CA approved, RP not required
<i>Almaleea cambagei</i>	Torrington Pea	Plant	NE	V	16/07/2000	CA approved, RP not required
<i>Ammobium craspedioides</i>	Yass Daisy	Plant	S	V	16/07/2000	CA approved, RP not required

Scientific Name	Common Name	Class	RFA region ¹	EPBC Act listing ²	EPBC listing date effective	Status of conservation advice and recovery plans ³
<i>Amphibromus fluitans</i>	River Swamp Wallaby-grass, Floating Swamp Wallaby-grass	Plant	E, S	V	16/07/2000	CA approved, RP not required
<i>Amyema plicatula</i>		Plant	NE	E	16/07/2000	CA approved, RP not required
<i>Androcalva procumbens</i>		Plant	NE	V	16/07/2000	CA approved, RP not required
<i>Androcalva rosea</i>	Sandy Hollow Commersonia	Plant	NE	E	8/01/2008	CA approved, RP not required
<i>Angophora inopina</i>	Charmhaven Apple	Plant	NE	V	16/07/2000	CA approved, RP not required
<i>Angophora robur</i>	Sandstone Rough-barked Apple	Plant	NE	V	16/07/2000	CA approved, RP approved, RP required
<i>Argyrotegium nitidulum</i>	Shining Cudweed	Plant	S	V	16/07/2000	CA approved, RP approved, RP required
<i>Arthraxon hispidus</i>	Hairy-joint Grass	Plant	NE	V	16/07/2000	CA approved, RP not required
<i>Asperula asthenes</i>	Trailing Woodruff	Plant	NE	V	16/07/2000	CA approved, RP not required
<i>Asterolasia elegans</i>		Plant	NE, S	E	16/07/2000	RP approved, RP required

Scientific Name	Common Name	Class	RFA region ¹	EPBC Act listing ²	EPBC listing date effective	Status of conservation advice and recovery plans ³
<i>Astrotricha crassifolia</i>	Thick-leaf Star-hair	Plant	NE, E, S	V	16/07/2000	CA approved, RP not required
<i>Astrotricha roddii</i>		Plant	NE	E	16/07/2000	CA approved, RP not required
<i>Baloghia marmorata</i>	Marbled Balogia, Jointed Baloghia	Plant	NE	V	16/07/2000	CA approved, RP not required
<i>Baloskion longipes</i>	Dense Cord-rush	Plant	NE, S	V	16/07/2000	CA approved, RP not required
<i>Banksia vincentia</i>		Plant	S	CE	15/02/2018	CA approved, RP not required
<i>Bertya Ernestiana</i>	a shrub	Plant	NE	V	16/07/2000	CA approved, RP not required
<i>Bertya opponens</i>		Plant	NE	V	16/07/2000	CA approved, RP approved, RP required
<i>Boronia deanei</i>	Deane's Boronia	Plant	S	V	16/07/2000	CA approved, RP not required
<i>Boronia granitica</i>	Granite Boronia	Plant	NE	E	16/07/2000	CA approved, RP approved, RP required
<i>Boronia repanda</i>	Repand Boronia, Border Boronia	Plant	NE	E	16/07/2000	CA approved, RP not required
<i>Boronia umbellata</i>	Orara Boronia	Plant	NE	V	16/07/2000	CA approved, RP approved, RP

Scientific Name	Common Name	Class	RFA region ¹	EPBC Act listing ²	EPBC listing date effective	Status of conservation advice and recovery plans ³
						required
<i>Bosistoa transversa</i>	Three-leaved Bosistoa, Yellow Satinheart	Plant	NE	V	16/07/2000	CA approved, RP not required
<i>Bossiaea oligosperma</i>		Plant	S	V	16/07/2000	CA approved, RP not required
<i>Budawangia gnidioides</i>	Budawangs Cliff-heath	Plant	S	V	16/07/2000	CA approved, RP not required
<i>Bulbophyllum globuliforme</i>	Miniature Moss-orchid, Hoop Pine Orchid	Plant	NE	V	16/07/2000	CA approved, RP not required
<i>Cadellia pentastylis</i>	Ooline	Plant	NE	V	16/07/2000	CA approved, RP not required
<i>Caladenia actensis</i>	Canberra Spider Orchid	Plant	S	CE	6/06/2005	RP approved, RP required
<i>Caladenia atroclavia</i>	Black-clubbed Spider-orchid	Plant	NE	E	16/07/2000	CA approved, RP not required
<i>Caladenia concolor</i>	Crimson Spider-orchid, Maroon Spider-orchid	Plant	S	V	16/07/2000	CA approved, RP approved, RP required

Scientific Name	Common Name	Class	RFA region ¹	EPBC Act listing ²	EPBC listing date effective	Status of conservation advice and recovery plans ³
<i>Caladenia tensa</i>	Greencomb Spider-orchid, Rigid Spider-orchid	Plant	S	E	16/07/2000	CA approved, RP approved, RP required
<i>Caladenia tessellata</i>	Thick-lipped Spider-orchid, Daddy Long-legs	Plant	NE, E, S	V	16/07/2000	RP approved, RP required
<i>Callistemon forresterae</i>	Forrester's Bottlebrush	Plant	E	V	16/07/2000	RP approved, RP required
<i>Callistemon pungens</i>		Plant	NE	V	16/07/2000	CA approved, RP not required
<i>Callitris oblonga</i>	Pygmy Cypress-pine, Pigmy Cypress-pine, Dwarf Cypress-pine	Plant	NE, S	V	16/07/2000	CA approved, RP approved, RP required
<i>Calotis glandulosa</i>	Mauve Burr-daisy	Plant	E, S	V	16/07/2000	CA approved, RP not required
<i>Clematis fawcettii</i>	Stream Clematis	Plant	NE	V	16/07/2000	CA approved, RP not required
<i>Colobanthus curtisiae</i>	Curtis' Colobanth	Plant	S	V	16/07/2000	CA approved, RP not required
<i>Commersonia prostrata</i>	Dwarf Kerrawang	Plant	NE, S	E	16/07/2000	RP approved, RP required
<i>Coopernookia scabridiuscula</i>		Plant	NE	V	16/07/2000	CA approved, RP not required

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<i>Corchorus cunninghamii</i>	Native Jute	Plant	NE	E	16/07/2000	CA approved, RP approved, RP not required
<i>Corokia whiteana</i>		Plant	NE	V	16/07/2000	CA approved, RP not required
<i>Correa baeuerlenii</i>	Chef's Cap	Plant	E, S	V	16/07/2000	CA approved, RP not required
<i>Correa lawrenceana</i> var. <i>genoensis</i>	Genoa River Correa	Plant	E	E	16/07/2000	RP approved, RP required
<i>Corunastylis ectopa</i>	Brindabella Midge-orchid, Ectopic Midge-orchid	Plant	S	CE	6/06/2005	RP approved, RP required
<i>Corunastylis insignis</i>	Wyong Midge Orchid 1, Variable Midge Orchid 1	Plant	NE	CE	19/07/2014	CA approved, RP not required
<i>Corunastylis littoralis</i>	Tuncurry Midge Orchid	Plant	NE	CE	22/02/2011	CA approved, RP not required
<i>Corunastylis</i> sp. <i>Charmhaven</i> (NSW 896673)	Wyong Midge Orchid 2	Plant	NE	CE	19/07/2014	CA approved, RP not required
<i>Corynocarpus rupestris</i> <i>subsp. rupestris</i>	Glenugie Karaka	Plant	NE	V	16/07/2000	CA approved, RP approved, RP required

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<i>Cryptocarya foetida</i>	Stinking Cryptocarya, Stinking Laurel	Plant	NE	V	16/07/2000	CA approved, RP not required
<i>Cryptostylis hunteriana</i>	Leafless Tongue-orchid	Plant	NE, E, S	V	16/07/2000	CA approved, RP not required
<i>Cynanchum elegans</i>	White-flowered Wax Plant	Plant	NE, S	E	16/07/2000	CA approved, RP not required
<i>Cyperus semifertilis</i>		Plant	NE	V	16/07/2000	CA approved, RP not required
<i>Daphnandra johnsonii</i>	Illawarra Socketwood	Plant	S	E	16/07/2000	CA approved, RP required
<i>Darwinia biflora</i>		Plant	NE	V	16/07/2000	CA approved, RP not required
<i>Davidsonia jerseyana</i>	Davidson's Plum	Plant	NE	E	16/07/2000	CA approved, RP required
<i>Davidsonia johnsonii</i>	Smooth Davidsonia, Smooth Davidson's Plum, Small- leaved Davidson's Plum	Plant	NE	E	16/07/2000	CA approved, RP approved, RP required
<i>Desmodium acanthocladum</i>	Thorny Pea	Plant	NE	V	16/07/2000	CA approved, RP not required
<i>Deyeuxia pungens</i>	Narrow-leaf Bent-grass	Plant	S	V	16/07/2000	CA approved, RP approved, RP required

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<i>Dichanthium setosum</i>	bluegrass	Plant	NE	V	16/07/2000	CA approved, RP not required
<i>Diospyros mabacea</i>	Red-fruited Ebony, Silky Persimmon, Ebony	Plant	NE	E	16/07/2000	RP approved, RP required
<i>Diploglottis campbellii</i>	Small-leaved Tamarind	Plant	NE	E	16/07/2000	RP approved, RP required
<i>Diuris aequalis</i>	Buttercup Doubletail	Plant	S	V	16/07/2000	CA approved, RP not required
<i>Diuris flavescens</i>	Pale Yellow Doubletail, Wingham Doubletail	Plant	NE	CE	24/01/2014	CA approved, RP not required
<i>Diuris ochroma</i>	Pale Golden Moths	Plant	NE, E, S	V	16/07/2000	CA approved, RP approved, RP required
<i>Diuris pedunculata</i>	Small Snake Orchid, Two-leaved Golden Moths, Golden Moths, Cowslip Orchid, Snake Orchid	Plant	NE	E	16/07/2000	CA approved, RP not required
<i>Diuris praecox</i>	Newcastle Doubletail	Plant	NE	V	16/07/2000	CA approved, RP not required

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<i>Diuris venosa</i>	Veined Doubletail, Goat Orchid, Veined Donkey-orchid	Plant	NE	V	16/07/2000	CA approved, RP not required
<i>Dodonaea procumbens</i>	Trailing Hop-bush	Plant	E, S	V	16/07/2000	RP approved, RP required
<i>Eidothea hardeniana</i>	Nightcap Oak	Plant	NE	CE	23/07/2002	CA approved, RP required
<i>Elaeocarpus sedentarius</i>	Minyon Quandong	Plant	NE	E	16/07/2000	CA approved, RP approved, RP required
<i>Elaeocarpus williamsianus</i>	Hairy Quandong	Plant	NE	E	16/07/2000	CA approved, RP approved, RP required
<i>Endiandra floydii</i>	Floyd's Walnut	Plant	NE	E	16/07/2000	RP approved, RP required
<i>Endiandra hayesii</i>	Rusty Rose Walnut, Velvet Laurel	Plant	NE	V	16/07/2000	CA approved, RP approved, RP required
<i>Eriocaulon australasicum</i>	Austral Pipewort, Southern Pipewort	Plant	S	E	16/07/2000	RP approved, RP required
<i>Eucalyptus aggregata</i>	Black Gum	Plant	NE, E, S	V	17/11/2015	CA approved, RP not required

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<i>Eucalyptus aquatica</i>	Mountain Swamp Gum, Broad-leaved Sallee, Broad-leaved Sally	Plant	S	V	16/07/2000	CA approved, RP not required
<i>Eucalyptus benthamii</i>	Camden White Gum, Nepean River Gum	Plant	S	V	16/07/2000	CA approved, RP required
<i>Eucalyptus caleyi</i> subsp. <i>ovendenii</i>	Ovenden's Ironbark	Plant	NE	V	16/07/2000	CA approved, RP not required
<i>Eucalyptus camfieldii</i>	Camfield's Stringybark	Plant	NE	V	16/07/2000	CA approved, RP not required
<i>Eucalyptus glaucina</i>	Slaty Red Gum	Plant	NE	V	16/07/2000	CA approved, RP not required
<i>Eucalyptus imlayensis</i>	Imlay Mallee, Mount Imlay Mallee	Plant	E, S	E	16/07/2000	CA approved, RP not required
<i>Eucalyptus kartzoffiana</i>	Araluen Gum	Plant	S	V	16/07/2000	CA approved, RP not required
<i>Eucalyptus langleyi</i>	Albatross Mallee	Plant	S	V	16/07/2000	CA approved, RP not required
<i>Eucalyptus macarthurii</i>	Camden Woollybutt, Paddys River Box	Plant	S	E	5/05/2016	CA approved, RP not required

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<i>Eucalyptus mckieana</i>	McKie's Stringybark	Plant	NE	V	16/07/2000	CA approved, RP not required
<i>Eucalyptus nicholii</i>	Narrow-leaved Peppermint, Narrow-leaved Black Peppermint	Plant	NE	V	16/07/2000	CA approved, RP not required
<i>Eucalyptus pachycalyx</i> <i>subsp. banyabba</i>	Banyabba Shiny-barked Gum	Plant	NE	E	16/07/2000	RP approved, RP required
<i>Eucalyptus parramattensis</i> <i>subsp. decadens</i>	Earp's Gum, Earp's Dirty Gum	Plant	NE	V	16/07/2000	CA approved, RP required
<i>Eucalyptus parvula</i>	Small-leaved Gum	Plant	E, S	V	16/07/2000	CA approved, RP not required
<i>Eucalyptus pulverulenta</i>	Silver-leaved Mountain Gum, Silver-leaved Gum	Plant	E, S	V	16/07/2000	CA approved, RP not required
<i>Eucalyptus pumila</i>	Pokolbin Mallee	Plant	NE	V	16/07/2000	CA approved, RP not required
<i>Eucalyptus recurva</i>	Mongarlowe Mallee	Plant	S	CE	9/04/2015	CA approved, RP approved, RP required
<i>Eucalyptus rubida</i> <i>subsp. barbigerorum</i>	Blackbutt Candlebark	Plant	NE	V	16/07/2000	CA approved, RP not required

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<i>Eucalyptus scoparia</i>	Wallangarra White Gum	Plant	NE	V	16/07/2000	CA approved, RP not required
<i>Eucalyptus sp. Howes Swamp Creek (M.Doherty 26)</i>		Plant	NE	E	16/07/2000	CA approved, RP not required
<i>Eucalyptus tetrapleura</i>	Square-fruited Ironbark	Plant	NE	V	16/07/2000	CA approved, RP approved, RP required
<i>Euphrasia arguta</i>		Plant	NE	CE	19/03/2011	CA approved, RP not required
<i>Euphrasia bella</i>	Lamington Eyebright, Mt. Merino Eyebright	Plant	NE	V	16/07/2000	CA approved, RP approved, RP required
<i>Floydia praealta</i>	Ball Nut, Possum Nut, Big Nut, Beefwood	Plant	NE	V	16/07/2000	CA approved, RP not required
<i>Fontainea australis</i>	Southern Fontainea	Plant	NE	V	16/07/2000	CA approved, RP approved, RP required
<i>Fontainea oraria</i>	Coastal Fontainea	Plant	NE	E	16/07/2000	RP approved, RP required
<i>Gaultheria viridicarpa J.B.Williams subsp. viridicarpa ms.</i>	Green Waxberry	Plant	NE	V	01/10/2008	CA approved, RP approved, RP required

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<i>Genoplesium baueri</i>	Yellow Gnat-orchid	Plant	NE, S	E	25/01/2014	CA approved, RP required
<i>Genoplesium plumosum</i>	Plumed Midge-orchid, Tallong Midge Orchid	Plant	S	E	16/07/2000	CA approved, RP approved, RP required
<i>Genoplesium rhyoliticum</i>	Pambula Midge-orchid	Plant	E	E	16/07/2000	CA approved, RP not required
<i>Genoplesium vernale</i>	East Lynne Midge-orchid	Plant	S	V	4/10/2001	CA approved, RP approved, RP required
<i>Gentiana baeuerlenii</i>	Baeuerlen's Gentian	Plant	S	E	16/07/2000	CA approved, RP required
<i>Gentiana bredboensis</i>	Bredbo Gentian	Plant	S	V	16/07/2000	CA approved, RP not required
<i>Gentiana wingecarribiensis</i>	Wingecarribee Gentian	Plant	S	E	16/07/2000	CA approved, RP not required
<i>Gentiana wissmannii</i>	New England Gentian	Plant	NE	V	16/07/2000	CA approved, RP approved, RP required
<i>Gingidia rupicola</i>	Mountain Angelica, Broad- leafed Carrot	Plant	NE	E	16/07/2000	CA approved, RP approved, RP required
<i>Glycine latrobeana</i>	Clover Glycine, Purple Clover	Plant	E, S	V	16/07/2000	RP approved, RP required

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<i>Gossia fragrantissima</i>	Sweet Myrtle, Small-leaved Myrtle	Plant	NE	E	16/07/2000	RP approved, RP required
<i>Grevillea acanthifolia subsp. paludosa</i>	Bog Grevillea	Plant	E, S	E	16/07/2000	CA approved, RP not required
<i>Grevillea banyabba</i>		Plant	NE	V	16/07/2000	RP approved, RP required
<i>Grevillea beadleana</i>	Beadle's Grevillea	Plant	NE	E	16/07/2000	CA approved, RP required
<i>Grevillea evansiana</i>		Plant	NE	V	16/07/2000	CA approved, RP not required
<i>Grevillea guthrieana</i>		Plant	NE	E	16/07/2000	CA approved, RP not required
<i>Grevillea iaspicula</i>	Wee Jasper Grevillea	Plant	S	E	16/07/2000	CA approved, RP not required
<i>Grevillea masonii</i>		Plant	NE	E	16/07/2000	RP approved, RP required
<i>Grevillea mollis</i>		Plant	NE	E	16/07/2000	CA approved, RP approved, RP required
<i>Grevillea molyneuxii</i>		Plant	S	E	16/07/2000	CA approved, RP not required
<i>Grevillea parviflora subsp. parviflora</i>	Small-flower Grevillea	Plant	NE, S	V	16/07/2000	CA approved, RP not required

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<i>Grevillea quadricauda</i>		Plant	NE	V	16/07/2000	CA approved, RP not required
<i>Grevillea rhizomatosa</i>		Plant	NE	V	16/07/2000	CA approved, RP approved, RP required
<i>Grevillea rivularis</i>	Carrington Falls Grevillea	Plant	S	E	16/07/2000	CA approved, RP not required
<i>Grevillea scortechinii</i> subsp. <i>scortechinii</i>	Black Grevillea	Plant	NE	V	16/07/2000	CA approved, RP not required
<i>Grevillea shiressii</i>		Plant	NE	V	16/07/2000	CA approved, RP not required
<i>Grevillea wilkinsonii</i>	Tumut Grevillea	Plant	S	E	16/07/2000	CA approved, RP approved, RP required
<i>Hakea archaeoides</i>		Plant	NE	V	16/07/2000	CA approved, RP approved, RP required
<i>Hakea fraseri</i>	Gnarled Corkbark, Fraser's Hakea	Plant	NE	V	16/07/2000	CA approved, RP approved, RP required
<i>Haloragis exalata</i> subsp. <i>exalata</i>	Wingless Raspwort, Square Raspwort	Plant	NE, E, S	V	16/07/2000	CA approved, RP not required
<i>Haloragis exalata</i> subsp.	Tall Velvet Sea-berry	Plant	NE	V	16/07/2000	CA approved, RP not required

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<i>velutina</i>						
<i>Haloragodendron lucasii</i>	Hal	Plant	NE	E	16/07/2000	CA approved, RP not required
<i>Hibbertia marginata</i>		Plant	NE	V	16/07/2000	CA approved, RP approved, RP required
<i>Hicksbeachia pinnatifolia</i>	Monkey Nut, Bopple Nut, Red Bopple, Red Bopple Nut, Red Nut, Beef Nut, Red Apple Nut, Red Boppel Nut, Ivory Silky Oak	Plant	NE	V	16/07/2000	CA approved, RP not required
<i>Homopholis belsonii</i>	Belson's Panic	Plant	NE	V	16/07/2000	CA approved, RP not required
<i>Homoranthus darwinioides</i>		Plant	NE	V	16/07/2000	CA approved, RP not required
<i>Homoranthus lunatus</i>		Plant	NE	V	16/07/2000	CA approved, RP not required
<i>Homoranthus montanus</i>		Plant	NE	V	16/07/2000	CA approved, RP not required
<i>Homoranthus prolixus</i>		Plant	NE	V	16/07/2000	CA approved, RP not required

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<i>Irenepharsus trypherus</i>	Delicate Cress, Illawarra Irene	Plant	S	E	16/07/2000	CA approved, RP required
<i>Isoglossa eranthemoides</i>	Isoglossa	Plant	NE	E	16/07/2000	RP approved, RP required
<i>Isopogon fletcheri</i>	Fletcher's Drumsticks	Plant	NE	V	16/07/2000	CA approved, RP not required
<i>Kennedia retrorsa</i>		Plant	NE	V	16/07/2000	CA approved, RP not required
<i>Kunzea cambagei</i>		Plant	S	V	16/07/2000	CA approved, RP not required
<i>Kunzea rupestris</i>		Plant	NE	V	16/07/2000	CA approved, RP not required
<i>Lasiopetalum joyceae</i>		Plant	NE	V	16/07/2000	CA approved, RP not required
<i>Lasiopetalum longistamineum</i>		Plant	NE	V	16/07/2000	CA approved, RP not required
<i>Leionema lachnaeoides</i>		Plant	NE	E	16/07/2000	CA approved, RP approved, RP required
<i>Leionema ralstonii</i>		Plant	E	V	16/07/2000	CA approved, RP not required
<i>Leionema sympetalum</i>	Rylstone Bell	Plant	NE	V	16/07/2000	CA approved, RP not required

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<i>Lepidium ginninderrense</i>	Ginninderra Peppercress	Plant	S	V	28/02/2005	CA approved, RP required
<i>Lepidium hyssopifolium</i>	Basalt Pepper-cress, Peppercress, Rubble Pepper-cress, Pepperweed	Plant	S	E	16/07/2000	RP approved, RP required
<i>Lepidium peregrinum</i>	Wandering Pepper-cress	Plant	NE	E	1/05/2003	CA approved, RP not required
<i>Leptospermum deanei</i>	Deane's Tea-tree	Plant	NE	V	16/07/2000	CA approved, RP not required
<i>Leptospermum thompsonii</i>	Monga Tea-tree	Plant	S	V	16/07/2000	CA approved, RP not required
<i>Leucochrysum albicans</i> var. <i>tricolor</i>	Hoary Sunray, Grassland Paper-daisy	Plant	NE, E, S	E	1/11/2009	RP approved, RP required
<i>Leucopogon confertus</i>	Torrington Beard-heath	Plant	NE	E	16/07/2000	CA approved, RP not required
<i>Leucopogon exolasius</i>	Woronora Beard-heath	Plant	S	V	16/07/2000	CA approved, RP not required

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<i>Macadamia integrifolia</i>	Macadamia Nut, Queensland Nut Tree, Smooth-shelled Macadamia, Bush Nut, Nut Oak	Plant	NE	V	16/07/2000	CA approved, RP approved, RP required
<i>Macadamia tetraphylla</i>	Rough-shelled Bush Nut, Macadamia Nut, Rough-shelled Macadamia, Rough-leaved Queensland Nut	Plant	NE	V	16/07/2000	CA approved, RP approved, RP required
<i>Macrozamia occidua</i>		Plant	NE	V	16/07/2000	CA approved, RP not required
<i>Marsdenia longiloba</i>	Clear Milkvine	Plant	NE	V	16/07/2000	CA approved, RP not required
<i>Melaleuca biconvexa</i>	Biconvex Paperbark	Plant	NE, S	V	16/07/2000	CA approved, RP not required
<i>Melaleuca deanei</i>	Deane's Melaleuca	Plant	NE, S	V	4/04/2001	RP approved, RP required
<i>Melichrus</i> sp. <i>Gibberagee</i> (Benwell 97239)	Narrow-leaf Melichrus	Plant	NE	E	16/07/2000	RP approved, RP required

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<i>Melichrus sp. Newfoundland State Forest (P.Gilmour 7852)</i>	Hairy Melichrus	Plant	NE	E	16/07/2000	RP approved, RP required
<i>Micromyrtus blakelyi</i>		Plant	NE	V	16/07/2000	CA approved, RP not required
<i>Microtis angusii</i>	Angus's Onion Orchid	Plant	NE	E	16/07/2000	RP approved, RP required
<i>Myrsine richmondensis</i>	Purple-leaf Muttonwood, Lismore Muttonwood	Plant	NE	E	16/07/2000	CA approved, RP required
<i>Nematolepis rhytidophylla</i>		Plant	E	V	16/07/2000	CA approved, RP not required
<i>Neoastelia spectabilis</i>		Plant	NE	V	16/07/2000	CA approved, RP approved, RP required
<i>Ochrosia moorei</i>	Southern Ochrosia	Plant	NE	E	16/07/2000	CA approved, RP approved, RP required
<i>Olax angulata</i>	Minnie Waters Olax	Plant	NE	V	16/07/2000	CA approved, RP approved, RP required
<i>Olearia cordata</i>		Plant	NE	V	16/07/2000	CA approved, RP not required

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<i>Olearia flocktoniae</i>	Dorrigo Daisy-bush	Plant	NE	E	16/07/2000	RP approved, RP required
<i>Owenia cepiodora</i>	Onionwood, Bog Onion, Onion Cedar	Plant	NE	V	16/07/2000	CA approved, RP approved, RP required
<i>Ozothamnus tessellatus</i>		Plant	NE	V	16/07/2000	CA approved, RP not required
<i>Ozothamnus vagans</i>	Wollumbin Dogwood	Plant	NE	V	16/07/2000	CA approved, RP approved, RP required
<i>Parsonsia dorrigensis</i>	Milky Silkpod	Plant	NE	E	16/07/2000	CA approved, RP approved, RP required
<i>Paspalidium grandispiculatum</i>	a grass	Plant	NE	V	16/07/2000	CA approved, RP not required
<i>Pelargonium sp. Striatellum</i> (G.W.Carr 10345)	Omeo Stork's-bill	Plant	NE, E, S	E	21/12/2011	CA approved, RP not required
<i>Persicaria elatior</i>	Knotweed, Tall Knotweed	Plant	NE, E, S	V	16/07/2000	CA approved, RP not required
<i>Persoonia acerosa</i>	Needle Geebung	Plant	S	V	16/07/2000	CA approved, RP not required
<i>Persoonia bargoensis</i>	Bargo Geebung	Plant	S	V	16/07/2000	CA approved, RP not required

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<i>Persoonia glaucescens</i>	Mittagong Geebung	Plant	S	V	16/07/2000	CA approved, RP not required
<i>Persoonia hirsuta</i>	Hairy Geebung, Hairy Persoonia	Plant	NE, S	E	16/07/2000	CA approved, RP not required
<i>Persoonia mollis subsp. maxima</i>		Plant	NE	E	16/07/2000	CA approved, RP approved, RP required
<i>Persoonia pauciflora</i>	North Rothbury Persoonia	Plant	NE	CE	8/07/2005	RP approved, RP required
<i>Phaius australis</i>	Lesser Swamp-orchid	Plant	NE	E	16/07/2000	CA approved, RP not required
<i>Phebalium glandulosum subsp. eglanulosum</i>	Rusty Desert Phebalium	Plant	NE	V	16/07/2000	CA approved, RP not required
<i>Phebalium whitei</i>		Plant	NE	V	16/07/2000	CA approved, RP not required
<i>Philothea ericifolia</i>		Plant	NE	V	16/07/2000	CA approved, RP not required
<i>Phyllota humifusa</i>	Dwarf Phyllota	Plant	S	V	16/07/2000	CA approved, RP not required
<i>Picris evae</i>	Hawkweed	Plant	NE	V	16/07/2000	CA approved, RP not required
<i>Pimelea curviflora var.</i>		Plant	NE	V	16/07/2000	CA approved, RP not required

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<i>curviflora</i>						
<i>Pimelea spicata</i>	Spiked Rice-flower	Plant	S	E	16/07/2000	CA approved, RP approved, RP required
<i>Pimelea venosa</i>		Plant	NE	E	16/07/2000	CA approved, RP not required
<i>Plectranthus nitidus</i>	Nightcap Plectranthus, Silver Plectranthus	Plant	NE	E	16/07/2000	CA approved, RP approved, RP required
<i>Plinthanthesis rodwayi</i>	Budawang's Wallaby-grass	Plant	S	V	16/07/2000	CA approved, RP not required
<i>Pomaderris brunnea</i>	Rufous Pomaderris	Plant	NE, E, S	V	16/07/2000	RP approved, RP required
<i>Pomaderris cotoneaster</i>	Cotoneaster Pomaderris	Plant	E, S	E	16/07/2000	RP approved, RP required
<i>Pomaderris gilmourii</i> var. <i>cana</i>	Grey Deua Pomaderris	Plant	S	V	16/07/2000	CA approved, RP not required
<i>Pomaderris pallida</i>	Pale Pomaderris	Plant	E, S	V	16/07/2000	CA approved, RP not required
<i>Pomaderris parrisiae</i>	Parris' Pomaderris	Plant	E, S	V	16/07/2000	CA approved, RP not required
<i>Pomaderris reperta</i>	Denman Pomaderris	Plant	NE	CE	8/01/2008	CA approved, RP not required

Scientific Name	Common Name	Class	RFA region ¹	EPBC Act listing ²	EPBC listing date effective	Status of conservation advice and recovery plans ³
<i>Pomaderris sericea</i>	Bent Pomaderris	Plant	NE, E, S	V	16/07/2000	RP approved, RP required
<i>Prasophyllum affine</i>	Jervis Bay Leek Orchid, Culburra Leek-orchid, Kinghorn Point Leek-orchid	Plant	E, S	E	16/07/2000	RP approved, RP required
<i>Prasophyllum bagoense</i>	Bago Leek-orchid	Plant	S	CE	3/05/2012	CA approved, RP not required
<i>Prasophyllum fuscum</i>	Tawny Leek-orchid, Slaty Leek-orchid	Plant	S	V	16/07/2000	CA approved, RP not required
<i>Prasophyllum innubum</i>	Brandy Marys Leek-orchid	Plant	S	CE	24/01/2014	CA approved, RP not required
<i>Prasophyllum keltonii</i>	Kelton's Leek-orchid	Plant	S	CE	24/01/2014	CA approved, RP not required
<i>Prasophyllum morgani</i>	Mignonette Leek-orchid, Cobungra Leek-orchid, Dense Leek-orchid	Plant	S	V	16/07/2000	CA approved, RP approved, RP required
<i>Prasophyllum petilum</i>	Tarengo Leek Orchid	Plant	E, S	E	16/07/2000	RP approved, RP required
<i>Prasophyllum sp. Wybong</i> (<i>C.Phelps</i> ORG 5269)	a leek-orchid	Plant	NE	CE	13/11/2009	CA approved, RP not required

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<i>Prasophyllum validum</i>	Sturdy Leek-orchid	Plant	S	V	16/07/2000	RP approved, RP required
<i>Prostanthera askania</i>	Tranquillity Mintbush, Tranquillity Mintbush	Plant	NE	E	16/07/2000	RP approved, RP required
<i>Prostanthera cineolifera</i>		Plant	NE	V	16/07/2000	CA approved, RP not required
<i>Prostanthera cryptandroides</i> <i>subsp. cryptandroides</i>	Wollemi Mint-bush	Plant	NE	V	8/06/2013	CA approved, RP not required
<i>Prostanthera densa</i>	Villous Mintbush	Plant	NE, S	V	16/07/2000	CA approved, RP not required
<i>Prostanthera discolor</i>		Plant	NE	V	16/07/2000	CA approved, RP not required
<i>Prostanthera junonis</i>	Somersby Mintbush	Plant	NE	E	16/07/2000	CA approved, RP approved, RP required
<i>Prostanthera palustris</i>	Swamp Mint-bush	Plant	NE	V	16/07/2000	RP approved, RP required
<i>Prostanthera staurophylla</i>	a mint-bush	Plant	NE	V	16/07/2000	CA approved, RP not required
<i>Prostanthera stricta</i>	Mount Vincent Mintbush	Plant	NE	V	16/07/2000	CA approved, RP not required

Scientific Name	Common Name	Class	RFA region ¹	EPBC Act listing ²	EPBC listing date effective	Status of conservation advice and recovery plans ³
<i>Pterostylis bicornis</i>		Plant	NE	V	16/07/2000	CA approved, RP not required
<i>Pterostylis chlorogramma</i>	Green-striped Greenhood	Plant	E	V	16/07/2000	RP approved, RP required
<i>Pterostylis gibbosa</i>	Illawarra Greenhood, Rufa Greenhood, Pouched Greenhood	Plant	NE, S	E	16/07/2000	CA approved, RP approved, RP required
<i>Pterostylis oreophila</i>	Blue-tongued Orchid, Kiandra Greenhood	Plant	E, S	CE	3/05/2012	CA approved, RP required
<i>Pterostylis pulchella</i>	Pretty Greenhood	Plant	NE, S	V	16/07/2000	CA approved, RP not required
<i>Pterostylis saxicola</i>	Sydney Plains Greenhood	Plant	NE, S	E	16/07/2000	CA approved, RP not required
<i>Pterostylis vernalis</i>	Halbury Rustyhood	Plant	S	CE	12/02/2010	CA approved, RP not required
<i>Pultenaea aristata</i>		Plant	S	V	16/07/2000	CA approved, RP not required
<i>Pultenaea baeuerlenii</i>	Budawangs Bush-pea	Plant	S	V	16/07/2000	CA approved, RP not required
<i>Pultenaea elusa</i>	Elusive Bush-pea	Plant	S	E	16/07/2000	CA approved, RP not required
<i>Pultenaea glabra</i>	Smooth Bush-pea, Swamp	Plant	NE	V	16/07/2000	CA approved, RP not required

Scientific Name	Common Name	Class	RFA region ¹	EPBC Act listing ²	EPBC listing date effective	Status of conservation advice and recovery plans ³
	Bush-pea					
<i>Pultenaea parrisiae</i>		Plant	E, S	V	16/07/2000	CA approved, RP not required
<i>Randia moorei</i>	Spiny Gardenia	Plant	NE	E	16/07/2000	RP approved, RP required
<i>Ranunculus anemoneus</i>	Anemone Buttercup	Plant	S	V	16/07/2000	CA approved, RP approved, RP required
<i>Rhizanthella slateri</i>	Eastern Underground Orchid	Plant	NE, S	E	18/12/2007	CA approved, RP not required
<i>Rutidosia heterogama</i>	Heath Wrinklewort	Plant	NE	V	16/07/2000	CA approved, RP not required
<i>Rutidosia leiolepis</i>	Monaro Golden Daisy	Plant	E, S	V	16/07/2000	CA approved, RP not required
<i>Rutidosia leptorrhynchoides</i>	Button Wrinklewort	Plant	E, S	E	16/07/2000	RP approved, RP required
<i>Rytidosperma pumilum</i>	Feldmark Grass	Plant	S	V	16/07/2000	CA approved, RP approved, RP required
<i>Samadera bidwillii</i>	Quassia	Plant	NE	V	16/07/2000	CA approved, RP not required
<i>Samadera sp. Moonee Creek (J.King s.n. Nov.</i>		Plant	NE	E	16/07/2000	RP approved, RP required

Scientific Name	Common Name	Class	RFA region ¹	EPBC Act listing ²	EPBC listing date effective	Status of conservation advice and recovery plans ³
1949)						
<i>Sarcochilus fitzgeraldii</i>	Ravine Orchid	Plant	NE	V	16/07/2000	CA approved, RP not required
<i>Sarcochilus hartmannii</i>	Waxy Sarcochilus, Blue Knob Orchid	Plant	NE	V	16/07/2000	CA approved, RP not required
<i>Sarcochilus weinthalii</i>	Blotched Sarcochilus, Weinthals Sarcanth	Plant	NE	V	16/07/2000	CA approved, RP required
<i>Selaginella andrewsii</i>	Tallebudgera spikemoss	Plant	NE	V	23/02/2013	CA approved, RP required
<i>Senecio macrocarpus</i>	Large-fruit Fireweed, Large-fruit Groundsel	Plant	S	V	16/07/2000	RP approved, RP required
<i>Solanum sulphureum</i>		Plant	NE	E	7/12/2016	CA approved, RP not required
<i>Sophora fraseri</i>		Plant	NE	V	16/07/2000	CA approved, RP not required
<i>Styphelia perileuca</i>		Plant	NE	V	16/07/2000	CA approved, RP approved, RP required

Scientific Name	Common Name	Class	RFA region ¹	EPBC Act listing ²	EPBC listing date effective	Status of conservation advice and recovery plans ³
<i>Swainsona recta</i>	Small Purple-pea, Mountain Swainson-pea, Small Purple Pea	Plant	S	E	16/07/2000	RP approved, RP required
<i>Symplocos baeuerlenii</i>	Small-leaved Hazelwood, Shrubby Hazelwood	Plant	NE	V	16/07/2000	CA approved, RP approved, RP required
<i>Syzygium hodgkinsoniae</i>	Smooth-bark Rose Apple, Red Lilly Pilly	Plant	NE	V	16/07/2000	CA approved, RP not required
<i>Syzygium moorei</i>	Rose Apple, Coolamon, Robby, Durobby, Watermelon Tree, Coolamon Rose Apple	Plant	NE	V	16/07/2000	CA approved, RP approved, RP required
<i>Syzygium paniculatum</i>	Magenta Lilly Pilly, Magenta Cherry, Daguba, Scrub Cherry, Creek Lilly Pilly, Brush Cherry	Plant	NE, S	V	16/07/2000	RP approved, RP required
<i>Tasmannia glaucifolia</i>	Fragrant Pepperbush	Plant	NE	V	16/07/2000	CA approved, RP not required
<i>Tetradlea juncea</i>	Black-eyed Susan	Plant	NE	V	16/07/2000	CA approved, RP not required

Scientific Name	Common Name	Class	RFA region ¹	EPBC Act listing ²	EPBC listing date effective	Status of conservation advice and recovery plans ³
<i>Thelymitra adorata</i>	Wyong Sun Orchid	Plant	NE	CE	19/07/2014	CA approved, RP not required
<i>Thelymitra kangaloonica</i>	Kangaloon Sun Orchid	Plant	NE, S	CE	8/01/2009	CA approved, RP not required
<i>Thelymitra matthewsii</i>	Spiral Sun-orchid	Plant	E	V	16/07/2000	RP approved, RP required
<i>Thesium australe</i>	Austral Toadflax, Toadflax	Plant	NE, E, S	V	16/07/2000	CA approved, RP required
<i>Triplarina imbricata</i>		Plant	NE, S	E	16/07/2000	CA approved, RP approved, RP required
<i>Triplarina nowraensis</i>	Nowra Heath-myrtle	Plant	S	E	16/07/2000	RP approved, RP required
<i>Tylophora linearis</i>		Plant	NE	E	16/07/2000	CA approved, RP not required
<i>Tylophora woollsii</i>		Plant	NE	E	16/07/2000	CA approved, RP approved, RP required
<i>Uromyrtus australis</i>	Peach Myrtle	Plant	NE	E	16/07/2000	RP approved, RP required
<i>Velleia perfoliata</i>		Plant	NE	V	16/07/2000	CA approved, RP not required
<i>Westringia davidii</i>		Plant	E	V	16/07/2000	CA approved, RP not required

Scientific Name	Common Name	Class	RFA region ¹	EPBC Act listing ²	EPBC listing date effective	Status of conservation advice and recovery plans ³
<i>Westringia kydrensis</i>		Plant	E, S	E	16/07/2000	CA approved, RP not required
<i>Westringia rupicola</i>		Plant	NE	V	16/07/2000	CA approved, RP not required
<i>Wollemia nobilis</i>	Wollemi Pine	Plant	NE	E	16/07/2000	RP approved, RP required
<i>Xerochrysum palustre</i>	Swamp Everlasting, Swamp Paper Daisy	Plant	E, S	V	16/07/2000	RP approved, RP required
<i>Zieria adenophora</i>	Araluen Zieria	Plant	S	E	16/07/2000	CA approved, RP approved, RP required
<i>Zieria baeuerlenii</i>	Bomaderry Zieria, Bomaderry Creek Zieria	Plant	S	E	16/07/2000	RP approved, RP required
<i>Zieria buxijugum</i>	Box Range Zieria	Plant	E	E	16/07/2000	CA approved, RP approved, RP required
<i>Zieria citriodora</i>	Lemon-scented Zieria	Plant	E, S	V	16/07/2000	RP approved, RP required
<i>Zieria floydii</i>		Plant	NE	E	16/07/2000	CA approved, RP approved, RP required
<i>Zieria formosa</i>	Shapely Zieria	Plant	E	E	16/07/2000	CA approved, RP approved, RP required

Scientific Name	Common Name	Class	RFA region ¹	EPBC Act listing ²	EPBC listing date effective	Status of conservation advice and recovery plans ³
<i>Zieria granulata</i>	Hill Zieria, Hilly Zieria, Illawarra Zieria	Plant	S	E	16/07/2000	CA approved, RP required
<i>Zieria involucrata</i>		Plant	NE	V	16/07/2000	RP approved, RP required
<i>Zieria lasiocaulis</i>	Willi Willi Zieria	Plant	NE	E	16/07/2000	CA approved, RP approved, RP required
<i>Zieria murphyi</i>		Plant	S	V	16/07/2000	CA approved, RP not required
<i>Zieria parrisiae</i>	Parris's Zieria	Plant	E	E	16/07/2000	CA approved, RP approved, RP required
<i>Zieria prostrata</i>	Headland Zieria	Plant	NE	E	16/07/2000	CA approved, RP approved, RP required
<i>Zieria tuberculata</i>	Warty Zieria	Plant	E, S	V	16/07/2000	CA approved, RP not required

Notes:

(1) RFA regions: NE – North East; S – Southern; E – Eden

(2) EPBC Act listing as at 6 April 2018: CE – Critically Endangered; C – Critical; V- Vulnerable; M – Listed as migratory but not threatened

(3) CA – Conservation Advice; RP – Recovery Plan

(4) *Hirundapus caudacutus* was nominated for vulnerable and included on the 2017 FPAL. The nomination identified forestry as a potential threat (i.e. loss of roosting hollows).

* Listed threatened Migratory species

Source: Environmental Resources Information Network Species of National Environmental Significance Database

Fauna

Scientific Name	Common Name	Class	RFA region ¹	EPBC Act listing ²	EPBC listing date effective	Status of conservation advice and recovery plans ³
<i>Anomalopus mackayi</i>	Five-clawed Worm-skink, Long-legged Worm-skink	Reptile	NE	V	16/07/2000	CA approved, RP not required
<i>Anthochaera phrygia</i>	Regent Honeyeater	Bird	NE, E, S	CE	8/07/2015	CA approved, RP approved, RP required
<i>Aprasia parapulchella</i>	Pink-tailed Worm-lizard, Pink-tailed Legless Lizard	Reptile	NE, E, S	V	16/07/2000	CA approved, RP required
<i>Apus pacificus</i>	Fork-tailed Swift	Bird	NE, E, S	M	NA	CA and RP not required
<i>Argynnis hyperbius inconstans</i>	Australian Fritillary	Insect	NE	CE	15/08/2017	CA approved, RP not required
<i>Atrichornis rufescens</i>	Rufous Scrub-bird	Bird	NE	E	6/11/2014	CA approved, RP not required
<i>Bidyanus bidyanus</i>	Silver Perch, Bidyan	Fish	S	CE	21/12/2013	CA approved, RP required
<i>Botaurus poiciloptilus</i>	Australasian Bittern	Bird	NE, E, S	E	3/03/2011	CA approved, RP required
<i>Burramys parvus</i>	Mountain Pygmy-possum	Mammal	S	E	16/07/2000	CA approved, RP approved, RP required
<i>Calidris canutus</i>	Red Knot, Knot	Bird *	NE, E, S	E	5/05/2016	CA approved, RP not required
<i>Calidris ferruginea</i>	Curlew Sandpiper	Bird *	NE, E, S	CE	26/05/2015	CA approved, RP not required
<i>Calidris tenuirostris</i>	Great Knot	Bird *	NE, S	CE	5/05/2016	CA approved, RP not required

Scientific Name	Common Name	Class	RFA region ¹	EPBC Act listing ²	EPBC listing date effective	Status of conservation advice and recovery plans ³
<i>Chalinolobus dwyeri</i>	Large-eared Pied Bat, Large Pied Bat	Mammal	NE, E, S	V	4/04/2001	RP approved, RP required
<i>Charadrius leschenaultii</i>	Greater Sand Plover, Large Sand Plover	Bird *	NE, S	V	5/05/2016	CA approved, RP not required
<i>Charadrius mongolus</i>	Lesser Sand Plover, Mongolian Plover	Bird *	NE, S	E	5/05/2016	CA approved, RP not required
<i>Cuculus optatus</i>	Oriental Cuckoo, Horsfield's Cuckoo	Bird	NE, E, S	M	NA	CA and RP not required
<i>Cyclodomorphus praealtus</i>	Alpine She-oak Skink	Reptile	S	E	24/12/2009	CA approved, RP required
<i>Cyclopsitta diophthalma coxeni</i>	Coxen's Fig-Parrot	Bird	NE	E	16/07/2000	CA approved, RP approved, RP required
<i>Dasyornis brachypterus</i>	Eastern Bristlebird	Bird	NE, E, S	E	16/07/2000	RP approved, RP required
<i>Dasyurus maculatus maculatus (SE mainland population)</i>	Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population)	Mammal	NE, E, S	E	14/05/2004	RP approved, RP required
<i>Delma impar</i>	Striped Legless Lizard	Reptile	NE, E, S	V	16/07/2000	CA approved, RP approved, RP required

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<i>Delma torquata</i>	Adorned Delma, Collared Delma	Reptile	NE	V	16/07/2000	CA approved, RP not required
<i>Diomedea antipodensis</i>	Antipodean Albatross	Bird *	NE, E, S	V	16/07/2000	RP approved, RP required
<i>Diomedea antipodensis gibsoni</i>	Gibson's Albatross	Bird	NE, E, S	V	16/07/2000	RP approved, RP required
<i>Diomedea epomophora</i>	Southern Royal Albatross	Bird *	NE, E, S	V	16/07/2000	RP approved, RP required
<i>Diomedea exulans</i>	Wandering Albatross	Bird *	NE, E, S	V	16/07/2000	RP approved, RP required
<i>Diomedea sanfordi</i>	Northern Royal Albatross	Bird *	NE, E, S	E	16/07/2000	RP approved, RP required
<i>Erythrotriorchis radiatus</i>	Red Goshawk	Bird	NE	V	16/07/2000	CA approved, RP approved, RP required
<i>Euastacus dharawalus</i>	Fitzroy Falls Spiny Crayfish	Crustacean	S	CE	7/12/2016	CA approved, RP not required
<i>Fregetta grallaria grallaria</i>	White-bellied Storm-Petrel (Tasman Sea), White-bellied Storm-Petrel (Australasian)	Bird	NE, E, S	V	16/07/2000	RP approved, RP required
<i>Furina dunmalli</i>	Dunmall's Snake	Reptile	NE	V	16/07/2000	CA approved, RP not required

Scientific Name	Common Name	Class	RFA region ¹	EPBC Act listing ²	EPBC listing date effective	Status of conservation advice and recovery plans ³
<i>Galaxias rostratus</i>	Flathead Galaxias, Beaked Minnow, Flat-headed Galaxias, Flat-headed Jollytail, Flat-headed Minnow	Fish	NE, S	CE	5/05/2016	CA approved, RP not required
<i>Geophaps scripta scripta</i>	Squatter Pigeon (southern)	Bird	NE	V	16/07/2000	CA approved, RP not required
<i>Grantiella picta</i>	Painted Honeyeater	Bird	NE, E, S	V	8/07/2015	CA approved, RP required
<i>Heleioporus australiacus</i>	Giant Burrowing Frog	Frog	NE, E, S	V	16/07/2000	CA approved, RP required
<i>Hirundapus caudacutus</i> ⁴	White-throated Needletail	Bird	NE, E, S	M	NA	CA and RP not required
<i>Hoplocephalus bungaroides</i>	Broad-headed Snake	Reptile	NE, S	V	16/07/2000	CA approved, RP required
<i>Isodon obesulus obesulus</i>	Southern Brown Bandicoot (eastern), Southern Brown Bandicoot (south-eastern)	Mammal	NE, E, S	E	4/04/2001	CA approved, RP required
<i>Lathamus discolor</i>	Swift Parrot	Bird	NE, E, S	CE	5/05/2016	CA approved, RP approved, RP required
<i>Leiopoa ocellata</i>	Malleefowl	Bird	S	V	16/07/2000	RP approved, RP required

Scientific Name	Common Name	Class	RFA region ¹	EPBC Act listing ²	EPBC listing date effective	Status of conservation advice and recovery plans ³
<i>Limosa lapponica baueri</i>	Bar-tailed Godwit (baueri), Western Alaskan Bar-tailed Godwit	Bird	NE, E, S	V	5/05/2016	CA approved, RP not required
<i>Limosa lapponica menzbieri</i>	Northern Siberian Bar-tailed Godwit, Bar-tailed Godwit (menzbieri)	Bird	NE, E, S	CE	5/05/2016	CA approved, RP not required
<i>Liopholis guthega</i>	Guthega Skink	Reptile	S	E	23/02/2011	CA approved, RP required
<i>Litoria aurea</i>	Green and Golden Bell Frog	Frog	NE, E, S	V	16/07/2000	CA approved, RP required
<i>Litoria booroolongensis</i>	Booroolong Frog	Frog	NE, E, S	E	18/12/2007	CA approved, RP approved, RP required
<i>Litoria castanea</i>	Yellow-spotted Tree Frog, Yellow-spotted Bell Frog	Frog	NE, E, S	E	16/07/2000	CA approved, RP approved, RP required
<i>Litoria littlejohni</i>	Littlejohn's Tree Frog, Heath Frog	Frog	NE, E, S	V	16/07/2000	CA approved, RP not required
<i>Litoria olongburensis</i>	Wallum Sedge Frog	Frog	NE	V	16/07/2000	RP approved, RP required
<i>Litoria piperata</i>	Peppered Tree Frog	Frog	NE	V	16/07/2000	CA approved, RP approved, RP required

Scientific Name	Common Name	Class	RFA region ¹	EPBC Act listing ²	EPBC listing date effective	Status of conservation advice and recovery plans ³
<i>Litoria raniformis</i>	Growling Grass Frog, Southern Bell Frog, Green and Golden Frog, Warty Swamp Frog	Frog	E, S	V	16/07/2000	RP approved, RP required
<i>Litoria spenceri</i>	Spotted Tree Frog	Frog	S	E	16/07/2000	CA approved, RP approved, RP required
<i>Litoria verreauxii alpina</i>	Alpine Tree Frog, Verreaux's Alpine Tree Frog	Frog	E,S	V	16/07/2000	CA approved, RP required
<i>Maccullochella ikei</i>	Clarence River Cod, Eastern Freshwater Cod	Fish	NE	E	16/07/2000	CA approved, RP required
<i>Maccullochella macquariensis</i>	Trout Cod	Fish	S	E	16/07/2000	RP approved, RP required
<i>Maccullochella peelii</i>	Murray Cod	Fish	NE, E, S	V	3/07/2003	RP approved, RP required
<i>Macquaria australasica</i>	Macquarie Perch	Fish	NE, E, S	E	16/07/2000	CA approved, RP required
<i>Macronectes giganteus</i>	Southern Giant-Petrel, Southern Giant Petrel	Bird *	NE, E, S	E	4/04/2001	RP approved, RP required
<i>Macronectes halli</i>	Northern Giant Petrel	Bird *	NE, E, S	V	4/04/2001	RP approved, RP required

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<i>Mastacomys fuscus mordicus</i>	Broad-toothed Rat (mainland), Tooarrana	Mammal	NE, E, S	V	10/05/2016	CA approved, RP not required
<i>Mixophyes balbus</i>	Stuttering Frog, Southern Barred Frog (in Victoria)	Frog	NE, E, S	V	16/07/2000	RP approved, RP required
<i>Mixophyes fleayi</i>	Fleay's Frog	Frog	NE	E	16/07/2000	CA approved, RP approved, RP required
<i>Mixophyes iteratus</i>	Giant Barred Frog, Southern Barred Frog	Frog	NE	E	16/07/2000	CA approved, RP approved, RP required
<i>Monarcha melanopsis</i>	Black-faced Monarch	Bird	NE, E, S	M	NA	CA and RP not required
<i>Monarcha trivirgatus</i>	Spectacled Monarch	Bird	NE, E, S	M	NA	CA and RP not required
<i>Myiagra cyanoleuca</i>	Satin Flycatcher	Bird	NE, E, S	M	NA	CA and RP not required
<i>Nannoperca oxleyana</i>	Oxleyan Pygmy Perch	Fish	NE	E	16/07/2000	CA approved, RP approved, RP required
<i>Neophema chrysogaster</i>	Orange-bellied Parrot	Bird	E, S	CE	13/09/2006	RP approved, RP required
<i>Numenius madagascariensis</i>	Eastern Curlew, Far Eastern Curlew	Bird *	NE, E, S	CE	26/05/2015	CA approved, RP not required

Scientific Name	Common Name	Class	RFA region ¹	EPBC Act listing ²	EPBC listing date effective	Status of conservation advice and recovery plans ³
<i>Nyctophilus corbeni</i>	Corben's Long-eared Bat, South-eastern Long-eared Bat	Mammal	NE, S	V	4/04/2001	CA approved, RP required
<i>Pachyptila turtur subantarctica</i>	Fairy Prion (southern)	Bird	NE, E, S	V	16/07/2000	CA approved, RP required
<i>Pandion haliaetus</i>	Osprey	Bird	NE, E, S	M	NA	CA and RP not required
<i>Pedionomus torquatus</i>	Plains-wanderer	Bird	S	CE	8/07/2015	CA approved, RP approved, RP required
<i>Petauroides volans</i>	Greater Glider	Mammal	NE, E, S	V	5/05/2016	CA approved, RP required
<i>Petrogale penicillata</i>	Brush-tailed Rock-wallaby	Mammal	NE, E, S	V	16/07/2000	RP approved, RP required
<i>Phascolarctos cinereus</i> (combined populations of Qld, NSW and the ACT)	Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory)	Mammal	NE, E, S	V	2/05/2012	CA approved, RP required
<i>Phoebastria fusca</i>	Sooty Albatross	Bird *	NE, E, S	V	16/07/2000	RP approved, RP required
<i>Phyllodes imperialis smithersi</i>	Pink Underwing Moth	Insect	NE	E	3/12/2002	CA approved, RP not required

Scientific Name	Common Name	Class	RFA region ¹	EPBC Act listing ²	EPBC listing date effective	Status of conservation advice and recovery plans ³
<i>Poephila cincta cincta</i>	Southern Black-throated Finch	Bird	NE	E	14/02/2005	RP approved, RP required
<i>Polytelis swainsonii</i>	Superb Parrot	Bird	S	V	16/07/2000	CA approved, RP approved, RP required
<i>Pommerhelix duralensis</i>	Dural Land Snail	Snail	NE	E	9/04/2015	CA approved, RP not required
<i>Potorous longipes</i>	Long-footed Potoroo	Mammal	E	E	16/07/2000	CA approved, RP approved, RP required
<i>Potorous tridactylus tridactylus</i>	Long-nosed Potoroo (SE mainland)	Mammal	NE, E, S	V	16/07/2000	RP required
<i>Prototroctes maraena</i>	Australian Grayling	Fish	NE, E, S	V	16/07/2000	RP approved, RP required
<i>Pseudomys fumeus</i>	Smoky Mouse, Konoom	Mammal	E, S	E	16/07/2000	RP approved, RP required
<i>Pseudomys novaehollandiae</i>	New Holland Mouse, Pookila	Mammal	NE, S	V	11/08/2010	CA approved, RP required
<i>Pseudomys oralis</i>	Hastings River Mouse, Koontoo	Mammal	NE	E	16/07/2000	RP approved, RP required
<i>Pseudophryne corroboree</i>	Southern Corroboree Frog	Frog	S	CE	6/04/2013	RP approved, RP required
<i>Pseudophryne pengilleyi</i>	Northern Corroboree Frog	Frog	S	CE	6/04/2013	RP approved, RP required

Scientific Name	Common Name	Class	RFA region ¹	EPBC Act listing ²	EPBC listing date effective	Status of conservation advice and recovery plans ³
<i>Pterodroma leucoptera leucoptera</i>	Gould's Petrel, Australian Gould's Petrel	Bird	NE, E, S	E	16/07/2000	RP approved, RP required
<i>Pterodroma neglecta neglecta</i>	Kermadec Petrel (western)	Bird	NE, S	V	16/07/2000	RP approved, RP required
<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	Mammal	NE, E, S	V	6/12/2001	RP required
<i>Rhipidura rufifrons</i>	Rufous Fantail	Bird	NE, E, S	M	NA	CA and RP not required
<i>Rostratula australis</i>	Australian Painted Snipe	Bird	NE, E, S	E	15/05/2013	CA approved, RP required
<i>Saiphos reticulatus</i>	Three-toed Snake-tooth Skink	Reptile	NE	V	16/07/2000	CA approved, RP not required
<i>Sternula nereis nereis</i>	Australian Fairy Tern	Bird	NE, E, S	V	3/03/2011	CA approved, RP required
<i>Synemon plana</i>	Golden Sun Moth	Insect	S	CE	3/12/2002	CA approved, RP required
<i>Thalassarche bulleri</i>	Buller's Albatross, Pacific Albatross	Bird *	NE, E, S	V	16/07/2000	RP approved, RP required
<i>Thalassarche bulleri platei</i>	Northern Buller's Albatross, Pacific Albatross	Bird	NE, E, S	V	16/07/2000	RP approved, RP required
<i>Thalassarche cauta cauta</i>	Shy Albatross, Tasmanian Shy Albatross	Bird *	NE, E, S	V	16/07/2000	RP approved, RP required

Scientific Name	Common Name	Class	RFA region ¹	EPBC Act listing ²	EPBC listing date effective	Status of conservation advice and recovery plans ³
<i>Thalassarche cauta steadi</i>	White-capped Albatross	Bird *	NE, E, S	V	16/07/2000	RP approved, RP required
<i>Thalassarche eremita</i>	Chatham Albatross	Bird *	NE, E, S	E	16/07/2000	RP approved, RP required
<i>Thalassarche impavida</i>	Campbell Albatross, Campbell Black-browed Albatross	Bird *	NE, E, S	V	16/07/2000	RP approved, RP required
<i>Thalassarche melanophris</i>	Black-browed Albatross	Bird *	NE, E, S	V	6/06/2005	RP approved, RP required
<i>Thalassarche salvini</i>	Salvin's Albatross	Bird *	NE, E, S	V	16/07/2000	RP approved, RP required
<i>Thersites mitchellae</i>	Mitchell's Rainforest Snail	Snail	NE	CE	23/07/2002	CA approved, RP approved, RP required
<i>Thinornis rubricollis rubricollis</i>	Hooded Plover (eastern)	Bird	E, S	V	6/11/2014	CA approved, RP not required
<i>Turnix melanogaster</i>	Black-breasted Button-quail	Bird	NE	V	16/07/2000	CA approved, RP approved, RP required
<i>Tympanocryptis pinguicolla</i>	Grassland Earless Dragon	Reptile	E, S	E	16/07/2000	RP approved, RP required
<i>Uvidicolus sphyrurus</i>	Border Thick-tailed Gecko, Granite Belt Thick-tailed Gecko	Reptile	NE	V	16/07/2000	CA approved, RP not required

Scientific Name	Common Name	Class	RFA region ¹	EPBC Act listing ²	EPBC listing date effective	Status of conservation advice and recovery plans ³
<i>Wollumbinia belli</i>	Bell's Turtle, Western Sawshelled Turtle, Namoi River Turtle, Bell's Sawshelled Turtle	Reptile	NE	V	16/07/2000	CA approved, RP not required
<i>Wollumbinia georgesi</i>	Georges' Snapping Turtle, Bellinger River Snapping Turtle, Georges Helmeted Turtle	Reptile	NE	CE	7/12/2016	CA approved, RP not required
<i>Xeromys myoides</i>	Water Mouse, False Water Rat, Yirrkoo	Mammal	NE	V	16/07/2000	RP approved, RP required

Notes:

(1) RFA regions: NE – North East; S – Southern; E – Eden

(2) EPBC Act listing as at 6 April 2018: CE – Critically Endangered; C – Critical; V – Vulnerable

(3) CA – Conservation Advice; RP – Recovery Plan

Source: Environmental Resources Information Network Species of National Environmental Significance Database

Communities

Community Name	RFA region ¹	EPBC Act listing ²	EPBC listing date effective	Status of conservation advice and recovery plans ³
Littoral Rainforest and Coastal Vine Thickets of Eastern Australia	NE, S, E	CE	10/10/2008	CA approved, RP required
Illawarra and south coast lowland forest and woodland ecological community	S, E	CE	16/09/2016	CA approved, RP not required
Central Hunter Valley eucalypt forest and woodland	NE	CE	7/05/2015	CA approved, RP not required
Cumberland Plain Shale Woodlands and Shale-Gravel Transition Forest	NE	CE	9/12/2009	CA approved, RP required
Hunter Valley Weeping Myall (<i>Acacia pendula</i>) Woodland	NE	CE	1/08/2005	CA approved, RP approved, RP required
Shale Sandstone Transition Forest of the Sydney Basin Bioregion	NE, S	CE	16/12/2014	CA approved, RP required
Lowland Rainforest of Subtropical Australia	NE	CE	25/11/2011	CA approved, RP not required
Natural grasslands on basalt and fine-textured alluvial plains of northern New South Wales and southern Queensland	NE	CE	7/01/2009	CA approved, RP required
New England Peppermint (<i>Eucalyptus nova-anglica</i>) Grassy Woodlands	NE	CE	1/03/2011	CA approved, RP required
Lowland Grassy Woodland in the South East Corner Bioregion	S, E	CE	16/02/2013	CA approved, RP not required
Natural Temperate Grassland of the South Eastern Highlands	S, E	CE	6/04/2016	CA approved, RP required
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	NE, S, E	CE	17/05/2006	No approved CA, RP approved, RP required
Turpentine-Ironbark Forest of the Sydney Basin Bioregion	NE	CE	26/08/2005	CA approved, RP required
Warkworth Sands Woodland of the Hunter Valley	NE	CE	5/05/2016	CA approved, RP not required
Southern Highlands Shale Forest and Woodland in the Sydney Basin Bioregion	S	CE	28/08/2015	CA approved, RP not required
Western Sydney Dry Rainforest and Moist Woodland on Shale	NE	CE	27/02/2013	CA approved, RP required

Community Name	RFA region ¹	EPBC Act listing ²	EPBC listing date effective	Status of conservation advice and recovery plans ³
Alpine Sphagnum Bogs and Associated Fens	S, E	E	7/01/2009	CA approved, RP approved, RP required
Castlereagh Scribbly Gum and Agnes Banks Woodlands of the Sydney Basin Bioregion	S	E	17/03/2015	CA approved, RP required
Coastal Swamp Oak (<i>Casuarina glauca</i>) Forest of New South Wales and South East Queensland ecological community	NE, S, E	E	20/03/2018	CA approved, RP not required
Coastal Upland Swamps in the Sydney Basin Bioregion	NE, S	E	17/07/2014	CA approved, RP not required
Temperate Highland Peat Swamps on Sandstone	S, E	E	12/05/2005	CA approved, RP not required
Coolibah - Black Box Woodlands of the Darling Riverine Plains and the Brigalow Belt South Bioregions	NE	E	7/05/2015	CA approved, RP not required
Grey Box (<i>Eucalyptus microcarpa</i>) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia	NE, S	E	1/04/2010	CA approved, RP required
<i>Posidonia australis</i> seagrass meadows of the Manning-Hawkesbury ecoregion	NE	E	7/05/2015	CA approved, RP not required
Upland Basalt Eucalypt Forests of the Sydney Basin Bioregion	NE, S	E	25/11/2011	CA approved, RP not required
Upland Wetlands of the New England Tablelands (New England Tableland Bioregion) and the Monaro Plateau (South Eastern Highlands Bioregion)	NE, S, E	E	17/11/2005	CA approved, RP not required
Weeping Myall Woodlands	NE, S	E	7/01/2009	CA approved, RP required
Subtropical and Temperate Coastal Saltmarsh	NE, S, E	V	10/08/2013	CA approved, RP required

Notes:

(1) RFA regions: NE – North East; S – Southern; E – Eden

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(3) CA – Conservation Advice; RP – Recovery Plan

Appendix 3

NSW Threatened Species List

As at 23 May 2018 (from Schedule 1 of the BC Act)¹²¹

Critically endangered species

Animals

Phylum	Class	Family	Scientific Name	Common name
Vertebrates	Amphibians	Hylidae	<i>Litoria castanea</i> (Steindachner, 1867)	Yellow-spotted Tree Frog
			<i>Litoria spenceri</i> Dubois, 1984	Spotted Tree Frog
			<i>Litoria piperata</i> Tyler & Davis, 1985	Peppered Tree Frog
			<i>Pseudophryne corroboree</i> Moore, 1953	Southern Corroboree Frog
		Myobatrachidae	<i>Pseudophryne pengilleyi</i> Wells and Wellington, 1985	
	Reptiles	Chelidae	<i>Myuchelys georgesii</i> (Cann, 1997)	Bellinger River Snapping Turtle
	Birds	Accipitridae	<i>Erythrotriorchis radiatus</i> (Latham, 1801)	Red Goshawk
	Turnicidae	<i>Turnix melanogaster</i> (Gould, 1837)	Black-breasted Button-quail	

¹²¹ Accessed 23 May 2018 at <https://www.legislation.nsw.gov.au/~view/act/2016/63/sch1>

Phylum	Class	Family	Scientific Name	Common name
		Burhinidae	<i>Esacus magnirostris</i> Vieillot, 1818	Beach Stone-curlew
		Charadriidae	<i>Thinornis rubricollis</i> (Gmelin, 1789)	Hooded Plover
		Cacatuidae	<i>Calyptorhynchus banksii banksii</i> (Latham, 1790)	Red-tailed Black-Cockatoo (coastal subspecies)
		Columbidae	<i>Geophaps scripta scripta</i> (Temminck, 1821)	Squatter Pigeon (southern subspecies)
		Psittacidae	<i>Cyclopsitta diophthalma coxeni</i> Gould, 1867	Coxen's Fig-Parrot
			<i>Neophema chrysogaster</i> (Latham, 1790)	Orange-bellied Parrot
		Maluridae	<i>Amytornis modestus inexpectatus</i> (Mathews, 1912)	Thick-billed Grasswren (central NSW subspecies)
			<i>Amytornis modestus obscurior</i> (Mathews, 1923)	Thick-billed Grasswren (north-west NSW subspecies)
		Meliphagidae	<i>Anthochaera phrygia</i> (Shaw, 1794)	Regent Honeyeater
			<i>Manorina melanotis</i> (Wilson, 1911)	Black-eared Miner
		Pachycephalidae	<i>Pachycephala rufogularis</i> Gould, 1841	Red-lored Whistler
	Mammals	Muridae	<i>Pseudomys desertor</i> Troughton, 1932	Desert Mouse
			<i>Pseudomys fumeus</i> Brazenor, 1934	Smoky Mouse
		Potoroidae	<i>Potorous longipes</i> Seebeck and Johnston, 1980	Long-footed Potoroo
Invertebrates	Mollusca	Charopidae	<i>Mystivagor mastersi</i> (Brazier, 1872)	Masters Charopid Land Snail
			<i>Pseudocharopa ledgbirdi</i> (Etheridge, 1889)	Mount Lidgbird

Phylum	Class	Family	Scientific Name	Common name
				Charopid Land Snail
			<i>Pseudocharopa whiteleggei</i> (Etheridge, 1889)	Whitelegge's Land Snail
		Helicarionidae	<i>Gudeoconcha sophiae magnifica</i> Iredale, 1944	Magnificent Helicarionid Land Snail
Arthropoda				
Insecta	Phasmatodea	Phasmatidae	<i>Dryococelus australis</i> (Montrouzier, 1855)	Lord Howe Island Phasmid
	Lepidoptera	Lycaenidae	<i>Jalmenus eubulus</i> Miskin, 1876	

Plants

Family	Scientific Name	Common name
Araucariaceae	<i>Wollemia nobilis</i> W.G. Jones, K.D. Hill & J.M. Allen	Wollemi Pine
Areaceae	<i>Lepidorrhachis mooreana</i> (F. Muell.) O.F. Cook	Little Mountain Palm
Convolvulaceae	<i>Calystegia affinis</i> Endl.	
Cucurbitaceae	<i>Cucumis althaeoides</i> (Ser.) P. Sebastian & I. Telford	
Dilleniaceae	<i>Hibbertia fumana</i> Sieber ex Toelken	
	<i>Hibbertia</i> sp. Bankstown (R.T. Miller & C.P. Gibson s.n. 18/10/2006)	
	<i>Hibbertia spanantha</i> Toelken & A.F. Rob.	
Euphorbiaceae	<i>Fontainea oraria</i> Jessup & Guymer	
Fabaceae	<i>Bossiaea fragrans</i> K.L. McDougall	
	<i>Glycine latrobeana</i> (Meisn.) Benth.	
	<i>Pultenaea</i> sp. Genowlan Point (Allen s.n., 29 Nov. 1997)	
	<i>Pultenaea elusa</i> (J.D. Briggs & Crisp) R.P.J. de Kok	
Gentianaceae	<i>Gentiana bredboensis</i> L.G. Adams	

Family	Scientific Name	Common name
	<i>Gentiana wingecarribiensis</i> L. Adams	Wingecarribee Gentian
Haloragaceae	<i>Myriophyllum implicatum</i> Orchard	
Lamiaceae	<i>Prostanthera gilesii</i> Althofer ex B.J.Conn & T.C.Wilson	
	<i>Prostanthera marifolia</i> R. Br.	
Malvaceae	<i>Lasiopetalum behrii</i> F. Muell.	
Myrtaceae	<i>Callistemon megalongensis</i> (Craven & S.M. Douglas) Udovicic & R.D. Spencer	Megalong Valley Bottlebrush
	<i>Callistemon purpurascens</i> S.M. Douglas & S. David	
	<i>Eucalyptus imlayensis</i> Crisp & Brooker	
	<i>Eucalyptus</i> sp. Cattai (Gregson s.n., 28 Aug 1954)	
Orchidaceae	<i>Caladenia attenuata</i> (Brinsley) D.L. Jones	
	<i>Corunastylis</i> sp. Charmhaven (NSW896673)	
	<i>Diuris flavescens</i> D.L. Jones	
	<i>Genoplesium insigne</i> D.L. Jones	
	<i>Genoplesium littorale</i> D.L. Jones	Tuncurry Midge Orchid
	<i>Genoplesium plumosum</i> (Rupp) D.L. Jones & M.A. Clem.	
	<i>Prasophyllum bagoense</i> D.L. Jones	
	<i>Prasophyllum canaliculatum</i> D.L. Jones	
	<i>Prasophyllum fuscum</i> R. Br. <i>sensu stricto</i>	
	<i>Prasophyllum innubum</i> D.L. Jones	
	<i>Prasophyllum keltonii</i> D.L. Jones	
	<i>Prasophyllum</i> sp. Majors Creek (Jones 11084)	
	<i>Prasophyllum</i> sp. Moama (D.L. Jones 19276)	
	<i>Pterostylis despectans</i> (Nicholls) M.A. Clem & D.L. Jones	

Family	Scientific Name	Common name
	<i>Pterostylis oreophila</i> Clemesha	
	<i>Pterostylis ventricosa</i> (D.L. Jones) G.N. Backh.	
	<i>Pterostylis vernalis</i> (D.L. Jones) G.N. Backh.	
	<i>Thelymitra adorata</i> Jeanes	Wyong Sun Orchid
	<i>Thelymitra kangaloonica</i> Jeanes	
	<i>Thelymitra atronitida</i> Jeanes	
Orobanchaceae	<i>Euphrasia arguta</i> R. Br.	
Poaceae	<i>Elymus multiflorus</i> subsp. <i>kingianus</i> (Endl.) de Lange & R. O. Gardner	
Proteaceae	<i>Banksia conferta</i> A.S. George subsp. <i>conferta</i>	
	<i>Banksia vincentia</i> Stimpson & P.H. Weston	
	<i>Grevillea caleyi</i> R. Br.	
	<i>Grevillea iaspicula</i> McGill.	
	<i>Grevillea ilicifolia</i> (R.Br.) R.Br. subsp. <i>ilicifolia</i>	
	<i>Grevillea rivularis</i> L.A.S.Johnson & McGill.	
	<i>Persoonia pauciflora</i> P.H. Weston	North Rothbury Persoonia
Rhamnaceae	<i>Pomaderris delicata</i> N.G. Walsh & F. Coates	
	<i>Pomaderris reperta</i> N.G. Walsh & F. Coates	
	<i>Pomaderris walshii</i> J.C. Millott & K.L. McDougall	
Rutaceae	<i>Leionema lamprophyllum</i> subsp. <i>fractum</i> S.A.J.Bell.	
	<i>Phebalium speciosum</i> I. Telford	
	<i>Zieria adenophora</i> Blakely	
	<i>Zieria buxijugum</i> J.D. Briggs & J.A. Armstr.	
	<i>Zieria formosa</i> J.D. Briggs & J.A. Armstr.	
	<i>Zieria odorifera</i> subsp. <i>copelandii</i> Duretto & P.I.Forst.	
	<i>Zieria parrisiae</i> J.D. Briggs & J.A. Armstr.	

Family	Scientific Name	Common name
Sapindaceae	<i>Dodonaea stenozyga</i> F. Muell.	
Thymelaeaceae	<i>Pimelea cremnophila</i> L.M.Copel. & I.Telford	

Populations

(Nil)

Endangered species

Animals

Phylum	Class	Family	Scientific Name	Common name
Vertebrates	Amphibians	Hylidae	<i>Litoria aurea</i> (Lesson, 1829)	Green and Golden Bell Frog
			<i>Litoria booroolongensis</i> (Moore, 1961)	Booroolong Frog
			<i>Litoria raniformis</i> (Keferstein, 1867)	Southern Bell Frog
			<i>Litoria verreauxii alpina</i> (Fry, 1915)	Alpine Tree Frog
		Myobatrachidae	<i>Mixophyes balbus</i> Straughan, 1968	Stuttering Frog
			<i>Mixophyes fleayi</i> Corben & Ingram, 1987	Fleay's Barred Frog
			<i>Mixophyes iteratus</i> Straughan, 1968	Giant Barred Frog
			<i>Neobatrachus pictus</i> Peters, 1863	Painted Burrowing Frog
			<i>Philoria kundagungan</i> (Ingram & Corben, 1975)	Mountain Frog
			<i>Philoria loveridgei</i> Parker, 1940	Loveridge's Frog
			<i>Philoria pughi</i> Knowles, Mahony, Armstrong and Donnellan, 2004	a frog

Phylum	Class	Family	Scientific Name	Common name
			<i>Philoria richmondensis</i> Knowles, Mahony, Armstrong and Donnellan, 2004	a frog
			<i>Uperoleia mahonyi</i> Clulow, Anstis, Keogh & Catullo, 2016	Mahony's Toadlet
	Reptiles	Agamidae	<i>Ctenophorus mirrityana</i> (McLean, Moussalli, Sass & Stuart-Fox 2013)	Barrier Range Dragon
			<i>Tympanocryptis pinguicolla</i> Mitchell, 1948	Grassland Earless Dragon
		Cheloniidae	<i>Caretta caretta</i> (Linnaeus, 1758)	Loggerhead Turtle
		Chelidae	<i>Myuchelys bellii</i> (Gray, 1844)	Western Sawshelled Turtle, Bell's Turtle
			<i>Myuchelys purvisi</i> (Wells and Wellington, 1985)	Manning River Helmeted Turtle, Purvis' Turtle
		Dermochelyidae	<i>Dermochelys coriacea</i> (Vandelli, 1761)	Leatherback Turtle
		Pygopodidae	<i>Aprasia inaurita</i> Kluge, 1974	Mallee Worm-lizard
			<i>Delma australis</i> Kluge, 1974	Marble-faced Delma
		Diplodactylidae	<i>Amalosia rhombifer</i> (J.E. Gray, 1845)	Zigzag Velvet Gecko
			<i>Diplodactylus platyurus</i> Parker, 1926	Eastern Fat-tailed Gecko
		Scincidae	<i>Anomalopus mackayi</i> Greer & Cogger, 1985	Five-clawed Worm-skink
			<i>Ctenotus pantherinus ocellifer</i> (Peters, 1866)	Leopard Ctenotus
			<i>Cyclodomorphus melanops elongatus</i> (Werner, 1910)	Mallee Slender Blue-tongue Lizard
			<i>Cyclodomorphus praealtus</i> Shea, 1995	Alpine She-oak Skink

Phylum	Class	Family	Scientific Name	Common name
			<i>Cyclodomorphus venustus</i> Shea & Miller, 1995	
			<i>Eulamprus leuraensis</i> Wells & Wellington, 1984	Water skink
			<i>Liopholis guthega</i> (Donnellan, Hutchinson, Dempsey & Osborne, 2002)	Guthega Skink
		Elapidae	<i>Echiopsis curta</i> (Schlegel, 1837)	Bardick
			<i>Hoplocephalus bungaroides</i> (Schlegel, 1837)	Broad-headed Snake
			<i>Pseudonaja modesta</i> (Günther, 1872)	Ringed Brown Snake
		Typhlopidae	<i>Ramphotyphlops endoterus</i> (Waite, 1918)	Interior Blind Snake
	Birds	Megapodiidae	<i>Leipoa ocellata</i> Gould, 1840	Malleefowl
		Anatidae	<i>Nettapus coromandelianus</i> (J.F. Gmelin, 1789)	Cotton Pygmy-goose
		Procellariidae	<i>Macronectes giganteus</i> (J.F. Gmelin, 1789)	Southern Giant Petrel
		Diomedeidae	<i>Diomedea exulans</i> Linnaeus, 1758	Wandering Albatross
		Ciconiidae	<i>Ephippiorhynchus asiaticus</i> (Latham, 1790)	Black-necked Stork
		Ardeidae	<i>Botaurus poiciloptilus</i> (Wagler, 1827)	Australasian Bittern
		Falconidae	<i>Falco hypoleucos</i> Gould, 1841	Grey Falcon
		Rallidae	<i>Gallirallus sylvestris</i> (P.L. Sclater, 1869)	Lord Howe Woodhen
		Otididae	<i>Ardeotis australis</i> (J.E. Gray, 1829)	Australian Bustard
		Pedionomidae	<i>Pedionomus torquatus</i> Gould, 1840	Plains-wanderer
		Scolopacidae	<i>Calidris ferruginea</i> (Pontoppidan, 1763)	Curlew Sandpiper
		Rostratulidae	<i>Rostratula australis</i> (Gould, 1838)	Australian Painted Snipe

Phylum	Class	Family	Scientific Name	Common name
		Burhinidae	<i>Burhinus grallarius</i> (Latham, 1801)	Bush Stone-curlew
		Haematopodidae	<i>Haematopus longirostris</i> Vieillot, 1817	Pied Oystercatcher
		Laridae	<i>Sternula albifrons</i> (Pallas, 1764)	Little Tern
		Columbidae	<i>Phaps histrionica</i> (Gould, 1841)	Flock Bronzewing
		Psittacidae	<i>Lathamus discolor</i> (Shaw, 1790)	Swift Parrot
			<i>Polytelis anthopeplus monarchoides</i> Schodde, 1993	Regent Parrot (eastern subspecies)
		Maluridae	<i>Amytornis barbatus barbatus</i> , Favaloro & McEvey, 1968	Grey Grasswren
		Dasyornithidae	<i>Dasyornis brachypterus</i> (Latham, 1801)	Eastern Bristlebird
		Acanthizidae	<i>Calamanthus fuliginosus</i> (Vigors & Horsfield, 1827) <i>sensu stricto</i>	Striated Fieldwren
	Mammals	Dasyuridae	<i>Antechinomys laniger</i> (Gould, 1856)	Kultarr
			<i>Antechinus arktos</i> Baker, Mutton, Hines & Van Dyck, 2014	Black-tailed Antechinus
			<i>Dasyurus viverrinus</i> (Shaw, 1800)	Eastern Quoll
		Peramelidae	<i>Isoodon obesulus obesulus</i> (Shaw, 1797)	Southern Brown Bandicoot (eastern)
		Vombatidae	<i>Lasiornis latifrons</i> (Owen, 1845)	Southern Hairy-nosed Wombat
		Burramyidae	<i>Burramys parvus</i> Broom, 1896	Mountain Pygmy-possum
			<i>Cercartetus concinnus</i> (Gould, 1845)	Western Pygmy Possum
		Macropodidae	<i>Macropus dorsalis</i> (Gray, 1837)	Black-striped Wallaby
			<i>Petrogale penicillata</i> (Gray, 1825)	Brush-tailed Rock-wallaby

Phylum	Class	Family	Scientific Name	Common name
			<i>Petrogale xanthopus</i> Gray, 1855	Yellow-footed Rock-wallaby
		Molossidae	<i>Mormopterus eleryi</i> Reardon and McKenzie, 2008	Bristle-faced free-tailed bat, Hairy-nosed Freetail Bat
		Muridae	<i>Notomys fuscus</i> (Jones, 1925)	Dusky Hopping-mouse
			<i>Pseudomys bolami</i> Troughton, 1932	Bolam's Mouse
			<i>Pseudomys delicatulus</i> (Gould, 1842)	Delicate Mouse
			<i>Pseudomys oralis</i> Thomas, 1921	Hastings River Mouse
	Marine mammals	Dugongidae	<i>Dugong dugon</i> (Müller, 1776)	Dugong
		Balaenidae	<i>Eubalaena australis</i> (Desmoulins, 1822)	Southern Right Whale
		Balaenopteridae	<i>Balaenoptera musculus</i> (Linnaeus, 1758)	Blue Whale
Invertebrates	Annelida			
	Oligochaeta			
	Opisthopera	Megascolecidae	<i>Pericryptodrilus nanus</i> Jamieson, 1977	
	Molluscs	Bulimulidae	<i>Placostylus bivaricosus</i> (Gaskoin, 1855)	a land snail
		Camaenidae	<i>Meridolum corneovirens</i> (Pffeiffer, 1851)	a land snail
			<i>Pommerhelix duralensis</i> (Cox, 1868)	Dural Land Snail
			<i>Thersites mitchellae</i> (Cox, 1864)	a land snail
Arthropoda				
Insecta	Blattodea	Blaberidae	<i>Panesthia lata</i> Walker, 1868	Lord Howe Island wood-feeding cockroach

Phylum	Class	Family	Scientific Name	Common name
	Coleoptera	Carabidae	<i>Nurus atlas</i> Castelnau, 1867	
			<i>Nurus brevis</i> Motschulsky, 1865	
	Lepidoptera	Castniidae	<i>Synemon plana</i> Walker, 1854	Golden Sun Moth
		Hesperiidae	<i>Ocybadistes knightorum</i> (Lambkin & Donaldson, 1994)	Black Grass-dart Butterfly
		Nymphalidae	<i>Argynnis hyperbius</i> (Linnaeus, 1763)	Laced Fritillary
		Lycaenidae	<i>Paralucia spinifera</i> Edwards and Common, 1978	Purple Copper Butterfly,
				Bathurst Copper Butterfly
		Noctuidae	<i>Phyllodes imperialis</i> Druce (ANIC 3333) southern subspecies	
	Odonata	Petaluridae	<i>Petalura gigantea</i> (Leach, 1815)	Giant Dragonfly
			<i>Petalura litorea</i> Theischinger 1999	

Fungi

Class	Family	Scientific Name	Common name
Basidiomycota	Hygrophoraceae	<i>Camarophylloopsis kearneyi</i> A.M. Young	
		<i>Hygrocybe austropratensis</i> A.M. Young	
		<i>Hygrocybe collucera</i> A.M. Young, R Kearney & E. Kearney	
		<i>Hygrocybe griseoramosa</i> A.M. Young, R Kearney & E. Kearney	
		<i>Hygrocybe lanecovensensis</i> A.M. Young	
Alga			
Charophyta	Characeae	<i>Nitella partita</i> Nordst.	

Class	Family	Scientific Name	Common name

Plants

Family	Scientific Name	Common name
Acanthaceae	<i>Dipteracanthus australasicus</i> subsp. <i>corynothecus</i> (F. Muell. ex Benth.) R. Barker	
	<i>Harnieria hygrophiloides</i> (F. Muell.) R. M. Barker	
	<i>Isoglossa eranthemoides</i> (F. Muell.) R. Barker	
	<i>Xerothamnella parvifolia</i> C. White	
Anthericaceae	<i>Caesia parviflora</i> var. <i>minor</i> R.J.F. Hend.	
Apiaceae	<i>Gingidia rupicola</i> I. Telford & J.J. Bruhl	
	<i>Trachymene scapigera</i> (Domin) B.L. Burtt	
Apocynaceae	<i>Cynanchum elegans</i> (Benth.) Domin	
	<i>Marsdenia longiloba</i> Benth.	
	<i>Ochrosia moorei</i> (F. Muell.) F. Muell. ex Benth.	
	<i>Tylophora woollsii</i> Benth	
Aponogetonaceae	<i>Aponogeton queenslandicus</i> H. Bruggen	
Araceae	<i>Typhonium</i> sp. aff. <i>brownii</i> (A.G. Floyd 11/3/1958 North Coast Regional Botanic Garden Herbarium 585)	
Araliaceae	<i>Astrotricha</i> sp. Wallagaraugh (R.O. Makinson 1228)	
	<i>Astrotricha cordata</i> A. Bean	
	<i>Astrotricha roddii</i> Makinson	
Asteraceae	<i>Brachyscome ascendens</i> G.L. Davis	
	<i>Calotis moorei</i> P. Short	

Family	Scientific Name	Common name
	<i>Calotis pubescens</i> N.G. Walsh & K.L. McDougall	
	<i>Cratystylis conocephala</i> (F. Muell.) S. Moore	
	<i>Erodiophyllum elderi</i> F. Muell.	
	<i>Kippistia suaedifolia</i> F. Muell.	
	<i>Leptorhynchus orientalis</i> Paul G. Wilson	
	<i>Leptorhynchus waitzia</i> Sonder	
	<i>Olearia flocktoniae</i> Maiden & E. Betche	
	<i>Ozothamnus vagans</i> (C.T. White) Anderb.	
	<i>Rutidosis leptorrhynchoides</i> F. Muell.	
	<i>Senecio linearifolius</i> var. <i>dangarensis</i> Belcher ex I. Thomps.	
	<i>Senecio spathulatus</i> A. Rich.	
	<i>Senecio squarrosus</i> A. Rich.	
Brassicaceae	<i>Irenepharsus magicus</i> Hewson	
	<i>Irenepharsus trypherus</i> Hewson	
	<i>Lepidium hyssopifolium</i> Desv	
	<i>Lepidium monoplocoides</i> F. Muell.	
	<i>Lepidium pseudopapillosum</i> Thell.	
Calomniaceae	<i>Calomnion complanatum</i> (Hook.f. & Wilson) Lindb.	
Campanulaceae	<i>Wahlenbergia scopulicola</i> Carolin ex P.J. Smith	
Capparaceae	<i>Capparis canescens</i> Banks ex DC.	
	<i>Capparis loranthifolia</i> Lindley var. <i>loranthifolia</i>	
Caryophyllaceae	<i>Polycarpaea spirostylis</i> subsp. <i>glabra</i> (C. White & Francis) Pedley	
Casuarinaceae	<i>Allocasuarina defungens</i> L. Johnson	
	<i>Allocasuarina glareicola</i> L. Johnson	

Family	Scientific Name	Common name
	<i>Allocasuarina portuensis</i> L. Johnson	
	<i>Casuarina obesa</i> Miq.	
Chenopodiaceae	<i>Atriplex sturtii</i> S. Jacobs	
	<i>Dysphania platycarpa</i> Paul G. Wilson	
	<i>Dysphania plantaginella</i> F. Muell.	
	<i>Osteocarpum scleropterum</i> (F. Muell.) Volkens	
	<i>Sclerolaena napiformis</i> Paul G. Wilson	
	<i>Threlkeldia inchoata</i> (J. Black) J. Black	
Convolvulaceae	<i>Convolvulus tedmorei</i> R.W. Johnson	
	<i>Ipomoea diamantinensis</i> J. Black	
	<i>Ipomoea polymorpha</i> Roemer & Schultes	
	<i>Wilsonia rotundifolia</i> Hook.	
Cupressaceae	<i>Callitris baileyi</i> C. White	
Cyperaceae	<i>Carex archeri</i> Boott	
	<i>Carex klaphakei</i> K.L. Wilson	
	<i>Carex raleighii</i> Nelmes	
	<i>Cyperus aquatilis</i> R. Br.	
	<i>Cyperus conicus</i> (R. Br.) Boeck	
	<i>Cyperus semifertilis</i> S.T. Blake	
	<i>Eleocharis tetraquetra</i> Nees	
Davalliaceae	<i>Arthropteris palisotii</i> (Desv.) Alston	
Davidsoniaceae	<i>Davidsonia jerseyana</i> (F. Muell. ex F.M. Bailey) G. Harden & J.B. Williams	
	<i>Davidsonia johnsonii</i> J.B. Williams & G. Harden	
Dilleniaceae	<i>Hibbertia hexandra</i> C. White	

Family	Scientific Name	Common name
	<i>Hibbertia hexandra</i> C. White	
	<i>Hibbertia puberula</i> Toelken	
	<i>Hibbertia stricta</i> subsp. <i>furcatula</i> Toelken	
	<i>Hibbertia superans</i> Toelken	
	<i>Hibbertia tenuifolia</i> Toelken	
Droseraceae	<i>Aldrovanda vesiculosa</i> L.	
Dryopteridaceae	<i>Lastreopsis hispida</i> (Sw.) Tind.	
	<i>Polystichum moorei</i> H. Christ	
Ebenaceae	<i>Diospyros mabacea</i> (F. Muell.) F. Muell.	
	<i>Diospyros yandina</i> Jessup	
Elaeocarpaceae	<i>Elaeocarpus sedentarius</i> Maynard & Crayn	Minyon Quandong
	<i>Elaeocarpus williamsianus</i> Guymer	
Ericaceae	<i>Epacris hamiltonii</i> Maiden & E. Betche	
	<i>Leucopogon confertus</i> Benth	
	<i>Leucopogon fletcheri</i> Maiden & Betche subsp. <i>fletcheri</i>	
	<i>Melichrus hirsutus</i> J.B. Williams ms	
	<i>Melichrus</i> sp. Gibberagee (A.S. Benwell & J.B. Williams 97239)	
	<i>Monotoca rotundifolia</i> J.H. Willis	
Eriocaulaceae	<i>Eriocaulon australasicum</i> (F. Muell.) Korn	
	<i>Eriocaulon carsonii</i> F. Muell.	
Euphorbiaceae	<i>Acalypha eremorum</i> Muell. Arg.	
	<i>Bertya</i> sp. (Chambigne NR, M. Fatemi 24)	
	<i>Bertya</i> sp. (Clouds Creek, M. Fatemi 4)	
	<i>Bertya ingramii</i> T. James	

Family	Scientific Name	Common name
	<i>Chamaesyce psammogeton</i> (P.S. Green) P.I. Foster and R.J. Henderson	
	<i>Euphorbia sarcostemmoides</i> J.H. Willis	
	<i>Monotaxis macrophylla</i> Benth	
Fabaceae	<i>Acacia acanthoclada</i> F. Muell.	
	<i>Acacia acrionastes</i> Pedley	
	<i>Acacia atrox</i> Kodela	
	<i>Acacia bynoeana</i> Benth.	
	<i>Acacia chrysotricha</i> Tind	
	<i>Acacia dangarensis</i> Tindale & Kodela	
	<i>Acacia gordonii</i> (Tind.) Pedley	
	<i>Acacia jucunda</i> Maiden & Blakel	
	<i>Acacia meiantha</i> Tindale & Herscovitch	
	<i>Acacia notabilis</i> F. Muell	
	<i>Acacia petraea</i> Pedley	
	<i>Acacia pubifolia</i> Pedley	
	<i>Acacia rivalis</i> J. Black	
	<i>Acacia ruppilii</i> Maiden & E. Betche	
	<i>Acacia terminalis</i> (Salisb.) J.F. Macbr. subsp. <i>terminalis</i>	
	<i>Almaleea cambagei</i> (Maiden & E. Betche) Crisp & P. Weston	
	<i>Caesalpinia bonduc</i> (L.) Roxb.	
	<i>Carmichaelia exsul</i> F. Muell.	
	<i>Cassia marksiana</i> (F.M. Bailey) Domin	
	<i>Crotalaria cunninghamii</i> R. Br.	
	<i>Cullen parvum</i> (F. Muell.) J.W. Grimes	

Family	Scientific Name	Common name
	<i>Desmodium campylocaulon</i> F. Muell.	
	<i>Dillwynia glaucula</i> Jobson & P.H. Weston	
	<i>Indigofera baileyi</i> F. Muell	
	<i>Indigofera efoliata</i> F. Muell.	
	<i>Indigofera helmsii</i> Peter G. Wilson	
	<i>Indigofera leucotricha</i> E. Pritzel	
	<i>Indigofera longibractea</i> J. Black	
	<i>Pultenaea</i> sp. Olinda (R.G. Coveny 6616)	
	<i>Pultenaea parviflora</i> Sieber ex DC.	
	<i>Pultenaea pedunculata</i> Hook	
	<i>Senna acclinis</i> (F. Muell.) Randell	
	<i>Sophora tomentosa</i> L	
	<i>Swainsona adenophylla</i> J. Black	
	<i>Swainsona colutooides</i> F. Muell.	
	<i>Swainsona flavicarinata</i> J. Black	
	<i>Swainsona recta</i> A. Lee	
	<i>Swainsona viridis</i> J. Black	
Flacourtiaceae	<i>Xylosma parvifolia</i> Jessup	
	<i>Xylosma terrae-reginae</i> C. White & Sleumer	
Gentianaceae	<i>Gentiana baeuerlenii</i> L. Adams	
Geraniaceae	<i>Pelargonium</i> sp. (G.W. Carr 10345)	
Goodeniaceae	<i>Dampiera fusca</i> Rajput & Carolin	
	<i>Goodenia occidentalis</i> Carolin	
	<i>Goodenia nocoleche</i> Pellow & J.L. Porter	

Family	Scientific Name	Common name
	<i>Scaevola collaris</i> F. Muell.	
Grammitaceae	<i>Grammitis stenophylla</i> B.S. Parris	
Gyrostemonaceae	<i>Gyrostemon thesioides</i> (Hook. f.) A.S. George	
Haloragaceae	<i>Haloragodendron lucasii</i> (Maiden & E. Betche) Orch.	
Lamiaceae	<i>Plectranthus allopectus</i> S.T. Blake	
	<i>Plectranthus nitidus</i> P. Forst	
	<i>Prostanthera askania</i> B.J. Conn	
	<i>Prostanthera junonis</i> B.J. Conn	
	<i>Prostanthera staurophylla</i> F. Muell. sensu stricto	
	<i>Westringia kydrensis</i> Conn	
Lauraceae	<i>Endiandra floydii</i> B. Hyland	
	<i>Endiandra muelleri</i> subsp. <i>bracteata</i> B. Hyland	
Linderniaceae	<i>Lindernia alsinoides</i> R. Br.	
Lindsaeaceae	<i>Lindsaea brachypoda</i> (Baker) Salomon	
	<i>Lindsaea fraseri</i> Hook.	
	<i>Lindsaea incisa</i> Prent.	
Loganiaceae	<i>Geniostoma huttonii</i> B.J. Conn	
	<i>Mitrasacme pygmaea</i> R. Br.	
Loranthaceae	<i>Amyema plicatula</i> (Krause) Danser	
	<i>Muellerina myrtifolia</i> (Cunn. ex Benth.) Barlow	
Lythraceae	<i>Rotala tripartita</i> Beesley	
Malvaceae	<i>Commersonia prostrata</i> (Maiden & Betche) C.F. Wilkins & Whitlock	
	<i>Commersonia rosea</i> S.A.J. Bell & L.M. Copel.	
	<i>Sida rohlenae</i> Domin	

Family	Scientific Name	Common name
Marattiaceae	<i>Angiopteris evecta</i> (G.Forst.) Hoffm	
Marsileaceae	<i>Pilularia novae-hollandiae</i> A. Braun	
Menispermaceae	<i>Tinospora smilacina</i> Benth.	
Monimiaceae	<i>Daphnandra johnsonii</i> Schodde	
Myrsinaceae	<i>Myrsine richmondensis</i> Jackes	
Myrtaceae	<i>Angophora exul</i> K.D. Hill	
	<i>Baeckea kandos</i> A.R. Bean	
	<i>Choricarpia subargentea</i> (C. White) L. Johnson	
	<i>Eucalyptus camphora</i> subsp. <i>relicta</i> L. Johnson & K. Hill	
	<i>Eucalyptus castrensis</i> K.D. Hill	
	<i>Eucalyptus copulans</i> L. Johnson & K. Hill	
	<i>Eucalyptus largeana</i> Blakely	Craven Grey Box
	<i>Eucalyptus macarthurii</i> H. Deane & Maiden	
	<i>Eucalyptus magnificata</i> L. Johnson & K. Hill	
	<i>Eucalyptus microcodon</i> L. Johnson & K. Hill	
	<i>Eucalyptus pachycalyx</i> subsp. <i>banyabba</i> K.D. Hill	
	<i>Eucalyptus parvula</i> L.A.S. Johnson & K.D. Hill	
	<i>Eucalyptus saxatilis</i> Kirkpatr. & Brooker	
	<i>Eucalyptus scoparia</i> Maiden	
	<i>Eucalyptus</i> sp. Howes Swamp Creek (M. Doherty 19/7/85, NSW 207054)	
	<i>Gossia fragrantissima</i> (F. Muell. ex Benth.) N. Snow & Guymer	
	<i>Homoranthus binghiensis</i> J.T. Hunter	
	<i>Homoranthus croftianus</i> J.T. Hunter	

Family	Scientific Name	Common name
	<i>Kardomia prominens</i> (A.R. Bean) Peter G. Wilson	
	<i>Kardomia silvestris</i> (A.R. Bean) Peter G. Wilson	
	<i>Melaleuca irbyana</i> R.T. Baker	
	<i>Micromyrtus grandis</i> J.T. Hunter	
	<i>Micromyrtus minutiflora</i> (F. Muell.) Benth.	
	<i>Syzygium paniculatum</i> Gaertn.	
	<i>Triplarina imbricata</i> (Sm.) A.R. Bean	
	<i>Triplarina nowraensis</i> A.R. Bean	
	<i>Uromyrtus australis</i> A.J. Scott	
Orchidaceae	<i>Caladenia arenaria</i> Fitzg.	
	<i>Caladenia concolor</i> Fitzg.	
	<i>Caladenia tessellata</i> Fitzg.	
	<i>Calochilus pulchellus</i> D.L. Jones	
	<i>Chiloglottis anaticeps</i> D.L. Jones	
	<i>Corybas dowlingii</i> D.L. Jones	
	<i>Dendrobium melaleucaphilum</i> M.A. Clem. & D.L. Jones	
	<i>Diuris aequalis</i> F. Muell. ex Fitzg.	
	<i>Diuris arenaria</i> D.L. Jones	
	<i>Diuris bracteata</i> Fitzg.	
	<i>Diuris disposita</i> D.L. Jones	
	<i>Diuris eborensis</i> D.L. Jones	
	<i>Diuris ochroma</i> D.L. Jones	
	<i>Diuris pedunculata</i> R. Br.	
	<i>Diuris</i> sp. aff. <i>chrysantha</i> (Byron Bay) (D.L. Jones ORG 2761)	

Family	Scientific Name	Common name
	<i>Diuris</i> sp. (Oaklands, D.L. Jones 5380)	
	<i>Genoplesium baueri</i> R. Br.	
	<i>Genoplesium rhyoliticum</i> D.L. Jones & M.A. Clem.	
	<i>Genoplesium superbum</i> D.L. Jones	
	<i>Geodorum densiflorum</i> (Lam.) Schltr.	
	<i>Microtis angusii</i> D.L. Jones	
	<i>Oberonia complanata</i> (A. Cunn.) M.A. Clem. & D.L. Jones	
	<i>Phaius australis</i> F. Muell.	
	<i>Prasophyllum affine</i> Lindl.	
	<i>Prasophyllum petilum</i> D.L. Jones & R.J. Bates	
	<i>Pterostylis bicornis</i> D.L. Jones & M.A. Clem	Horned Greenhood
	<i>Pterostylis gibbosa</i> R. Br.	
	<i>Pterostylis metcalfei</i> D.L. Jones	
	<i>Pterostylis saxicola</i> D.L. Jones & M.A. Clem.	
	<i>Pterostylis</i> sp. Botany Bay (A. Bishop J221/1-13)	
	<i>Sarcochilus dilatatus</i> F. Muell.	
Orobanchaceae	<i>Centranthera cochinchinensis</i> (Lour.) Merr.	
	<i>Euphrasia collina</i> subsp. <i>muelleri</i> (Wettst.) W.R. Barker	
	<i>Euphrasia orthocheila</i> subsp. <i>peraspera</i> W.R. Barker	
	<i>Euphrasia scabra</i> R. Br.	
Phyllanthaceae	<i>Phyllanthus maderaspatensis</i> L.	
	<i>Phyllanthus microcladus</i> Muell. Arg.	
Picrodendraceae	<i>Pseudanthus ovalifolius</i> F. Muell.	
Platyzomataceae	<i>Platyzoma microphyllum</i> R. Br.	

Family	Scientific Name	Common name
Poaceae	<i>Alexfloydia repens</i> B.K. Simon	
	<i>Austrostipa nullanulla</i> (J. Everett & S.W.L. Jacobs) S.W.L. Jacobs & J. Everett	
	<i>Austrostipa wakoolica</i> (Vickery, S.W.L. Jacobs & J. Everett) S.W.L. Jacobs & J. Everett	
	<i>Deyeuxia appressa</i> Vickery	
	<i>Digitaria porrecta</i> S.T. Blake	
	<i>Distichlis distichophylla</i> (Labill.) Fassett	
	<i>Elionurus citreus</i> (R. Br.) Munro ex Benth.	
	<i>Homopholis belsonii</i> C.E. Hubb	
	<i>Plinthanthesis rodwayi</i> (C.E. Hubb) S.T. Blake	
	<i>Rytidosperma vickeryae</i> M. Gray & H. P. Linder	
Podocarpaceae	<i>Pherosphaera fitzgeraldii</i> (F. Muell.) F. Muell. ex Hook. f.	
Polygalaceae	<i>Polygala linariifolia</i> Willd.	
Polypodiaceae	<i>Belvisia mucronata</i> (Fée) Copel.	
	<i>Drynaria rigidula</i> (Sw.) Beddome	
Primulaceae	<i>Lysimachia vulgaris</i> var. <i>davurica</i> (Ledeb.) Knuth	
Proteaceae	<i>Eidothea hardeniana</i> P.H. Weston & R.M. Kooyman	
	<i>Grevillea acanthifolia</i> subsp. <i>paludosa</i> Makinson & Albrecht	
	<i>Grevillea beadleana</i> McGillivray	
	<i>Grevillea divaricata</i> R. Br.	
	<i>Grevillea guthrieana</i> P. Olde & N. Marriott	
	<i>Grevillea hilliana</i> F. Muell.	
	<i>Grevillea masonii</i> P. Olde & N. Marriott	

Family	Scientific Name	Common name
	<i>Grevillea mollis</i> P. Olde & Molyneux	
	<i>Grevillea obtusiflora</i> R. Br.	
	<i>Grevillea parviflora</i> subsp. <i>supplicans</i> Makinson	
	<i>Grevillea renwickiana</i> F. Muell.	
	<i>Grevillea wilkinsonii</i> R. Makinson	
	<i>Hakea dohertyi</i> Haegi	
	<i>Hakea pulvinifera</i> L. Johnson	
	<i>Persoonia bargoensis</i> P.H. Weston & L.A.S. Johnson	
	<i>Persoonia glaucescens</i> Sieber ex Spreng.	
	<i>Persoonia hindii</i> P.H. Weston & L.A.S. Johnson	
	<i>Persoonia hirsuta</i> Pers.	
	<i>Persoonia mollis</i> subsp. <i>maxima</i> Krauss & L. Johnson	
	<i>Persoonia nutans</i> R. Br.	
Psilotaceae	<i>Psilotum complanatum</i> Sw.	
Pteridaceae	<i>Cheilanthes sieberi</i> subsp. <i>pseudovellea</i> H. Quirk & T.C. Chambers	
Rhamnaceae	<i>Pomaderris adnata</i> N.G. Walsh & F. Coates	
	<i>Pomaderris brunnea</i> N.A. Wakef.	
	<i>Pomaderris cocoparrana</i> N.G. Walsh	
	<i>Pomaderris cotoneaster</i> Wakef.	
	<i>Pomaderris elachophylla</i> F. Muell.	
	<i>Pomaderris queenslandica</i> C. White	
	<i>Pomaderris sericea</i> Wakef.	
Rubiaceae	<i>Coprosma inopinata</i> I. Hutton & P.S. Green	
	<i>Dentella minutissima</i> C. White & Francis	

Family	Scientific Name	Common name
	<i>Galium australe</i> DC.	
	<i>Oldenlandia galioides</i> (F. Muell.) F. Muell.	
	<i>Randia moorei</i> F. Muell. ex Benth.	
	<i>Triflorensia cameronii</i> (C. T. White) S. T. Reynolds	
Rutaceae	<i>Acronychia littoralis</i> T. Hartley & J. Williams	
	<i>Asterolasia buxifolia</i> Benth.	
	<i>Asterolasia elegans</i> McDougall & Porteners	
	<i>Asterolasia beckersii</i> Orme & Duretto	
	<i>Boronia boliviensis</i> J.B. Williams & J.T. Hunter	
	<i>Boronia hapalophylla</i> Duretto, F.J. Edwards & P.G. Edwards	
	<i>Boronia repanda</i> (F. Muell. ex E. Betche) Maiden & E. Betche	
	<i>Boronia ruppilii</i> Cheel	
	<i>Coatesia paniculata</i> F. Muell.	
	<i>Correa lawrenceana</i> var. <i>genoensis</i> Paul G. Wilson	
	<i>Leionema lachnaeoides</i> (A. Cunn.) Paul G. Wilson	
	<i>Melicope vitiflora</i> (F. Muell.) T.G. Hartley	
	<i>Phebalium bifidum</i> P.H. Weston & M. Turton	
	<i>Phebalium glandulosum</i> subsp. <i>eglandulosum</i> (Blakely) Paul G. Wilson	
	<i>Philotheca obovatifolia</i> (Bayly) P.I. Forst.	
	<i>Zieria adenodonta</i> (F. Muell.) J.A. Armstrong	
	<i>Zieria baeuerlenii</i> J.A. Armstrong	
	<i>Zieria citriodora</i> J.A. Armstrong	
	<i>Zieria covenyi</i> J.A. Armstrong	

Family	Scientific Name	Common name
	<i>Zieria floydii</i> J.A. Armstrong	
	<i>Zieria granulata</i> C. Moore ex Benth.	
	<i>Zieria ingramii</i> J.A. Armstrong	
	<i>Zieria involucrata</i> R. Br. ex Benth.	
	<i>Zieria lasiocaulis</i> J.A. Armstrong	
	<i>Zieria obcordata</i> A. Cunn.	
	<i>Zieria prostrata</i> J.A. Armstrong	
Santalaceae	<i>Santalum murrayanum</i> (Mitchell) Gardner	
Sapindaceae	<i>Cupaniopsis serrata</i> (F. Muell.) Radlk.	
	<i>Diploglottis campbellii</i> Cheel	
	<i>Dodonaea microzyga</i> F. Muell. var. <i>microzyga</i>	
	<i>Dodonaea sinuolata</i> subsp. <i>acrodentata</i> J. West	
Sapotaceae	<i>Niemeyera chartacea</i> (Bailey) C. White	
Simaroubaceae	<i>Quassia</i> sp. Moonee Creek (King s.n., 1949)	
Solanaceae	<i>Solanum amourense</i> A.R. Bean	
	<i>Solanum celatum</i> A.R. Bean	
	<i>Solanum limitare</i> A.R. Bean	
	<i>Solanum sulphureum</i> A.R. Bean	
Stackhousiaceae	<i>Stackhousia clementii</i> Domin	
Thymelaeaceae	<i>Pimelea axiflora</i> subsp. <i>pubescens</i> Rye	
	<i>Pimelea elongata</i> Threlfall	
	<i>Pimelea serpyllifolia</i> R. Br. subsp. <i>serpyllifolia</i>	
	<i>Pimelea spicata</i> R. Br.	
	<i>Pimelea venosa</i> Threlfall	

Family	Scientific Name	Common name
Tiliaceae	<i>Corchorus cunninghamii</i> F. Muell.	
Urticaceae	<i>Dendrocnide moroides</i> (Wedd.) Chew	
Violaceae	<i>Viola cleistogamoides</i> (L. Adams) Seppelt	
Zamiaceae	<i>Macrozamia humilis</i> D.L. Jones	
	<i>Macrozamia johnsonii</i> D.L. Jones & K. Hill	
Zannichelliaceae	<i>Zannichellia palustris</i> L.	

Populations

Animals

Phylum	Class	Family	Scientific Name	Common name
Invertebrates				
	Arthropoda			
	Coleoptera	Chrysomelidae	<i>Menippus darcyi</i> Reid & Nally, 2008	<i>Menippus darcyi</i> population in the Sutherland Shire
Vertebrates				
	Amphibians	Myobatrachidae	<i>Adelotus brevis</i> (Günther, 1863)	Tusked Frog population in the Nandewar and New England Tableland Bioregions
	Reptiles	Scincidae	<i>Liopholis whitii</i> (Lacépède, 1804)	White's Skink population in the Broken Hill Complex

Phylum	Class	Family	Scientific Name	Common name
				Bioregion
	Birds	Casuariidae	<i>Dromaius novaehollandiae</i> (Latham, 1790)	Emu population in the New South Wales North Coast Bioregion and Port Stephens LGA
		Megapodiidae	<i>Alectura lathami</i> Gray, 1831	Australian Brush-turkey population in the Nandewar and Brigalow Belt South Bioregions
		Cacatuidae	<i>Callocephalon fimbriatum</i> (Grant, 1803)	Gang-gang Cockatoo population in the Hornsby and Ku-ring-gai LGAs
			<i>Calyptorhynchus lathami</i> (Temminck, 1807)	Glossy Black-Cockatoo, Riverina population
		Spheniscidae	<i>Eudyptula minor</i> (Forster, 1781)	Little Penguin in the Manly Point Area (being the area on and near the shoreline from Cannae Point generally northward to the point near the intersection of Stuart Street and Oyama Cove Avenue, and extending 100 metres offshore from that shoreline)

Phylum	Class	Family	Scientific Name	Common name
		Climacterid ae	<i>Climacteris affinis</i> Blyth, 1864	White-browed Treecreeper population in Carrathool LGA south of the Lachlan River and Griffith LGA
		Meliphagid ae	<i>Epthianura albifrons</i> (Jardine & Selby, 1828)	White-fronted Chat population in the Sydney Metropolitan Catchment Management Area
	Mammals	Macropodid ae		
		Muridae	<i>Mastacomys fuscus</i> Thomas, 1882	Broad-toothed Rat at Barrington Tops in the LGAs of Gloucester, Scone and Dungog
		Peramelidae	<i>Perameles nasuta</i> Geoffroy, 1804	Long-nosed Bandicoot, North Head
			<i>Perameles nasuta</i> Geoffroy, 1804	Long-nosed Bandicoot population in inner western Sydney
		Petauridae	<i>Petaurus australis</i> Shaw, 1791	Yellow-bellied Glider population on the Bago Plateau (as described in the final determination of the Scientific Committee published in the Gazette on 28

Phylum	Class	Family	Scientific Name	Common name
				November 2014)
			<i>Petaurus norfolcensis</i> (Kerr, 1792)	Squirrel Glider in the Wagga Wagga LGA
			<i>Petaurus norfolcensis</i> (Kerr, 1792)	Squirrel Glider on Barrenjoey Peninsula, north of Bushrangers Hill
		Pseudocheiridae	<i>Petauroides volans</i> (Kerr, 1792)	Greater Glider population in the Eurobodalla LGA
			<i>Petauroides volans</i> (Kerr, 1792)	Greater Glider population in the Mount Gibraltar Reserve area
			<i>Petauroides volans</i> (Kerr, 1792)	Greater Glider population in the Seven Mile Beach National Park area
		Phascolarctidae	<i>Phascolarctos cinereus</i> (Goldfuss, 1817)	Koala, Hawks Nest and Tea Gardens population
			<i>Phascolarctos cinereus</i> (Goldfuss, 1817)	Koala in the Pittwater LGA
			<i>Phascolarctos cinereus</i> (Goldfuss, 1817)	Koala population between the Tweed

Phylum	Class	Family	Scientific Name	Common name
				River and Brunswick River east of the Pacific Highway
		Potoroidae	<i>Potorous tridactylus</i> (Kerr, 1792)	Long-nosed Potoroo, Cobaki Lakes and Tweed Heads West population

Plants

Family	Scientific Name	Common name
Apocynaceae	<i>Marsdenia viridiflora</i> R. Br. subsp. <i>viridiflora</i>	<i>Marsdenia viridiflora</i> R. Br. subsp. <i>viridiflora</i> population in the Bankstown, Blacktown, Camden, Campbelltown, Fairfield, Holroyd, Liverpool and Penrith LGAs
Campanulaceae	<i>Wahlenbergia multicaulis</i> Benth.	Tadgell's Bluebell in the LGAs of Auburn, Bankstown, Baulkham Hills, Canterbury, Hornsby, Parramatta and Strathfield

Family	Scientific Name	Common name
Casuarinaceae	<i>Allocasuarina diminuta</i> subsp. <i>mimica</i> L.A.S. Johnson	<i>Allocasuarina diminuta</i> subsp. <i>mimica</i> population in the Sutherland Shire and Liverpool City LGAs
	<i>Allocasuarina inophloia</i> (F. Muell. & F.M. Bailey) L.A.S. Johnson	Stringybark She-Oak population in the Clarence Valley LGA
Cupressaceae	<i>Callitris endlicheri</i> (Parl.) Bailey	Black Cypress Pine, Woronora Plateau population
Fabaceae	<i>Acacia pendula</i> A. Cunn. ex G. Don	<i>Acacia pendula</i> population in the Hunter catchment
	<i>Acacia prominens</i> Cunn. ex Don	Gosford Wattle, Hurstville and Kogarah LGAs
	<i>Chorizema parviflorum</i> Benth.	<i>Chorizema parviflorum</i> Benth. in the Wollongong and Shellharbour LGAs
	<i>Dillwynia tenuifolia</i> Sieber ex D.C.	<i>Dillwynia tenuifolia</i> , Kemps Creek
	<i>Dillwynia tenuifolia</i> Sieber ex D.C.	<i>Dillwynia tenuifolia</i> Sieber ex D.C. in the Baulkham Hills LGA
	<i>Glycine clandestina</i> (broad leaf form) (Pullen 13342)	<i>Glycine clandestina</i> (broad leaf form) in the Nambucca LGA
	<i>Lespedeza juncea</i> subsp. <i>sericea</i> (Thunb.) Steenis	<i>Lespedeza juncea</i> subsp. <i>sericea</i> in the Wollongong LGA
	<i>Pultenaea villifera</i> Sieber ex DC.	<i>Pultenaea villifera</i> Sieber ex DC. population in the Blue Mountains LGA
Lamiaceae	<i>Prostanthera saxicola</i> R. Br.	<i>Prostanthera saxicola</i> population in Sutherland and Liverpool LGAs

Family	Scientific Name	Common name
Malvaceae	<i>Keraudrenia corollata</i> var. <i>denticulata</i> C. T. White	<i>Keraudrenia corollata</i> var. <i>denticulata</i> in the Hawkesbury LGA
Myrtaceae	<i>Darwinia fascicularis</i> subsp. <i>oligantha</i>	<i>Darwinia fascicularis</i> subsp. <i>oligantha</i> population in the Baulkham Hills and Hornsby LGAs
	<i>Eucalyptus aggregata</i> H. Deane & Maiden	<i>Eucalyptus aggregata</i> population in the Wingecaribee LGA
	<i>Eucalyptus camaldulensis</i> Dehnh.	<i>Eucalyptus camaldulensis</i> population in the Hunter catchment
	<i>Eucalyptus langleyi</i> L.A.S. Johnson & Blaxell	<i>Eucalyptus langleyi</i> population north of the Shoalhaven River in the Shoalhaven LGA
	<i>Eucalyptus oblonga</i> DC.	<i>Eucalyptus oblonga</i> population at Bateau Bay, Forresters Beach and Tumbi Umbi in the Wyong LGA
	<i>Eucalyptus parramattensis</i> C. Hall. subsp. <i>parramattensis</i>	<i>Eucalyptus parramattensis</i> C. Hall. subsp. <i>parramattensis</i> in Wyong and Lake Macquarie LGAs
	<i>Eucalyptus seeana</i> Maiden	<i>Eucalyptus seeana</i> population in the Greater Taree LGA
	<i>Gossia acmenoides</i> (F. Muell) N. Snow & Guymer	<i>Gossia acmenoides</i> population in the Sydney Basin Bioregion south of the Georges River

Family	Scientific Name	Common name
Orchidaceae	<i>Cymbidium canaliculatum</i> R. Br.	<i>Cymbidium canaliculatum</i> population in the Hunter Catchment
	<i>Diuris tricolor</i> Fitzg.	Pine Donkey Orchid population in the Muswellbrook LGA
	<i>Rhizanthella slateri</i> (Rupp) M.A. Clem. & Cribb	<i>Rhizanthella slateri</i> (Rupp) M.A. Clem. & Cribb in the Great Lakes LGA
Rhamnaceae	<i>Pomaderris prunifolia</i> Fenzl	<i>P. prunifolia</i> in the Parramatta, Auburn, Strathfield and Bankstown LGAs
	<i>Spyridium burragorang</i> K.R. Thiele	<i>Spyridium burragorang</i> in the Cessnock LGA
Rutaceae	<i>Zieria smithii</i> Jackson	Low growing form of <i>Z. smithii</i> , Diggers Head

Vulnerable species

Animals

Phylum	Class	Family	Scientific Name	Common name
Vertebrates	Amphibians	Hylidae	<i>Litoria brevipalmata</i> Tyler, Martin & Watson, 1972	Green-thighed Frog
			<i>Litoria daviesae</i> Mahony, Knowles, Foster & Donnellan, 2001	
			<i>Litoria littlejohni</i> A.M. White, Whitford and Mahoney, 1994	Littlejohn's Tree Frog
			<i>Litoria olongburensis</i> Liem & Ingram, 1977	Olongburra Frog
			<i>Litoria subglandulosa</i> Tyler & Anstis, 1983	Glandular Frog
		Myobatrachidae	<i>Assa darlingtoni</i> (Loveridge, 1933)	Pouched Frog

Phylum	Class	Family	Scientific Name	Common name
			<i>Crinia sloanei</i> Littlejohn, 1958	Sloane's Froglet
			<i>Crinia tinnula</i> Straughan & Main, 1966	Wallum Froglet
			<i>Heleioporus australiacus</i> (Shaw & Nodder, 1795)	Giant Burrowing Frog
			<i>Philoria sphagnicolus</i> (Moore, 1958)	Sphagnum Frog
			<i>Pseudophryne australis</i> (Gray, 1835)	Red-crowned Toadlet
	Reptiles	Carphodactylidae	<i>Uvidicolus sphyrurus</i> (Ogilby, 1892)	
		Cheloniidae	<i>Chelonia mydas</i> (Linnaeus, 1758)	Green Turtle
		Diplodactylidae	<i>Lucasium stenodactylum</i> (Boulenger, 1896)	Crowned Gecko
			<i>Strophurus elderi</i> (Stirling & Zietz, 1893)	Jewelled Gecko
		Gekkonidae	<i>Christinus guentheri</i> (Boulenger, 1885)	Lord Howe Island Southern Gecko
		Pygopodidae	<i>Aprasia parapulchella</i> Kluge, 1974	Pink-tailed Legless Lizard
			<i>Delma impar</i> (Fischer, 1882)	Striped Legless Lizard
		Varanidae	<i>Varanus rosenbergi</i> Mertens, 1957	Rosenberg's Goanna
		Scincidae	<i>Coeranoscincus reticulatus</i> (Günther, 1873)	Three-toed Snake-tooth Skink
			<i>Ctenotus brooksi</i> (Loveridge, 1933)	Wedgesnout Ctenotus
			<i>Lerista xanthura</i> Storr, 1976	Yellow-tailed Plain Slider
			<i>Oligosoma lichenigera</i> (O'Shaughnessy, 1874)	Lord Howe Island Skink
			<i>Tiliqua multifasciata</i> Sternfeld, 1919	Centralian Blue-tongued Lizard
			<i>Tiliqua occipitalis</i> (Peters, 1863)	Western Blue-tongued

Phylum	Class	Family	Scientific Name	Common name
				Lizard
		Pythonidae	<i>Antaresia stimsoni</i> (Smith, 1985)	Stimson's Python
			<i>Aspidites ramsayi</i> (Macleay, 1882)	Woma
		Elapidae	<i>Cacophis harriettae</i> Krefft, 1869	White-crowned Snake
			<i>Demansia rimicola</i> Scanlon, 2007	A whip snake
			<i>Hoplocephalus bitorquatus</i> (Jan, 1859)	Pale-headed Snake
			<i>Hoplocephalus stephensii</i> Krefft, 1869	Stephens' Banded Snake
			<i>Simoselaps fasciolatus</i> (Gunther, 1872)	Narrow-banded Snake
			<i>Suta flagellum</i> (McCoy, 1878)	Little Whip Snake
	Birds	Anseranatidae	<i>Anseranas semipalmata</i> (Latham, 1798)	Magpie Goose
		Anatidae	<i>Oxyura australis</i> Gould, 1837	Blue-billed Duck
			<i>Stictonetta naevosa</i> (Gould, 1841)	Freckled Duck
		Procellariidae	<i>Ardenna carneipes</i> (Gould, 1844)	Flesh-footed Shearwater
			<i>Macronectes halli</i> Mathews, 1912	Northern Giant-petrel
			<i>Pterodroma leucoptera leucoptera</i> (Gould, 1844)	Gould's Petrel
			<i>Pterodroma neglecta neglecta</i> (Schlegel, 1863)	Kermadec Petrel (west Pacific subspecies)
			<i>Pterodroma nigripennis</i> (Rothschild, 1893)	Black-winged Petrel
			<i>Pterodroma solandri</i> (Gould, 1844)	Providence Petrel
			<i>Puffinus assimilis</i> Gould, 1838	Little Shearwater
		Oceanitidae	<i>Fregetta grallaria</i> (Vieillot, 1818)	White-bellied Storm-Petrel
		Diomedeidae	<i>Diomedea antipodensis</i> Robertson & Warham, 1992	Antipodean Albatross

Phylum	Class	Family	Scientific Name	Common name
		e		
			<i>Diomedea gibsoni</i> Robertson & Warham, 1992	Gibson's Albatross
			<i>Phoebetria fusca</i> (Hilsenberg, 1822)	Sooty Albatross
			<i>Thalassarche cauta</i> (Gould, 1841)	Shy Albatross
			<i>Thalassarche melanophris</i> (Temminck, 1828)	Black-browed Albatross
		Phaethontidae	<i>Phaethon rubricauda</i> Boddaert, 1783	Red-tailed Tropicbird
		Sulidae	<i>Sula dactylatra</i> Lesson, 1831	Masked Booby
		Ardeidae	<i>Ixobrychus flavicollis</i> (Latham, 1790)	Black Bittern
		Falconidae	<i>Falco subniger</i> G.R. Gray, 1843	Black Falcon
		Accipitridae	<i>Circus assimilis</i> Jardine & Selby, 1828	Spotted Harrier
			<i>Haliaeetus leucogaster</i> (Gmelin, 1788)	White-bellied Sea-eagle
			<i>Hamirostra melanosternon</i> (Gould, 1841)	Black-breasted Buzzard
			<i>Hieraaetus morphnoides</i> (Gould, 1841)	Little Eagle
			<i>Lophoictinia isura</i> (Gould, 1838)	Square-tailed Kite
			<i>Pandion cristatus</i> (Vieillot, 1816)	Eastern Osprey
		Gruidae	<i>Grus rubicunda</i> (Perry, 1810)	Brolga
		Rallidae	<i>Amaurornis moluccana</i> (Wallace, 1865)	Pale-vented Bush-hen
		Turnicidae	<i>Turnix maculosus</i> (Temminck, 1815)	Red-backed Button-quail
		Scolopacidae	<i>Calidris alba</i> (Pallas, 1764)	Sanderling
			<i>Calidris tenuirostris</i> (Horsfield, 1821)	Great Knot
			<i>Limicola falcinellus</i> (Pontoppidan, 1763)	Broad-billed Sandpiper
			<i>Limosa limosa</i> (Linnaeus, 1758)	Black-tailed Godwit

Phylum	Class	Family	Scientific Name	Common name
			<i>Xenus cinereus</i> (Güldenstädt, 1775)	Terek Sandpiper
		Jacanidae	<i>Irediparra gallinacea</i> (Temminck, 1828)	Comb-crested Jacana
		Haematopodidae	<i>Haematopus fuliginosus</i> Gould, 1845	Sooty Oystercatcher
		Charadriidae	<i>Charadrius leschenaultii</i> Lesson, 1826	Greater Sand-plover
			<i>Charadrius mongolus</i> Pallas, 1776	Lesser Sand-plover
		Laridae	<i>Gygis alba</i> (Sparrman, 1786)	White Tern
			<i>Onychoprion fuscata</i> (Linnaeus, 1766)	Sooty Tern
			<i>Procelsterna cerulea</i> (Bennett, 1840)	Grey Ternlet
		Columbidae	<i>Ptilinopus magnificus</i> (Temminck, 1821)	Wompoo Fruit-dove
			<i>Ptilinopus regina</i> Swainson, 1825	Rose-crowned Fruit-dove
			<i>Ptilinopus superbus</i> (Temminck, 1809)	Superb Fruit-dove
		Cacatuidae	<i>Callocephalon fimbriatum</i> (Grant, 1803)	Gang-gang Cockatoo
			<i>Calyptorhynchus banksii samueli</i> Mathews, 1917	Red-tailed Black-Cockatoo (inland subspecies)
			<i>Calyptorhynchus lathami</i> (Temminck, 1807)	Glossy Black-Cockatoo
			<i>Lophochroa leadbeateri</i> (Vigors, 1831)	Major Mitchell's Cockatoo
		Psittacidae	<i>Glossopsitta porphyrocephala</i> (Dietrichsen, 1837)	Purple-crowned Lorikeet
			<i>Glossopsitta pusilla</i> (Shaw, 1790)	Little Lorikeet
			<i>Neophema pulchella</i> (Shaw, 1792)	Turquoise Parrot
			<i>Neophema splendida</i> (Gould, 1841)	Scarlet-chested Parrot

Phylum	Class	Family	Scientific Name	Common name
			<i>Pezoporus wallicus wallicus</i> (Kerr, 1792)	Eastern Ground Parrot
			<i>Polytelis swainsonii</i> (Desmarest, 1826)	Superb Parrot
		Strigidae	<i>Ninox connivens</i> (Latham, 1801)	Barking Owl
			<i>Ninox strenua</i> (Gould, 1838)	Powerful Owl
		Tytonidae	<i>Tyto longimembris</i> (Jerdon, 1839)	Eastern Grass Owl
			<i>Tyto novaehollandiae</i> (Stephens, 1826)	Masked Owl
			<i>Tyto tenebricosa</i> (Gould, 1845)	Sooty Owl
		Podargidae	<i>Podargus ocellatus</i> Quoy & Gaimard, 1830	Marbled Frogmouth
		Alcedinidae	<i>Todiramphus chloris</i> (Boddaert, 1783)	Collared Kingfisher
		Menuridae	<i>Menura alberti</i> Bonaparte, 1850	Albert's Lyrebird
		Atrichornithidae	<i>Atrichornis rufescens</i> (Ramsay, 1867)	Rufous Scrub-bird
		Climacteridae	<i>Climacteris picumnus victoriae</i> Mathews, 1912	Brown Treecreeper (eastern subspecies)
		Maluridae	<i>Amytornis striatus</i> (Gould, 1840)	Striated Grasswren
		Acanthizidae	<i>Calamanthus campestris</i> (Gould, 1841)	Rufous Fieldwren
			<i>Chthonicola sagittata</i> (Latham, 1801)	Speckled Warbler
			<i>Hylacola cautus</i> Gould, 1843	Shy Heathwren
			<i>Pyrrholaemus brunneus</i> Gould, 1841	Redthroat
		Meliphagidae	<i>Certhionyx variegatus</i> Lesson, 1830	Pied Honeyeater
			<i>Epthianura albifrons</i> (Jardine & Selby, 1828)	White-fronted Chat
			<i>Grantiella picta</i> (Gould, 1838)	Painted Honeyeater
			<i>Lichenostomus cratitius</i> (Gould, 1841)	Purple-gaped Honeyeater

Phylum	Class	Family	Scientific Name	Common name
			<i>Lichenostomus fasciocularis</i> (Gould, 1854)	Mangrove Honeyeater
			<i>Melithreptus gularis gularis</i> (Gould, 1837)	Black-chinned Honeyeater (eastern subspecies)
		Petroicidae	<i>Drymodes brunneopygia</i> Gould, 1841	Southern Scrub-robin
			<i>Melanodryas cucullata cucullata</i> (Latham, 1801)	Hooded Robin (south-eastern form)
			<i>Petroica boodang</i> (Lesson, 1838)	Scarlet Robin
			<i>Petroica phoenicea</i> Gould, 1837	Flame Robin
			<i>Petroica rodinogaster</i> (Drapiez, 1819)	Pink Robin
		Pomatostomidae	<i>Pomatostomus halli</i> Cowles, 1964	Hall's Babbler
			<i>Pomatostomus temporalis temporalis</i> (Vigors & Horsfield, 1827)	Grey-crowned Babbler (eastern subspecies)
		Psophodidae	<i>Cinclosoma castanotum</i> Gould, 1840	Chestnut Quail-thrush
		Neosittidae	<i>Daphoenositta chrysoptera</i> (Latham, 1801)	Varied Sittella
		Pachycephalidae	<i>Pachycephala inornata</i> Gould, 1841	Gilbert's Whistler
			<i>Pachycephala olivacea</i> Vigors & Horsfield, 1827	Olive Whistler
			<i>Pachycephala pectoralis contempta</i> Hartert, 1898	Golden Whistler (Lord Howe Is. subsp.)
		Monarchidae	<i>Carterornis leucotis</i> (Gould, 1850)	White-eared Monarch
		Campephagidae	<i>Coracina lineata</i> (Swainson, 1825)	Barred Cuckoo-shrike
		Artamidae	<i>Artamus cyanopterus cyanopterus</i> (Latham, 1802)	Dusky Woodswallow

Phylum	Class	Family	Scientific Name	Common name
			<i>Strepera graculina crissalis</i> Sharpe, 1877	Pied Currawong (Lord Howe Is. subsp.)
		Timaliidae	<i>Zosterops lateralis tephroleurus</i> Gould, 1855	Silvereye (Lord Howe Is. subsp.)
		Estrildidae	<i>Stagonopleura guttata</i> (Shaw, 1796)	Diamond Firetail
	Mammals	Burramyidae	<i>Cercartetus nanus</i> (Desmarest, 1818)	Eastern Pygmy-possum
		Dasyuridae	<i>Dasyurus maculatus</i> (Kerr, 1792)	Spotted-tailed Quoll
			<i>Ningauia yvonneae</i> Kitchener, Stoddart & Henry, 1983	Southern Ningauia
			<i>Phascogale tapoatafa</i> (Meyer, 1793)	Brush-tailed Phascogale
			<i>Planigale maculata</i> (Gould, 1851)	Common Planigale
			<i>Sminthopsis leucopus</i> (Gray, 1842)	White-footed Dunnart
			<i>Sminthopsis macroura</i> (Gould, 1845)	Stripe-faced Dunnart
		Phascolarctidae	<i>Phascolarctos cinereus</i> (Goldfuss, 1817)	Koala
		Petauridae	<i>Petaurus australis</i> Shaw, 1791	Yellow-bellied Glider
			<i>Petaurus norfolcensis</i> (Kerr, 1792)	Squirrel Glider
		Potoroidae	<i>Aepyprymnus rufescens</i> (Gray, 1837)	Rufous Bettong
			<i>Potorous tridactylus</i> (Kerr, 1792)	Long-nosed Potoroo
		Macropodidae	<i>Macropus parma</i> Waterhouse, 1845	Parma Wallaby
			<i>Thylogale stigmatica</i> (Gould, 1860)	Red-legged Pademelon
		Pteropodidae	<i>Nyctimene robinsoni</i> Thomas, 1904	Eastern Tube-nosed Bat
			<i>Pteropus poliocephalus</i> Temminck, 1825	Grey-headed Flying-fox
			<i>Syconycteris australis</i> (Peters, 1867)	Common Blossom-bat

Phylum	Class	Family	Scientific Name	Common name
		Emballonuridae	<i>Saccolaimus flaviventris</i> (Peters, 1867)	Yellow-bellied Sheath-tail-bat
		Molossidae	<i>Mormopterus lumsdenae</i> Reardon, McKenzie and Adams, 2014	Northern Free-tailed Bat
			<i>Mormopterus norfolkensis</i> (Gray, 1839)	Eastern Freetail-bat
		Vespertilionidae	<i>Chalinolobus dwyeri</i> Ryan, 1966	Large-eared Pied Bat
			<i>Chalinolobus nigrogriseus</i> (Gould, 1856)	Hoary Wattled Bat
			<i>Chalinolobus picatus</i> (Gould, 1852)	Little Pied Bat
			<i>Falsistrellus tasmaniensis</i> (Gould, 1858)	Eastern False Pipistrelle
			<i>Kerivoula papuensis</i> Dobson, 1878	Golden-tipped Bat
			<i>Miniopterus australis</i> (Tomes, 1858)	Little Bentwing-bat
			<i>Miniopterus schreibersii oceanensis</i> Maeda, 1982	Eastern Bentwing-bat
			<i>Myotis macropus</i> (Gould, 1855)	Southern Myotis
			<i>Nyctophilus bifax</i> Thomas, 1915	Eastern Long-eared Bat
			<i>Nyctophilus corbeni</i> Parnaby, 2009	Corben's Long-eared Bat
			<i>Scoteanax rueppellii</i> (Peters, 1866)	Greater Broad-nosed Bat
			<i>Vespadelus baverstocki</i> (Kitchener, Jones & Caputi, 1987)	Inland Forest Bat
			<i>Vespadelus troughtoni</i> (Kitchener, Jones & Caputi, 1987)	Eastern Cave Bat
		Muridae		
			<i>Leggadina forresti</i> (Thomas, 1906)	Forrest's Mouse
			<i>Mastacomys fuscus</i> Thomas, 1882	Broad-toothed Rat
			<i>Pseudomys gracilicaudatus</i> (Gould, 1845)	Eastern Chestnut Mouse
			<i>Pseudomys hermannsburgensis</i> (Waite, 1896)	Sandy Inland Mouse

Phylum	Class	Family	Scientific Name	Common name
			<i>Pseudomys pilligaensis</i> Fox & Briscoe, 1980	Pilliga Mouse
			<i>Rattus villosissimus</i> (Waite, 1898)	Long-haired Rat
	Marine mammals	Otariidae	<i>Arctocephalus forsteri</i> (Lesson, 1828)	New Zealand Fur-seal
			<i>Arctocephalus pusillus doriferus</i> Jones, 1925	Australian Fur-seal
		Physeteridae	<i>Physeter macrocephalus</i> Linnaeus, 1758	Sperm Whale
		Balaenopteridae	<i>Megaptera novaeangliae</i> (Borowski, 1781)	Humpback Whale

Fungi

Class	Family	Scientific Name	Common name
Basidiomycota	Hygrophoraceae	<i>Hygrocybe anomala</i> var. <i>ianthinomarginata</i> A.M. Young	
		<i>Hygrocybe aurantipes</i> A.M. Young	
		<i>Hygrocybe reesiaae</i> A.M. Young	
		<i>Hygrocybe rubronivea</i> A.M. Young	

Plants

Family	Scientific Name	Common name
Apiaceae	<i>Xanthosia scopulicola</i> J.M. Hart & Henwood	
Apocynaceae	<i>Parsonsia dorrigoensis</i> J.B. Williams	
	<i>Tylophora linearis</i> P.I. Forst.	

Family	Scientific Name	Common name
Araliaceae	<i>Astrotricha crassifolia</i> Blakely	
Argophyllaceae	<i>Corokia whiteana</i> L.S. Sm.	
Asteliaceae	<i>Neostelia spectabilis</i> J.B. Williams	
Asteraceae	<i>Ammobium craspedioides</i> Benth.	
	<i>Argyrotegium nitidulum</i> (Hook. f.) J.M. Ward & Breitw.	
	<i>Brachyscome muelleroides</i> G. L. R. Davis	
	<i>Brachyscome papillosa</i> G. L. R. Davis	
	<i>Calotis glandulosa</i> F. Muell.	
	<i>Olearia cordata</i> Lander	
	<i>Ozothamnus tessellatus</i> (Maiden & R. Baker) Anderberg	
	<i>Picris evae</i> Lack	
	<i>Rutidosia heterogama</i> Philipson	
	<i>Rutidosia leiolepis</i> F. Muell.	
	<i>Senecio garlandii</i> F. Muell. ex Belcher	
Brassicaceae	<i>Lepidium aschersonii</i> Thell.	
Casuarinaceae	<i>Allocasuarina simulans</i> L. Johnson	
Chenopodiaceae	<i>Atriplex infrequens</i> Paul G. Wilson	
	<i>Maireana cheelii</i> (R. Anderson) Paul G. Wilson	
Convolvulaceae	<i>Wilsonia backhousei</i> Hook. f.	
Corynocarpaceae	<i>Corynocarpus rupestris</i> Guymer subsp. <i>rupestris</i>	
Cunoniaceae	<i>Acrophyllum australe</i> (Cunn.) Hoogl.	
Cupressaceae	<i>Callitris oblonga</i> A. Rich. & Rich.	
Cyperaceae	<i>Cyperus rupicola</i> S.T. Blake	
	<i>Eleocharis obicis</i> L.A.S. Johnson & O.D. Evans	
	<i>Lepidosperma evansianum</i> K.L. Wilson	

Family	Scientific Name	Common name
Dilleniaceae	<i>Hibbertia marginata</i> Conn	
Doryanthaceae	<i>Doryanthes palmeri</i> W. Hill ex Benth.	
Elaeocarpaceae	<i>Tetratheca glandulosa</i> Sm.	
	<i>Tetratheca juncea</i> Sm.	
Ericaceae	<i>Budawangia gnidioides</i> (Summerh.) Telford	
	<i>Dracophyllum macranthum</i> E.A.Br. & N. Streiber	
	<i>Epacris purpurascens</i> Sims var. <i>purpurascens</i>	
	<i>Epacris sparsa</i> R. Br.	
	<i>Gaultheria viridicarpa</i> subsp. <i>merinoensis</i> J.B. Williams ms	
	<i>Gaultheria viridicarpa</i> J.B. Williams ms subsp. <i>viridicarpa</i>	
	<i>Leucopogon exolasius</i> (F. Muell.) F. Muell. ex Benth.	
	<i>Styphelia perileuca</i> J. Powell	
Euphorbiaceae	<i>Baloghia marmorata</i> C. White	
	<i>Bertya opponens</i> (F. Muell. ex Benth) Guymer	
	<i>Fontainea australis</i> Jessup & Guymer	
Fabaceae	<i>Acacia ausfeldii</i> Regel	
	<i>Acacia bakeri</i> Maiden	
	<i>Acacia baueri</i> subsp. <i>aspera</i> (Maiden & E. Betche) Pedley	
	<i>Acacia carneorum</i> Maiden	
	<i>Acacia clunies-rossiae</i> Maiden	
	<i>Acacia constablei</i> Tind.	
	<i>Acacia courtii</i> Tind. & Herscovitch	
	<i>Acacia curranii</i> Maiden	
	<i>Acacia flocktoniae</i> Maiden	

Family	Scientific Name	Common name
	<i>Acacia georgensis</i> Tind.	
	<i>Acacia macnuttiana</i> Maiden & Blakely	
	<i>Acacia phasmoides</i> J.H. Willis	
	<i>Acacia pubescens</i> (Vent.) R. Br.	
	<i>Acacia pycnostachya</i> F. Muell.	
	<i>Archidendron hendersonii</i> (F. Muell.) Nielsen	
	<i>Bossiaea bombayensis</i> K.L. McDougall	
	<i>Bossiaea oligosperma</i> A. Lee	
	<i>Desmodium acanthocladum</i> F. Muell.	
	<i>Dillwynia tenuifolia</i> Sieber ex DC.	
	<i>Kennedia retrorsa</i> Hemsley	
	<i>Phyllota humifusa</i> Benth.	
	<i>Pultenaea aristata</i> Sieber ex DC.	
	<i>Pultenaea baeuerlenii</i> F. Muell.	
	<i>Pultenaea glabra</i> Benth.	
	<i>Pultenaea humilis</i> Benth. ex Hook.f.	
	<i>Pultenaea maritima</i> de Kok	
	<i>Pultenaea parrisiae</i> J.D. Briggs & Crisp	
	<i>Rhynchosia acuminatissima</i> Miq.	
	<i>Sophora fraseri</i> Benth.	
	<i>Swainsona murrayana</i> Wawra	
	<i>Swainsona plagiotropis</i> F. Muell.	
	<i>Swainsona pyrophila</i> J. Thompson	
	<i>Swainsona sericea</i> (A. Lee) J. Black ex H. Eichler	

Family	Scientific Name	Common name
	<i>Tephrosia filipes</i> Benth.	
Gentianaceae	<i>Gentiana wissmannii</i> J. Williams	
Goodeniaceae	<i>Velleia perfoliata</i> R. Br.	
Haloragaceae	<i>Haloragis exalata</i> F. Muell. subsp. <i>exalata</i>	
	<i>Haloragis exalata</i> subsp. <i>velutina</i> Orch.	
Juncaginaceae	<i>Maundia triglochinosides</i> F. Muell.	
Lamiaceae	<i>Prostanthera cineolifera</i> R. Baker & H.G. Smith	
	<i>Prostanthera cryptandroides</i> Cunn. ex Benth. subsp. <i>cryptandroides</i>	
	<i>Prostanthera densa</i> A.A. Ham.	
	<i>Prostanthera discolor</i> R. Baker	
	<i>Prostanthera palustris</i> B.J. Conn	
	<i>Prostanthera sejuncta</i> M.L. Williams, Drinnan & N.G. Walsh	
	<i>Prostanthera stricta</i> R. Baker	
	<i>Westringia davidii</i> Conn	
Lauraceae	<i>Cryptocarya foetida</i> R. Baker	
	<i>Endiandra hayesii</i> Kosterm.	
Malvaceae	<i>Commersonia procumbens</i> (Maiden & Betche) Guymer	
	<i>Lasiopetalum joyceae</i> Blakely	
	<i>Lasiopetalum longistamineum</i> Maiden & Betche	
Meliaceae	<i>Owenia cepiodora</i> F. Muell.	
Menispermaceae	<i>Tinospora tinosporoides</i> (F. Muell.) Forman	
Myrtaceae	<i>Angophora inopina</i> K.D. Hill	
	<i>Angophora robur</i> L. Johnson & K. Hill	
	<i>Callistemon linearifolius</i> (Link) DC.	

Family	Scientific Name	Common name
	<i>Darwinia biflora</i> (Cheel) B. Briggs	
	<i>Darwinia glaucophylla</i> B.G. Briggs	
	<i>Darwinia peduncularis</i> B. Briggs	
	<i>Eucalyptus aggregata</i> Deane & Maiden	
	<i>Eucalyptus alligatrix</i> L.A.S. Johnson & K.D. Hill subsp. <i>alligatrix</i>	
	<i>Eucalyptus approximans</i> Maiden	
	<i>Eucalyptus aquatica</i> (Blakely) L. Johnson & K. Hill	
	<i>Eucalyptus benthamii</i> Maiden & Cabbage	
	<i>Eucalyptus boliviana</i> J.B. Williams & K.D. Hill	
	<i>Eucalyptus caleyi</i> subsp. <i>ovendenii</i> L. Johnson & K. Hill	
	<i>Eucalyptus camfieldii</i> Maiden	
	<i>Eucalyptus cannonii</i> R. Baker	
	<i>Eucalyptus canobolensis</i> (L.A.S. Johnson & K.D. Hill) J.T. Hunter	
	<i>Eucalyptus corticosa</i> L.A.S. Johnson	Black Gum
	<i>Eucalyptus dissita</i> K.D. Hill	
	<i>Eucalyptus fracta</i> K.D. Hill	
	<i>Eucalyptus glaucina</i> Blakely	
	<i>Eucalyptus kartzoffiana</i> L. Johnson & Blaxell	
	<i>Eucalyptus langleyi</i> L. Johnson & Blaxell	
	<i>Eucalyptus leucoxylon</i> subsp. <i>pruinosa</i> (F. Muell. ex. Miq.) Boland	
	<i>Eucalyptus mckieana</i> Blakely	
	<i>Eucalyptus nicholii</i> Maiden & Blakely	
	<i>Eucalyptus oresbia</i> Hunter and Bruhl	
	<i>Eucalyptus parramattensis</i> subsp. <i>decadens</i> L. Johnson & Blaxell	

Family	Scientific Name	Common name
	<i>Eucalyptus pulverulenta</i> Sims	
	<i>Eucalyptus pumila</i> Cambage	
	<i>Eucalyptus robertsonii</i> subsp. <i>hemisphaerica</i> L. Johnson & K. Hill	
	<i>Eucalyptus rubida</i> subsp. <i>barbigerorum</i> L. Johnson & K. Hill	
	<i>Eucalyptus sturgissiana</i> L. Johnson & Blaxell	
	<i>Eucalyptus tetrapleura</i> L. Johnson	Yellow Gum
	<i>Homoranthus darwinioides</i> (Maiden & E. Betche) Cheel	
	<i>Homoranthus lunatus</i> Craven & S.R. Jones	
	<i>Homoranthus prolixus</i> Craven & S.R. Jones	
	<i>Kunzea cambagei</i> Maiden & E. Betche	
	<i>Kunzea rupestris</i> Blakely	
	<i>Leptospermum deanei</i> J. Thompson	
	<i>Leptospermum thompsonii</i> J. Thompson	
	<i>Melaleuca biconvexa</i> Byrnes	
	<i>Melaleuca deanei</i> F. Muell.	
	<i>Melaleuca groveana</i> Cheel & C. White	
	<i>Micromyrtus blakelyi</i> J. Green	
	<i>Syzygium hodgkinsoniae</i> (F. Muell.) L. Johnson	
	<i>Syzygium moorei</i> (F. Muell.) L. Johnson	
Olacaceae	<i>Olax angulata</i> A.S. George	
Orchidaceae	<i>Bulbophyllum globuliforme</i> Nicholls	
	<i>Caladenia montana</i> G.W. Carr	
	<i>Chiloglottis platyptera</i> D.L. Jones	
	<i>Cryptostylis hunteriana</i> Nicholls	

Family	Scientific Name	Common name
	<i>Diuris praecox</i> D.L. Jones	
	<i>Diuris tricolor</i> Fitzg.	
	<i>Diuris venosa</i> Rupp	
	<i>Genoplesium vernale</i> D.L. Jones	
	<i>Oberonia titania</i> Lindl.	
	<i>Peristeranthus hillii</i> (F. Muell.) T.E. Hunt.	
	<i>Prasophyllum pallens</i> D.L. Jones	
	<i>Prasophyllum retroflexum</i> D.L. Jones	
	<i>Pterostylis alpina</i> R.S. Rogers	
	<i>Pterostylis chaetophora</i> M.A. Clem. & D.L. Jones	
	<i>Pterostylis cobarensis</i> M.A. Clem.	
	<i>Pterostylis elegans</i> D.L. Jones	
	<i>Pterostylis foliata</i> Hook. f.	
	<i>Pterostylis nigricans</i> L. Jones & M.A. Clem.	
	<i>Pterostylis pulchella</i> Messmer	
	<i>Pterostylis riparia</i> D.L. Jones	
	<i>Rhizanthella slateri</i> (Rupp) M.A. Clem. and P.J. Cribb	
	<i>Sarcochilus fitzgeraldii</i> F. Muell.	
	<i>Sarcochilus hartmannii</i> F. Muell.	
	<i>Sarcochilus weinthalii</i> F.M. Bailey	
	<i>Thelymitra alpicola</i> Jeanes	
Orobanchaceae	<i>Euphrasia bella</i> S.T. Blake	
	<i>Euphrasia bowdeniae</i> W.R. Barker	
	<i>Euphrasia ciliolata</i> W.R. Barker	

Family	Scientific Name	Common name
Plantaginaceae	<i>Veronica blakelyi</i> (B.G. Briggs & Ehrend.) B.G. Briggs	
Poaceae	<i>Amphibromus fluitans</i> Kirk	
	<i>Ancistrachne maidenii</i> (A.A. Ham.) Vickery	
	<i>Arthraxon hispidus</i> (Thunb.) Makino	
	<i>Austrostipa metatoris</i> (J. Everett & S.W.L. Jacobs) S.W.L. Jacobs & J. Everett	
	<i>Dichanthium setosum</i> S.T. Blake	
	<i>Paspalidium grandispiculatum</i> B.K Simon	
	<i>Rytidosperma pumilum</i> (Kirk) Linder	
Polygonaceae	<i>Muehlenbeckia costata</i> K.L. Wilson and Makinson ms	
	<i>Persicaria elatior</i> (R. Br.) Sojak	
Proteaceae	<i>Floydia praealta</i> (F. Muell.) L. Johnson & B. Briggs	
	<i>Grevillea banyabba</i> P. Olde & N. Marriott	
	<i>Grevillea evansiana</i> McKee	
	<i>Grevillea juniperina</i> R. Br. subsp. <i>juniperina</i>	
	<i>Grevillea kennedyana</i> F. Muell.	
	<i>Grevillea molyneuxii</i> D.J. McGillivray	
	<i>Grevillea parviflora</i> R. Br. subsp. <i>parviflora</i>	
	<i>Grevillea quadricauda</i> P. Olde & N. Marriott	
	<i>Grevillea rhizomatosa</i> P. Olde & N. Marriott	
	<i>Grevillea scortechinii</i> subsp. <i>sarmentosa</i> (Blakely & McKie) McGillivray	
	<i>Grevillea shiressii</i> Blakely	
	<i>Hakea archaeoides</i> W.R. Barker	

Family	Scientific Name	Common name
	<i>Hakea fraseri</i> R. Br.	
	<i>Hicksbeachia pinnatifolia</i> F. Muell.	
	<i>Isopogon fletcheri</i> F. Muell.	
	<i>Macadamia tetraphylla</i> L. Johnson	
	<i>Persoonia acerosa</i> Sieber ex Schultes & Schultes f.	
	<i>Persoonia marginata</i> Cunn. ex R. Br.	
Ranunculaceae	<i>Clematis fawcettii</i> F. Muell.	
	<i>Ranunculus anemoneus</i> F. Muell.	
Restionaceae	<i>Baloskion longipes</i> (L.A.S. Johnson & O.D. Evans) B.G. Briggs & L.A.S. Johnson	
Rhamnaceae	<i>Discaria nitida</i> Tortosa	
	<i>Pomaderris bodalla</i> N.G. Walsh & F. Coates	
	<i>Pomaderris gilmourii</i> var. <i>cana</i> N. Walsh	
	<i>Pomaderris notata</i> S.T. Blake	
	<i>Pomaderris pallida</i> Wakef.	
	<i>Pomaderris parrisiae</i> N. Walsh	
Rubiaceae	<i>Asperula asthenes</i> Airy Shaw & Turrill	
Rutaceae	<i>Boronia deanei</i> Maiden & E. Betche	
	<i>Boronia granitica</i> Maiden & E. Betche	
	<i>Boronia umbellata</i> P. Weston	
	<i>Bosistoa transversa</i> J.F. Bailey & C.T. White	
	<i>Correa baeuerlenii</i> F. Muell.	
	<i>Leionema ralstonii</i> (F. Muell.) Paul G. Wilson	
	<i>Leionema sympetalum</i> (Paul G. Wilson) Paul G. Wilson	

Family	Scientific Name	Common name
	<i>Nematolepis rhytidophylla</i> (Alb. & N.G. Walsh) Paul G. Wilson	
	<i>Zieria murphyi</i> Blakely	
	<i>Zieria tuberculata</i> J.A. Armstrong	
Santalaceae	<i>Thesium australe</i> R. Br.	
Sapindaceae	<i>Dodonaea procumbens</i> F. Muell.	
	<i>Lepiderema pulchella</i> Radlk.	
Sapotaceae	<i>Niemeyera whitei</i> (Aubrev.) Jessup	
Solonaceae	<i>Solanum karsense</i> Symon	
Surianaceae	<i>Cadellia pentastylis</i> F. Muell.	
Symplocaceae	<i>Symplocos baeuerlenii</i> R. Baker	
Thymelaeaceae	<i>Pimelea curviflora</i> R. Br. var. <i>curviflora</i>	
Winteraceae	<i>Tasmannia glaucifolia</i> J. Williams	
	<i>Tasmannia purpurascens</i> (Vick.) A.C. Smith	

Populations

(Nil)

Appendix 4

Nationally Important Wetlands located within NSW RFA regions

Wetland Name	RFA	Wetland Name	RFA
Bega Swamp	E	Everlasting Swamp	NE
Bondi Lake	E	Hexham Swamp	NE
Jacksons Bog	E	Jewells Wetland	NE
Merimbula Lake	E	Kooragang Nature Reserve	NE
Nadgee Lake and tributary wetlands	E	Lake Hiawatha and Minnie Water	NE
Nelson Lagoon	E	Lake Macquarie	NE
Nunnock Swamp	E	Limeburners Creek Nature Reserve	NE
Packers Swamp	E	Little Llangothlin Lagoon	NE
Pambula Estuarine Wetlands	E	Lower Bungawalbin Catchment Wetland Complex	NE
Wallagoot Lagoon (Wallagoot Lake)	E	Myall Lakes	NE
100 Acre Swamp	NE	New England Wetlands	NE
Alumy Creek/Bunyip Swamp	NE	Port Stephens Estuary	NE
Avoca Lagoon	NE	Round Mountain Swamps	NE
Barrington Top Swamps	NE	Salt Ash Air Weapons Range	NE
Billinudgel Nature Reserve	NE	Shortland Wetlands Centre	NE
Brisbane Water Estuary	NE	Stotts Island Nature Reserve	NE
Budgewoi Lake Sand Mass	NE	Swan Pool/Belmore Swamp	NE
Bundjalung National Park	NE	Terrigal Lagoon	NE
Clarence River Estuary	NE	The Broadwater	NE
Clybucca Creek Estuary	NE	Tuckean Swamp	NE
Cockrone Lagoon	NE	Tuggerah Lake	NE
Colongra Swamp	NE	Ukerebagh Island Nature Reserve	NE
Cook Island Nature Reserve	NE	Upper Coldstream	NE
Cowans Pond	NE	Wallis Lake and adjacent estuarine islands	NE

Wetland Name	RFA	Wetland Name	RFA
Crowdy Bay National Park	NE	Wamberal Lagoon	NE
Cudgen Nature Reserve	NE	Wooloweyah Lagoon	NE
Ellalong Lagoon	NE	Wyong Racecourse Swamp	NE
Big Badja Swamp	S	Beecroft Peninsula	S
Lowbidgee Floodplain	S	Meroo Lake Wetland Complex	S
Lagoon Head	S	Micalong Swamp	S
Lake Bathurst	S	Minnamurra River Estuary	S
Jervis Bay	S	Monaro Lakes	S, E
Lake George	S	Moruya River Estuary Saltmarshes	S
Lake Illawarra	S	Nargal Lake	S
Long Swamp	S	Rennex Gap	S
Killalea Lagoon	S	Shoalhaven/Crookhaven Estuary	S
Kosciusko Alpine Fens, Bogs and Lakes	S	Snowgum Flat	S
Blue Lake (Kosciuszko)	S	St Georges Basin	S
Budderoo National Park Heath Swamps	S	Swan Lagoon	S
Clyde River Estuary	S	Tabourie Lake	S
Coila Creek Delta	S	Termeil Lake Wetland Complex	S
Coomonderry Swamp	S	Tomneys Plain	S
Coopers Swamp	S	Tuross River Estuary	S
Coree Flats	S	Waldrons Swamp	S
Jervis Bay Sea Cliffs	S	Wallaga Lake	S, E
Cormorant Beach	S	Wingecarribee Swamp	S
Cullendulla Creek and Embayment	S	Wollumboola Lake	S
Durras Lake	S	Yaouk Swamp	S

Appendix 5

Principles of Ecologically Sustainable Forest Management (ESFM)

Below are the Principles of ecologically sustainable forest management adopted in all three NSW RFAs.

Principle 1: Maintain or increase the full suite of forest values for present and future generations across the NSW native forest estate

- The principle of intergenerational equity (that in meeting the needs of the present generation, the ability of the future generations to meet their own needs is not compromised) is embodied in this principle.
- Ensure that ESFM at the regional and smaller scales is implemented by ecologically appropriate planning and operational practices, and that ESFM targets are set and indicators of performance are monitored.
- Ensure the long-term maintenance of the full range of values of the NSW existing forest estate. The intention is to maintain or increase not only the full range of values, but also the magnitude or level at which those values are maintained or increased.
- Encourage the increased production of plantation-grown timber and the social and economic benefits flowing from this increased production to supplement the wood supply from native forests.

Aims for values include:

A Biodiversity

- Biological diversity of forests at the ecosystem, species and genetic levels where biological diversity includes natural patterns of ecosystems, species and gene pools in time and space.
- Address the requirements of vulnerable species, assist with the recovery of threatened species, and maintain the full range of ecological communities at viable levels.
- Protect landscape values through the careful planning of operations and the reservation of appropriate patches and corridors of vegetation.

B The productive capacity and sustainability of forest ecosystems

- Maintain ecological processes within forests (such as the formation of soil, energy flows and the carbon, nutrient and water cycles, fauna and flora communities and their interactions).
- Maintain or increase the ability of forest ecosystems to produce biomass whether utilised by society or as part of nutrient and energy cycles.

- Ensure the rate of removal of any forest products is consistent with ecologically sustainable levels.
- Ensure the deleterious effects of activities/disturbances which threaten forests, forest health or forest values are minimised.

C *Forest ecosystem health and vitality*

- Reduce or avoid threats to forest ecosystems from introduced diseases, exotic plants and animals, unnatural regimes of fire or flooding, wind shear, land clearing and urbanisation.
- Promote good environmental practice in relation to pest management.
- Ensure the deleterious effects of activities/disturbances within forests, their scale and intensity, including their cumulative effects are minimised.
- Restore and maintain the suite of attributes (ecological condition, species composition and structure of native forests) where forest health and vitality have been degraded.

D *Soil and water*

- Maintain the chemical and biological functions of soils by protecting soils from unnatural nutrient losses, exposure, degradation and loss.
- Maintain the physical integrity of soils by protecting soils from erosion, mass movement, instability, compaction, pulverisation and loss.
- Protect water quality (physical, chemical, biological) by measures controlling disturbance resulting from forest activities.
- Identify and maintain at appropriate levels, water yield and flow duration in catchments.

E *Positive contribution of forests to global geochemical cycles*

- Maintain the positive contribution of forests to the global geochemical cycle (includes climate, air and water quality and deposition).

F *Long-term social and economic benefits*

- Maintain and enhance, on an ecologically sustainable basis, production of wood and wood products, including value adding, investment and resource security.
- Provided it is ecologically sustainable, set, maintain or enhance the level of use of non-wood products and uses, including bee-keeping, grazing, mining, recreation and tourism, reliable water supply.
- Maintain and enhance, on an ecologically sustainable basis, the provision of employment and community needs such as economic diversification, investment skills, education, jobs stability, training and Indigenous needs.
- Encourage the establishment and use of plantation forests on existing cleared land to expand social and economic values.
- Maintain and enhance the intangible social welfare benefits which forests provide.

G *Natural and cultural heritage values*

- Protect social, natural and cultural heritage values and sites, including aesthetic, landscape, historic, cultural, educational, scenic, spiritual and scientific values, including Indigenous values and sites.

Principle 2: Ensure public participation, access to information, accountability and transparency in the delivery of ESFM.

- Ensure public participation in decision-making processes at local, regional and State and Federal levels.
- Ensure comprehensive, timely and reasonable public access to information.
- Ensure transparency, openness and accountability in decision making processes and performance.

Principle 3: Ensure legislation, policies, institutional framework, codes, standards and practices related to forest management require and provide incentives for ecologically sustainable management of the native forest estate.

Establish a process for shared management and administration, recognising the customary and traditional rights of Indigenous people, and the interests of private land-holders and other stakeholders in an area's management.

Principle 4: Apply precautionary principles for prevention of environmental degradation

The incorporation of the precautionary principle into decision making has been endorsed by State and Commonwealth Governments (Commonwealth of Australia 1992 p. 49, IGAE 1992) and is defined as *'where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. In the application of the precautionary principle, public and private decisions should be guided by:*

- *careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment; and*
- *an assessment of the risk-weighted consequences of various options.'*

Principle 5: Apply best available knowledge and adaptive management processes

ESFM would utilise the concept of adaptive management and continuous improvement based on best science and expert advice and targeted research on critical gaps in knowledge, monitoring or evaluation.

Appendix 6

Excerpt from *Independent review of the report on progress with implementation of the NSW Regional Forest Agreements for the second and third five-yearly reviews 2004 – 2014*

Recommendations from the first five-yearly independent review of NSW RFAs

With comments from the reviewer of the second and third five yearly reviews

For the first five-yearly review of the NSW RFAs, the Parties appointed Mr Scott Spencer of Queensland as the Independent Assessor to review the *Draft Report on Progress with Implementation of the New South Wales Regional Forest Agreements (RFAs)* and the 32 public submissions received as part of this review.

In November 2009, the Independent Assessor provided his report¹²², which included 18 recommendations for the Australian and NSW governments to consider in the ongoing implementation of the NSW RFAs.

On 15 March 2010, the Independent Assessor's report was tabled in the Australian Parliament.

The NSW and Australian governments produced a Joint Government Response to the Independent Assessor's report¹²³, which was tabled in the House of Representatives of the Australian Parliament on 30 October 2014.

This section provides an overview of progress against the recommendations from the independent review of the first five-yearly implementation report under the NSW RFAs.

Of the 18 recommendations for continued implementation of the NSW RFAs arising from the 2009 independent review, the Parties have indicated that:

- 11 have been completed or fully implemented
- 2 have been partly implemented
- 5 are underway through ongoing actions that have been implemented since 2014.

The reviewer has assessed progress on implementing the recommendation as:

¹²²Spencer S 2009, *Final Report on Progress with Implementation of NSW Regional Forest Agreements: Report of Independent Assessor*, accessed 9 November 2016, www.agriculture.gov.au/forestry/policies/rfa/publications/annual-reports/nsw

¹²³ NSW and Australian Governments 2014b, Joint Australian and New South Wales Government Response

to the Final Report on Progress with Implementation of the NSW Regional Forest Agreements: Report of the Independent Assessor, accessed 9 November 2016 www.agriculture.gov.au/SiteCollectionDocuments/rfa/publications/annual-reports/nsw/jointresponsenswrf.pdf

- 10 have been achieved / implemented
- 2 have been part achieved
- 2 are underway and ongoing
- 4 have not been achieved or satisfactorily implemented.

Recommendation	Joint Government Response	Status for Periods 2&3	Reviewer's comments
<p>1. That for future reviews the Parties consider supplementing the notification process by directly advising key community, conservation and industry groups of the review and the various processes involved.</p>	<p>Considered important. Public notices were placed for the first period review seeking comment.</p>	<p>Underway and completed when the Implementation report is released</p> <p>Key stakeholder list has been prepared and used to notify groups once the Implementation Report was released.</p>	<p>Achieved although submitters including some who would be key stakeholders, commonly complained they had not been notified and were 'taken by surprise' with the review announcement. The then short time line for submissions was also seen as an issue.</p>
<p>2. With the approval of the submitters, the Parties refer the submissions to this review to:</p> <ul style="list-style-type: none"> • the NSW Review • the Australian Government, to be taken into account during development of its response of the Independent Review of the EPBC Act (EPBC Review 2008) • Executive Management of the NSW forest agencies. 	<p>Both Parties supported the submissions being used outside the review process.</p>	<p>Completed</p>	<p>Achieved</p>
<p>3. The Parties consider initiating a further review process as soon as possible to meet the agreed RFAs second review time requirements and;</p>	<p>Both Parties supported the intent of the recommendation to commence further five-year review on time.</p>	<p>Underway. The Parties acknowledge there have been delays. The combined second and third five-yearly review will focus milestones as well as</p>	<p>Not achieved - 4 years late on the third review and 9 years on the second review. This delay reflects poorly on the stated intent of transparency,</p>

Recommendation	Joint Government Response	Status for Periods 2&3	Reviewer's comments
these reviews focus on progress with milestones due to commence in the second 5 years of the RFAs, actions underway from the first 5 years, and indicators that are considered critical to the success of the RFAs in areas such as reserve management, species protection (including pest animal and weed management), management planning and wood supply estimates.		commitments or obligations, sustainability indicators and demonstrate ESFM.	commitment and accountability through the RFA process.
4. That the Parties to the RFA consider: <ul style="list-style-type: none"> • The resource requirements of ongoing and yet to commence undertakings under the three RFAs to determine whether implementation is likely within agreed timelines, and/or • Whether reprioritization of any milestones is necessary to ensure delivery of initiatives which are essential to the implementation of the RFAs. 	- Both Parties committed to implementation of the milestones and applying resources to achieve this.	Fully implemented. The Parties have worked on the requirements within available resources and most have been achieved fully, in part or underway. No milestones have been amended except the timing of the second five-yearly review.	Not achieved with many milestones, commitments and obligations lagging. As well, milestones have not been amended when the Parties have been aware that changes were needed.
5. In future five-yearly reviews the Parties consider further including more commentary for Milestones in the "Underway" and "Concluded" categories	Supported by both Parties	Implemented with more commentary on progress and implementation	Achieved

Recommendation	Joint Government Response	Status for Periods 2&3	Reviewer's comments
to provide an assessment of the adequacy of progress of these milestones.			
6. The Parties continue to ensure their current data release and publication strategies align with modern practice for the release of publicly held information.	Implemented	Implemented with the Parties engaging with interested groups and regularly releasing reports and information on the states forest.	Achieved
7. The NSW Government continue to give priority to completion and publication of plans of management for various dedicated areas.	NSW continues to prioritise completion and publication of management plans for various dedicated areas.	Underway	Underway with progress considering the expansion of reserves and parks. The interim step of preparing plans / strategies to cover the key risks of fire, pests and visitor management is commended.
8. In future reviews the Parties should provide more information about development of various threatened species recovery plans to allow an assessment of the adequacy of progress in the management of threatened species as it relates to Milestone 23.	Both Parties support the provision of information on the development and implementation of threatened species and ecological communities' recovery plans and recovery actions.	Fully implemented	Implemented
9. The NSW Government should give high priority to finalisation of its Park Management Program and this issue should be specifically reported on as part of the second 5 yearly RFAs Review.	The Parties agree that the PMP should continue to be developed and made publicly available, where appropriate.	Underway with good progress on legislation, assessment of all parks within New South Wales four times since 2005 and state-wide reporting on progress.	Underway and ongoing. The PMP is dynamic and an adaptive program that will be adjusted over time to meet the needs of the park system and its management.
10. The NSW Government should continue to give priority to audit and	Both Parties agree that an effective and credible audit and compliance framework	Fully implemented	Implemented and ongoing with independent DPI audits of Crown-timber land

Recommendation	Joint Government Response	Status for Periods 2&3	Reviewer's comments
compliance activity by each agency involved in the RFAs and that auditing be closely scrutinised as part of the NSW Review.	is essential for both the implementation of and public confidence in the three NSW RFAs.		compliance, and private native forestry and plantation forestry audits. Needs to be extended to all agencies.
11. The NSW Government should continue to give high priority to the release of the NSW Forest Management System covering public and private land. It should be completed before the next review.	Both Parties agree that a high priority should be given to the release of the New South Wales and met F MS covering public and private land.	Underway and will be fully implemented on the publication of the implementation report	Not achieved - outside the timeline set in recommendation 11. It is important that the forest management system is readily available and that it clearly illustrates how the States forests are managed.
12. The NSW Government should initiate immediate action to establish and deliver the regional ESFM performance reports as required under Milestone 41.	Both Parties agree that the regional ESFM performance reports should be publicly available.	Fully implemented	Implemented in Part I. ESFM performance reports are the responsibility of FCNSW. The ESFM indicators have been revised by Government and released as an EPA publication. The new indicators align with MIG 2018 indicators.
13. The NSW Government should give the highest priority to the continuous improvement system for FRAMES as required under Milestone 48 and development of the inventory plot measurement systems required across the various regions as required under Milestone 49.	Both Parties agree that the FRAMES provides the toolkit of applications for long term wood supply determinations from State forests in the three RFA regions where harvesting is permitted.	Implemented in part	Implemented. FCNSW continues to improve FRAMES and this will be ongoing. The measurement of inventory plots will be required to provide base data.
14. The NSW Government should ensure that its FRAMES and associated supply models undergo regular (5 yearly) expert independent	Both Parties agree that the frames program would benefit from expert independent assessment to support confidence in the program	Fully implemented	Implemented with two reviews of FRAMES and regional woods flow models by a timber supply expert.

Recommendation	Joint Government Response	Status for Periods 2&3	Reviewer's comments
assessment to confirm the efficacy of any improvement and other amendments to the system			
<p>15. The Parties should: Satisfy themselves that the requirements of Milestone 51 to provide annual comparisons of actual and modelled yields cannot be cost effectively or safely delivered in the form originally envisioned in the RFAs and If so, initiate action to develop an alternative arrangement that allows consideration of actual v modelled performance using the information already produced by Forests NSW. This data should be published annually. Keep this matter under continuous review to take advantage of refinements in FRAMES that might allow better comparison of actual v modelled performance at a sub-regional scale.</p>	Not described	Implemented in part	Not achieved – the main recommendation was that the actual yield would be checked against the predicted. FCNSW are working to make FRAMES operative at the state, RFA and tactical levels and to be able to compare actual with predicted product flows.
<p>16. The NSW Government should take early action to complete the various reviews of sustainable yield calculations as required under Milestone 53. These reviews should be made available publicly when completed. Publication of a description of sustainable yield calculation</p>	Both Parties agree that reviews of sustainable yield which delivers wood supply yields for the three New South Wales RFA regions are essential to the socioeconomic outcomes under the New South Wales RFAs.	Fully implemented	Achieved- there has been a lot of work refining the sustainable yield calculations including expert reviews. This work is ongoing to improve components of the inputs such as described in response to Recommendation 15.

Recommendation	Joint Government Response	Status for Periods 2&3	Reviewer's comments
methodologies as required by Milestone 54 should occur as soon as possible.			
17. That the Parties to the RFAs consider whether more systematic, cost effective approaches could be available to collect data on threatened species over time or in its absence, whether it would be valid to release appropriately qualified comparative data developed from existing sources.	Both Parties support the collection of data on threatened species on a systematic basis.	Fully implemented	Implemented. New South Wales established a systematic and cost effective program for addressing threatened species management through the 'savings our species' program. This program sets out the government's species management plan and what needs to be done to secure New South Wales threatened species in the wild over the next hundred years.
18. The NSW Government should explore accessing data on soil and water quality from all relevant Commonwealth, State and Local government agencies including community NRM volunteer groups, with a view to developing a more systematic and comprehensive approach to monitoring of these attributes in forest areas.	Both Parties agreed to access all data that may be beneficial to the monitoring of the ESFM criteria and indicators as adopted.	Fully implemented	Implemented and ongoing.

Points raised in the submissions

The recommendations made by the Independent Assessor seem to address many of the issues raised by the submissions made as part of this review. The Status for Period 2&3 column indicates most of the actions outlined in the Joint Government Response are complete. It is therefore strange that the majority of submissions submitted as part of this review considered these issues to remain unresolved.

Specific issues raised by the submissions included:

- Overall dissatisfaction with the level of resourcing provided and the systems in place for conducting the five-yearly reviews and monitoring achievement of ESFM.
- Insufficient EPA field staff to audit on-ground logging operations for breach of prescription.
- Insufficient monitoring of sustainability indicators across all land tenures to give a landscape perspective.
- Poor engagement with local interest groups regarding the collection and use of data on threatened species.
- Lack of a process to address issues once identified, such as issues regarding shortages in sustainable yield.
- The absence of sufficient threatened species Recovery Plans.

Reviewer's comments

Overall there has been progress implementing the recommendations from the first review and a number of pleasing developments prompted by these recommendations. These developments include significant progress in developing the Park Management Program and work on the high-risk areas pending the writing of actual plans for all areas. There has also been significant progress on collaborative work with threatened species protection and planning.

While it is still work in progress, FRAMES is improving in providing sustainable yield estimates. The FRAMES system and the derived sustainable yield estimates have been closely examined by experts, with subsequent progressive refinements. The first review of the RFA recommended the FRAMES predicted volumes be compared to actual log volumes and there have been three reconciliations of this important check.

There remain a number of areas where the Parties need to improve including:

- publishing of the current status of the ESFM indicators for each RFA. While this is partly covered by other reports, a consolidated report on these important descriptors is essential. (Note – this was achieved in 2016)
- publishing the NSW Forest Management System, clearly outlining the processes for managing forests on both private and public land.

There is still work to be done in regard to the agencies contacting all stakeholders well in advance of an RFA review. While the agencies have identified many key stakeholders, it is important they keep this list updated to include the many groups with an interest in forest management.

The ongoing problem of lagging on timelines for review of the RFAs is a concern. The review of period two and three of the three RFAs was around 9 and 4 years behind schedule. This follows the first review being four years behind schedule, although it was limited to milestones only.

Because the Parties failed to meet what many consider to be the most important milestone of the RFAs (that is, the review of progress in implementing the RFAs), many submitters questioned whether the Parties are genuinely committed to RFA processes. However, the reviewer finds the Report to be an impressive document that supports the Parties' commitment to RFA processes.

The reviewer recognises the agencies may find it difficult to provide adequate resources to support all the processes and commitments of the RFAs, especially where RFA processes have

remained static while an evolving work environment has resulted in the need for agencies to prioritise the many competing demands on their resources.

The reviewer hopes future RFAs will be written to be more relevant, adaptive and focused on the elements that are important and current in forest management, while also protecting the integrity, accountability and transparency of the original RFAs. Hopefully this will then lead to the agencies providing adequate resourcing to both implement and review the RFAs on schedule.