

Sensitive – Compliance and Enforcement

PDR: EC16-000613

To: Deputy Secretary Dean Knudson (for decision)**Through:** Matt Cahill, First Assistant Secretary, Environment Standards Division**PROPOSED COMPLIANCE AND ENFORCEMENT ACTIONS CONCERNING KINGVALE STATION****Timing:** 22 June 2016, to begin the process to compel a referral for the clearing of native vegetation and cultivation, which has a high risk of having a significant impact on the Great Barrier Reef World Heritage area.**Recommendations:**

1. That you agree that there are sufficient reasons to believe that Mr Harris (or his agents) are proposing to undertake high value agriculture activities at Kingvale Station that you think may be, or is, a controlled action under the *Environment Protection and Biodiversity Conservation Act 1999*.

Agreed / Not agreed

2. Subject to your agreement to recommendation 1, that you agree to commence the process of requesting referral of the proposed action under section 70 of the EPBC Act.

Agreed / Not agreed

3. If you agree to request a referral under section 70 process, that you sign the letter at **Attachment A**.

Signed / Not signed

Deputy Secretary: Dean Knudson



Date: 23-June-16

Comments:

This brief concerns our proposed compliance and enforcement strategy for potential breaches of *Environment Protection and Biodiversity Conservation Act 1999* in connection with land clearing and cultivation in agricultural areas. Its inappropriate disclosure may prejudice our compliance and enforcement processes for these and other matters.

Key Points:

1. This brief seeks your agreement to start the process of requesting the referral of a proposal by the landholder of Kingvale Station to undertake high value agriculture activities (being broad-scale clearing and planting sorghum crops), in accordance with section 70 of the *Environment Protection and Biodiversity Conservation Act 1999*.

2. Kingvale Station, located near Laura, is leased from the Crown by Mr Scott Harris, who has been granted a permit from the Queensland Government to clear 2 560 hectares of native vegetation for high value agriculture activities (**Attachment B**).
 - a. Mr Harris plans high value agriculture activities for several areas on Kingvale (**Attachment C**). Two areas proposed for clearing are located in the south of the property (marked as A1 and A2 on the map), and there is one larger area in the north of the property (marked as A3, A4 and A5). Areas A3, A4 and A5 constitute an aggregate area of approximately 2 100 hectares of native vegetation.
 - b. Between 14 – 17 December 2015, department compliance officers visited Kingvale under a monitoring warrant with an ecologist and a fluvial geomorphologist. Their expert reports, including a summary, are provided at **Attachment D**.
 - i. The fluvial geomorphologist's report indicates that clearing the northern part of Kingvale may significantly impact the Great Barrier Reef due to reduced water quality.
3. Compelling a referral of the high value agriculture activities at Kingvale is the best way to let the Department assess the potential impacts on protected matters.
 - a. Mr Harris has started clearing and the window for pursuing a voluntary referral is closing.
 - b. Kingvale's remoteness makes it difficult to monitor the time and extent of any clearing and cultivation.
 - c. We have previously engaged with Mr Harris about planned clearing at Kingvale, through **Section 47F** and, more recently, through his legal representative, Mr David Kempton. However, after discussions and correspondence with Mr Kempton, we consider Mr Harris to now be seriously disengaged.
 - d. On this basis, we think that it is no longer appropriate to pursue referral by informal and cooperative means.

Do you have the power to compel a referral under section 70?

4. The Minister has delegated decisions to compel a referral under section 70 of the EPBC Act to you (**Attachment E**). You may decide to start the process to compel referral by making a formal referral request to the person proposing to take the action.
5. To exercise this delegated power, you must:
 - a. believe on a reasonable basis that a person is proposing to take an action; and
 - b. think that the action may be or is a controlled action.

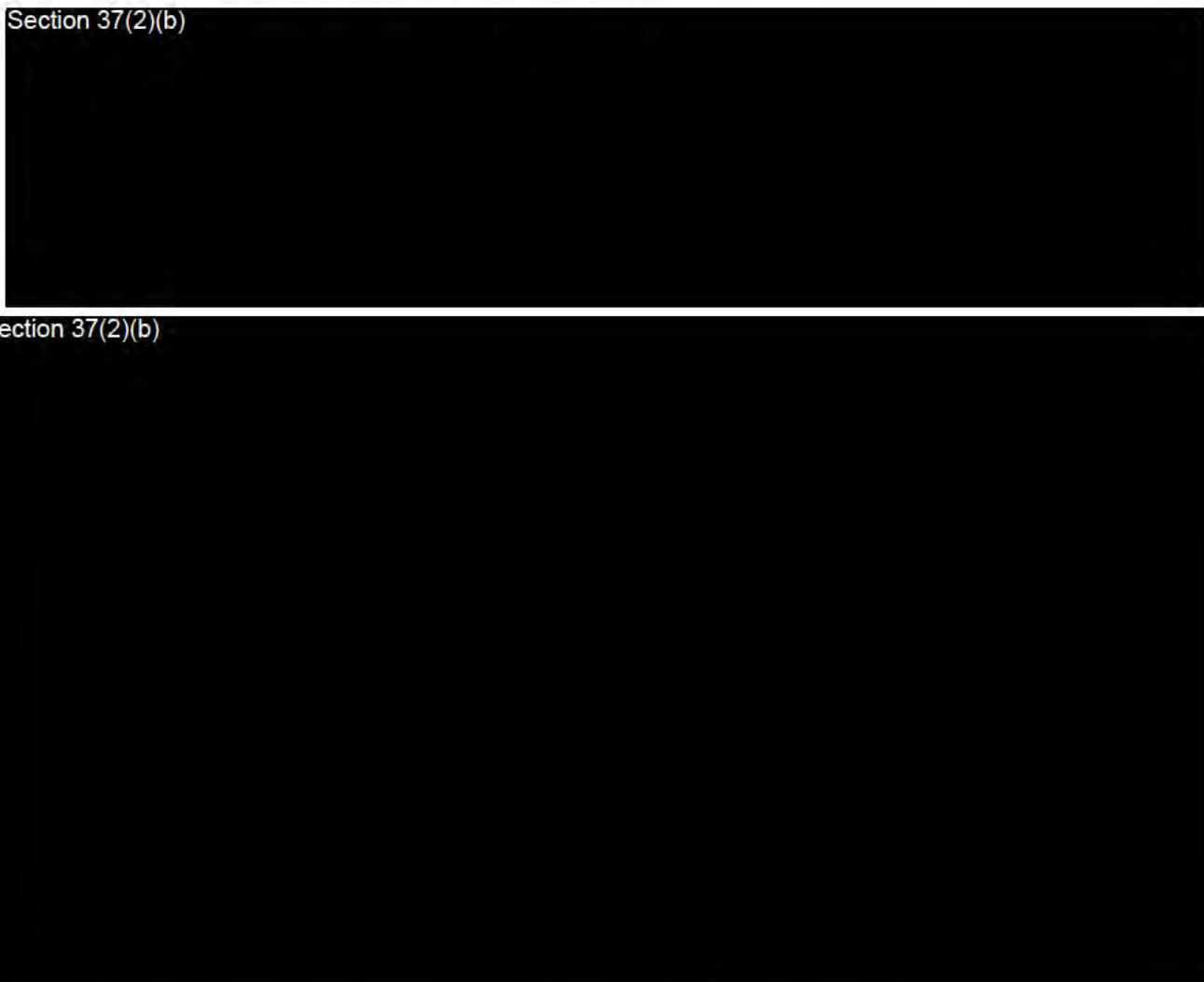
Is there evidence that Mr Harris is proposing to take an action?

6. **Attachment F** annexes draft findings of fact about whether Mr Harris proposes to take an action. These include:
 - a. On 7 December 2015 when asked when clearing would be undertaken, Mr Harris's farm manager said words to the effect of "*I don't know, it could be tomorrow, next week or*

April. The dozers are onsite and ready to go, I'm just waiting for drivers and depending on weather conditions, it could be any day but really I can't tell you when".

- b. In material provided to the Queensland Government in support of the Mr Harris's application for the clearing permit, Mr Harris described the proposed timing of steps in the high value agriculture activities as:
- "Pull timber after the wet season (after April) when it is dry enough to get dozers on country. This time of year also has maximum ground cover.
 - "September – burn the fallen timber. This avoids the more intense dry period later in the year.
 - "September – December, Stick rake the area and ground preparation by using disc ploughs
 - "On receipt of the first showers of rain ... the proponents will spray weed with ground –rig (boom) and start planting using a large Multiplanter (zero tillage machines that can direct sow and have high clearance)".

Section 37(2)(b)



Section 37(2)(b)

Could the high value agriculture activities be a controlled action?

9. **Attachment F** also annexes draft findings of fact about whether the high value agriculture activities may be a controlled action.

10. A controlled action is an action that is prohibited by Part 3 of the EPBC Act, unless an approval is obtained under Part 9. Controlled actions include those actions carried out without approval that have, will have, or are likely to have a significant impact on:
 - a. the world heritage values of a declared World Heritage Property, in this case the Great Barrier Reef;
 - b. the Great Barrier Reef Marine Park; and
 - c. listed threatened species or endangered communities.
11. We are particularly concerned that high value agriculture activities in the northern part of Kingvale have a high risk of causing a significant impact on the Great Barrier Reef Marine Park and World Heritage area.
 - a. The permitted clearing in the northern part of Kingvale (approx 2,000 hectares) is within the Normanby Catchment, which is approximately 200 km (115 km straight line) from the Reef.
 - b. There are potential significant impacts to the Great Barrier Reef Marine Park and World Heritage Area, for example through freshwater inflows, diffuse nutrient and sediment runoff.
 - c. The Great Barrier Reef Marine Park's *Strategic Assessment Report* characterises the adverse impact of nutrients and sediment on coral reefs as very high, meaning that the effects of the impact are widespread to the extent that the outstanding universal values of that habitat are severely compromised. The impact of increased freshwater inflow has been assessed as high, meaning that the effects of the impact are obvious in many locations or for many species to the extent that significant additional intervention would be required to maintain the values.
 - i. The Minister endorsed the Report under section 146 of the EPBC Act as adequately addressing the impacts of actions within the Park.
 - ii. Abnormally large freshwater inflows can contribute to low salinity bleaching and mortality in corals, and/or widespread damage to seagrass meadows.
 - iii. Inorganic nutrients, including nitrogen and phosphorus, cause imbalances in the nutrient cycle of the Great Barrier Reef with a wide range of negative impacts.
 - iv. Increased nutrient loads have also been linked to outbreaks of crown of thorn starfish, because the increased nutrients provide food for their larvae. Such outbreaks have been one of the major causes of coral death and reef damage on the Great Barrier Reef since surveys began in the 1980s.
 - v. Increased sediment loads have far reaching effects for the Great Barrier Reef values. In relation to fine sediment, these can include smothering seagrass and corals, making it harder or impossible for them to grow, survive and reproduce.
 - d. We sought expert advice from a fluvial geomorphology consultant, Dr Jeffrey Shellberg, about the potential downstream impacts from the proposed vegetation clearing at Kingvale, taking into account the work already conducted by the landholder's expert (**Attachment D**). Dr Shellberg's key conclusions are that:

- i. Fine sediment pollution from Kingvale could contribute to the cumulative impacts of degraded water quality from land use delivered to the Great Barrier Reef, and that the operational and ongoing works at Kingvale could contribute to cumulative adverse impacts on the reef which could push the currently healthy local reef beyond thresholds of ecological stability; and
 - ii. Such health impacts and water quality decline are increasing with land use intensification in the northern Great Barrier Reef.
- e. The Referral Guidelines for the Great Barrier Reef World Heritage Area identify '*substantive land use change in the catchments*' as an example of an activity with a high risk of significant impact. Referral precedents for similar actions are provided at **Attachment H**.

12. Uncertainty also remains about potential impacts to other protected matters from high value agriculture activities in the northern section of Kingvale, including to the critically endangered Bare-rumped Sheathtail Bat and endangered Northern Quoll.

How is your section 70 power exercised?

13. The section 70 process starts with you formally requesting that Mr Harris refer the action.
- a. The draft letter at **Attachment A** does this, and also sets out draft findings as to why you believe that Mr Harris is proposing to take the action, and why you think that it may be a controlled action.
14. If this letter is sent, Mr Harris has 15 business days to submit a referral (or such longer period as may be agreed).
15. If Mr Harris does not comply with the referral request, you have 20 business days after the end of the 15 day period to decide to 'deem' the referral as having been made.
16. If the referral is 'deemed', the assessment process may be longer and more complex, because it is likely that no materials will have been submitted to us for assessment.
17. This may require us to use statutory powers (such as notices to produce) to seek further information to allow consideration as to whether the action is a controlled action.

What if clearing is commenced or continues following a call-in?

18. If compelling referral does not stop clearing until the action had been properly assessed, or if it triggers immediate clearing within the 15 business day referral period, then we would need to assess whether to escalate our response (for example, by seeking to enter the property under a warrant and/or seeking an injunction from the Federal Court).
19. Consideration could also be given referring the matter to the Commonwealth Director of Public Prosecutions for criminal proceedings for a breach of section 74AA of the Act, which prohibits taking an action before a decision is made in relation a referral.
20. General Counsel Branch has reviewed this brief, and the Australian Government Solicitor have reviewed the attached draft letter.

Shane Gaddes
Assistant Secretary
Compliance and Enforcement Branch
Ph: 6274 2760
Mob: Section 22
[25/06/2016]

Contact Officer: Section 22
Compliance and Enforcement Branch
Ph: Section 22

ATTACHMENTS

- A. Letter to Scott Harris, through his legal representative Mr David Kempton, for signature
- B. Queensland Permit to clear native vegetation on the property for Agricultural pursuits
- C. Map showing location of areas proposed, or actually cleared within property boundary
- D. Overview of expert advice
 - a. Redleaf Environmental (2016) "*Kingsvale Station – MNES [matter of national environmental significance] Preliminary survey, December 2015, and assessment of species occurrence*" prepared by Dr Bruce Thomson B.App.Sci, MBA, PhD,
 - b. Shellberg (2016), "*Soil Erosion and Downstream Sedimentation Risks Associated with Proposed Vegetation Clearing for Agricultural Development on Kingsvale Station, Lot 1 on Plan KG2, Cape York Peninsula*" by Dr. Jeffrey Shellberg, a Fluvial Geomorphology Consultant
- E. Delegations instrument, for noting
- F. Draft findings of fact
- G. Satellite Imagery of property showing
 - a. Clearing in areas A1 and A2
 - b. Areas A3, A4 and A5
- H. Referral precedents for similar impacts, for noting



Australian Government
Department of the Environment

Mr Scott Harris
c/o Mr David Kempton
PO Box 732
EDGE HILL QLD 4870

By Email: dkempton@bigpond.com

Dear Mr Harris

Kingvale Station, Cape York, Queensland: Request for referral of action under section 70 of the *Environment Protection and Biodiversity Conservation Act 1999*

I refer to the Department's previous correspondence with you concerning high value agricultural activities at Kingvale Station. The Department has been seeking to engage with you about the potential impacts of your activities on matters protected under the *Environment Protection and Biodiversity Conservation Act 1999*.

As we have not been able to engage with you about this matter, and I have concerns about imminent clearing at Kingvale and its potential to impact on matters protected by the EPBC Act, the Department has applied to the Cairns Magistrates Court for a monitoring warrant concerning Kingvale Station. The Court issued the monitoring warrant on Wednesday, 21 June 2016. The Department will write to you separately about this.

Request for referral under the EPBC Act

The purpose of this letter is to formally request that you refer the proposed action to the Federal Minister for the Environment under section 70 of the EPBC Act. The proposed action is:

*The clearing of vegetation at Kingvale Station (Lot 1 on KG3, Cook Shire Council) as described in the development permit issued to Mr Scott Alexander Harris on 16 April 2014 by the Queensland Department of State Development, Infrastructure and Planning, to the extent that it occurs in the areas identified as A3, A4 or A5 of the map [see **Attachment 1**], the subsequent use of that cleared land for the production of sorghum, and intensification of cattle grazing.*

Section 70 of the EPBC Act

I have attached a copy of section 70 of the EPBC Act to this letter. Section 70(1) Act provides:

(1) If the Minister believes a person proposes to take an action that the Minister thinks may be or is a controlled action, the Minister may request:

(a) the person; or

(b) a State, self-governing Territory or agency of a State or self-governing Territory that the Minister believes has administrative responsibilities relating to the action;

to refer the proposal to the Minister within 15 business days or a longer period agreed by the Minister and the requested person, State, Territory or agency (as appropriate).

Under section 515 of the EPBC Act the Minister may delegate any of his powers under the EPBC Act to an officer or employee in the Department of the Environment. The Minister has delegated his power to make decisions under section 70 to me in my capacity as a Deputy Secretary of the Department.

Section 70(2) of the EPBC Act requires that in making a request under section 70(1) the decision maker must act in accordance with the regulations, if any. No applicable regulations have been made.

Request for referral

I believe that you intend to take the proposed action described above, and I think this action may be a 'controlled action', as that term is defined in the EPBC Act.

For these reasons, I request that you refer the proposed action to the Minister within 15 business days of the date of this letter, which is **Friday, 15 July 2016**.

To refer the proposed action you should complete enclosed form (**Attachment 2**) (which is available online at: <http://www.environment.gov.au/protection/environment-assessments/assessment-and-approval-process/refer-an-action>) and submit it in the way set out in the instructions on the form.

You are not obliged to make a referral concerning the proposed action. However, if you do not, then:

- The Minister or his delegate may decide that the EPBC Act has effect as if the proposal had been referred, as described in section 70.
- If you take the proposed action and the taking of this action without approval contravenes Part 3 of the EPBC Act then the Department may:
 - seek an injunction to stop the proposed action;
 - apply to the court to impose a civil remedy and pecuniary penalty;
 - seek an order for you to remediate the damage caused by the proposed action; or
 - refer you for prosecution for a criminal offence, which is punishable by imprisonment or a fine.

Considerations relevant to my decision to request you to refer the matter

I have set out in **Attachment 3** to this letter the findings on which I have based my belief that you propose to take the proposed action and why I think that this action may be a controlled action for the purposes of the EPBC Act.

I have not reached a concluded view that the proposed action is a controlled action. Nor have I formed a view as to whether or not the proposed action, if referred, would be approved under Part 9 of the EPBC Act.

The EPBC Act does not require me to make either of those decisions for the purpose of making this request. Section 70(1) requires only that I think that the proposed action may be a controlled action.

Preliminary view on whether to deem the proposal to be referred

Based on the information presently available to me, I have formed a preliminary view that, should you decide not to refer the proposed action to the Minister, the Minister or his delegate should make a decision under section 70(3) of the EPBC Act to deem you to have referred the proposed action to the Minister.

I have formed this view because:

- I think that the proposed action may be a controlled action for the reasons explained in Attachment 3; and
- I consider that the appropriate way to determine if the proposed action is a controlled action and, if so, whether it should be approved under the EPBC Act, is by using the statutory assessment process set out in the Act.

Invitation to make submission if you do not intend to refer the action

If you do not intend to refer the proposed action to the Minister, then I invite you to write to me to set out the reasons why you think that the proposed action is not a controlled action for the purposes of the EPBC Act. In doing so, you may also set out any other reasons why I should or should not make a decision under section 70(3) to deem the proposed action to be referred. Please provide any relevant supporting information or documents.

You should provide any submissions, information or documents by **4.00pm on Friday, 15 July 2016**. The Minister or his delegate will then consider any submissions, information or documents in making a decision under section 70(3) of the EPBC Act.

You are not obliged to provide any response to this letter. However, if the Department does not receive any response by **4.00pm on Friday, 15 July 2016** then the Minister or his delegate may make a decision under section 70(3) of the EPBC Act without further notice to you. You will be notified if any such decision is made.

How to respond to this letter

To provide a written response to the matters raised in this letter, please submit your response by email to compliance@environment.gov.au or by post to:

Director - Compliance Section
Environment Standards Division
Department of the Environment
GPO Box 787
Canberra ACT 2601

Please note that, if you post your response, you should provide sufficient time for the Department to receive it by **4.00pm on Friday, 15 July 2016**.

Important matters to note when preparing your response

It is a criminal offence, punishable by fine or imprisonment, to provide false or misleading information to an officer of the Department (section 491 of the EPBC Act).

The Department may use any information you provide to determine whether the requirements of the EPBC Act have been complied with. If there is any apparent non-compliance with the Act, any information you provide may be used as evidence in subsequent court proceedings or for taking other compliance actions.

Contact information

For further information about this matter, please contact Section 22 [REDACTED] Director - Compliance Section, on Section 22 [REDACTED] or by email: Section 22 [REDACTED].

Yours sincerely

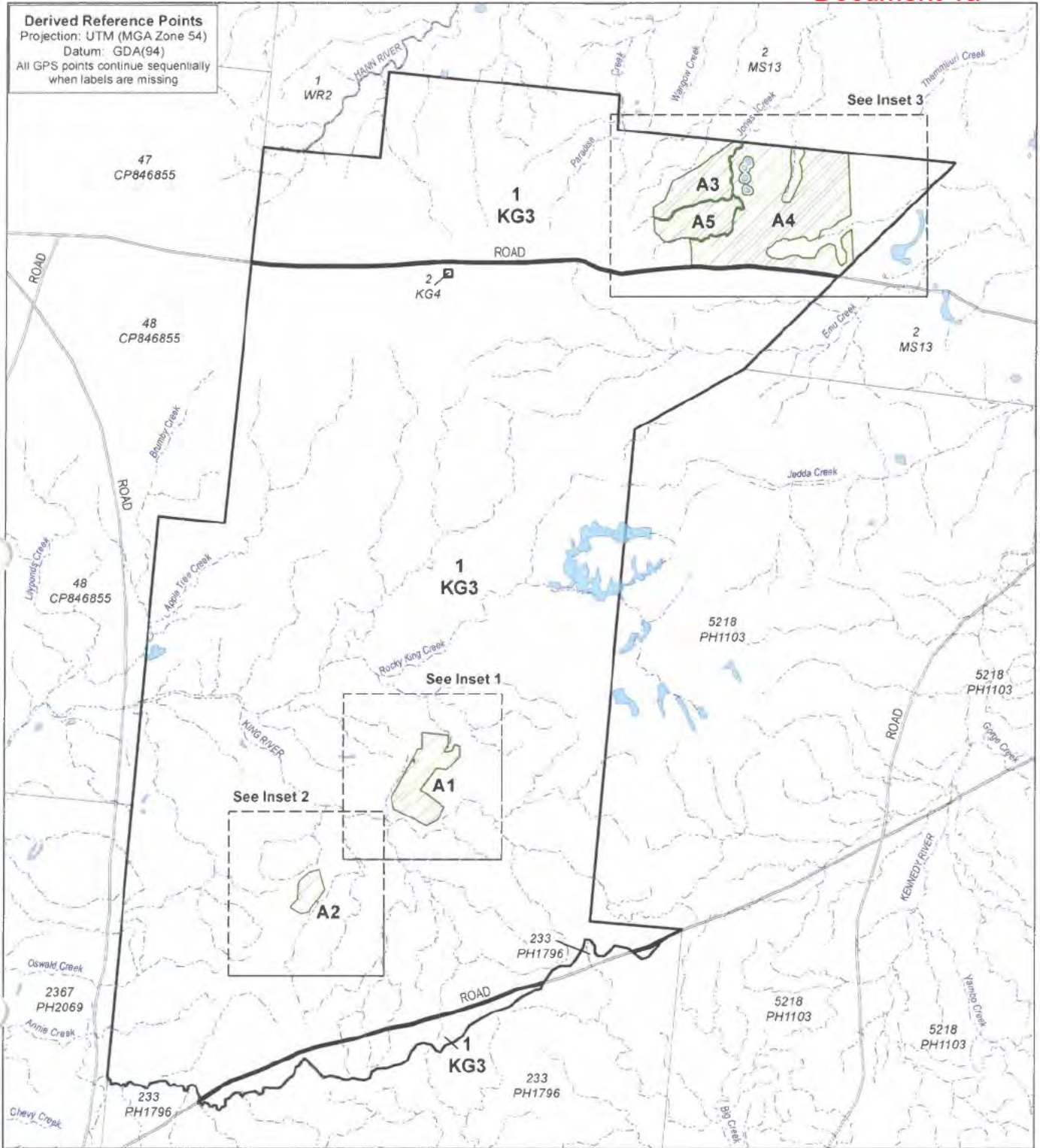


Dean Knudson
Deputy Secretary

23 June 2016

ATTACHMENTS

- Attachment 1 Map showing location of areas proposed, or actually cleared within property boundary
- Attachment 2 EPBC Act Referral Form
- Attachment 3 Information used for the consideration
- Attachment 4 Section 70 EPBC Act

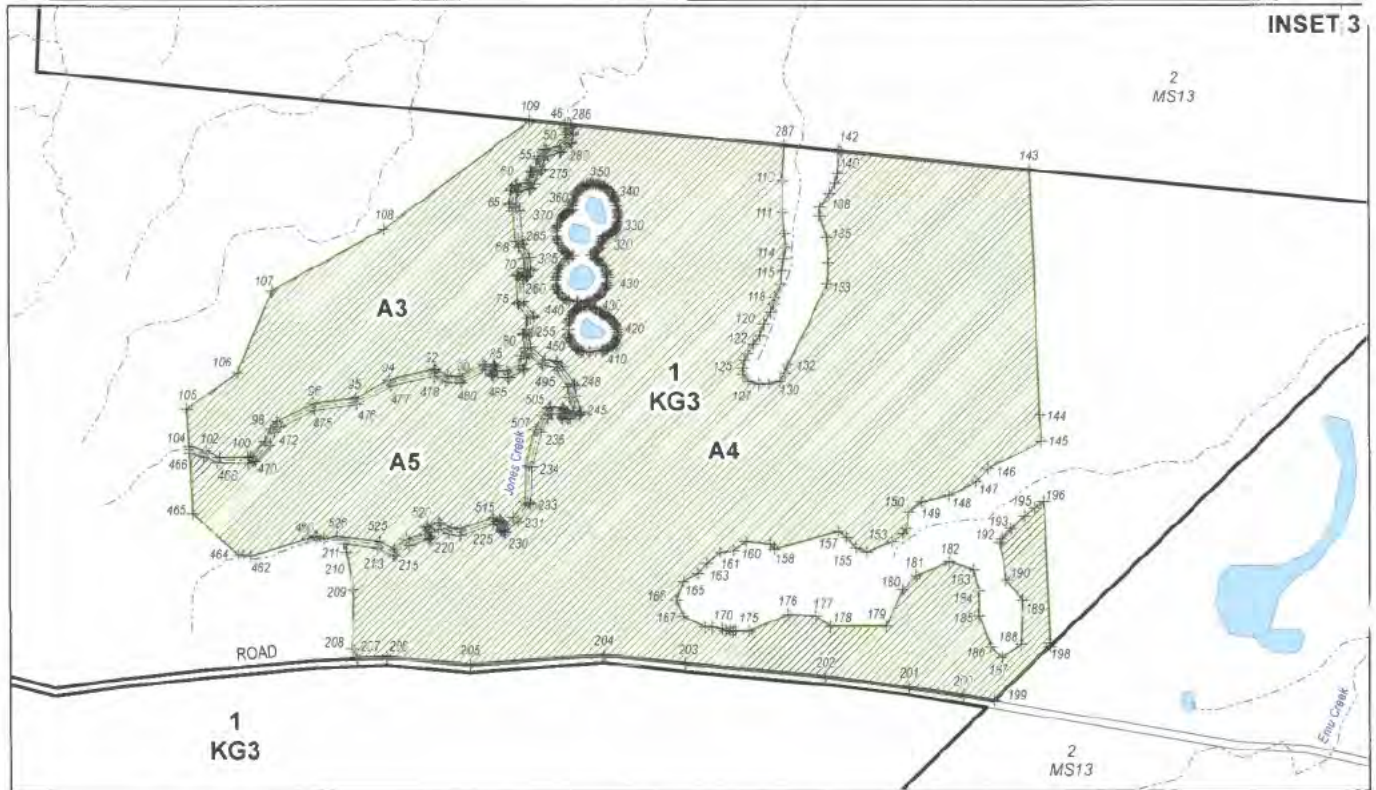
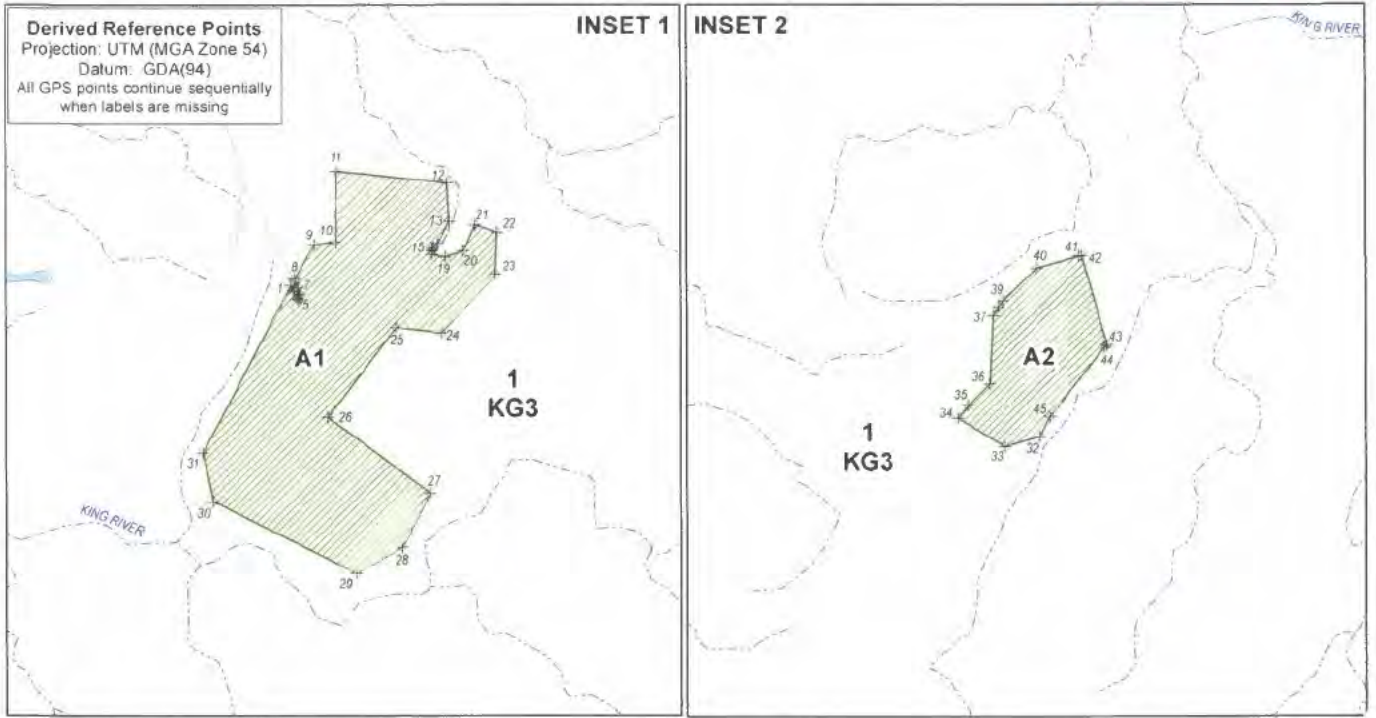


1:130000 @ A3 size
0 1 2 3 4 5 6 7 8 9 10 km
Projection: UTM (MGA Zone 54) Datum: GDA94

Note: Derived Reference Points are provided to assist in the location of the Referral Agency Response boundaries. Responsibility for locating these boundaries lies solely with the landholder and delegated contractor(s).

The property boundaries shown on this plan are APPROXIMATE ONLY. They are NOT an accurate representation of the legal boundaries.
Note: This plan must be read in conjunction with Referral Agency Response 2014/000805

LEGEND ◉ Derived Reference Points for GPS □ Subject Lot(s) Area A Watercourse Wetlands	Referral Agency Response (Vegetation) Plan Plan of Area A (Parts A1 - A5) in Lot 1 on KG3		 	
	CENTRE: TOWNSVILLE LOCALITY OF LAURA			REGION: NORTH LOCAL GOVT: COOK SHIRE
	Map Reference: 7566,7666,7766		Compiled from: DCDB, PVMP & VMO Notes	
	File Reference: 2014/000805		Prepared by: EMR	Date: 3 March 2014
RARP 2014/000805 Sheet 1 of 3				



1:40000 @ A3 size
0 0.5 1 1.5 2 2.5 3 km
Projection: UTM (MGA Zone 54) Datum: GDA94

Note: Derived Reference Points are provided to assist in the location of the Referral Agency Response boundaries. Responsibility for locating these boundaries lies solely with the landholder and delegated contractor(s).

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LEGEND Derived Reference Points for GPS Subject Lot(s) Area A Watercourse Wetlands Non Remnant RE	Referral Agency Response (Vegetation) Plan Plan of Area A (Parts A1 - A5) in Lot 1 on KG3		 RARP 2014/000805 Sheet 2 of 3
	CENTRE: TOWNSVILLE LOCALITY OF LAURA	REGION: NORTH LOCAL GOVT: COOK SHIRE	
	Map Reference: 7566,7665,7766	Compiled from: DCDB, PVMP & VMO Notes	
	File Reference: 2014/000805	Prepared by: EMR Date: 3 March 2014	

Derived Reference Points
Projection: UTM (MGA Zone 54)
Datum: GDA(94)
All GPS points continue sequentially
when labels are missing

Table with 24 columns: Point, Parcel, Easting, Northing, Point, Parcel, Easting, Northing, Point, Parcel, Easting, Northing, Point, Parcel, Easting, Northing, Point, Parcel, Easting, Northing, Point, Parcel, Easting, Northing. It contains a grid of coordinates for derived reference points.

Projection: UTM (MGA Zone 54)
Datum: GDA94

Note: Derived Reference Points are provided to assist in the location of the Referral Agency Response boundaries. Responsibility for locating these boundaries lies solely with the landholder and delegated contractor(s).

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Note: This plan must be read in conjunction with Referral Agency Response 2014/000805

Referral Agency Response (Vegetation) Plan
Plan of Area A (Parts A1 - A5) in Lot 1 on KG3



CENTRE: TOWNSVILLE
LOCALITY OF LAURA

REGION: NORTH
LOCAL GOVT: COOK SHIRE

RARP
2014/000805
Sheet 3 of 3

Map Reference: 7566 7666.7766

Compiled from: DCDB, PVMP & VMO Notes

File Reference: 2014/000805

Prepared by: EMR

Date: 3 March 2014



Referral of proposed action

What is a referral?

The *Environment Protection and Biodiversity Conservation Act 1999* (the EPBC Act) provides for the protection of the environment, especially matters of national environmental significance (NES). Under the EPBC Act, a person must not take an action that has, will have, or is likely to have a significant impact on any of the matters of NES without approval from the Australian Government Environment Minister or the Minister's delegate. (Further references to 'the Minister' in this form include references to the Minister's delegate.) To obtain approval from the Environment Minister, a proposed action should be referred. The purpose of a referral is to obtain a decision on whether your proposed action will need formal assessment and approval under the EPBC Act.

Your referral will be the principal basis for the Minister's decision as to whether approval is necessary and, if so, the type of assessment that will be undertaken. These decisions are made within 20 business days, provided sufficient information is provided in the referral.

Who can make a referral?

Referrals may be made by or on behalf of a person proposing to take an action, the Commonwealth or a Commonwealth agency, a state or territory government, or agency, provided that the relevant government or agency has administrative responsibilities relating to the action.

When do I need to make a referral?

A referral must be made for actions that are likely to have a significant impact on the following matters protected by Part 3 of the EPBC Act:

- World Heritage properties (sections 12 and 15A)
- National Heritage places (sections 15B and 15C)
- Wetlands of international importance (sections 16 and 17B)
- Listed threatened species and communities (sections 18 and 18A)
- Listed migratory species (sections 20 and 20A)
- Protection of the environment from nuclear actions (sections 21 and 22A)
- Commonwealth marine environment (sections 23 and 24A)
- Great Barrier Reef Marine Park (sections 24B and 24C)
- A water resource, in relation to coal seam gas development and large coal mining development (sections 24D and 24E)
- The environment, if the action involves Commonwealth land (sections 26 and 27A), including:
 - actions that are likely to have a significant impact on the environment of Commonwealth land (even if taken outside Commonwealth land);
 - actions taken on Commonwealth land that may have a significant impact on the environment generally;
- The environment, if the action is taken by the Commonwealth (section 28)
- Commonwealth Heritage places outside the Australian jurisdiction (sections 27B and 27C)

You may still make a referral if you believe your action is not going to have a significant impact, or if you are unsure. This will provide a greater level of certainty that Commonwealth assessment requirements have been met.

To help you decide whether or not your proposed action requires approval (and therefore, if you should make a referral), the following guidance is available from the Department's website:

- the Policy Statement titled Significant Impact Guidelines 1.1 – Matters of National Environmental Significance. Additional sectoral guidelines are also available.

- the Policy Statement titled Significant Impact Guidelines 1.2 - Actions on, or impacting upon, Commonwealth land, and actions by Commonwealth agencies.
- the Policy Statement titled Significant Impact Guidelines: Coal seam gas and large coal mining developments—Impacts on water resources.
- the interactive map tool (enter a location to obtain a report on what matters of NES may occur in that location).

Can I refer part of a larger action?

In certain circumstances, **the Minister may not accept a referral for an action that is a component of a larger action and may request the person proposing to take the action to refer the larger action for consideration under the EPBC Act (Section 74A, EPBC Act)**. If you wish to make a referral for a staged or component referral, read 'Fact Sheet 6 Staged Developments/Split Referrals' and contact the Referrals Gateway (1800 803 772).

Do I need a permit?

Some activities may also require a permit under other sections of the EPBC Act or another law of the Commonwealth. Information is available on the Department's web site.

Is your action in the Great Barrier Reef Marine Park?

If your action is in the Great Barrier Reef Marine Park it may require permission under the *Great Barrier Reef Marine Park Act 1975* (GBRMP Act). If a permission is required, referral of the action under the EPBC Act is deemed to be an application under the GBRMP Act (see section 37AB, GBRMP Act). This referral will be forwarded to the Great Barrier Reef Marine Park Authority (the Authority) for the Authority to commence its permit processes as required under the Great Barrier Reef Marine Park Regulations 1983. If a permission is not required under the GBRMP Act, no approval under the EPBC Act is required (see section 43, EPBC Act). The Authority can provide advice on relevant permission requirements applying to activities in the Marine Park.

The Authority is responsible for assessing applications for permissions under the GBRMP Act, GBRMP Regulations and Zoning Plan. Where assessment and approval is also required under the EPBC Act, a single integrated assessment for the purposes of both Acts will apply in most cases. Further information on environmental approval requirements applying to actions in the Great Barrier Reef Marine Park is available from <http://www.gbrmpa.gov.au/> or by contacting GBRMPA's Environmental Assessment and Management Section on (07) 4750 0700.

The Authority may require a permit application assessment fee to be paid in relation to the assessment of applications for permissions required under the GBRMP Act, even if the permission is made as a referral under the EPBC Act. Further information on this is available from the Authority:

Great Barrier Reef Marine Park Authority
2-68 Flinders Street PO Box 1379
Townsville QLD 4810
AUSTRALIA
Phone: + 61 7 4750 0700
Fax: + 61 7 4772 6093
www.gbrmpa.gov.au

What information do I need to provide?

Completing all parts of this form will ensure that you submit the required information and will also assist the Department to process your referral efficiently. If a section of the referral document is not applicable to your proposal enter N/A.

You can complete your referral by entering your information into this Word file.

Instructions

Instructions are provided in blue text throughout the form.

Attachments/supporting information

The referral form should contain sufficient information to provide an adequate basis for a decision on the likely impacts of the proposed action. You should also provide supporting documentation, such as environmental reports or surveys, as attachments.

Coloured maps, figures or photographs to help explain the project and its location should also be submitted with your referral. Aerial photographs, in particular, can provide a useful perspective and context. Figures should be good quality as they may be scanned and viewed electronically as black and white documents. Maps should be of a scale that clearly shows the location of the proposed action and any environmental aspects of interest.

Please ensure any attachments are below three megabytes (3mb) as they will be published on the Department's website for public comment. To minimise file size, enclose maps and figures as separate files if necessary. If unsure, contact the Referrals Gateway (email address below) for advice. Attachments larger than three megabytes (3mb) may delay processing of your referral.

Note: the Minister may decide not to publish information that the Minister is satisfied is commercial-in-confidence.

How do I pay for my referral?

From 1 October 2014 the Australian Government commenced cost recovery arrangements for environmental assessments and some strategic assessments under the EPBC Act. If an action is referred on or after 1 October 2014, then cost recovery will apply to both the referral and any assessment activities undertaken. Further information regarding cost recovery can be found on the [Department's website](#).

Payment of the referral fee can be made using one of the following methods:

- **EFT Payments can be made to:**

BSB: 092-009
Bank Account No. 115859
Amount: \$7352
Account Name: Department of the Environment.
Bank: Reserve Bank of Australia
Bank Address: 20-22 London Circuit Canberra ACT 2601
Description: The reference number provided (see note below)

- **Cheque** - Payable to "Department of the Environment". Include the reference number provided (see note below), and if posted, address:

The Referrals Gateway
Environment Assessment Branch
Department of the Environment
GPO Box 787
Canberra ACT 2601

- **Credit Card**

Please contact the Collector of Public Money (CPM) directly (call (02) 6274 2930 or 6274 20260 and provide the reference number (see note below).

Note: In order to receive a reference number, submit your referral and the Referrals Gateway will email you the reference number.

How do I submit a referral?

Referrals may be submitted by mail or email.

Mail to:

Referrals Gateway
Environment Assessment Branch
Department of Environment
GPO Box 787
CANBERRA ACT 2601

- If submitting via mail, electronic copies of documentation (on CD/DVD or by email) are required.

Email to: epbc.referrals@environment.gov.au

- Clearly mark the email as a 'Referral under the EPBC Act'.
- Attach the referral as a Microsoft Word file and, if possible, a PDF file.
- **Follow up with a mailed hardcopy including copies of any attachments or supporting reports.**

What happens next?

Following receipt of a valid referral (containing all required information) you will be advised of the next steps in the process, and the referral and attachments will be published on the Department's web site for public comment.

The Department will write to you within 20 business days to advise you of the outcome of your referral and whether or not formal assessment and approval under the EPBC Act is required. There are a number of possible decisions regarding your referral:

The proposed action is NOT LIKELY to have a significant impact and does NOT NEED approval

No further consideration is required under the environmental assessment provisions of the EPBC Act and the action can proceed (subject to any other Commonwealth, state or local government requirements).

The proposed action is NOT LIKELY to have a significant impact IF undertaken in a particular manner

The action can proceed if undertaken in a particular manner (subject to any other Commonwealth, state or local government requirements). The particular manner in which you must carry out the action will be identified as part of the final decision. You must report your compliance with the particular manner to the Department.

The proposed action is LIKELY to have a significant impact and does NEED approval

If the action is likely to have a significant impact a decision will be made that it is a *controlled action*. The particular matters upon which the action may have a significant impact (such as World Heritage values or threatened species) are known as the *controlling provisions*.

The controlled action is subject to a public assessment process before a final decision can be made about whether to approve it. The assessment approach will usually be decided at the same time as the controlled action decision. (Further information about the levels of assessment and basis for deciding the approach are available on the Department's web site.)

The proposed action would have UNACCEPTABLE impacts and CANNOT proceed

The Minister may decide, on the basis of the information in the referral, that a referred action would have clearly unacceptable impacts on a protected matter and cannot proceed.

Compliance audits

If a decision is made to approve a project, the Department may audit it at any time to ensure that it is completed in accordance with the approval decision or the information provided in the referral. If the project changes, such that the likelihood of significant impacts could vary, you should write to the Department to advise of the changes. If your project is in the Great Barrier Reef Marine Park and a decision is made to approve it, the Authority may also audit it. (See "*Is your action in the Great Barrier Reef Marine Park*," p.2, for more details).

For more information

- call the Department of the Environment Community Information Unit on 1800 803 772 or
- visit the web site <http://www.environment.gov.au/topics/about-us/legislation/environment-protection-and-biodiversity-conservation-act-1999>

All the information you need to make a referral, including documents referenced in this form, can be accessed from the above web site.

Referral of proposed action

Project title:

1 Summary of proposed action

NOTE: You must also attach a map/plan(s) and associated geographic information system (GIS) vector (shapefile) dataset showing the location and approximate boundaries of the area in which the project is to occur. Maps in A4 size are preferred. You must also attach a map(s)/plan(s) showing the location and boundaries of the project area in respect to any features identified in 3.1 & 3.2, as well as the extent of any freehold, leasehold or other tenure identified in 3.3(i).

1.1 Short description

Use 2 or 3 sentences to uniquely identify the proposed action and its location.

1.2 Latitude and longitude

Latitude and longitude details are used to accurately map the boundary of the proposed action. If these coordinates are inaccurate or insufficient it may delay the processing of your referral.

location point	Latitude			Longitude		
	degrees	minutes	seconds	degrees	minutes	seconds

The Interactive Mapping Tool may provide assistance in determining the coordinates for your project area.

If the area is less than 5 hectares, provide the location as a single pair of latitude and longitude references. If the area is greater than 5 hectares, provide bounding location points.

There should be no more than 50 sets of bounding location coordinate points per proposal area.

Bounding location coordinate points should be provided sequentially in either a clockwise or anticlockwise direction.

If the proposed action is linear (eg. a road or pipeline), provide coordinates for each turning point.

Also attach the associated GIS-compliant file that delineates the proposed referral area. If the area is less than 5 hectares, please provide the location as a point layer. If greater than 5 hectares, please provide a polygon layer. If the proposed action is linear (eg. a road or pipeline) please provide a polyline layer (refer to GIS data supply guidelines at [Attachment A](#)).

Do not use AMG coordinates.

1.3 Locality and property description

Provide a brief physical description of the property on which the proposed action will take place and the project location (eg. proximity to major towns, or for off-shore projects, shortest distance to mainland).

1.4 Size of the development footprint or work area (hectares)

1.5 Street address of the site

1.6 Lot description

Describe the lot numbers and title description, if known.

1.7 Local Government Area and Council contact (if known)

If the project is subject to local government planning approval, provide the name of the relevant council contact officer.

1.8 **Time frame**
Specify the time frame in which the action will be taken including the estimated start date of construction/operation.

1.9	Alternatives to proposed action Were any feasible alternatives to taking the proposed action (including not taking the action) considered but are not proposed?		No
			Yes, you must also complete section 2.2
1.10	Alternative time frames etc Does the proposed action include alternative time frames, locations or activities?		No
			Yes, you must also complete Section 2.3. For each alternative, location, time frame, or activity identified, you must also complete details in Sections 1.2-1.9, 2.4-2.7 and 3.3 (where relevant).
1.11	State assessment Is the action subject to a state or territory environmental impact assessment?		No
			Yes, you must also complete Section 2.5
1.12	Component of larger action Is the proposed action a component of a larger action?		No
			Yes, you must also complete Section 2.7
1.13	Related actions/proposals Is the proposed action related to other actions or proposals in the region (if known)?		No
			Yes, provide details:
1.14	Australian Government funding Has the person proposing to take the action received any Australian Government grant funding to undertake this project?		No
			Yes, provide details:
1.15	Great Barrier Reef Marine Park Is the proposed action inside the Great Barrier Reef Marine Park?		No
			Yes, you must also complete Section 3.1 (h), 3.2 (e)

2 Detailed description of proposed action

NOTE: It is important that the description is complete and includes all components and activities associated with the action. If certain related components are not intended to be included within the scope of the referral, this should be clearly explained in section 2.7.

2.1 Description of proposed action

This should be a detailed description outlining all activities and aspects of the proposed action and should reference figures and/or attachments, as appropriate.

2.2 Alternatives to taking the proposed action

This should be a detailed description outlining any feasible alternatives to taking the proposed action (including not taking the action) that were considered but are not proposed (note, this is distinct from any proposed alternatives relating to location, time frames, or activities – see section 2.3).

2.3 Alternative locations, time frames or activities that form part of the referred action

If you have identified that the proposed action includes alternative time frames, locations or activities (in section 1.10) you must complete this section. Describe any alternatives related to the physical location of the action, time frames within which the action is to be taken and alternative methods or activities for undertaking the action. For each alternative location, time frame or activity identified, you must also complete (where relevant) the details in sections 1.2-1.9, 2.4-2.7, 3.3 and 4. Please note, if the action that you propose to take is determined to be a controlled action, any alternative locations, time frames or activities that are identified here may be subject to environmental assessment and a decision on whether to approve the alternative.

2.4 Context, planning framework and state/local government requirements

Explain the context in which the action is proposed, including any relevant planning framework at the state and/or local government level (e.g. within scope of a management plan, planning initiative or policy framework). Describe any Commonwealth or state legislation or policies under which approvals are required or will be considered against.

2.5 Environmental impact assessments under Commonwealth, state or territory legislation

If you have identified that the proposed action will be or has been subject to a state or territory environmental impact statement (in section 1.11) you must complete this section. Describe any environmental assessment of the relevant impacts of the project that has been, is being, or will be carried out under state or territory legislation. Specify the type and nature of the assessment, the relevant legislation and the current status of any assessments or approvals. Where possible, provide contact details for the state/territory assessment contact officer.

Describe or summarise any public consultation undertaken, or to be undertaken, during the assessment. Attach copies of relevant assessment documentation and outcomes of public consultations (if available).

2.6 Public consultation (including with Indigenous stakeholders)

Your referral must include a description of any public consultation that has been, or is being, undertaken. Where Indigenous stakeholders are likely to be affected by your proposed action, your referral should describe any consultations undertaken with Indigenous stakeholders. Identify the relevant stakeholders and the status of consultations at the time of the referral. Where appropriate include copies of documents recording the outcomes of any consultations.

2.7 A staged development or component of a larger project

If you have identified that the proposed action is a component of a larger action (in section 1.12) you must complete this section. Provide information about the larger action and details of any interdependency between the stages/components and the larger action. You may also provide justification as to why you believe it is reasonable for the referred action to be considered separately from the larger proposal (eg. the referred action is 'stand-alone' and viable in its own right, there are separate responsibilities for component actions or approvals have been split in a similar way at the state or local government levels).

3 Description of environment & likely impacts

3.1 Matters of national environmental significance

Describe the affected area and the likely impacts of the proposal, emphasising the relevant matters protected by the EPBC Act. Refer to relevant maps as appropriate. The interactive map tool can help determine whether matters of national environmental significance or other matters protected by the EPBC Act are likely to occur in your area of interest.

Your assessment of likely impacts should refer to the following resources (available from the Department's web site):

- specific values of individual World Heritage properties and National Heritage places and the ecological character of Ramsar wetlands;
- profiles of relevant species/communities (where available), that will assist in the identification of whether there is likely to be a significant impact on them if the proposal proceeds;
- *Significant Impact Guidelines 1.1 – Matters of National Environmental Significance*, and
- associated sectoral and species policy statements available on the web site, as relevant.

Your assessment of likely impacts should consider whether a bioregional plan is relevant to your proposal. The Minister has prepared four marine bioregional plans (MBP) in accordance with section 176. It is likely that the MBP's will be more commonly relevant where listed threatened species, listed migratory species or a Commonwealth marine area is considered.

Note that even if your proposal will not be taken in a World Heritage area, Ramsar wetland, Commonwealth marine area, the Great Barrier Reef Marine Park or on Commonwealth land, it could still impact upon these areas (for example, through downstream impacts). Consideration of likely impacts should include both direct and indirect impacts.

3.1 (a) World Heritage Properties

Description

Nature and extent of likely impact

Address any impacts on the World Heritage values of any World Heritage property.

3.1 (b) National Heritage Places

Description

Nature and extent of likely impact

Address any impacts on the National Heritage values of any National Heritage place.

3.1 (c) Wetlands of International Importance (declared Ramsar wetlands)

Description

Nature and extent of likely impact

Address any impacts on the ecological character of any Ramsar wetlands.

3.1 (d) Listed threatened species and ecological communities

Description

Nature and extent of likely impact

Address any impacts on the members of any listed threatened species (except a conservation dependent species) or any threatened ecological community, or their habitat.

3.1 (e) Listed migratory species

Description

Nature and extent of likely impact

Address any impacts on the members of any listed migratory species, or their habitat.

3.1 (f) Commonwealth marine area

(If the action is in the Commonwealth marine area, complete 3.2(c) instead. This section is for actions taken outside the Commonwealth marine area that may have impacts on that area.)

Description

Nature and extent of likely impact

Address any impacts on any part of the environment in the Commonwealth marine area.

3.1 (g) Commonwealth land

(If the action is on Commonwealth land, complete 3.2(d) instead. This section is for actions taken outside Commonwealth land that may have impacts on that land.)

Description

If the action will affect Commonwealth land also describe the more general environment. The Policy Statement titled *Significant Impact Guidelines 1.2 - Actions on, or impacting upon, Commonwealth land, and actions by Commonwealth agencies* provides further details on the type of information needed. If applicable, identify any potential impacts from actions taken outside the Australian jurisdiction on the environment in a Commonwealth Heritage Place overseas.

Nature and extent of likely impact

Address any impacts on any part of the environment in the Commonwealth land. Your assessment of impacts should refer to the *Significant Impact Guidelines 1.2 - Actions on, or impacting upon, Commonwealth land, and actions by Commonwealth agencies* and specifically address impacts on:

- ecosystems and their constituent parts, including people and communities;
 - natural and physical resources;
 - the qualities and characteristics of locations, places and areas;
 - the heritage values of places; and
 - the social, economic and cultural aspects of the above things.
-

3.1 (h) The Great Barrier Reef Marine Park

Description

Nature and extent of likely impact

Address any impacts on any part of the environment of the Great Barrier Reef Marine Park.

Note: If your action occurs in the Great Barrier Reef Marine Park you may also require permission under the *Great Barrier Reef Marine Park Act 1975* (GBRMP Act). If so, section 37AB of the GBRMP Act provides that your referral under the EPBC Act is deemed to be an application under the GBRMP Act and Regulations for necessary permissions and a single integrated process will generally apply. Further information is available at www.gbrmpa.gov.au

3.1 (i) A water resource, in relation to coal seam gas development and large coal mining development

Description

If the action is a coal seam gas development or large coal mining development that has, or is likely to have, a significant impact on water resources, the draft *Policy Statement Significant Impact Guidelines: Coal seam gas and large coal mining developments—Impacts on water resources* provides further details on the type of information needed.

Nature and extent of likely impact

Address any impacts on water resources. Your assessment of impacts should refer to the draft *Significant Impact Guidelines: Coal seam gas and large coal mining developments—Impacts on water resources*.

3.2 Nuclear actions, actions taken by the Commonwealth (or Commonwealth agency), actions taken in a Commonwealth marine area, actions taken on Commonwealth land, or actions taken in the Great Barrier Reef Marine Park

You must describe the nature and extent of likely impacts (both direct & indirect) on the whole environment if your project:

- is a nuclear action;
- will be taken by the Commonwealth or a Commonwealth agency;
- will be taken in a Commonwealth marine area;
- will be taken on Commonwealth land; or
- will be taken in the Great Barrier Reef marine Park.

Your assessment of impacts should refer to the *Significant Impact Guidelines 1.2 - Actions on, or impacting upon, Commonwealth land, and actions by Commonwealth agencies* and specifically address impacts on:

- ecosystems and their constituent parts, including people and communities;
- natural and physical resources;
- the qualities and characteristics of locations, places and areas;
- the heritage values of places; and
- the social, economic and cultural aspects of the above things.

3.2 (a)	Is the proposed action a nuclear action?	<input type="checkbox"/>	No
		<input type="checkbox"/>	Yes (provide details below)

If yes, nature & extent of likely impact on the whole environment

3.2 (b)	Is the proposed action to be taken by the Commonwealth or a Commonwealth agency?	<input type="checkbox"/>	No
		<input type="checkbox"/>	Yes (provide details below)

If yes, nature & extent of likely impact on the whole environment

3.2 (c)	Is the proposed action to be taken in a Commonwealth marine area?	<input type="checkbox"/>	No
		<input type="checkbox"/>	Yes (provide details below)

If yes, nature & extent of likely impact on the whole environment (in addition to 3.1(f))

3.2 (d)	Is the proposed action to be taken on Commonwealth land?	<input type="checkbox"/>	No
		<input type="checkbox"/>	Yes (provide details below)

If yes, nature & extent of likely impact on the whole environment (in addition to 3.1(g))

3.2 (e)	Is the proposed action to be taken in the Great Barrier Reef Marine Park?	<input type="checkbox"/>	No
		<input type="checkbox"/>	Yes (provide details below)

If yes, nature & extent of likely impact on the whole environment (in addition to 3.1(h))

3.3 Other important features of the environment

Provide a description of the project area and the affected area, including information about the following features (where relevant to the project area and/or affected area, and to the extent not otherwise addressed above). If at Section 2.3 you identified any alternative locations, time frames or activities for your proposed action, you must complete each of the details below (where relevant) for each alternative identified.

3.3 (a) Flora and fauna

3.3 (b) Hydrology, including water flows

3.3 (c) Soil and Vegetation characteristics

3.3 (d) Outstanding natural features

3.3 (e) Remnant native vegetation

3.3 (f) Gradient (or depth range if action is to be taken in a marine area)

3.3 (g) Current state of the environment

Include information about the extent of erosion, whether the area is infested with weeds or feral animals and whether the area is covered by native vegetation or crops.

3.3 (h) Commonwealth Heritage Places or other places recognised as having heritage values

3.3 (i) Indigenous heritage values

3.3 (j) Other important or unique values of the environment

Describe any other key features of the environment affected by, or in proximity to the proposed action (for example, any national parks, conservation reserves, wetlands of national significance etc).

3.3 (k) Tenure of the action area (eg freehold, leasehold)

3.3 (l) Existing land/marine uses of area

3.3 (m) Any proposed land/marine uses of area

4 Environmental outcomes

Provide descriptions of the proposed environmental outcomes that will be achieved for matters of national environmental significance as a result of the proposed action. Include details of the baseline data upon which the outcomes are based, and the confidence about the likely achievement of the proposed outcomes. Where outcomes cannot be identified or committed to, provide explanatory details including any commitments to identify outcomes through an assessment process.

If a proposed action is determined to be a controlled action, the Department may request further details to enable application of the draft *Outcomes-based Conditions Policy 2015* and *Outcomes-based Conditions Guidance 2015* (<http://www.environment.gov.au/epbc/consultation/policy-guidance-outcomes-based-conditions>), including about environmental outcomes to be achieved, details of baseline data, milestones, performance criteria, and monitoring and adaptive management to ensure the achievement of outcomes. If this information is available at the time of referral it should be included.

General commitments to achieving environmental outcomes, particularly relating to beneficial impacts of the proposed action, CANNOT be taken into account in making the initial decision about whether the proposal is likely to have a significant impact on a matter protected under the EPBC Act. (But those commitments may be relevant at the later assessment and approval stages, including the appropriate level of assessment, and conditions of approval, if your proposal proceeds to these stages).

5 Measures to avoid or reduce impacts

Note: If you have identified alternatives in relation to location, time frames or activities for the proposed action at Section 2.3 you will need to complete this section in relation to each of the alternatives identified.

Provide a description of measures that will be implemented to avoid, reduce, manage or offset any relevant impacts of the action. Include, if appropriate, any relevant reports or technical advice relating to the feasibility and effectiveness of the proposed measures.

For any measures intended to avoid or mitigate significant impacts on matters protected under the EPBC Act, specify:

- what the measure is,
- how the measure is expected to be effective, and
- the time frame or workplan for the measure.

Examples of relevant measures to avoid or reduce impacts may include the timing of works, avoidance of important habitat, specific design measures, or adoption of specific work practices.

Provide information about the level of commitment by the person proposing to take the action to achieve the proposed environmental outcomes and implement the proposed mitigation measures. For example, if the measures are preliminary suggestions only that have not been fully researched, or are dependent on a third party's agreement (e.g. council or landowner), you should state that, that is the case.

Note, the Australian Government Environment Minister may decide that a proposed action is not likely to have significant impacts on a protected matter, as long as the action is taken in a particular manner (section 77A of the EPBC Act). The particular manner of taking the action may avoid or reduce certain impacts, in such a way that those impacts will not be 'significant'. More detail is provided on the Department's web site.

For the Minister to make such a decision (under section 77A), the proposed measures to avoid or reduce impacts must:

- clearly form part of the referred action (eg be identified in the referral and fall within the responsibility of the person proposing to take the action),
- be must be clear, unambiguous, and provide certainty in relation to reducing or avoiding impacts on the matters protected, and
- must be realistic and practical in terms of reporting, auditing and enforcement.

If a proposed action is determined to be a controlled action, the Department may request further details to enable application of the *Outcomes-based Conditions Policy 2016* (<http://www.environment.gov.au/epbc/publications/outcomes-based-conditions-policy-guidance>), including information about the environmental outcomes to be achieved by proposed avoidance, mitigation, management or offset measures, details of baseline data, milestones, performance criteria, and monitoring and adaptive management to ensure the achievement of outcomes. If this information is available at the time of referral it should be included in the description of the proposed measures.

More general commitments (e.g. preparation of management plans or monitoring), commitments to achieving environmental outcomes and measures aimed at providing environmental offsets, compensation or off-site benefits

CANNOT be taken into account in making the initial decision about whether the proposal is likely to have a significant impact on a matter protected under the EPBC Act. (But those commitments may be relevant at the later assessment and approval stages, including the appropriate level of assessment, if your proposal proceeds to these stages).

6 Conclusion on the likelihood of significant impacts

Identify whether or not you believe the action is a controlled action (ie. whether you think that significant impacts on the matters protected under Part 3 of the EPBC Act are likely) and the reasons why.

6.1 Do you THINK your proposed action is a controlled action?

- No, complete section 5.2
- Yes, complete section 5.3

6.2 Proposed action IS NOT a controlled action.

Specify the key reasons why you think the proposed action is NOT LIKELY to have significant impacts on a matter protected under the EPBC Act.

6.3 Proposed action IS a controlled action

Type 'x' in the box for the matter(s) protected under the EPBC Act that you think are likely to be significantly impacted. (The 'sections' identified below are the relevant sections of the EPBC Act.)

Matters likely to be impacted

- | | |
|--------------------------|---|
| <input type="checkbox"/> | World Heritage values (sections 12 and 15A) |
| <input type="checkbox"/> | National Heritage places (sections 15B and 15C) |
| <input type="checkbox"/> | Wetlands of international importance (sections 16 and 17B) |
| <input type="checkbox"/> | Listed threatened species and communities (sections 18 and 18A) |
| <input type="checkbox"/> | Listed migratory species (sections 20 and 20A) |
| <input type="checkbox"/> | Protection of the environment from nuclear actions (sections 21 and 22A) |
| <input type="checkbox"/> | Commonwealth marine environment (sections 23 and 24A) |
| <input type="checkbox"/> | Great Barrier Reef Marine Park (sections 24B and 24C) |
| <input type="checkbox"/> | A water resource, in relation to coal seam gas development and large coal mining development (sections 24D and 24E) |
| <input type="checkbox"/> | Protection of the environment from actions involving Commonwealth land (sections 26 and 27A) |
| <input type="checkbox"/> | Protection of the environment from Commonwealth actions (section 28) |
| <input type="checkbox"/> | Commonwealth Heritage places overseas (sections 27B and 27C) |

Specify the key reasons why you think the proposed action is likely to have a significant adverse impact on the matters identified above.

7 Environmental record of the responsible party

NOTE: If a decision is made that a proposal needs approval under the EPBC Act, the Environment Minister will also decide the assessment approach. The EPBC Regulations provide for the environmental history of the party proposing to take the action to be taken into account when deciding the assessment approach.

		Yes	No
7.1	<p>Does the party taking the action have a satisfactory record of responsible environmental management?</p> <p>Provide details</p>		
7.2	<p>Has either (a) the party proposing to take the action, or (b) if a permit has been applied for in relation to the action, the person making the application - ever been subject to any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources?</p> <p>If yes, provide details</p>		
7.3	<p>If the party taking the action is a corporation, will the action be taken in accordance with the corporation's environmental policy and planning framework?</p> <p>If yes, provide details of environmental policy and planning framework</p>		
7.4	<p>Has the party taking the action previously referred an action under the EPBC Act, or been responsible for undertaking an action referred under the EPBC Act?</p> <p>Provide name of proposal and EPBC reference number (if known)</p>		

8 Information sources and attachments

(For the information provided above)

8.1 References

- List the references used in preparing the referral.
- Highlight documents that are available to the public, including web references if relevant.

8.2 Reliability and date of information

For information in section 3 specify:

- source of the information;
- how recent the information is;
- how the reliability of the information was tested; and
- any uncertainties in the information.

8.3 Attachments

Indicate the documents you have attached. All attachments must be less than three megabytes (3mb) so they can be published on the Department's website. Attachments larger than three megabytes (3mb) may delay the processing of your referral.

		✓ attached	Title of attachment(s)
You must attach	figures, maps or aerial photographs showing the project locality (section 1)		
	GIS file delineating the boundary of the referral area (section 1)		
	figures, maps or aerial photographs showing the location of the project in respect to any matters of national environmental significance or important features of the environments (section 3)		
If relevant, attach	copies of any state or local government approvals and consent conditions (section 2.5)		
	copies of any completed assessments to meet state or local government approvals and outcomes of public consultations, if available (section 2.6)		
	copies of any flora and fauna investigations and surveys (section 3)		
	technical reports relevant to the assessment of impacts on protected matters that support the arguments and conclusions in the referral (section 3 and 4)		
	report(s) on any public consultations undertaken, including with Indigenous stakeholders (section 3)		

9 Contacts, signatures and declarations

NOTE: Providing false or misleading information is an offence punishable on conviction by imprisonment and fine (s 489, EPBC Act).

Under the EPBC Act a referral can only be made by:

- the person proposing to take the action (which can include a person acting on their behalf); or
- a Commonwealth, state or territory government, or agency that is aware of a proposal by a person to take an action, and that has administrative responsibilities relating to the action¹.

Project title:

9.1 Person proposing to take action

This is the individual, government agency or company that will be principally responsible for, or who will carry out, the proposed action.

If the proposed action will be taken under a contract or other arrangement, this is:

- the person for whose benefit the action will be taken; or
- the person who procured the contract or other arrangement and who will have principal control and responsibility for the taking of the proposed action.

If the proposed action requires a permit under the Great Barrier Reef Marine Park Act², this is the person requiring the grant of a GBRMP permission.

The Minister may also request relevant additional information from this person.

If further assessment and approval for the action is required, any approval which may be granted will be issued to the person proposing to take the action. This person will be responsible for complying with any conditions attached to the approval.

If the Minister decides that further assessment and approval is required, the Minister must designate a person as a proponent of the action. The proponent is responsible for meeting the requirements of the EPBC Act during the assessment process. The proponent will generally be the person proposing to take the action³.

1. Name and Title:

2. Organisation (if applicable):

Organisation name should match entity identified in ABN/ACN search

3. EPBC Referral Number (if known):

4: ACN / ABN (if applicable):

5. Postal address

6. Telephone:

7. Email:

8. Name of proposed proponent (if not the same person at item 1 above and if applicable):

9. ACN/ABN of proposed

¹ If the proposed action is to be taken by a Commonwealth, state or territory government or agency, section 8.1 of this form should be completed. However, if the government or agency is aware of, and has administrative responsibilities relating to, a proposed action that is to be taken by another person which has not otherwise been referred, please contact the Referrals Gateway (1800 803 772) to obtain an alternative contacts, signatures and declarations page.

² If your referred action, or a component of it, is to be taken in the Great Barrier Reef Marine Park the Minister is required to provide a copy of your referral to the Great Barrier Reef Marine Park Authority (GBRMPA) (see section 73A, EPBC Act). For information about how the GBRMPA may use your information, see http://www.gbrmpa.gov.au/privacy/privacy_notice_for_permits.

proponent (if not the same person named at item 1 above):

COMPLETE THIS SECTION ONLY IF YOU QUALIFY FOR EXEMPTION FROM THE FEE(S) THAT WOULD OTHERWISE BE PAYABLE

I qualify for exemption from fees under section 520(4C)(e)(v) of the EPBC Act because I am:

- an individual; OR
- a small business entity (within the meaning given by section 328-110 (other than subsection 328-119(4)) of the *Income Tax Assessment Act 1997*); OR
- not applicable.

If you are small business entity you must provide the Date/Income Year that you became a small business entity:

Note: You must advise the Department within 10 business days if you cease to be a small business entity. Failure to notify the Secretary of this is an offence punishable on conviction by a fine (regulation 5.23B(3) *Environment Protection and Biodiversity Conservation Regulations 2000* (Cth)).

COMPLETE THIS SECTION ONLY IF YOU WOULD LIKE TO APPLY FOR A WAIVER

I would like to apply for a waiver of full or partial fees under Schedule 1, 5.21A of the EPBC Regulations. Under sub regulation 5.21A(5), you must include information about the applicant (if not you) the grounds on which the waiver is sought and the reasons why it should be made:
Declaration

- not applicable.

I declare that to the best of my knowledge the information I have given on, or attached to this form is complete, current and correct.
I understand that giving false or misleading information is a serious offence.
I agree to be the proponent for this action.
I declare that I am not taking the action on behalf of or for the benefit of any other person or entity.

Signature

Date

9.2 Person preparing the referral information (if different from 8.1)

Individual or organisation who has prepared the information contained in this referral form,

Name

Title

Organisation

ACN / ABN (if applicable)

Postal address

Telephone

Organisation name should match entity identified in ABN/ACN search

Email

Declaration

I declare that to the best of my knowledge the Information I have given on, or attached to this form is complete, current and correct.
I understand that giving false or misleading information is a serious offence.

Signature

Date

REFERRAL CHECKLIST

NOTE: This checklist is to help ensure that all the relevant referral information has been provided. It is not a part of the referral form and does not need to be sent to the Department.

HAVE YOU:

- Completed all required sections of the referral form?
- Included accurate coordinates (to allow the location of the proposed action to be mapped)?
- Provided a map showing the location and approximate boundaries of the project area?
- Provided a map/plan showing the location of the action in relation to any matters of NES?
- Provided a digital file (preferably ArcGIS shapefile, refer to guidelines at [Attachment A](#)) delineating the boundaries of the referral area?
- Provided complete contact details and signed the form?
- Provided copies of any documents referenced in the referral form?
- Ensured that all attachments are less than three megabytes (3mb)?
- Sent the referral to the Department (electronic and hard copy preferred)?

Geographic Information System (GIS) data supply guidelines

If the area is less than 5 hectares, provide the location as a point layer. If the area greater than 5 hectares, please provide as a polygon layer. If the proposed action is linear (eg. a road or pipeline) please provide a polyline layer.

GIS data needs to be provided to the Department in the following manner:

- Point, Line or Polygon data types: ESRI file geodatabase feature class (preferred) or as an ESRI shapefile (.shp) zipped and attached with appropriate title
- Raster data types: Raw satellite imagery should be supplied in the vendor specific format.
- Projection as GDA94 coordinate system.

Processed products should be provided as follows:

- For data, uncompressed or lossless compressed formats is required - GeoTIFF or Imagine IMG is the first preference, then JPEG2000 lossless and other simple binary+header formats (ERS, ENVI or BIL).
- For natural/false/pseudo colour RGB imagery:
 - If the imagery is already mosaiced and is ready for display then lossy compression is suitable (JPEG2000 lossy/ECW/MrSID). Prefer 10% compression, up to 20% is acceptable.
 - If the imagery requires any sort of processing prior to display (i.e. mosaicing/colour balancing/etc) then an uncompressed or lossless compressed format is required.

Metadata or 'information about data' will be produced for all spatial data and will be compliant with ANZLIC Metadata Profile. (http://www.anzlic.org.au/policies_guidelines#guidelines).

The Department's preferred method is using ANZMet Lite, however the Department's Service Provider may use any compliant system to generate metadata.

All data will be provide under a Creative Commons license (<http://creativecommons.org/licenses/by/3.0/au/>)

REQUEST FOR REFERRAL OF PROPOSAL TO TAKE AN ACTION – KINGVALE STATION

I, **Dean Knudson**, Deputy Secretary of the Department of the Environment, make the following findings in requesting Mr Scott Alexander Harris to refer a proposed action to the Minister for the Environment, pursuant to section 70(1)(a) of the *Environment Protection and Biodiversity Conservation Act 1999* (**the EPBC Act**).

FINDINGS

Proposal to take an action

1. Mr Harris is registered on title as the leaseholder of Lot 1 on KG3 in Queensland. This land is also known as Lot 1 of Survey Plan 280074, and Kingvale Station.
2. Mr Harris applied for, and was granted, a permit to clear vegetation under the *Sustainable Planning Act 2009* (Qld) for dryland sorghum cultivation in particular areas on Kingvale Station (**the permit**). Those areas are identified as Area A1, A2, A3, A4 and A5 on the attached map titled "Referral Agency Response (Vegetation) Plan. Plan of Area A (Parts A1 - A5) in Lot 1 on KG3".
3. The Queensland Government granted Mr Harris the permit on 16 April 2014.
4. As far as I am aware, Mr Harris is the only person permitted to undertake work of the type described in the permit. I am not aware of any other persons having sought a similar permit. Accordingly, I conclude that Mr Harris is the person who proposes to take the action to clear vegetation in accordance with the permit, and accordingly is the appropriate person to receive this section 70 request.
5. On 7 December 2015, an officer of the Department of the Environment spoke with [REDACTED] **Section 47F**. The Department officer prepared a note of that discussion in which he recorded that when [REDACTED] **Section 47F** was asked when clearing would be undertaken at Kingvale Station, he said words to the effect of "I don't know, it could be tomorrow, next week or April. The dozers are onsite and ready to go, I'm just waiting for drivers and depending on weather conditions, it could be any day but really I can't tell you when".
6. On 9 December 2015, a Department officer wrote to Mr Harris. In that letter the officer explained that the Department held concerns that clearing subject to the permit was prohibited by Part 3 of the Act, and asked Mr Harris to agree to provide 14 days advance notice to the Department prior to the proposed clearing.
7. On 22 December 2015, the Department revised this request, asking only to be notified 14 days in advance of the commencement of clearing in areas A3, A4 and A5.
8. Mr Harris has not provided any such notice, nor has he agreed to provide such notice.
9. Satellite imagery of Kingvale Station taken on 28 April 2016 appears to show that clearing had commenced in areas A1 and A2 by this date. Further satellite images taken on 12 May 2016 and 14 May 2016 indicate that by this time clearing in A1 and A2 was complete, or at

least very substantially advanced. I formed these views by comparing the groundcover visible in the satellite imagery in the Areas A1 and A2 in 28 April 2016, 12 May 2016 and 14 May 2016 with satellite images of the same area from 7 April 2016.

10. I also examined the satellite imagery of areas A3, A4 and A5 dated 30 May and 11 June 2016. Based on this examination and a comparison of this imagery with images from 12 April 2016 I formed the view that as of 30 May 2016 clearing was yet to commence, or at least had not been substantially completed, and as of 11 June 2016 it was difficult to tell (but it appears that nothing had changed), in areas A3, A4 or A5 of Kingvale Station.
11. The analysis of the satellite imagery that I have described above indicates that while clearing may not yet have been undertaken in Areas A3, A4 and A5, it has been undertaken in Areas A1 and A2. I infer from the fact of the permit having been sought in relation to all of these areas that it is likely that clearing will commence in Areas A3, A4 and A5 in the near future, if it has not already.
12. I am not aware that any person other than Mr Harris, or a person acting on his behalf, has any authority or proposal to clear vegetation in area A1 or A2 at Kingvale. I infer that this clearing of A1 and A2 was undertaken by Mr Harris, or a person acting on his behalf.
13. In material provided to the Queensland Government in support of Mr Harris's application for the permit, the proposed timing of steps in the project was described as:
 - *"Pull timber after the wet season (after April) when it is dry enough to get dozers on country. This time of year also has maximum ground cover.*
 - *"September – burn the fallen timber. This avoids the more intense dry period later in the year.*
 - *"September – December, Stick rake the area and ground preparation by using disc ploughs*
 - *"On receipt of the first showers of rain ... the proponents will spray weed with ground –rig (boom) and start planting using a large Multiplanter (zero tillage machines that can direct sow and have high clearance)"¹.*
14. The timing of the clearing of A1 and A2 is consistent with Mr Harris pursuing the timetable for the project with a view to clearing on all areas, including A3, A4 and A5, being complete in time for the fallen timber to be burned in September.

Finding concerning the proposal to take an action

On the basis of the information above, I believe that Mr Harris proposes to clear vegetation in area A3, A4 and/or A5 on Kingvale Station and cultivate sorghum crops and intensify cattle grazing on that land, either personally or by other persons acting on his behalf, in the near future.

¹ *Proposed Dryland Cropping of Sorghum and Forage Sorghum for green chop at Kingvale Station west of Laura Peter Spies, Pinnacle Pocket Consulting, p1*

Action may be a controlled action – significant impact on the Great Barrier Reef

15. Areas A3, A4 and A5 constitute an aggregate area of approximately 2,100 hectares of native vegetation.
16. These areas are near to the Hann and Kennedy sub-catchments within the headwaters of the Normanby catchment. The Normanby catchment flows into the Great Barrier Reef Marine Park (**the Park**) which is part of the Great Barrier Reef World Heritage Area (**the World Heritage Area**).
17. The Great Barrier Reef Marine Park Authority (**GBRMPA**) prepared a Strategic Assessment Report (the **GBRMPA Report**) about the World Heritage Area². The GBRMPA Report was endorsed by the Minister pursuant to section 146 of the EPBC Act as adequately addressing the impacts of actions within the Park.
18. The GBRMPA Report identifies that there are a range of activities in the catchment area for the World Heritage Area which may have an impact on its outstanding universal values.
19. The GBRMPA Report identifies that agriculture in the catchment area for the World Heritage Area can have a range of adverse effects, including increased:
 - freshwater inflow into the World Heritage Area;
 - nutrients from catchment run-off flowing into the World Heritage Area; and
 - sediment from catchment run-off flowing into the World Heritage Area (page 6-8).
20. The GBRMPA Report characterises the adverse impact of nutrients and sediment on coral reefs as very high, meaning that the effects of the impact are widespread to the extent that the outstanding universal values of that habitat are severely compromised. The impact of increased freshwater inflow has been assessed as high, meaning that the effects of the impact are obvious in many locations or for many species to the extent that significant additional intervention would be required to maintain the values (the GBRMPA Report, pages 6-46 to 6-47).
21. Abnormally large freshwater inflows can contribute to low salinity bleaching and mortality in corals, or widespread damage to seagrass meadows (the GBRMPA Report, page 6-17).
22. Inorganic nutrients, including nitrogen and phosphorus, cause imbalances in the nutrient cycle of the reef with a wide range of negative impacts.
23. Increased nutrient loads have also been linked to outbreaks of crown of thorn starfish, because the increased nutrients provide food for their larvae. Such outbreaks have been one of the major causes of coral death and reef damage on the Great Barrier Reef since surveys began in the 1980s (the GBRMPA Report, pages 6-18 to 6-19).
24. Increased sediment loads have far reaching effects for the Great Barrier Reef values. In relation to fine sediment, these can include smothering seagrass and corals, making it harder or impossible for them to grow, survive and reproduce (the GBRMPA Report, pages 6-22).
25. Clearing of native vegetation, and sowing agricultural crops in its place, can increase the loads of nutrients and sediment entering the Normanby catchment, due to:

² <http://www.gbrmpa.gov.au/managing-the-reef/strategic-assessment>

- clearing leading to erosion of the soil, with fine sediment washing into the waterways because it is no longer held in place by the native vegetation;
 - fertilisers and pesticides being applied to crops to maximise yield washing into waterways³.
26. Fertiliser requirements for the project have been assessed by Mr Harris's expert, as part of the permit application process, as:
- high; and
 - including nitrogen and phosphorus⁴.
27. Noting that stocking rates will vary according to seasonal conditions, erosion associated with cattle movement across the property, such as bank erosion⁵, may increase as a result an expected intensified stocking rate following the establishment of farming crops on the property. Advice provided by Mr Harris indicates that average stocking rates could triple⁶ from 1,000 to 3,400 head.
28. The Department sought expert advice from a fluvial geomorphology consultant, Dr Jeffrey Shellberg, about the potential downstream impacts from the proposed vegetation clearing at Kingvale, taking into account the work already conducted by Mr Harris's expert.
29. Key conclusions from Dr Shellberg's report⁷ include that:
- The conclusion of Mr Harris's expert that clearing in areas A3, A4 and A5 "will not result in soil erosion stemming from mass movement, gully erosion, rill erosion, sheet erosion, wind erosion, or scalding" is incorrect⁸;
 - Fine sediment pollution from Kingvale Station could contribute to the cumulative impacts of degraded water quality from land use delivered to the Great Barrier Reef, and that the operational and ongoing works at Kingvale could contribute to cumulative adverse impacts on the reef which could push the currently healthy local reef beyond thresholds of ecological stability⁹;
 - Such health impacts and water quality decline are increasing with land use intensification in the northern Great Barrier Reef¹⁰; and

³ *Soil Erosion and Downstream Sedimentation Risks Associated with Proposed Vegetation Clearing for Agricultural Development on Kingvale Station, Lot 1 on Plan KG2, Cape York Peninsula*, Dr Jeffrey Shellberg, January 2016, p10, 24

⁴ *Proposed Dryland Cropping of Sorghum and Forage Sorghum for green chop at Kingvale Station west of Laura Peter Spies*, Pinnacle Pocket Consulting, 5 February 2014, p9

⁵ *Soil Erosion and Downstream Sedimentation Risks Associated with Proposed Vegetation Clearing for Agricultural Development on Kingvale Station, Lot 1 on Plan KG2, Cape York Peninsula*, Dr Jeffrey Shellberg, January 2016, p16

⁶ Property Report submitted to DILGP in support of an application to be granted a permit to undertake a High Value Agriculture farming practice pp19

⁷ *Soil Erosion and Downstream Sedimentation Risks Associated with Proposed Vegetation Clearing for Agricultural Development on Kingvale Station, Lot 1 on Plan KG2, Cape York Peninsula*, Dr Jeffrey Shellberg, January 2016, p28

⁸ *Ibid*, p28. Dr Shellberg describes A3, A4 and A5 as 'Area 1'. The link between these terms is made clear by Figure 2 in Dr Shellberg's report.

⁹ *Ibid* p26

¹⁰ *Ibid* p26

- Neither the assessment by Dr Shellberg nor the assessment by Mr Harris's expert was sufficient to fully and properly assess the potential risks to erosion and downstream sedimentation from agricultural clearing and development of this area.¹¹
30. I place greater weight on the conclusions on Dr Shellberg than the conclusions of Mr Harris's expert, having regard to their respective areas of speciality¹²:
31. The Department obtained specific advice from GBRMPA about the proposed clearing at Kingvale Station. GBRMPA's advice acknowledged that there is uncertainty about the effect of particular individual instances of vegetation clearing in the Normanby catchment, but indicated:
- individually, each proposal like Kingvale is certain to increase erosion;
 - it is almost guaranteed that the resulting erosion from large scale clearing will result in fine sediment entering Princess Charlotte Bay during flood events; and
 - GBRMPA considers that caution should be taken in approving any further clearing in the Normanby catchment because this catchment has already been subject to such a large amount of increased erosion.
32. In light of the above, I consider that the proposed action is likely to result in additional nitrogen, phosphorus and/or sediment entering the Great Barrier Reef Marine Park via the Normanby catchment, which has been scientifically linked to coral bleaching, outbreaks of crown of thorns starfish, and smothering of seagrasses and coral.
33. Coral and seagrasses are a part of the environment of the Park, and are key elements of the beauty, integrity and diversity of the World Heritage Area which go to its outstanding universal value.
34. A proposed action which increases sediment and nutrient load in the Park may accordingly have a significant impact on the environment within the Park, the world heritage values of the World Heritage Area, and the national heritage values of the World Heritage Area.
35. I am informed by officers of the Department that they have checked the Department's database of approvals and can see no record of any approval have been sought or granted for this proposed action under the EPBC Act.
36. The clearing, cropping and intensification of grazing of the land involved in the proposed action is a new or intensification of the use of that land, which has to date been used as a breeding enterprise carrying approximately 1,000 cattle¹³.
37. Information available to the Department indicates that intense cattle in tropical savannah landscapes of northern Australia can trigger increased erosion¹⁴.

¹¹ Ibid p28

¹² For Mr Spies, see *Proposed Dryland Cropping of Sorghum and Forage Sorghum for green chop at Kingvale Station west of Laura* Peter Spies, Pinnacle Pocket Consulting, 5 February 2014, page.1
For Dr Shellberg, see page 4

¹³ Property Report submitted to DILGP in support of an application to be granted a permit to undertake a High Value Agriculture farming practice pp19

¹⁴ Alluvial Gully Erosion; A dominant erosion process across tropical northern Australia. J Shellberg, A Brooks. Griffith University November 2012 page 11 - 15

38. The concept of a controlled action is defined in section 67 of the EPBC Act. It specifies that:

An action that a person proposes to take is a controlled action if the taking of the action by the person without approval under Part 9 for the purposes of a provision of Part 3 would be (or would, but for sections 25AA or 28AB, be) prohibited by the provision. The provision is a controlling provision for the action.

Finding concerning whether an action may be a controlled action – significant impact on the Great Barrier Reef

On the basis of the information above, I think that the proposed action may be prohibited by the following provisions of Part 3: sections 12, 15A, 24B(2) and 24C(5) of the EPBC Act. Accordingly, I think that the proposed action may be a controlled action within the meaning of section 67 of the Act.

Materials on which findings are based

39. In making these findings, I have had regard to the materials listed below. I have attached a copy of each of these materials to this letter, except where it is material that was provided by Mr Harris, has previously been provided to Mr Harris, or is publicly available. Copies of any of this previously provided or publicly available material will be provided to Mr Harris on request.

- Report by Mr Peter Spies, Pinnacle Pocket Consulting titled “Proposed Dryland cropping of sorghum and forage sorghum for green chop at Kingvale Station west of Laura”, provided to the Queensland Government by Mr Harris, or his agents, in applying for a High Value Agricultural permit under the Sustainable Planning Act 2009 (Qld) to clear native vegetation in particular areas of Lot 1 of KG3 (Lot 1 of Survey Plan 280074).
- All relevant correspondence relating to the proposal including communications with or between:
 - : Mr Harris or persons acting on his behalf;
 - : The Department of the Environment and/or other Commonwealth agencies and/or or officers of those Departments;
 - : The Queensland Department of State Development, Infrastructure and Planning.
- EPBC Act referral guidelines for the Outstanding Universal Value of the Great Barrier Reef World Heritage Area, Commonwealth of Australia 2014’ (available at http://www.environment.gov.au/system/files/resources/e8e47508-5ea4-457b-adeb-b9c1364e9bec/files/referral-guidelines-great-barrier-reef_0.pdf).
- GBRWHA Strategic Assessment Report (available at <http://www.gbrmpa.gov.au/managing-the-reef/strategic-assessment>).
- Reports titled:
 - : “Soil Erosion and Downstream Sedimentation Risks Associated with Proposed Vegetation Clearing for Agricultural Development on Kingvale Station, Lot 1 on

Plan KG2, Cape York Peninsula" by Dr. Jeffrey Shellberg, a Fluvial Geomorphology Consultant;

- "Alluvial Gully Erosion; A dominant erosion process across tropical northern Australia". J Shellberg, A Brooks. Griffith University November 2012 (available at http://www.track.org.au/sites/default/files/managed/file-attach/biblio/Full_Report_Alluvial_Gully_Erosion_final.pdf);
- "Alluvial Gully Prevention and Rehabilitation Options for reducing Sediment loads in the Normanby Catchment and Northern Australia" J Shellberg, A Brooks. Griffith University, Australian Rivers Institute December 2013
- GBRMPA advice about potential impacts of the proposed action on the environment in the Great Barrier Reef Marine Park.
- A Notice of decision given under section 334 of the *Sustainable Planning Act 2009* (Qld) for Kingvale Station – Lot 1 of KG3 dated 16 April 2014.
- Significant impact Guidelines 1.1
<http://www.environment.gov.au/epbc/publications/significant-impact-guidelines-11-matters-national-environmental-significance>
- Information about the Normanby catchment from Griffith University Australians Rivers Institute, "An Empirically-based sediment budget for the Normanby Basin: Sediment Sources, Sinks and Drivers on the Cape York Savannah", AP Brooks, J Spencer, J Olley, T Pietsch, D Borombovits; G Curwen, JG Shellberg (available at <http://www.capeyorkwaterquality.info/references/cywq-229>).
- EPBC Act Policy Statement - 'Indirect consequences' of an action: Section 527E of the EPBC Act" <http://www.environment.gov.au/resource/epbc-act-policy-statement-indirect-consequences-action-section-527e-epbc-act>
- EPBC Act Policy Statement - Definition of 'Environment' under section 528 of the EPBC Act <http://www.environment.gov.au/resource/epbc-act-policy-statement-definition-environment-under-section-528-epbc-act>
- LandSat 8 and Sentinel- 2 satellite imagery of Kingvale Station.
- Title search – Lot 1 of Survey Plan 280074.



Dean Knudson
Deputy Secretary

23 June 2016

**EXTRACT FROM THE ENVIRONMENT PROTECTION AND BIODIVERSITY
CONSERVATION ACT 1999**

Compilation #50 16 June 2016, Included amendments up to Act No.47, 2016

Registered 20 June 2016 <https://www.legislation.gov.au/Details/C2016C00521/Download>

70 Minister may request referral of proposal

- (1) If the Minister believes a person proposes to take an action that the Minister thinks may be or is a controlled action, the Minister may request:
- (a) the person; or
 - (b) a State, self-governing Territory or agency of a State or self-governing Territory that the Minister believes has administrative responsibilities relating to the action;
- to refer the proposal to the Minister within 15 business days or a longer period agreed by the Minister and the requested person, State, Territory or agency (as appropriate).

Note 1: If the proposal to take the action is not referred, the person cannot get an approval under Part 9 to take the action. If taking the action without approval contravenes Part 3, an injunction could be sought to prevent or stop the action, or the person could be ordered to pay a pecuniary penalty.

Note 2: Section 156 sets out rules about time limits.

- (2) In making a request, the Minister must act in accordance with the regulations (if any).

Deemed referral of proposal

- (3) If:
- (a) the Minister has made a request under subsection (1); and
 - (b) the period for compliance with the request has ended; and
 - (c) the requested person has not referred the proposal to the Minister in accordance with the request;
- the Minister may, within 20 business days after the end of that period, determine in writing that this Act has effect as if:
- (d) if paragraph (1)(a) applies—the requested person had referred the proposal to the Minister under subsection 68(1) at the time the determination was made; or
 - (e) if paragraph (1)(b) applies—the requested person had referred the proposal to the Minister under subsection 69(1) at the time the determination was made.
- (4) A determination under subsection (3) has effect accordingly.
- (5) A copy of a determination under subsection (3) is to be given to the requested person.
- (6) Subsection 68(3) and section 72 do not apply to a referral covered by subsection (3) of this section.
- (8) Subsection 74(3) applies to a referral covered by subsection (3) of this section as if the reference in paragraph 74(3)(a) to the referral were a reference to the determination concerned.



Department of
**State Development,
Infrastructure and Planning**

Our reference: SDA-0214-008018

Date: 16/04/2014

Mr Scott Alexander Harris
9 Main Street
Strathmore Station
Georgetown, Qld, 4871

Dear Mr Harris

Notice of decision

Kingvale Station – Lot 1 on KG3

The Department of State Development, Infrastructure and Planning advises that the development application described below has been approved subject to conditions.

Applicant details

Applicant name: Scott Alexander Harris

Site details

Real property description: Lot 1 on KG3
Local government area: Cook Shire Council

Application details

Proposed development: Development permit for operational work –vegetation clearing for the purposes of high value agriculture (dryland sorghum)

A decision notice for this application is attached.

Copies of the following documents are also attached:

- # relevant appeal provisions in the *Sustainable Planning Act 2009*
- # any plans and specifications approved in relation to the decision notice.

If you require any further information, please contact Joanne Manson, A/Principal Planning Officer, Regional Services – Far North Queensland on (07) 4048 1498 who will be pleased to assist.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Darren Cleland', written in a cursive style.

Darren Cleland
Regional Director

enc: Decision notice
Approved plans and specifications
Attachment 1—Assessment manager conditions and general advice
SPA appeal provisions

Decision notice

(Given under section 334 of the *Sustainable Planning Act 2009*)

Applicant details

Applicant name: Scott Alexander Harris
 Applicant contact details: 9 Main Street
 Strathmore Station
 Georgetown , Qld, 4870

Application details

Level of assessment: Code assessment
 Properly made date: 10 March 2014

Site details

Address: Kingvale Station
 Real property description: Lot 1 on KG3
 Site area (clearing): 2 863 hectares
 Name of owner: Cook Shire Council

Decision

Date of decision: 16 April 2014
 Decision details: Approved subject to conditions

Referral agencies

There were no referral agencies for this application.

Conditions

This approval is subject to:

- # the assessment manager conditions in Attachment 1
- # there are no concurrence agency conditions for this approval.

The department has, for particular conditions of this approval, nominated an entity to be the assessing authority for that condition under section 255D(3) of the *Sustainable Planning Act 2009*.

Aspects of development and development approval granted

Nature of Development	Approval Type	Brief Description of Proposal	Level of Assessment
Operational Work	Development permit	Vegetation clearing for the purpose of high value agriculture (dryland sorghum)	Code Assessment

Further development permits or compliance permits

Please be advised that the following development permits or compliance permits are required to be obtained before the development can be carried out:

- 1Not applicable

Self-assessable codes

Please be advised that the following codes may need to be complied with for self-assessable development related to the approved development:

1 Not applicable

Compliance assessment

Compliance assessment is required under chapter 6, part 10 of the *Sustainable Planning Act 2009* for the following documents or works in relation to the development:

1. Not applicable

Properly made submissions

Not applicable—No part of the application required impact assessment.

Findings on material questions of fact

- # The development application was properly made by the Department of State Development, Infrastructure and Planning on 10 March 2014.
- # The development application contained proposal details, a suitably qualified person report (Spies, 2014) and supporting information which the department relied on in making its assessment.
- # The proposed development seeks to clear vegetation for the purposes of high value agriculture (dryland sorghum crops).
- # The Department of Natural Resources and Mines determined the proposed development is for a relevant purpose in accordance with Section 22A of the *Vegetation Management Act 1999*.
- # The proposed development is considered to meet or proposes acceptable outcomes that meet with the performance outcomes specified in the State Development Assessment Provisions being a statutory planning instrument.

Evidence or other material on which the findings were based

- # All supporting material submitted by the applicant.
- # The development triggers referral agency assessment under the *Sustainable Planning Regulation 2009*.
- # The department undertook an assessment in accordance with the provisions of Section 282 of the *Sustainable Planning Act 2009*.
- # State Development Assessment Provisions; published by the Department of State Development, Infrastructure and Planning version 1.1, dated 22 November 2013 (in effect 2 December 2013) – Module 8.
- # State Assessment and Referral Agency mapping.
- # State Planning Policy December 2013 mapping.
- # Biggs, AJW, Philip, SR 1995a, Soils of Cape York Peninsula, online resource, Queensland Department of Primary Industries, Mareeba.
- # Biggs, AJW, Philip, SR 1995b, Soil survey and agricultural suitability of Cape York Peninsula, CYPLUS land use strategy, online resource, Department of Primary Industries.
- # Bioregion layer, subject lot is contained within a non-coastal bioregion (subregion is Laura Lowlands, Battle Camp Sandstones and Coen Yambo Inlier), see SDAP module 8.4 glossary of terms.
- # Bureau of Meteorology 2014, Rainfall statistics for all years: Pinnacle Station, (www.bom.qld.gov.au) (accessed 13/02/2014).

- # *Department of Natural Resources and Mines 1990, Guidelines for Agricultural Land Evaluation in Queensland, Queensland Government, Coorparoo.*
- # Horne, K 2010, 'Better business feature: six principles for freeing up cash in your business', *Irrigation Australia: The Official Journal of Irrigation Australia*, vol. 25, no. 3, Informit database.
- # Horne, K 2012, Lending to Australian agriculture: financing the farm', viewed 13 November 2013, www.daff.gov.au.
- # *Land Protection (Pest and Stock Route Management) Act 2002.*
- # McDonald, RC, Isbell, RF, Speight, JG, Walker, J & Hopkins MS 1998, *Australian soil and land survey: field handbook*, CSIRO, Canberra.
- # McKenzie, NJ 2008, *Guidelines for surveying soils and land resources*, 2nd edn, CSIRO Publishing, Collingwood.
- # National Australia Bank (NAB) 2013, 'Agribusiness', viewed 13 November 2013, www.nab.com.au.
- # *SA Harris family trust*, business plan for Strathmore Station, no date.
- # *Salinity Management Handbook* (Department of Natural Resources, 1997).
- # *Salinity Management Handbook* (online resource: Department of Natural Resources, 2nd edn, 2011).
- # Shapefiles provided by P Spies, Pinnacle Pocket Consulting.
- # SIRWEB VM databases (Wetland, watercourses, essential habitat, slope, relief).
- # SmartMap Information Services.
- # Spies P 2014, 'Proposed dryland cropping of sorghum and forage sorghum for green chop at Kingvale Station west of Laura', Consultant report, dated 5 February 2014.

Rights of appeal

The rights of applicants to appeal to the Planning and Environment Court against decisions about a development application are set out in chapter 7, part 1, division 8 of the *Sustainable Planning Act 2009*. For particular applications, there may also be a right to appeal to the Building and Development Dispute Resolution Committee (see chapter 7, part 2 of the *Sustainable Planning Act 2009*).

Copies of the relevant appeal provisions are attached.

Relevant period for the approval

This development approval will lapse if development is not started within the relevant periods stated in section 341 of SPA; being two (2) years starting the day the approval takes effect.

Native title considerations

No requirements

Approved plans and specifications

Copies of the following approved plans and specifications are attached:

Drawing or document	Reference no.	Version	Date
Referral Agency Response (Vegetation) Response Plan	2014/000805	N/A	3 March 2014
Proposed Dryland Cropping of Sorghum and Forage Sorghum for green chop at Kingvale Station west of Laura, prepared by Peter Spies, Pinnacle Pocket Consulting	N/A	N/A	5 February 2014

Our reference: SDA-0214-008018
Your reference: Kingvale Station

Attachment 1—Assessment manager conditions

No.	Conditions of development approval	Condition timing
Development permit for operational work – clearing vegetation for the purposes of high value agriculture		
Vegetation clearing - Pursuant to section 255D of the <i>Sustainable Planning Act 2009</i> , the chief executive administering the <i>Sustainable Planning Act 2009</i> nominates the Director-General of the Department of Natural Resources and Mines to be the assessing authority for the development to which the development approval relates for the administration and enforcement of any matter relating to the following condition(s):		
1.	Vegetation clearing must only occur for high value agriculture to establish dryland sorghum crops within the area identified as Area A on the accompanying Referral Agency (Vegetation) Response Plan 2014/000805, dated 3 March 2014.	From the date this approval takes effect and to be maintained at all times.
2.	Vegetation clearing debris must not be pushed into gullies, watercourses, other drainage lines or waterlogged areas.	From the date this approval takes effect and to be maintained at all times.
3.	Where contractors, employees, subcontractors, agents or any other person, that is not the applicant or the permittee, are to be engaged or employed to carry out the clearing of any vegetation under this development permit, the permittee is to provide them with a copy of this permit, including the attached conditions and attached Referral Agency (Vegetation) Response Plan 2014/000805, dated 3 March 2014 and ensure that they are aware of what clearing is authorised by this development permit.	From the date this approval takes effect and to be maintained at all times.
4.	Vegetation clearing must be undertaken in accordance with erosion management actions outlined in the document 'Proposed dryland cropping of sorghum and forage sorghum for green chop at Kingvale Station west of Laura', prepared by Consultant Peter Spies, dated 5 February 2014.	From the date this approval takes effect and to be maintained at all times.

General advice		
1.	These conditions do not prevent vegetation being cleared for a purpose prescribed in Schedule 24 of the Sustainable Planning Regulation 2009 or if cleared in accordance with any subsequent development approval.	
2.	Approval under the <i>Forestry Act 1959</i> may be required if the clearing involves commercial timber species. The Forestry unit at the Department of Agriculture, Fisheries and Forestry can be contacted on 13 25 23 to discuss the process.	

Our reference: SDA-0214-008018
Your reference: Kingvale Station

***Sustainable Planning Act 2009*—Representation and appeal provisions**

The following relevant appeal provisions are provided in accordance with s336(a) of the *Sustainable Planning Act 2009*.

Chapter 6 Integrated development assessment system (IDAS)

Part 8 Dealing with decision notices and approvals

Division 1 Changing decision notices and approvals during applicant's appeal period

360 Application of div 1

This division applies only during the applicant's appeal period.

361 Applicant may make representations about decision

- (1) The applicant may make written representations to the assessment manager about—
 - (a) a matter stated in the decision notice, other than a refusal or a matter about which a concurrence agency told the assessment manager under section 287(1) or (5); or
 - (b) the standard conditions applying to a deemed approval.
- (2) However, the applicant can not make representations under subsection (1)(a) about a condition attached to an approval under the direction of the Minister.

362 Assessment manager to consider representations

The assessment manager must consider any representations made to the assessment manager under section 361.

363 Decision about representations

- (1) If the assessment manager agrees with any of the representations about a decision notice or a deemed approval, the assessment manager must give a new decision notice (the ***negotiated decision notice***) to—
 - (a) the applicant; and
 - (b) each principal submitter; and
 - (c) each referral agency; and
 - (d) if the assessment manager is not the local government and the development is in a local government area—the local government.
- (2) Before the assessment manager agrees to a change under this section, the assessment manager must consider the matters the assessment manager was required to consider in assessing the application, to the extent the matters are relevant.
- (3) Only 1 negotiated decision notice may be given.
- (4) The negotiated decision notice—
 - (a) must be given within 5 business days after the day the assessment manager agrees with the representations; and
 - (b) must comply with section 335; and
 - (c) must state the nature of the changes; and
 - (d) replaces—
 - (i) the decision notice previously given; or

- (ii) if a decision notice was not previously given and the negotiated decision notice relates to a deemed approval—the standard conditions applying to the deemed approval.
- (5) If the assessment manager does not agree with any of the representations, the assessment manager must, within 5 business days after the day the assessment manager decides not to agree with any of the representations, give written notice to the applicant stating the decision about the representations.

364 Giving new notice about charges for infrastructure

- (1) This section applies if the development approved by the negotiated decision notice is different from the development approved in the decision notice or deemed approval in a way that affects the amount of an infrastructure charge, regulated infrastructure charge or adopted infrastructure charge.
- (2) The local government may give the applicant a new infrastructure charges notice under section 633, regulated infrastructure charges notice under section 643 or adopted infrastructure charges notice under section 648F to replace the original notice.

366 Applicant may suspend applicant's appeal period

- (1) If the applicant needs more time to make the representations, the applicant may, by written notice given to the assessment manager, suspend the applicant's appeal period.
- (2) The applicant may act under subsection (1) only once.
- (3) If the representations are not made within 20 business days after the day written notice was given to the assessment manager, the balance of the applicant's appeal period restarts.
- (4) If the representations are made within 20 business days after the day written notice was given to the assessment manager—
 - (a) if the applicant gives the assessment manager a notice withdrawing the notice under subsection (1)—the balance of the applicant's appeal period restarts the day after the assessment manager receives the notice of withdrawal; or
 - (b) if the assessment manager gives the applicant a notice under section 363(5)—the balance of the applicant's appeal period restarts the day after the applicant receives the notice; or
 - (c) if the assessment manager gives the applicant a negotiated decision notice—the applicant's appeal.

Chapter 7 Appeals, offences and enforcement

Part 1 Planning and Environment Court

Division 8 Appeals to court relating to development applications and approvals

461 Appeals by applicants

- (1) An applicant for a development application may appeal to the court against any of the following—
 - (a) the refusal, or the refusal in part, of the development application;
 - (b) any condition of a development approval, another matter stated in a development approval and the identification or inclusion of a code under section 242;
 - (c) the decision to give a preliminary approval when a development permit was applied for;
 - (d) the length of a period mentioned in section 341;
 - (e) a deemed refusal of the development application.
- (2) An appeal under subsection (1)(a), (b), (c) or (d) must be started within 20 business days (the **applicant's appeal period**) after—

- (a) if a decision notice or negotiated decision notice is given—the day the decision notice or negotiated decision notice is given to the applicant; or
 - (b) otherwise—the day a decision notice was required to be given to the applicant.
- (3) An appeal under subsection (1)(e) may be started at any time after the last day a decision on the matter should have been made.

462 Appeals by submitters—general

- (1) A submitter for a development application may appeal to the court only against—
- (a) the part of the approval relating to the assessment manager’s decision about any part of the application requiring impact assessment under section 314; or
 - (b) the part of the approval relating to the assessment manager’s decision under section 327.
- (2) To the extent an appeal may be made under subsection (1), the appeal may be against 1 or more of the following—
- (a) the giving of a development approval;
 - (b) any provision of the approval including—
 - (i) a condition of, or lack of condition for, the approval; or
 - (ii) the length of a period mentioned in section 341 for the approval.
- (3) However, a submitter may not appeal if the submitter—
- (a) withdraws the submission before the application is decided; or
 - (b) has given the assessment manager a notice under section 339(1)(b)(ii).
- (4) The appeal must be started within 20 business days (the **submitter’s appeal period**) after the decision notice or negotiated decision notice is given to the submitter.

463 Additional and extended appeal rights for submitters for particular development applications

- (1) This section applies to a development application to which chapter 9, part 7 applies.
- (2) A submitter of a properly made submission for the application may appeal to the court about a referral agency’s response made by a concurrence agency for the application.
- (3) However, the submitter may only appeal against a referral agency’s response to the extent it relates to—
- (a) development for an aquacultural ERA; or
 - (b) development that is—
 - (i) a material change of use of premises for aquaculture; or
 - (ii) operational work that is the removal, damage or destruction of a marine plant.
- (3) Despite section 462(1), the submitter may appeal against the following matters for the application even if the matters relate to code assessment—
- (a) a decision about a matter mentioned in section 462(2) if it is a decision of the chief executive;
 - (b) a referral agency’s response mentioned in subsection (2).

464 Appeals by advice agency submitters

- (1) Subsection (2) applies if an advice agency, in its response for an application, told the assessment manager to treat the response as a properly made submission.
- (2) The advice agency may, within the limits of its jurisdiction, appeal to the court about —
- (a) any part of the approval relating to the assessment manager’s decision about any part of the application requiring impact assessment under section 314; or

- (b) any part of the approval relating to the assessment manager's decision under section 327.
- (3) The appeal must be started within 20 business days after the day the decision notice or negotiated decision notice is given to the advice agency as a submitter.
- (4) However, if the advice agency has given the assessment manager a notice under section 339(1)(b)(ii), the advice agency may not appeal the decision.

465 Appeals about decisions relating to extensions for approvals

- (1) For a development approval given for a development application, a person to whom a notice is given under section 389, other than a notice for a decision under section 386(2), may appeal to the court against the decision in the notice.
- (2) The appeal must be started within 20 business days after the day the notice of the decision is given to the person.
- (3) Also, a person who has made a request under section 383 may appeal to the court against a deemed refusal of the request.
- (4) An appeal under subsection (3) may be started at any time after the last day the decision on the matter should have been made.

466 Appeals about decisions relating to permissible changes

- (1) For a development approval given for a development application, the following persons may appeal to the court against a decision on a request to make a permissible change to the approval—
 - (a) if the responsible entity for making the change is the assessment manager for the application—
 - (i) the person who made the request; or
 - (ii) an entity that gave a notice under section 373 or a pre-request response notice about the request;
 - (b) if the responsible entity for making the change is a concurrence agency for the application—the person who made the request.
- (2) The appeal must be started within 20 business days after the day the person is given notice of the decision on the request under section 376.
- (3) Also, a person who has made a request under section 369 may appeal to the court against a deemed refusal of the request.
- (4) An appeal under subsection (3) may be started at any time after the last day the decision on the matter should have been made.

467 Appeals about changing or cancelling conditions imposed by assessment manager or concurrence agency

- (1) A person to whom a notice under section 378(9)(b) giving a decision to change or cancel a condition of a development approval has been given may appeal to the court against the decision in the notice.
- (2) The appeal must be started within 20 business days after the day the notice of the decision is given to the person.

Division 11 Making and appeal to Court

481 How appeals to the court are started

- (1) An appeal is started by lodging written notice of appeal with the registrar of the court.
- (2) The notice of appeal must state the grounds of the appeal.
- (3) The person starting the appeal must also comply with the rules of the court applying to the appeal.
- (4) However, the court may hear and decide an appeal even if the person has not complied with subsection (3).

482 Notice of appeal to other parties—development applications and approvals

- (1) An appellant under division 8 must give written notice of the appeal to—
 - (a) if the appellant is an applicant—

- (i) the chief executive; and
 - (ii) the assessment manager; and
 - (iii) any concurrence agency; and
 - (iv) any principal submitter whose submission has not been withdrawn; and
 - (v) any advice agency treated as a submitter whose submission has not been withdrawn; or
- (b) if the appellant is a submitter or an advice agency whose response to the development application is treated as a submission for an appeal—
- (i) the chief executive; and
 - (ii) the assessment manager; and
 - (iii) any referral agency; and
 - (iv) the applicant; or
- (c) if the appellant is a person to whom a notice mentioned in section 465(1) has been given—
- (i) the chief executive; and
 - (ii) the assessment manager for the development application to which the notice relates; and
 - (iii) any entity that was a concurrence agency for the development application to which the notice relates; and
 - (iii) the person who made the request under section 383 to which the notice relates, if the person is not the appellant; or
- (d) if the appellant is a person mentioned in section 466(1)—
- (i) the chief executive; and
 - (ii) the responsible entity for making the change to which the appeal relates; and
 - (iii) the person who made the request to which the appeal relates under section 369, if the person is not the appellant; and
 - (iv) if the responsible entity is the assessment manager—any entity that was a concurrence agency for the development application to which the notice of the decision on the request relates; or
- (e) if the appellant is a person to whom a notice mentioned in section 467 has been given—the entity that gave the notice.
- (2) The notice must be given within—
- (a) if the appellant is a submitter or advice agency whose response to the development application is treated as a submission for an appeal—2 business days after the appeal is started; or
 - (b) otherwise—10 business days after the appeal is started.
- (3) The notice must state—
- (a) the grounds of the appeal; and
 - (b) if the person given the notice is not the respondent or a co-respondent under section 485—that the person may, within 10 business days after the notice is given, elect to become a co-respondent to the appeal by filing in the court a notice of election in the approved form.

485 Respondent and co-respondents for appeals under div 8

- (1) Subsections (2) to (8) apply for appeals under sections 461 to 464.
- (2) The assessment manager is the respondent for the appeal.
- (3) If the appeal is started by a submitter, the applicant is a co-respondent for the appeal.
- (4) Any submitter may elect to become a co-respondent for the appeal.
- (5) If the appeal is about a concurrence agency's response, the concurrence agency is a co-respondent for the appeal.

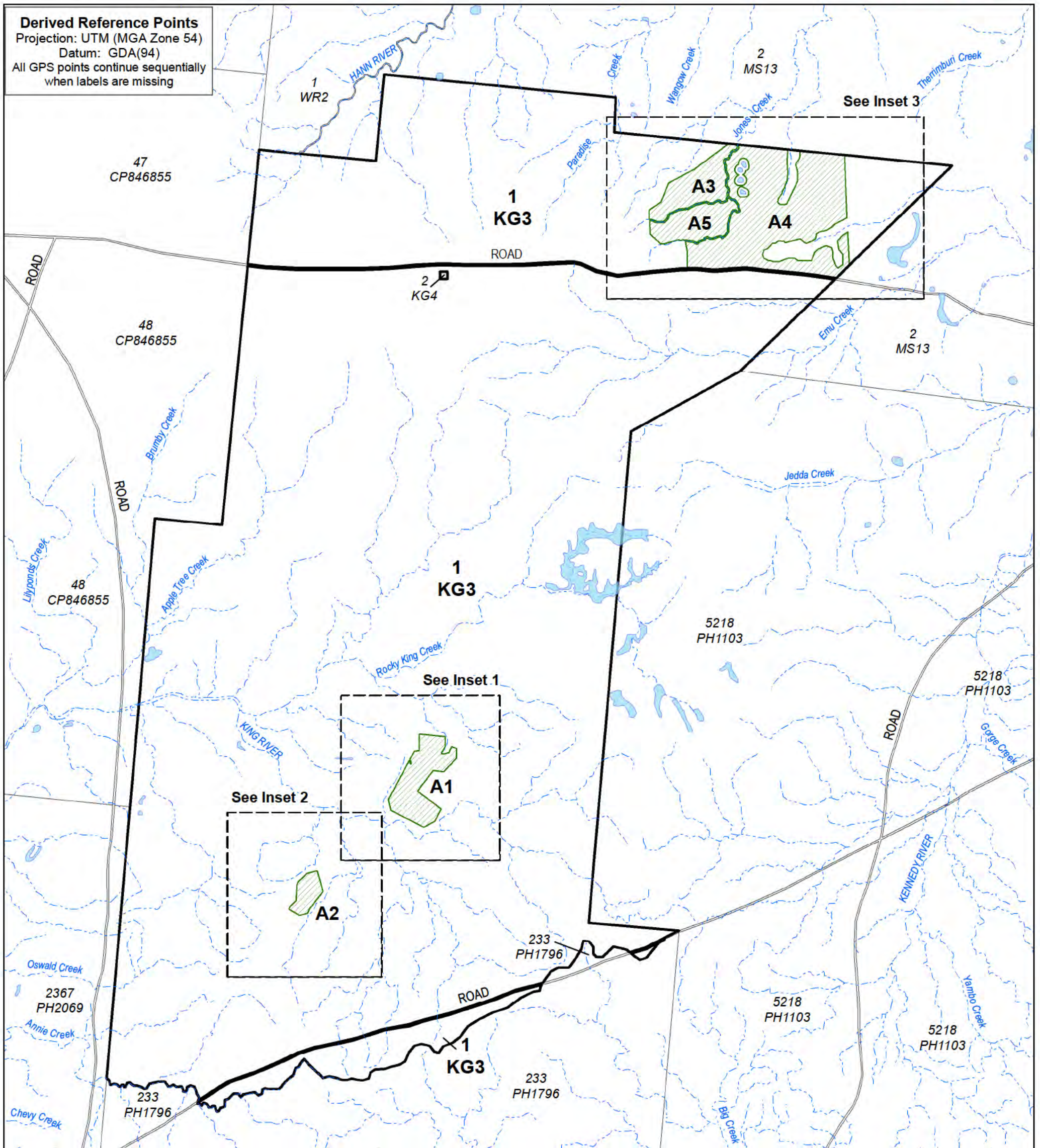
- (6) If the appeal is only about a concurrence agency's response, the assessment manager may apply to the court to withdraw from the appeal.
- (7) The respondent and any co-respondents for an appeal are entitled to be heard in the appeal as a party to the appeal.
- (8) A person to whom a notice of appeal is required to be given under section 482 and who is not the respondent or a co-respondent for the appeal may elect to be a co-respondent.
- (9) For an appeal under section 465—
 - (a) the assessment manager is the respondent; and
 - (b) if the appeal is started by a concurrence agency that gave the assessment manager a notice under section 385—the person asking for the extension the subject of the appeal is a co-respondent; and
 - (c) any other person given notice of the appeal may elect to become a co-respondent.
- (10) For an appeal under section 466—
 - (a) the responsible entity for making the change to which the appeal relates is the respondent; and
 - (b) if the responsible entity is the assessment manager—
 - (i) if the appeal is started by a person who gave a notice under section 373 or a pre-request response notice—the person who made the request for the change is a co-respondent; and
 - (ii) any other person given notice of the appeal may elect to become a co-respondent.
- (11) For an appeal under section 467, the respondent is the entity given notice of the appeal.

488 How an entity may elect to be a co-respondent

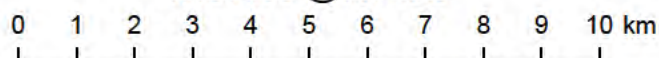
An entity that is entitled to elect to be a co-respondent to an appeal may do so, within 10 business days after notice of the appeal is given to the entity, by following the rules of court for the election.

490 Lodging appeal stops particular actions

- (1) If an appeal, other than an appeal under section 465, 466 or 467, is started under division 8, the development must not be started until the appeal is decided or withdrawn.
- (2) If an appeal is about a condition imposed on a compliance permit, the development must not be started until the appeal is decided or withdrawn.
- (3) Despite subsections (1) and (2), if the court is satisfied the outcome of the appeal would not be affected if the development or part of the development is started before the appeal is decided, the court may allow the development or part of the development to start before the appeal is decided.



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Projection: UTM (MGA Zone 54) Datum: GDA94

Note: Derived Reference Points are provided to assist in the location of the Referral Agency Response boundaries. Responsibility for locating these boundaries lies solely with the landholder and delegated contractor(s).

The property boundaries shown on this plan are APPROXIMATE ONLY. They are NOT an accurate representation of the legal boundaries.

Note: This plan must be read in conjunction with Referral Agency Response 2014/000805

LEGEND

- ⊕ Derived Reference Points for GPS
- Subject Lot(s)
- ▨ Area A
- ~ Watercourse
- Wetlands

**Referral Agency Response (Vegetation) Plan
Plan of Area A (Parts A1 - A5) in Lot 1 on KG3**



CENTRE: TOWNSVILLE
LOCALITY OF LAURA

REGION: NORTH
LOCAL GOVT: COOK SHIRE

Map Reference: 7566,7666,7766

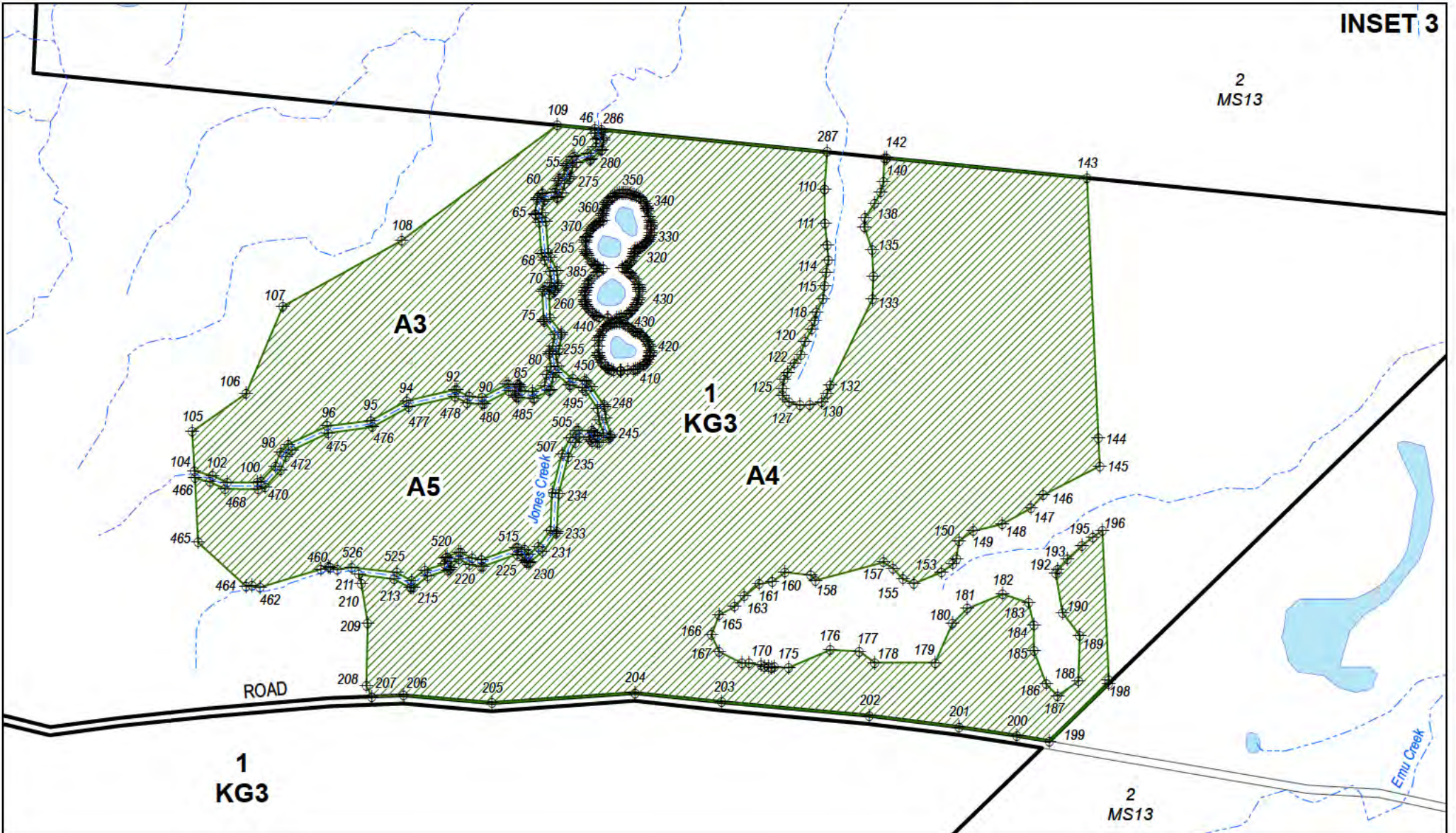
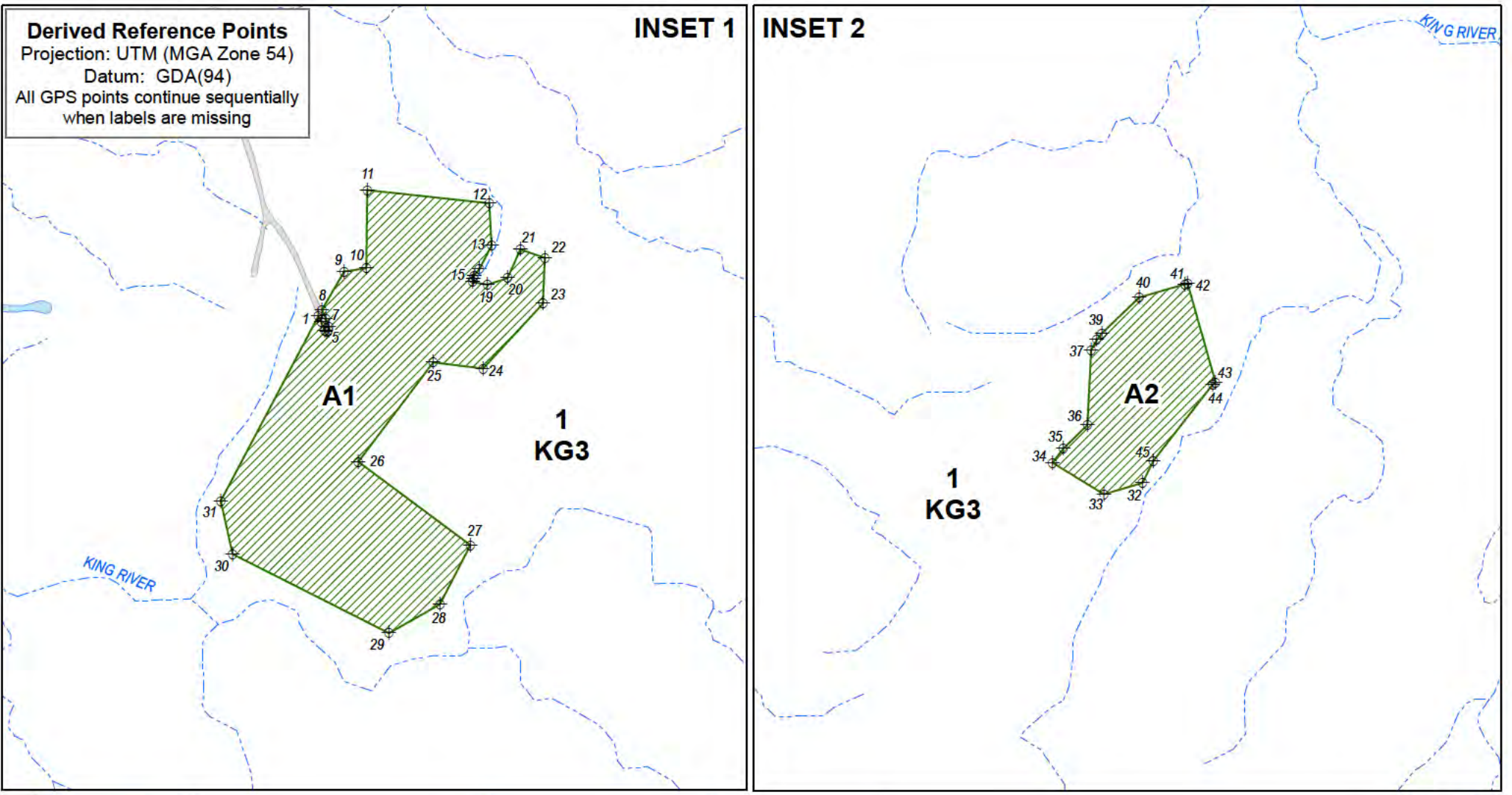
Compiled from: DCDB, PVMP & VMO Notes

File Reference: 2014/000805

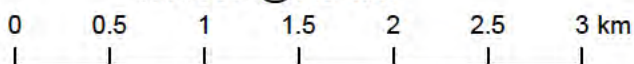
Prepared by: EMR

Date: 3 March 2014

RARP
2014/000805
Sheet 1 of 3



1:40000 @ A3 size



Projection: UTM (MGA Zone 54) Datum: GDA94

Note: Derived Reference Points are provided to assist in the location of the Referral Agency Response boundaries. Responsibility for locating these boundaries lies solely with the landholder and delegated contractor(s).

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Note: This plan must be read in conjunction with Referral Agency Response 2014/000805

LEGEND ◆ Derived Reference Points for GPS Subject Lot(s) Area A Watercourse Wetlands Non Remnant RE	Referral Agency Response (Vegetation) Plan Plan of Area A (Parts A1 - A5) in Lot 1 on KG3		 RARP 2014/000805 Sheet 2 of 3
	CENTRE: TOWNSVILLE LOCALITY OF LAURA	REGION: NORTH LOCAL GOVT: COOK SHIRE	
	Map Reference: 7566,7666,7766 File Reference: 2014/000805	Compiled from: DCDB, PVMP & VMO Notes Prepared by: EMR Date: 3 March 2014	



Kingsvale Station – MNES Preliminary survey, December 2015, and assessment of species occurrence

Prepared For **Section 22** Commonwealth Dept of Environment

Date 6th January 2016

Citation: Redleaf Environmental (2015) Kingvale Station – MNES Preliminary survey, Dec 2015, and assessment of species occurrence.

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Front Page: *Saccolaimus saccolaimus* from the NT.

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Summary

This report provides the results of a field assessment undertaken in connection with areas identified for clearing on Kingsvale Station as part of a High Value Agriculture project that has been approved by the previous Queensland Government. This report provides information in relation to MNES species that may occur in the area, these species being initially flagged by an interrogation of the MNES database.

The areas surveyed consisted of open forests of *Eucalyptus* and *Corymbia* on sandplains and basalt-derived red, acidic volcanics.

At the time of the field survey, wildlife activity was suppressed due to the exceedingly dry conditions and of the four EPBC listed bat species that were listed in the MNES report, it was found that one set of calls match those produced by the Bare-rumped Sheathtail Bat (*Saccolaimus saccolaimus*). The identification is not confirmed, since one other species, *Saccolaimus mixtus*, also produces a similar call, and further survey would be required to investigate the occurrence of the MNES species (*S. saccolaimus*) in this area, which would be a westerly range extension. Prior to these records, the most westerly point in the distribution of this species was on the Normanby River on Kings Plains Station, some 50km east of Laura (Dr R. Coles survey for South Endeavour Trust Nov 2015). For *Saccolaimus mixtus*, the records would represent a southerly range extension.

Saccolaimus saccolaimus is a tree roosting bat and occurs in forest and woodland habitats as well as riparian areas and the edge of rainforest.

Based on a habitat assessment during the survey, it is possible that several other MNES threatened species occur in the area or in nearby habitats. The species most likely to occur in the area is the Northern Quoll (*Dasyurus hallucatus*). As in the case of the bat, further intensive survey work would be required to establish if this species occurs in the subject area.

The degree to which the proposed clearing would impact on these species is difficult to assess, however both roosting and foraging habitat would be destroyed by the clearing in the case of the sheathtail bat, and foraging habitat and population connectivity may be affected in the case of the quoll.

1. Introduction

A survey of MNES listed bat species was commissioned by the Commonwealth Department of Environment in respect of a number of areas that are slated for clearing as part of a High Value Agriculture project on Kingsvale Station, Cape York. The project had not been referred under the EPBC Act 1999, and thus no assessment of impacts to MNES had been considered. The objective of the survey was to conduct an initial broad assessment of the areas to determine the likelihood of EPBC listed bats being present.

2. Ecosystems

The areas are mapped by the Queensland Herbarium as the Regional Ecosystems listed in the following table (Table 1). The vegetation is broadly described as open Eucalypt forest and *Melaleuca* seasonal swamplands on sandplains, and *Corymbia* forest on basalt derived red earths and erosional surfaces.

RE	Description
3.5.7	<i>Eucalyptus tetradonta</i> +/- <i>Corymbia clarksoniana</i> woodland on sand plains
3.3.50	<i>Melaleuca viridiflora</i> +/- <i>Petalostigma pubescens</i> +/- <i>M. stenostachya</i> low open woodland on low plains
3.5.12	<i>Eucalyptus tetradonta</i> +/- <i>Corymbia nesophila</i> +/- <i>C. clarksoniana</i> woodland on undulating rises
3.3.49	<i>Melaleuca viridiflora</i> low open woodland on low plains
3.12.10	<i>Eucalyptus cullenii</i> +/- <i>Corymbia clarksoniana</i> woodland on acid volcanic ranges
3.11.11	<i>Corymbia stockeri</i> +/- <i>Eucalyptus tetradonta</i> woodland on hills and erosional surfaces
3.11.7	<i>Eucalyptus cullenii</i> and <i>Corymbia clarksoniana</i> woodland on low metamorphic hills and rises
3.3.25	<i>Eucalyptus leptophleba</i> +/- <i>Corymbia tessellaris</i> +/- <i>E. platyphylla</i> woodland on riverine levees and floodplains

Table 1. Regional Ecosystems identified in the proposed clearing areas.

3. Desktop EPBC Search

MNES Bat species listed as possibly occurring in the area (identified in the MNES report with a buffer of 40km and central co-ordinate placed in the middle of the largest area of proposed clearing), are included below in Table 2.

Common Name	Scientific Name	EPBC Status
Spectacled Flying Fox	<i>Pteropus conspicilatus</i>	Vul
Greater Warty-nosed Leafnosed Bat	<i>Hipposideros semoni</i>	En
Large-eared Horseshoe Bat	<i>Rhinolophus robertsi</i>	En
Bare-rumped Sheathtail Bat	<i>Saccolaimus saccolaimus</i>	CrEn
Red Goshawk	<i>Erythrotriorchis radiatus</i>	Vu

Gouldian Finch	<i>Erythura gouldiae</i>	En
Golden-shouldered Parrot	<i>Psephotus chrysopterygius</i>	En
Painted Snipe	<i>Rostratula australis</i>	En
Buff-breasted Button Quail	<i>Turnix olivii</i>	En
Common Mistfrog	<i>Litoria rheocola</i>	En
Brush-tailed Rabbit Rat	<i>Conilurus pencillatus</i>	Vu
Northern Quoll	<i>Dasyurus hallucatus</i>	En
Black-footed Tree-rat	<i>Mesimbrionomys gouldii rattooides</i>	Vu
Cape York Rock Wallaby	<i>Petrogale coenensis</i>	En
Koala	<i>Phascolarctos cinereus</i>	Vu

Table 2. MNES vertebrates (threatened species)

4. Bats - Field Survey

A bat survey of the proposed clearing areas was conducted on the nights of the 14th, 15th and 16th December using an active search methodology with a Pettersson full spectrum bat detector to record echo-location calls of flying bats. Sound sampling was conducted for a total of 5.5hrs. Daytime assessments of habitat quality and potential bat roosting sites were also undertaken across all proposed clearing areas.

4.1. Echo-location Call Survey Results

The echo-location survey returned four species;

- > Yellow-bellied Sheathtail Bat, *Saccolaimus flaviventris*
- > Northern Freetail Bat, *Chaerephon jobensis*
- > Eastern Freetail Bat, *Mormopterus ridei*
- > Hoary Wattled Bat, *Chalinolobus nigrogriseus*
- > Bare-rumped Sheathtail Bat, *Saccolaimus saccolaimus* / Papuan Sheathtail Bat, *Saccolaimus mixtus*

4.2. Bare-rumped Sheathtail Bat Records

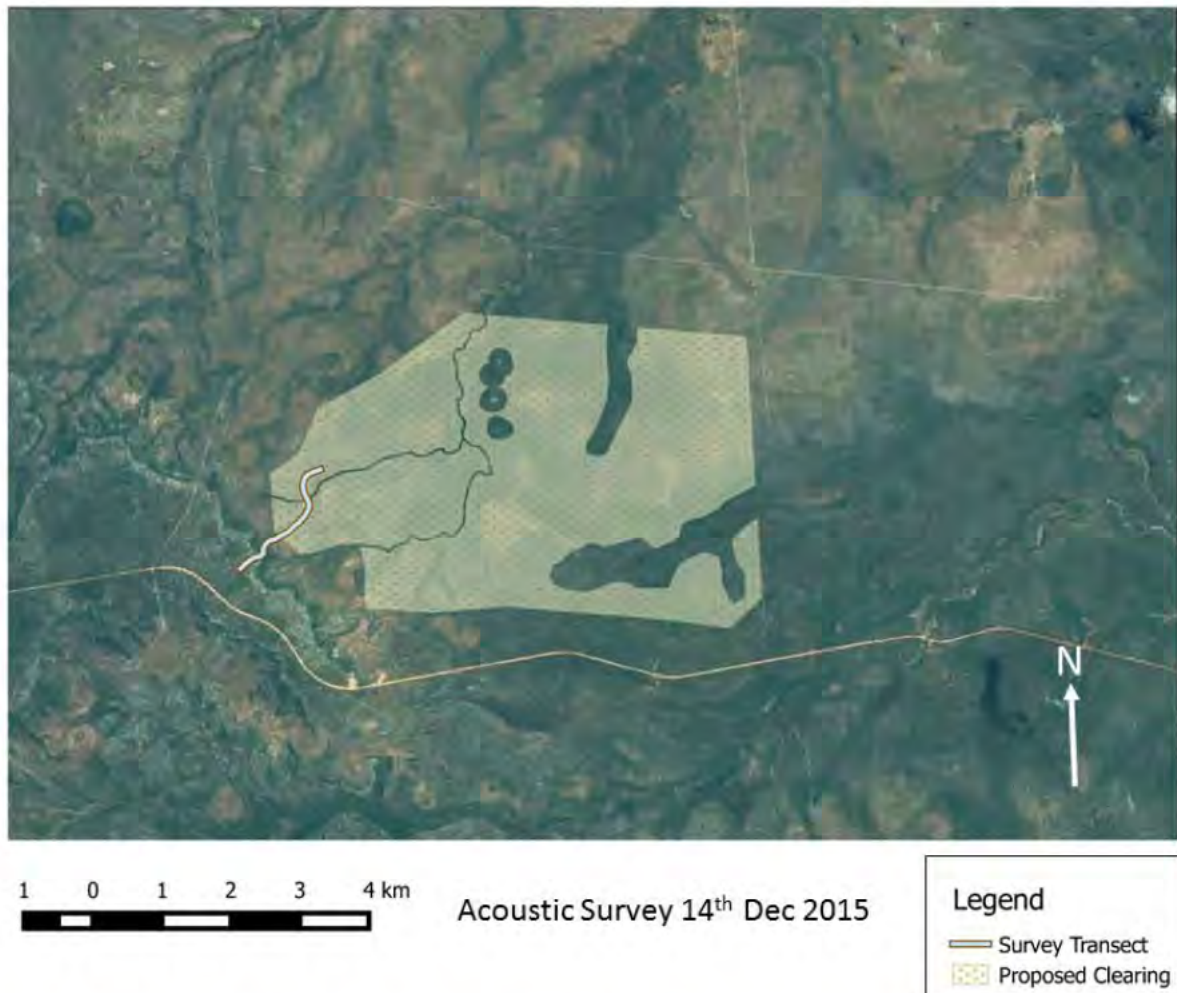
Sound recordings of the search phase calls of flying bats made on the night of the 14th December 2015 along the transect shown on Map 1, match reference calls of *Saccolaimus saccolaimus*. This species has a call that is similar in many respects to several others that may occur in the area and although it occasionally produces a highly distinctive call feature that can be used for positive diagnosis. The calls recorded on the trip, unfortunately did not contain this distinctive feature, and so conclusive identification can not be made. The calls may also be attributable to *Saccolaimus mixtus* which is also unconfirmed in this area but may occur. In both cases, the calls have a frequency range of 23 to 25kHz and are relatively flat. Further call recordings are required to make a positive

identification, supplemented by mist-netting at sites where the bats may be coming low enough to the ground to be caught (usually over open water).

S. saccolaimus usually occurs in wet eucalypt and riparian forest along the north east coast of Cape York, although actual habitat preferences are still not fully understood. Their western distributional limits are unknown, however, apart from the records described herein, which could be new westerly records, there is a recent confirmed record from a site 50km east of Laura on the Normanby River, Kings Plains Station, some 50km east of Laura. The records from Kingvale would also represent a southerly range extension for *Saccolaimus mixtus* (EPBC – not listed) if confirmed. This species has previously been recorded just south of Weipa.

S. saccolaimus roosts in tree hollows where they are known to aggregate in relatively large numbers (20 – 200). They and forage over adjacent woodlands and forests.

Figure 1 shows a sample of the calls recorded during the survey and Figure 2 shows a sample of positively identified *S. saccolaimus* calls from Iron Range, CYP.



Map 1. Showing the transect used for active detection on the night of the 14th Dec when the recordings were made.

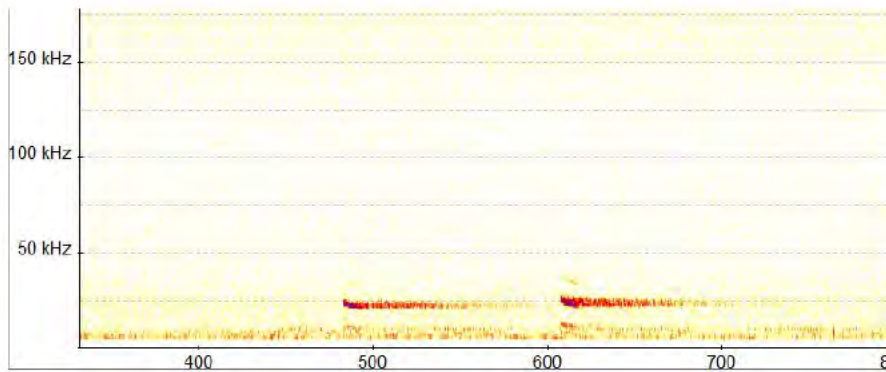


Figure 1. Sample of the call signature typical of Bare-rumped Shearwater Bats, recorded on the night of the 14th Dec on the transect shown on Map 1 above.

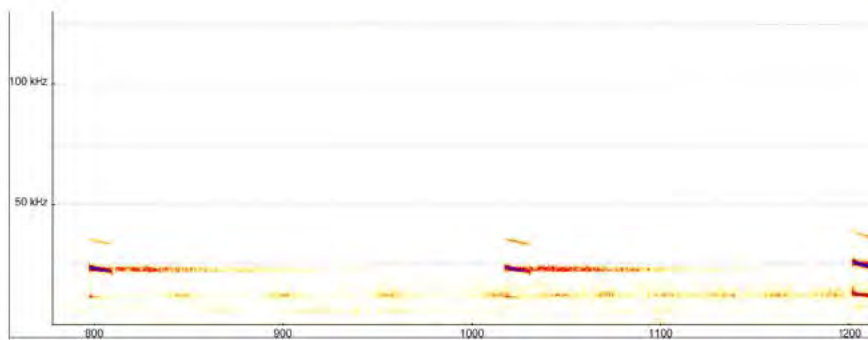


Figure 2. Confirmed call sequence from *S. saccolaimus* from Iron Range recorded by Ms Julie Broken-Brow 2015 (University of Queensland).

5. EPBC Habitat Assessment for Other Listed Species

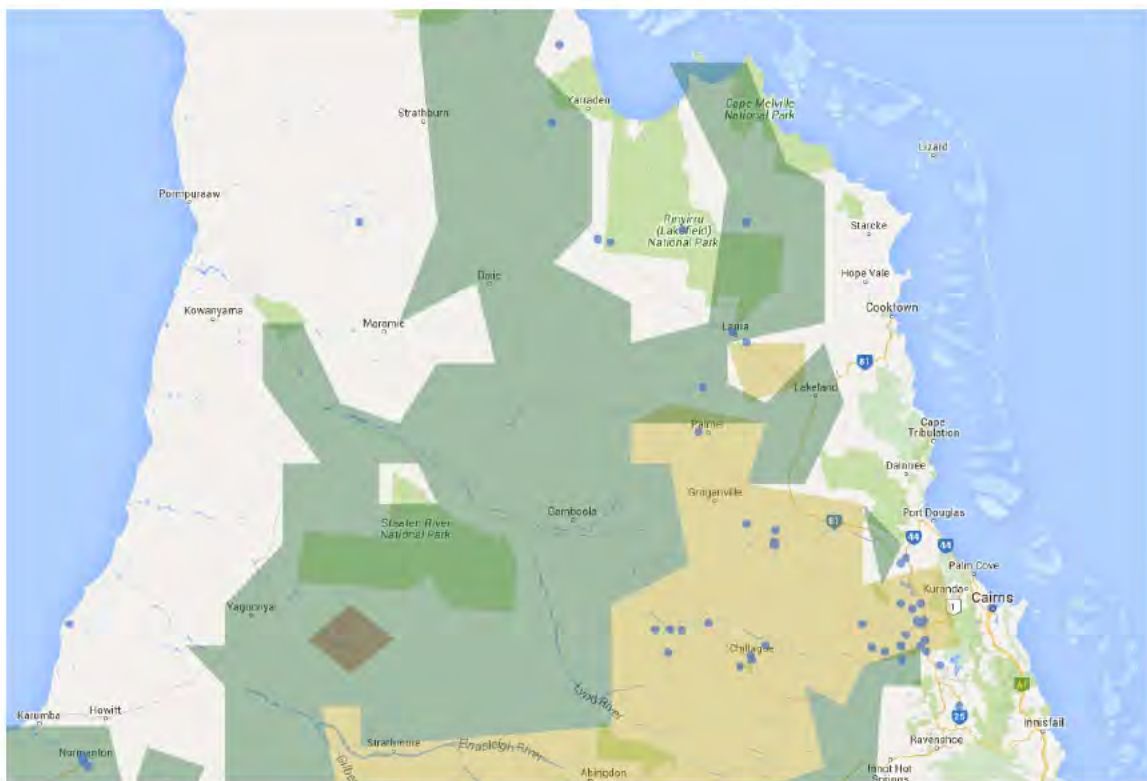
Two of the EPBC listed bat species for this area have highly specific roosting requirements and for these, roosting sites are likely to be a limiting factor that determines distribution. Table 3 below summarises information for these bats and other EPBC listed species, indicating likelihood of occurrence in the subject areas, given the sparsity of surveys and observations this part of Cape York.

Species	Habitat	Likelihood of Occurrence
Spectacled Flying Fox	Eucalypt forests, rainforest and coastal habitats along the north-east Australian coast with highest population density in the Wet Tropics Bioregion.	Possibly occurs during wet periods when Eucalypts are flowering but generally confined to more coastal habitats to the east. Impacts likely to be insignificant
Greater Warty-nosed Leafnosed Bat	Roosts in caves occasionally in abandoned mines. In this region of Cape York, occurs around karst and sandstone	Does not occur. Suitable roosting habitat was not found in the subject areas.

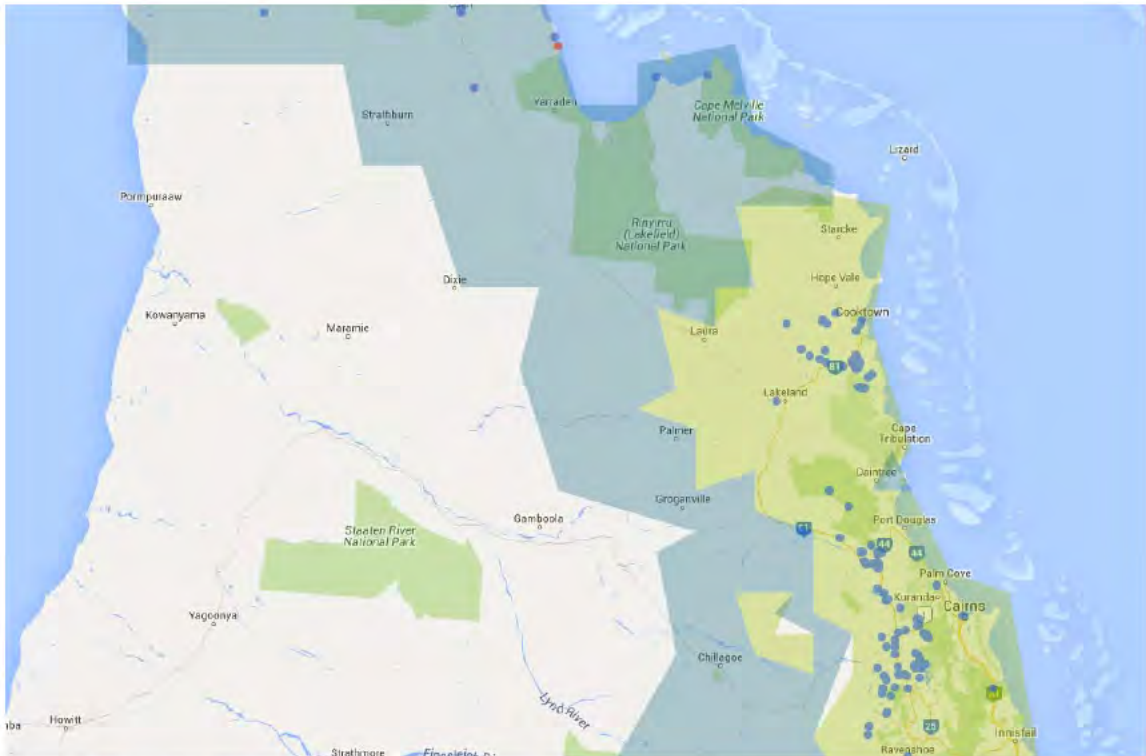
	habitats. Foraging habitat is usually dense vegetation and grass.	Impacts likely to be insignificant
Large-eared Horseshoe Bat	Roosts in caves, in large tree hollows, under creek banks and in culverts. In arid parts of its range, it is confined to caves and deep recesses where humidity levels are high. Forages in dry savannah with grassy understorey or in dense vegetation.	Does not occur. Suitable roosting habitat was not found in the subject areas. Impacts likely to be insignificant
Gouldian Finch	Eucalypt grassland. Most habitats in the subject area appeared to be substantially degraded and unlikely to provide good habitat, although records of this species are known from Laura and Palmer River (Map 2)	This species has not been recorded in the area, however survey effort and extent of surveys can not be reliably determined. May occur in suitable habitats. Impacts not possible to predict without further data.
Red Goshawk	Various forest types and woodlands across the subject area but sparsely distributed and difficult to detect. The area is not shown as a likely area of distribution for this species, but further surveys may identify nesting birds in this area.	Based on habitat assessments and known distribution records, the species may possibly occur in the subject areas but detailed survey work would be required to identify presence. Impacts not possible to predict without further data.
Golden-shouldered Parrot	Known to occur within the region and nests in termite mounds where sparse vegetation structure appears to be a critical habitat feature. Recorded north and south (Staaten River NP) of the subject area.	This species has not been recorded in the area, however survey effort and extent of surveys can not be reliably determined. May occur in suitable habitats. Proposed clearing areas contain termite mounds. Impacts not possible to predict without further data.

Painted Snipe	Widespread in wetlands – swamps, marshes and seasonally inundated areas.	Suitable habitat not found in the subject areas. Impacts likely to be insignificant
Buff-breasted Button-quail	Found primarily in association with rock hills / grasslands. Very poorly known and ecology is not fully understood.	Unable to provide an assessment based on the data at hand.
Common Mistfrog	Found in or near permanent water in rainforest.	Suitable habitat not found in the subject areas. Impacts likely to be insignificant
Brush-tailed Rabbit Rat	Eucalypt forest but no records from southern Cape York. Nearest confirmed location is Mornington Island.	Unlikely to occur. Impacts likely to be insignificant
Northern Quoll	Primary habitat is rocky ridges and cliff lines in dry forest. May venture out into adjacent woodlands and is known to use termite mounds as shelter. Map 3 shows local distribution based on records and expert opinion from Atlas of Living Australia.	Likely to occur along rocky ridges with outcropping boulders and scree, and likely to extend into open woodlands under suitable climatic conditions. Impacts likely to be destruction of foraging habitat and loss of connectivity (inhibiting gene flow) between populations. Further survey is warranted.
Black-footed Tree Rat	Habitat is described as tall <i>Eucalyptus miniata</i> forest with shrub understorey. This habitat type was not found in the subject areas, however there are records from near Laura and south near the Palmer River (Map 4)	Based on habitat assessments and known distribution records, the species may possibly occur in the subject areas but detailed survey work would be required to identify presence. Impacts not possible to predict without further data.
Cape York Rock Wallaby	Occurs along the eastern margin of Cape York Peninsula in association	Suitable habitat not found in the subject areas. Well outside known distribution.

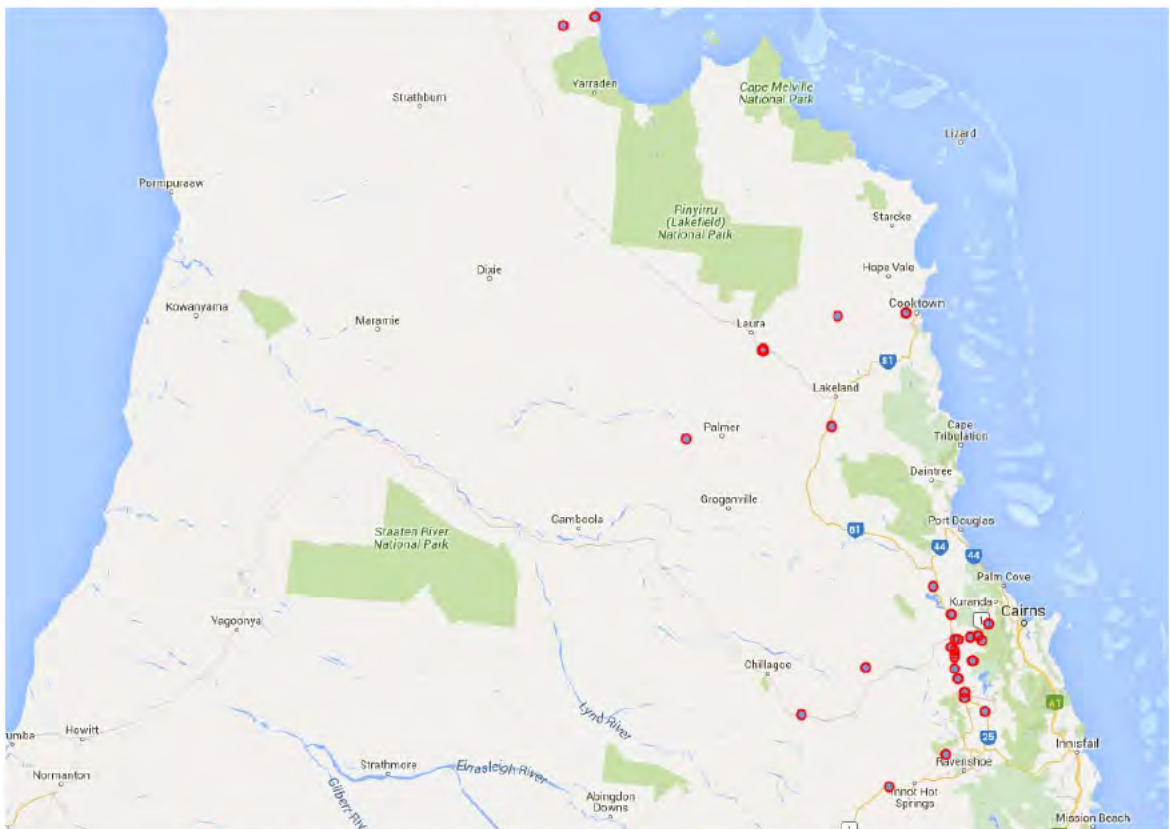
	with rocky outcrops in monsoon vine thicket.	Impacts likely to be insignificant
Koala	Eucalypt forests. Northern most records from Chillagoe and Port Douglas. Laura is included as a possible northern-most distributional limit but without records, it appears likely that koala's don't occur in the area.	Well outside known distribution. Impacts likely to be insignificant



Map 2. Records of Gouldian Finch from Atlas of Living Australia.



Map 3. Records of Northern Quoll from Atlas of Living Australia.



Map 4. Records of Black-footed Tree Rat from Atlas of Living Australia.

6. Survey Outcomes

Short-term surveys for threatened species are often equivocal and fail to provide definitive results to resolve species occurrences and distributions. In this case, MNES bat species were actively surveyed whilst other MNES species (threatened vertebrates only) were assessed on the basis of habitat suitability only.

The results suggest that one MNES bat species, the Bare-rumped Sheath-tail Bat, is likely to occur in the area and this contention is supported by echo-location call analysis from calls recorded within one of the proposed clearing areas.

The habitat assessment also suggests that at least one other MNES species, the Northern Quoll may occur in proximity to the proposed clearing areas and that vegetation removal may diminish foraging areas and impede the movement of animals between key habitat areas, fragmenting populations and contributing to long term population decline.

A further five MNES species may occur in this region, which has been very poorly surveyed in the past. Without further survey effort, an assessment of impacts for these species is not possible.

In all cases, the most reliable way to reduce this uncertainty is to conduct further specialised and targeted surveys in a systematic manner, so as to develop a more coherent understanding of distributions and habitat preferences.

In terms of the results for the bat survey using echo-location call analysis, the total number of bat species identified was particularly low, in comparison to the number that potentially may occur in the region (approximately 15 species). This result may have been due to the continuing dry conditions in the area at the time of the survey, and further surveys during, or towards the end of a wet season may return better results. This would also be optimal time to survey for *S. saccolaimus* and to confirm its presence in the area.

The most likely habitats to target for this species would be riparian corridors and areas with larger trees. The surveys would need to include mist netting at high level in the tree canopy (recently recommended for inclusion in the Commonwealth Survey Guidelines), and netting over larger water bodies where bats fly low to drink and catch insects.



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Our Footprint for Future Generations

**Soil Erosion and Downstream Sedimentation Risks Associated with
Proposed Vegetation Clearing for Agricultural Development
on Kingvale Station, Lot 1 on Plan KG2, Cape York Peninsula**

Produced By:

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January 2016



Produced For:

Department of the Environment

Commonwealth of Australia

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1 Introduction

It is currently proposed to clear and develop 2,863 hectares of forested land for agricultural cropping on Kingvale Station, Lot 1 on Plan KG2, Cape York Peninsula (Spies 2014). The proposal is to clear native forest vegetation from 2408 ha of land in the headwaters of the Normanby Catchment (Hann and Kennedy River sub-catchments) and 455 ha of land in the headwaters of the Mitchell Catchment (King and Palmer River sub-catchments) (Figure 1). This proposed clearing was approved in January 2015 by the previous Queensland State Government, but clearing has not yet commenced at the time of this report in January 2016. The Commonwealth of Australia, Department of Environment, commissioned Dr. Jeffrey Shellberg [BSc Geoscience, MSc Forest Hydrology, PhD Fluvial Geomorphology) to advise on the risks to soil and gully erosion that the proposed project could generate and accelerate, as well as downstream sedimentation impacts. The specific scope of the assessment were to:

- 1) Examine the formation and structure of the geological features within Kingvale Station;
- 2) Advise as to whether or not the soil types and topography of those portions of the property upon which the clearing is proposed to be undertaken, have the potential to result in increased erosion risk;
- 3) Advise as to how, should there be an increase in erosion, could this impact on sediment load delivered into the Normanby catchment and subsequently onto the Great Barrier Reef;
- 4) Report on any limitations and assumptions associated with predictions and assessments; and
- 5) Advise on the need for further surveys or assessments to address data deficiencies.

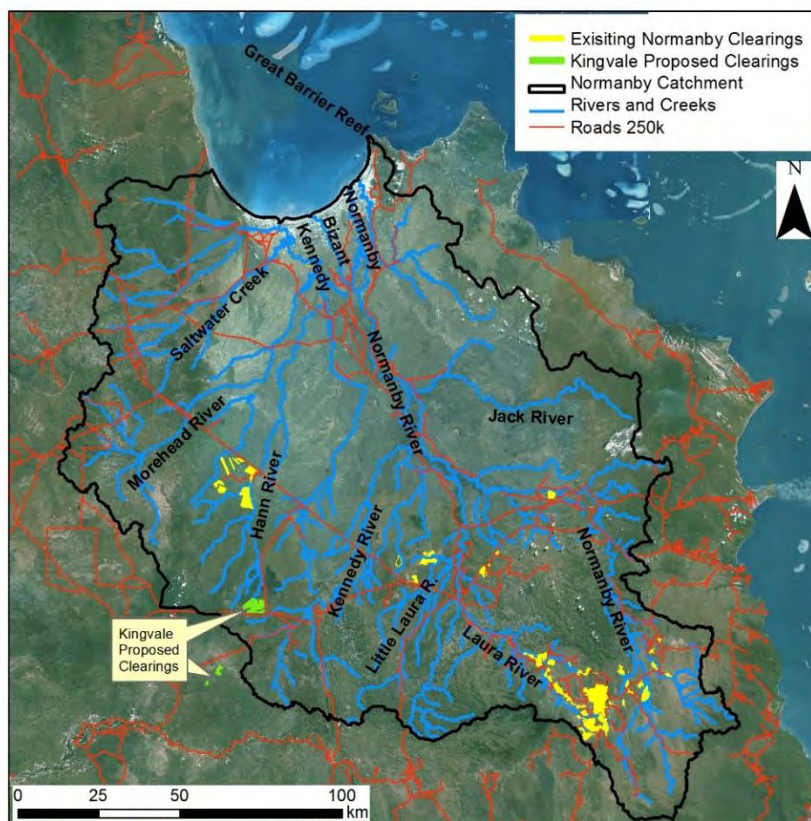


Figure 1 Locations of the proposed forest clearings for agriculture on Kingvale Station in the Normanby Catchment (Area 1) and the adjacent Mitchell Catchment (Area 2 and 3). Also shown are the exiting forest clearings for agricultural and pasture in the Normanby catchment, as well as other proposed clearings.

Time limitations at the beginning of the 2015/2016 rainfall wet season only allowed for the preliminary field assessment of Area 1 (2408 ha) proposed to be cleared on Kingvale Station. Area 1 is located the headwaters of the Normanby Catchment (Hann/Kennedy River sub-catchments) at the edge of the Kimba Plateau (Figure 2; Spies 2014). Proposed Areas 2 and 3 (455 ha of land) in the Mitchell Catchment were not assessed for their potential land use impact on soil erosion, but should be in the near future.

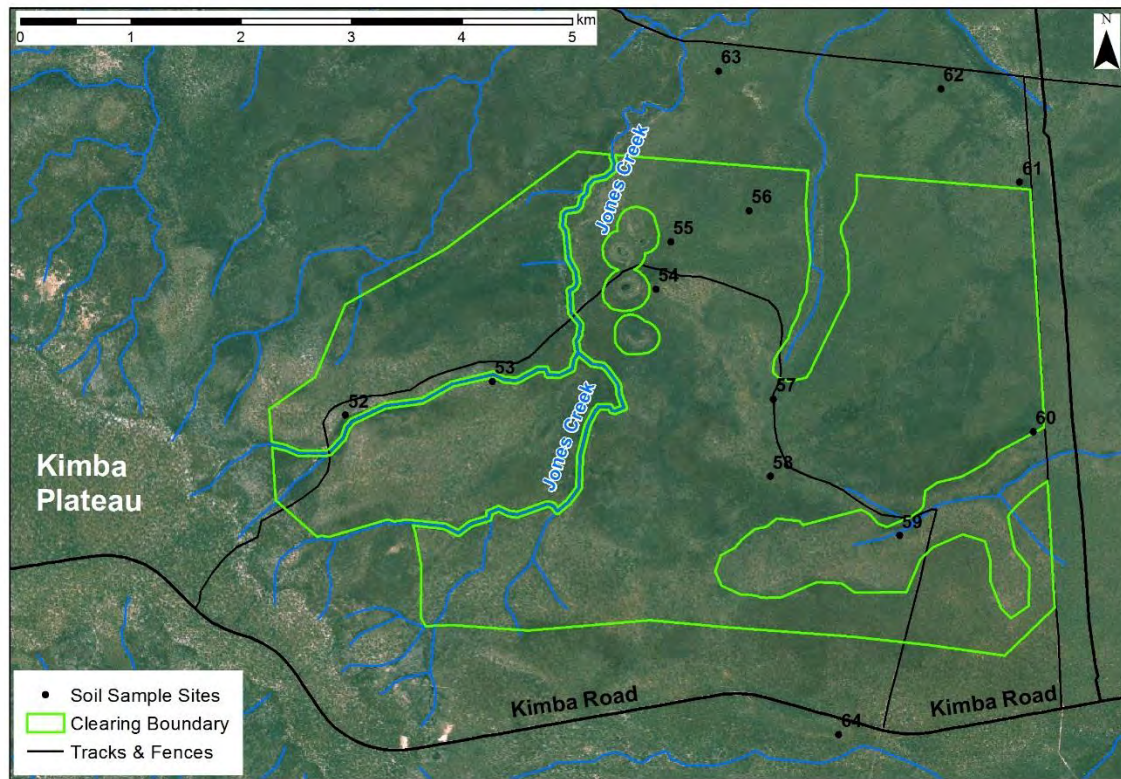


Figure 2 The proposed Area 1 (2408 ha) to be cleared for agriculture (green area) in the Normanby catchment and headwaters of the Hann River (Jones Creek) and Kennedy River (Emu Creek). Soil site numbers from Spies 2014 are included in the map.

2 Methods

The supporting detail provided for the proposed clearings on Kingvale Station is the report titled *“Proposed Dryland Cropping of Sorghum and Forage Sorghum for green chop at Kingvale Station west of Laura”* (Spies 2014), along with associated soil test data. A detailed Environmental Impact Assessment has not been conducted for this proposed development. Thus for this preliminary assessment of soil erosion risk, the proposal and report by Spies (2014) is reviewed for context, data, and assessment validity, as is the field potential for accelerated erosion from the proposed land use development.

2.1 Desk-Based Review of Regional Data and Literature Relevant to Soil Erosion Risk

Existing data and reports on the physical landscape of the Kimba Plateau and surroundings were consulted to provide the hydrogeomorphic context for the site of the proposed clearing at Area 1 on Kingvale Station. Historic reports and data on soils (Isbell et al. 1968; Biggs 1994a; Biggs and Philip 1995ab), land systems (Galloway et al., 1970), topography (SRTM DTED2, 2000), geology (Whitaker and Grimes 1977; Wilford et al. 1995; Blewett and Wilford 1996), and hydrology (Horn 1995; Horn et al. 1995) were consulted for general site context. Much of the physical landscape information

contained in these reports and others has already been summarised for the Kimba Plateau region, along with new local data and information, which are contained in a detailed synthesis report (Shellberg et al. 2015). A wider scientific literature review of the physical and biological values of this part of the Great Dividing Range is provided by Shellberg (2014).

The regional context of soil and gully erosion on Cape York Peninsula is provided by detailed work on sediment sources and sediment budgets in the Normanby catchment (Brooks et al. 2013; Gleeson 2012) and Mitchell catchment (Rustomji et al. 2010; Shellberg 2011). Soil and gully erosion observations from similar land systems to those on Kingvale on the edges of the Great Dividing Range (Shellberg and Grimes 2012; Barber et al. 2012; Shellberg et al. 2015) also are relied upon to assess risks to gully erosion from land use development. International scientific journal articles relevant to these Quaternary and Tertiary landscapes are cited as supporting documentation for erosion risk. Knowledge of regionally appropriate Best Management Practices (BMPs) to prevent or minimise soil and gully erosion are also utilised to assess the risks to erosion and downstream sedimentation (Shellberg and Brooks 2013).

These detailed reviews and reports are not repeated here in detail, but are relied upon for context and supporting information where appropriate and needed for the site situation at Kingvale.

2.2 Field Visit to Kingvale

A field visit and preliminary site assessment of Area 1 (2408 ha) proposed to be cleared on Kingvale Station was conducted on 14th of December 2015 accompanied by Department of Environment (DoE) staff and the Manager of Kingvale Station. The internal and external landscape of Area 1 was traversed by vehicle and foot to assess on-site erosion and off-site sedimentation potential. A variety of geomorphic features and soil types were visited. The assessment of erosion risk focused on sensitive features of the landscape, as indicated by existing erosion under current grazing land use. These observations, along with regional data and observations of erosion in similar land systems, are used to assess potential future erosion risks from agricultural development.

3 Results

3.1 Landscape Context

The proposed clearing of Area 1 is located just below the eastern edge of the Kimba Plateau located at 250m above sea level (Figure 3). Elevations within the proposed clearing area range from 150m to 200m with average slopes less than 1.2%, but with greater local slopes along banks of creeks and drainage valleys. The proposed Area 1 is drained on its western half by the headwaters of Jones Creek, a tributary of Wangow Creek and the Hann River, whereas the south-eastern part of Area 1 is drained by a tributary of Emu Creek, a spring-fed tributary to the Kennedy River.

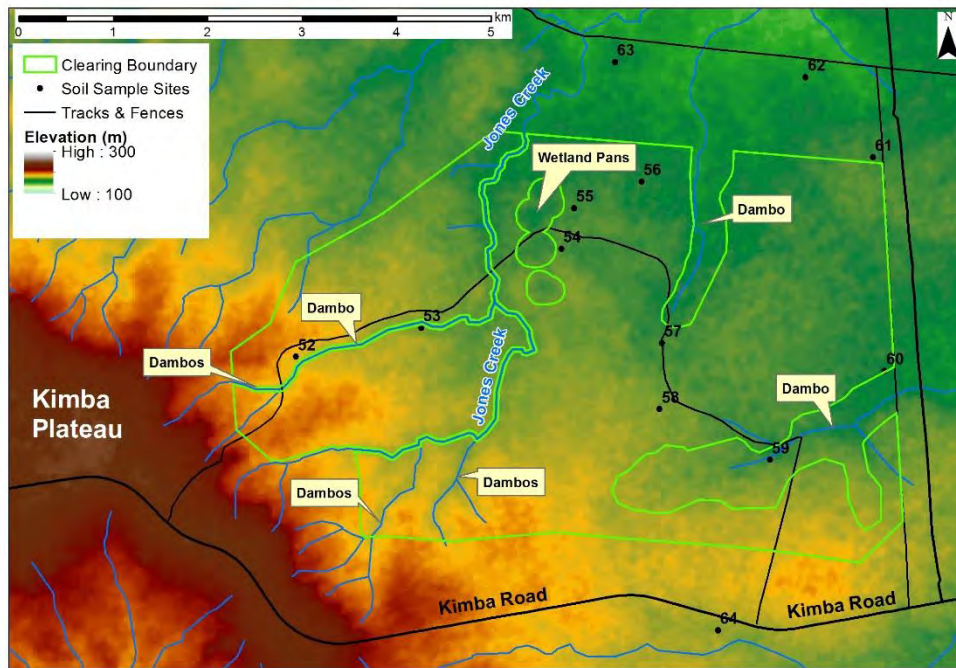


Figure 3 The topography and elevation (SRTM DTED2 2000) of the proposed Area 1 (2408 ha) to be cleared for agriculture. Locations of some wetland pans and dambos (seasonally waterlogged valleys) are identified.

The geology of the Kimba Plateau consists of Quaternary residual sandy soils and deeply-weathered Tertiary sandstone overlying Mesozoic sandstone and older granite and metamorphic basement rock (Grimes 2015c). The edge of the Kimba Plateau near Area 1 at the head of Jones Creek contains outcrops of the Rolling Downs Group (Klr, mudstone, siltstone, sandstone) with the Gilbert River Formation (JKg, sandstone) at depth, which in places are mantled by colluvial footslope sediments (Qfc, sands and minor gravels in a sandy clay matrix) (Whitaker and Grimes 1977; Blewett and Wilford 1996). The top of the Kimba Plateau is blanketed by white to reddish clayey sandy soils (Qrs) formed by in-situ deep weathering of the sandstones of the Bulimba Formation (KTI) and Gilbert River Formation (JKg) (Grimes 2015c). Below the edge of the Kimba Plateau, residual sandy soils also blanket the underlying formations where weathered sandy material has been transported a short distance by sheet wash and soil creep onto the gentle slopes below. These blankets of residual sandy soil can range from a few centimetres to several meters thick, and may contain ironstone nodules.

Within the proposed Area 1 boundary, outcrops of the Gilbert River Formation (JKg, sandstone) were observed along the bed of Jones Creek at a permanent spring just downstream of the confluence of its western tributary (Figure 4). The aquifer of the Gilbert River Formation (JKg, sandstone) is what feeds the permanent spring at Jones Creek, which is a groundwater dependent ecosystem similar to other springs around the Kimba Plateau (Shellberg et al. 2015). This aquifer is also the likely source

of water for the groundwater bores present just northeast of Area 1 on Kingvale, which is currently being piped and stored for watering cattle troughs and yards, and potentially future irrigation development.



Figure 4 Sandstone outcrops of the Gilbert River Formation (JKg) along the bed of Jones Creek that seep groundwater into a permanent spring and groundwater dependent ecosystem that supports fish, crabs and freshwater crocodiles.

Outcrops of indurated alluvium (conglomerates and sandstone) and ferricrete (ironstone) are present within Area 1, which are likely of Quaternary or late Tertiary of age. These ferricrete outcrops were observed within the banks of Jones Creek and tributaries, as well as the surface outcrops near the wetland pans east of Jones Creek. It is possible that this indurated alluvium underlies much of the sandy soils of Area 1 below typical soil auger depths, but is likely concentrated along older drainage lines and deeply-weathered wetland pans where induration has been most intense.



Figure 5 Outcrops of the indurated alluvium (ferricrete) near a) the ridgelines between wetland pans, and b) a tributary of Jones Creek with overlying sandy soils on the banks.

A majority of Area 1 consists of a gently rolling landscape typical of the Balurga and Mottle Land Systems (Galloway et al. 1970) (e.g., Figure 6). These land systems consist of wide shallow ridges (interfluves) of residual sandy soils that have been deeply leached, periodic wetland pans on ridges

that have been deeply weathered into underlying geology, and shallow valleys (dambos) and larger creeks that have accumulated weathering products (sand, silt, clay, solutes) over the Holocene and late-Quaternary periods. Dambos are seasonally waterlogged, predominantly grass-covered, shallow, linear depressions, commonly without a marked stream channel, that occur at the upper ends of a drainage system (Boast 1990; Von der Heyden 2004; Shellberg and Grimes 2012). Wetland pans are shallow, seasonally flooded, swampy closed depressions found on sandy interfluves (Shellberg and Grimes 2012). Wetland pans are often near the heads of dambo tributaries, and can be connected to dambos via sub-surface seepage.

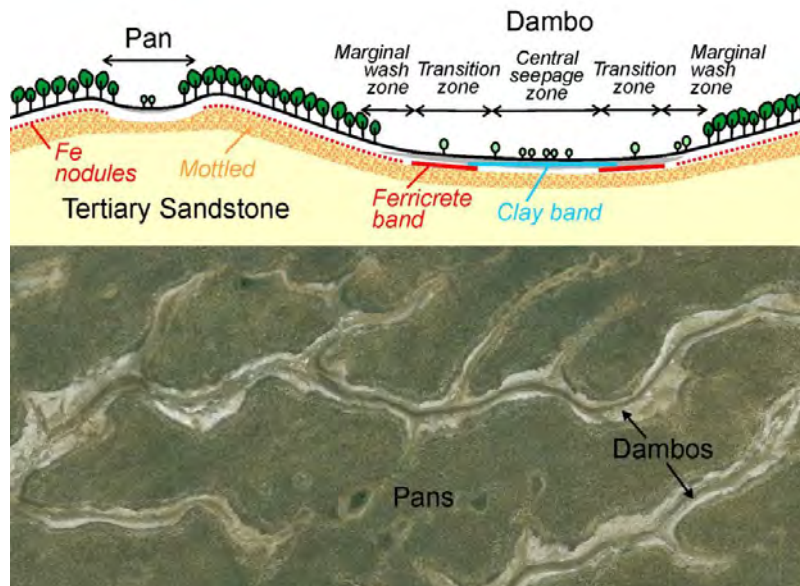


Figure 6 Top: Cross-section of zones of a dambo valley and pans on a ridgeline, and Bottom: a satellite image of typical dambos and pans of the Balurga and Mottle Land Systems (Galloway et al. 1970) common on both the east and west sides of the Great Dividing Range. Image created by Ken Grimes in Shellberg and Grimes (2012).

3.2 Soils

The sandy ridges between the dambo areas (interfluves) are the targeted soils for agricultural development in Area 1 on Kingvale Station. In contrast, the wetland pans, dambos, and creeks within Area 1 have generally been excluded from development (Spies 2014); however inaccuracies in their field delineation and inadequate buffering are discussed below.

The available soil information for Area 1 is reviewed by Spies (2014). The coarse nature of historic soil surveys in this area at a scale of 1:900,000 (Isbell et al. 1968; Biggs and Philip 1995ab) is correctly highlighted as problematic by Spies (2014). The eighteen (18) additional soil test sites improved the understanding of the surface soils in Area 1, in terms of the soil texture, chemistry, and fertility. While the additional soil samples increased the scale of soil mapping toward a 1:100,000 scale, the samples were not well distributed across the potential soil types in the area (focused along tracks and fences), which is also discussed below.

The soil survey results of Spies (2014), supported by earlier soil surveys (Isbell et al. 1968; Biggs and Philip 1995ab), indicated that soils of the wide shallow ridges (interfluves) are Kandosols, which generally are deep sandy soils that grade from fine sand to sandy loam to sandy clay loam at depth. Rock and ferricrete nodules can be present at depth or near surface within these soils, depending on landscape position (Figure 7). The soils termed Kimba and Clarke by Biggs and Philip (1995ab) vary in colour and textures with landscape position and depth. They generally are of very low fertility (N,P,K,S), with low organic matter, exchange cations and metals, as confirmed by soil test by Spies

(2014). They have a low water-holding capacity. These Kandosols vary along soil catenas influenced by landscape position, elevation, and degree of drainage and weathering as sketched by Spies (2014) following Biggs and Philip (1995ab). However, the complexity of the terrain and drainage patterns in Area 1 results in considerable variability in soil catenas that are oversimplified in the conceptual model provided.



Figure 7 An exposed Kandosol soil profile at a road cut near Area 1 on Kingvale Station. Note the potential for soil piping (sub-surface drainage through macropores) at depth as indicated by dark areas in centre right of picture, as well as stony fragments.

Based on earlier soil classifications (Biggs 1994a; Biggs and Philip 1995ab), Spies (2014) assumes that the Kandosols are stable and not erodible. However, this erosion classification is a relative term, as these soils and their landscape position evolved *from* erosion and weathering on the landscape. All soils, especially in the tropics, are prone to erosion, with some more than others. For example, increased clay content with depth in Kandosols and high volumes of tropical rainfall can lead to saturation excess overland flow that enhances surface soil erosion. Alternatively, low surface organic cover (due to fire or road tracks) can lead to hydrophobic conditions or reduced infiltration capacity on the sandy soil surface, and generate Horton overland flow that promotes surface erosion (as seen in a rain storm during the site visit). The relatively high permeability of Kandosols and increased clay content with depth also can lead to water concentrating at depth in the profile before moving laterally toward drainage depressions. Increases in slope toward drainage depressions along with slight increases in clay content can lead to soil piping and sub-surface erosion through macro-pores, which can promote soil profile collapse and drainage network development (rills and gullies). Furthermore, soil erosion in most soils can be exacerbated by clearing native vegetation and agricultural disturbance of soils with machinery.

The soils of the seasonally waterlogged valleys (dambos) in Area 1 are classified as Redoxic Hydrosols (assumed to be Lydia in Area 1, Biggs and Philip 1995ab) due to seasonal wetting and drying and complex oxidation / reduction reactions that strongly influence soil development through the profile. They often grade from fine sandy loams and silty clay loams on the surface to mottled clays potentially with ferruginous nodules at depth. These soils are hard-setting in the dry season and can be highly dispersive and erodible in the wet season. In many locations they can have high values of exchangeable sodium percentage (ESP) compared to other exchangeable cations, which predisposes the soils to dispersion and erosion, especially in silty sections of a profile. These soils would need to be physically and chemically tested in Area 1 for further investigation of their properties.



Figure 8 An exposed Hydrosols soil profile in a dambo and gully headcut in Area 1 on Kingvale Station, showing the hardsetting silty loam in the top of the profile, sharply grading into a loamy clay with mottling in the lower profile.

In general, dambo soils on Cape York Peninsula (Barber et al. 2012; Shellberg and Grimes 2012; Shellberg et al. 2015) and globally in the tropics (Mackel 1974, Roberts 1988; McFarlane and Whitow 1990; Boast 1990; Chidumayo 1992; Matiza 1992; Von der Heyden 2004) are highly vulnerable to gully erosion and land degradation from direct physical disturbance or excess water runoff and altered hydrology from surrounding land uses. Spies (2014) reports that the soil type in dambos of Area 1 were unstable, possibly sodic, and prone to erosion. However, the assumption that the underlying geology of these dambos is the Rolling Downs Group (Klr, siltstone or mudstone) is indeterminate. Dambos can form on top of a variety of geologies (mostly weathered sandstone or other basement rock in this area) and retain water because of the accumulation of weathering products (sand, silt, clay, solutes) in the shallow valley bottom over geologic time.

Satellite imagery from ASTER (Advanced Spaceborne Thermal Emission and Reflection Radiometer) was analysed for this report using a false colour (near infrared) spectrum (15m resolution) to distinguish between vegetation types and thus potential land systems and soil types in Area 1 on Kingvale. The ASTER imagery highlighted several distinct light-red coloured areas that are less densely forested compared to the surrounding red coloured Stringybark and Bloodwood Forests, dark-red grassy dambo valleys, and pink coloured wetland and spring areas (Figure 9). These light-red coloured areas likely differentiate a different soil type or land system from the combination of geology, soils and vegetation. During the field visit, the northern edge of this distinct area was briefly visited. The area had a more open canopy of bloodwoods, melaleuca and other mixed species, and abundant termite mounds scattered across a sparse grassland (Figure 10a). The presence of termite mounds such as magnetic (*Amitermes laurensis*) and others indicated that the area could be seasonally saturated with water or have lower infiltration capacity. The soil appeared to be a texture-contrast, slightly hardsetting loams with a few pebble lags, but detailed soil analysis was not conducted for confirmation. This soil type appears to be different than Kimba or Clark reviewed by Spies (2014). In addition, several small sinkholes were observed in-line, suggesting the potential for piping, sub-surface erosion, and soil collapse (Figure 10b). These areas (Figure 9) will need more field investigation for determination of exact soil type and any limitation, along with other more remote areas of the proposed clearing at Area 1.

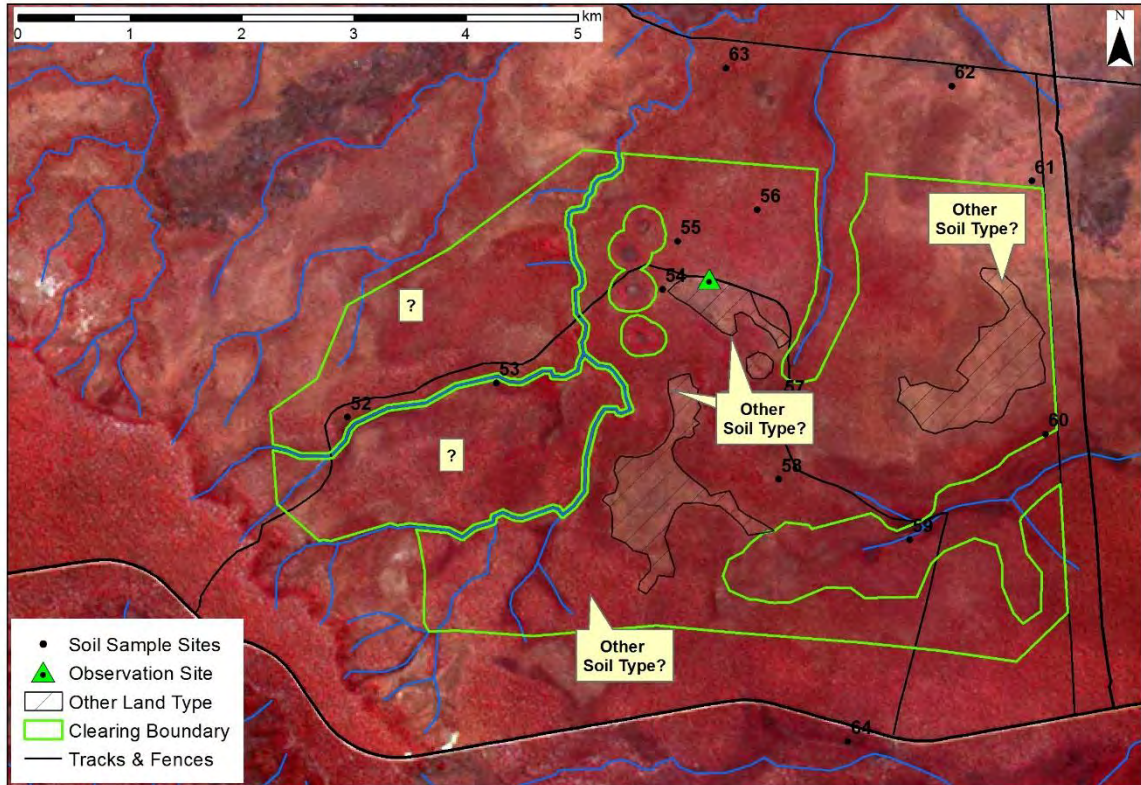


Figure 9 ASTER (Advanced Spaceborne Thermal Emission and Reflection Radiometer) satellite image (15m resolution) of Area 1 on Kingvale Station, highlighting additional potential vegetation and soil types.



Figure 10 A potentially unmapped land system and soil type in Area 1 at Kingvale (potentially different than Kimba or Clarke) as indicated by ASTER imagery and field observations of a) open canopy and grassland with termite mounds indicating seasonal saturation or reduced infiltration, and b) small sinkholes and piping into texture-contrast, slightly hardsetting loam loam soils.

3.3 Observed Existing Erosion

The field visit in December 2015 focused on existing soil erosion in Area 1 resulting from both natural processes and land use impacts from cattle grazing land use. The assessment of erosion risk focused on sensitive features of the landscape and anthropogenic disturbances. These observations were used as indicators for potential future erosion under land use intensification.

Road Erosion

Roads, tracks and fencelines are a common and major source of sediment in the Normanby catchment (Gleeson 2012; Brooks et al. 2013) and road density, location, design, and maintenance are major factors that influence sediment production. Best management practices are needed to minimise and reduce erosion from these linear disturbances (e.g., Shellberg and Brooks 2013).

Road erosion was observed immediately upon entry to the property and Area 1 along both old and newly bulldozed tracks and fence lines. A newly re-cleared road and cattle lane-way along the eastern boundary of Area 1 has signs of sheet and rill erosion associated with recent rainfall (Figure 11). No runoff control structures ('whoa boys') and BMPs were built in this area to divert runoff off these roads and laneways. A ~ 15mm rainstorm in the afternoon of the visit generated considerable runoff and Horton overland flow along these disturbed Kandosols. While these soils are porous at depth, any surface disturbance from machinery and loss of vegetative cover can promote compaction, reduced soil organic matter, reduced infiltration, and increase water runoff and erosion. During the rainstorm, both sand transport and fine suspended clays (note red and tan coloured water) were observed moving along the sheet flow. Thus the silt and clay content in these Kandosols is capable of being mobilised and transported off-site if disturbed, which is applicable to not just roads but also cleared areas and agricultural development. These observations indicate that considerable surface water runoff and sediment transport can occur from these Kandosols if disturbed by machinery.



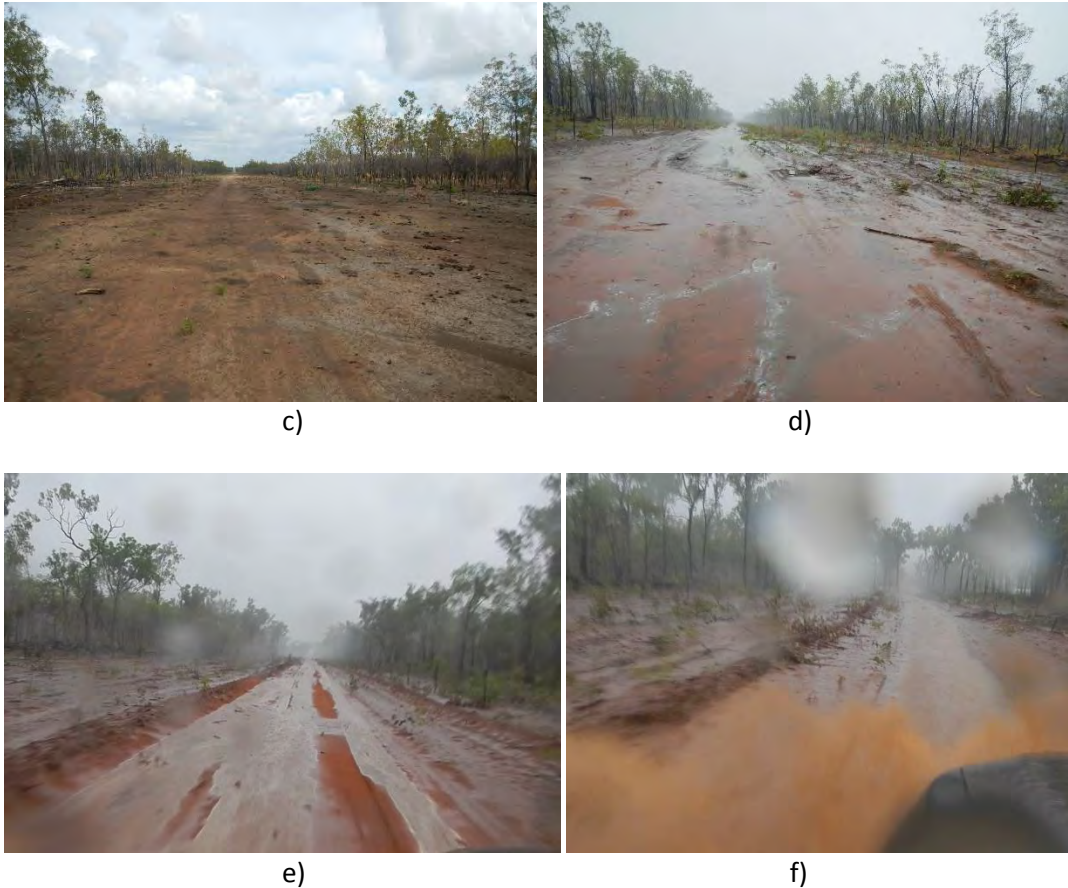


Figure 11 Sheet and rill erosion along a road and laneway just east of Area 1 on Kingvale during a small rainstorm.

On internal road tracks with Area 1, several water diversion structures (whoa boys) have been created (a year or two earlier) to divert water runoff from the road surface (Figure 12). This is a positive step toward improving BMP implementation. However, the whoa boys were very infrequently spaced and thus were not as effective as they could be if periodically installed every 25-100 meters depending on slope and anticipated surface runoff (Shellberg and Brooks 2013). Most of the ‘whoa boys’ observed had been recently filled in with sand/silt runoff from recent rainfall events several days and weeks earlier (Figure 12). They soon will be overtopped and ineffective unless additional frequent structures are built to divert water and sediment runoff onto stable infiltration areas.



Figure 12 Sand/silt infilling a ‘whoa boy’ in Area 1 from excess water runoff and infrequent whoa boy placement.

Other water and sediment diversions off tracks in Area 1 consisted of cut drains near creek crossings (Figure 13). Cutting drains off roads and tracks can promote gully erosion and lead to the direct input

of sediment into waterways (Gleeson 2012). Building frequent diversion banks is preferable (Shellberg and Brooks 2013). In this case, sand, silt and clay are directly being input into a local creek from a road drain, contributing to instream sedimentation and downstream delivery of finer sediment (Figure 13). Buffering creeks, dambos and wetlands with vegetation zones can be ineffective if sediment is delivered through buffers via rills, gullies, and road drains.

Gully and rill erosion was observed along other road tracks in and around Area 1 where grader machines had cut deep tracks through creek crossings (Figure 14). This is a ubiquitous erosion issue in the Normanby catchment anywhere tracks and fences are cut across the drainage network (Shellberg and Brooks 2013). BMPs to reducing erosion at these sites would entail 1) not cutting into the bank through the crossing, 2) armouring the approaches with rock, and 3) constructing whoa boys above the crossing to divert water runoff before the steep banks of the creek.



Figure 13 A cut drain off a track in Area 1 delivering sand, silt and clay directly into an adjacent waterway.



Figure 14 A road cut through a creek crossing near Area 1 that is accelerating rill and gully erosion.

Bank Erosion

Bank erosion is both a natural process and accelerated process from human land use. In Area 1 on Kingvale, bank erosion was observed along Jones Creek on the outside of meander bends, which is largely a natural process. However, increased water runoff from land use disturbance (fire, grazing, agriculture) and increased sand sediment loads from catchment erosion can enhance bank erosion. Increased sand loads in small creeks can promote channel widening and bank erosion (as sand bars force flow to outer banks). Subsequently, bank erosion can liberate additional fine sediment that can be delivered to downstream and off-shore environments. Accelerated bank erosion in small ephemeral channels is a major sediment source in the Normanby catchment (Brooks et al. 2013).



Figure 15 Bank erosion along Jones Creek, which could be accelerated from increased water runoff and sand accumulation in the bed that promotes channel widening and bank erosion.

Along Jones Creek, surface, rill and small gully erosion were observed along the banks from cattle pads (tracks), over-grazing, and trampling. This is a common occurrence in the Normanby catchment when cattle come down to creeks and rivers to access water (Shellberg and Brooks 2013). This erosion was especially pronounced near the permanent water spring and cattle yard at Jones Creek (Figure 16). Fencing these sensitive areas off from cattle would be needed, in conjunction with vegetation buffers along creeks, dambos and wetlands, to prevent and reduce this type of bank erosion.



Figure 16 Rill and gully erosion along the banks of Jones Creek enhanced by cattle pads, trampling and local overgrazing.

Gully Erosion

Gully erosion was observed in Area 1 at a large gully within a dambo valley, tributary to Jones Creek, which is currently proposed to be cleared without a buffer. Smaller gullies were also observed along road track creek crossings, along some stream banks, and just initiating (proto-gullies) in the bottom of other dambo valleys.

The large gully in Area 1 (Figure 17) is located in a shallow dambo valley with a ~ 1.8 m headcut eroding upslope into the valley. The gully has multiple lobes and side-wall collapse, along with downstream sedimentation of the sand fraction. The headcut is eroding into mottled clay Hydrosols at depth, and the clay soils are partially resisting the upslope advance of the headcut. However, the silty upper soil horizon is more dispersible and erodible, leading to a two-phased headward retreat with top soils being stripped off first. Water runoff into the gully head is generated from sheet flow down the dambo valley, which in this case is partially channelized down several cattle pads (tracks) that feed into the gully head cuts (Figure 18a). Fire and overgrazing in the upslope dambo catchment could also reduce ground cover, infiltration and roughness resistance to overland flow, accelerating water runoff. Downstream of the gully headcut, 300m, a farm dam has been constructed for cattle watering (Figure 18b). Construction of this dam could have changed local base level elevations, and promoted head-cutting, which along with land use accelerated water runoff and concentrated flow down cattle pads, promoted the gully erosion. The dam currently traps much of the sandy sediment generated from the gully, but finer sediment during floods easily bypasses the dam. Furthermore, sediment eroded from the spillway and the incised channel downstream also contribute to the fine sediment load in the Jones Creek catchment (Figure 19).



Figure 17 Gully erosion into a dambo valley, tributary to Jones Creek.



Figure 18 Potential factors initiating or accelerating gully erosion in Area 1 include a) increased water runoff down dambo valleys, concentrated along cattle pads into headcuts, and b) changes in downstream base-level elevations from farm dam construction or roads.



Figure 19 Channel and gully erosion into a dambo valley downstream of a farm dam and road crossing.

These observations of gully erosion into dambo valleys on Kingvale Station highlight the sensitivity and vulnerability of these valleys to land use disturbance. Their broad flat valleys with dense grass cover provide much natural resistance to erosion or the creation of permanent channels and gullies. However, land use impacts such as excessive cattle grazing, inappropriate fire regimes, road development, agriculture development, and catchment land use change can alter the vegetation and water balance, and thus the stability of dambos. The instability of dambos to land use has been well documented in the tropics of Africa (Mackel 1974, Roberts 1988; McFarlane and Whitow 1990; Boast 1990; Chidumayo 1992; Matiza 1992; Von der Heyden 2004) as well as Australia (Barber et al. 2012; Shellberg and Grimes 2012; Shellberg et al. 2015). Once channels are cut into dambos, they can become self-perpetuating, lower the local groundwater table, alter wetland vegetation communities, and accelerate sediment output to downstream waterbodies (McFarlane and Whitow 1990; Boast 1990; Barber et al. 2012). Future land use planning should fully accommodate the sensitivity of these dambo valleys to disturbance from both local and upslope catchment land use.

For example, the beginning phases of gully and channel erosion were observed in the northeastern dambo of Area 1, tributary to Jones Creek (Figure 9). This erosion is caused by a combination of reduced vegetative resistance and catchment water runoff during storm events. If the upstream catchment is further disturbed by vegetation clearing and agricultural development, then accelerated water runoff could cause a stability threshold to be crossed (Schumm 1973) and fuel gully erosion into this dambo. This could potentially convert it from a wide channel-less valley water-

logged in the wet season, to a continuous or discontinuous gully channel without the capacity to buffer outgoing water and sediment loads.



Figure 20 A potential new channel and gully location in a northern dambo in Area 1.

Sheet Erosion

Field evidence for sheet flow and sheet erosion was not ubiquitous within Area 1, but rather focused on soil areas with the lowest infiltration capacities, steepest slopes, and most anthropogenic disturbance. More observations of sheet erosion during heavy rainfall are needed to understand surface runoff patterns in Area 1, especially in paddock areas with Kandosols proposed to be cleared. Heavy use areas such as cattle yards and roads had obvious signs of sheet erosion. The convex slopes leading down toward streambank, 100m on either side, had signs of sheet flow and erosion. The potentially distinct soil type observed in the centre of Area 1 (Figure 9), with texture-contrast, slightly hardsetting loam soils with some pebble lags, dissimilar to Kimba or Clark, had signs of surface saturation, sheet flow, and piping and sub-surface erosion. More detailed investigation would be needed in this area to assess its exact soil type and vulnerability to sheet erosion after proposed clearing, with or without vegetation and stubble retention.



Figure 21 Evidence of soil saturation (or reduced infiltration) and modest sheet erosion in a potentially different soil type in the centre of Area 1 (Figure 9).

Downstream Sedimentation

Observations of existing sedimentation in creeks and dambos within and downstream of Area 1 were generally common. Sand deposits in-channel are common along Jones Creek and its tributaries, with both natural and human accelerated sources. These deposits likely have been increased to an unquantified degree from existing grazing land use, roads, tracks and fence lines, and as well as the gully, bank and sheet erosion mentioned above. While sand can be assumed to be the major constituent of the erosion of Kandosols, fine silt and clay were also observed to have been winnowed from the Kandosols and transported downslope and downstream. This is especially evident from disturbed areas such as roads and yards (Figure 11; Figure 13). Further downstream on both Jones Creek and the northern dambo draining Area 1, thin deposits of mud have blanketed the sandy creek bed from recent rainstorms in December at the start of the wet season (Figure 22). These observations suggest that fine sediment export can indeed be generated from both Kandosols and Hydrosols in Area 1.



Figure 22 Deposits of mud blanketed over sand on creek beds from recent rainstorms in December at the start of the wet season.

4 Discussion

4.1 Potential Risks of Erosion Associated with Existing Clearing and Development Plans

The observations of existing erosion in and around Area 1 on Kingvale Station from current cattle grazing land use highlight the sensitivity of this headwater landscape to erosion. Moderate erosion is currently occurring at human disturbed and sensitive parts of the landscape, and this erosion risk will be increased by land use intensification as currently planned. Prediction and quantification of future erosion from land use is difficult, but general areas at risk to increased erosion can be highlighted and addressed. Under the current plan for clearing and agricultural development (Spies 2014), the following areas are at risk of increased erosion:

1. As currently mapped, numerous headwater stream and dambo valleys (seasonal wetlands) in upper Jones Creek are not mapped and not buffered from clearing (Figure 23). An example is the gully and dambo valley in Figure 17 and Figure 18. These areas and others are at risk from gully, sheet and bank erosion. This buffer omission is likely an artefact of the scale of mapping products used for office delineation of buffers (1:250,000), rather than detailed field delineation. The slightly more detailed 1:100,000 streamlines used here highlight additional creeks present, while use of the SRTM topographic data and ASTER satellite data indicate many additional dambo valleys are unmapped and unbuffered. Use of 1:25,000 scale topographic maps may improve stream and valley delineation to some degree. However, detailed LiDAR (Light Detection and Ranging) topographic surveys (1m² resolution) would be needed to detect all the ephemeral stream lines (with annual scour and fill) and dambo wetlands with Hydrosols within Area 1.

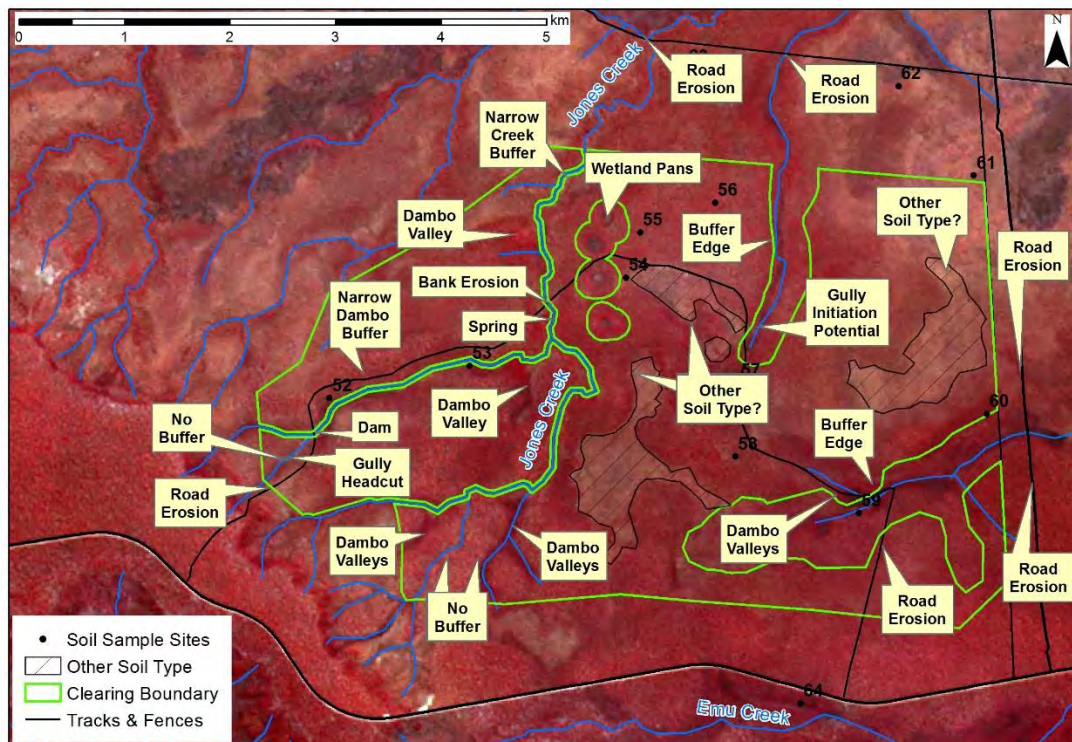


Figure 23 Locations of erosion risks across the proposed Area 1 at Kingvale Station.

2. The existing mapped dambo valleys tributary to Jones Creek, and the mainstem of Jones Creek, are only buffered with 25m buffers on either side of mapped centrelines of these valleys (Figure 23). However, in many places these dambo valleys are up to 150m wide and located offset from the incorrectly mapped centreline. If these buffers were installed as mapped, these features would experience significant disturbance and inadequate protection. Buffers should start not at the centreline of a mapped streamline, but rather from the field-delineated bank of a stream or the edge of a wetland dambo or pan. In the case of dambos and Hydrosols, the edge of the seasonal wetland can easily be identified in the field from the combination of topographic change, the presence/absence of magnetic (*Amitermes laurensis*) and other termite mounds, and the distinct changes in grass and tree vegetation (i.e., marginal wash zone in Figure 6; Figure 24).



Figure 24 The edge of a dambo valley in Area 1 (centre of picture) as indicated by termites, open vegetation and Hydrosols to the right, and thicker vegetation on sloped sandy soils to the left.

In addition, the northern and eastern large dambos in Area 1 (Figure 23), while buffered significantly and fairly appropriately sized, are not delineated completely according to the distribution of Hydrosols and streamlines. Several sections of these dambos have been inadvertently omitted, likely due to map rather than field delineation (Figure 23). This increases the erosion risk in several areas.

3. The assumption that Jones Creek and its tributaries are 1st and 2nd order streams is an artefact of the scale of mapping used to delineate streamlines (1:250k). If 1:100k streamlines are used (Figure 23), then Jones Creek becomes a 3rd or 4th order stream with a recommended 50m buffer or greater. If actual streamlines and valleys were delineated on the ground, or using detailed LiDAR data, then Jones Creek would likely be a 5th order or larger stream with a 100m buffer. To adequately protect Jones Creek and its dambo tributaries (seasonal wetlands), 100m buffers from the bank or valley edge would be needed similar to other wetlands on the property. For example, a 50m buffer from the bank edge would not fully protect the sloped lands on either side of Jones Creek in many places from disturbance or cattle grazing (Figure 25). These steeper slopes are vulnerable to sheet, rill and gully erosion, and are the discharge areas of lateral drainage from surrounding Kandosols. Furthermore, the science of buffering headwater streams suggest that buffer width should be scaled to erosion risk, not necessarily to stream order (e.g., McIntosh and Laffan 2005). Headwater streams produce the majority of water, sediment and nutrients in most landscapes, and should be protected from increased disturbance accordingly (e.g., MacDonald and Coe 2007; Alexander et al. 2007).



Figure 25 The steeper sloped valley sides draining toward Jones Creek needing adequate buffering for erosion protection.

4. The permanent freshwater spring along Jones Creek (Figure 4, near the cattle yard; Figure 23) is a groundwater dependent ecosystem (officially un-mapped) that supports fish, crabs and freshwater crocodiles, similar to other springs around the Kimba Plateau (Shellberg et al. 2015). The banks of this creek and spring are vulnerable to soil erosion as observed in the field (Figure 16). This section of the creek is a permanent wetland, and would warrant a greater buffer of 100m, similar to other nearby wetlands, to protect its ecological value.
5. The agricultural development proposal outlined by Spies (2014) for Area 1 states that *“ground cover (in excess of what is there now) will be achieved throughout the wet season to protect the soil”*. However, this statement ignores the fact that there will be essentially zero live standing ground cover or root cohesion at the start of the wet season and first heavy rains typical in December. The sorghum planted will be an annual crop that will be sowed after the first 50mm of rain. At least a month will pass into the wet season before the sorghum grows to equal the height and density of current perennial grass cover. Retention of sorghum stubble and minimal tillage will help improve cover and is encouraged, but this cover highly depends on the degree that *“cattle will graze the residual sorghum stubble and reduce trash for the following cultivation/planting”*. Therefore, there will likely be a critical window of soil exposure in November and December most years when bare soil surface will be exposed to heavy rainfall erosivity experienced in this part of the tropics in the early wet season (Yu 1998). This has the potential to accelerate overland flow and sheet erosion from cultivated lands, at least early in the season. This represents a long-term erosion risk of the proposal across 2408 ha of cleared land, as indicated by recent rainfall runoff from bare soil surfaces along cleared soils in the field (Figure 11). Bulldozing timber, burning, stick raking the rubbish, and disc ploughing the first year, and subsequent years with any additional minimal tillage, will also leave large soil areas vulnerable to sheet erosion.
6. Reduced vegetation cover early in the wet season (Nov-Dec) in the cleared area, even with some stubble retention, could reduce rainfall infiltration, roughness resistance to overland flow, and root cohesion. This could increase and accelerate water runoff rates during the *“first flush”* rain events. Increased water runoff has implications for the stability of downstream receiving area, such as dambo wetlands. Dambos are prone to gully and channel erosion, and are sensitive to land use that increases water runoff into them (Roberts 1988; McFarlane and Whitow 1990; Boast 1990; Von der Heyden 2004). Thus, the erosion implications of clearing 2408ha of Kandosols might be that they accelerate erosion off-site in dambo wetlands by changing the hydrological balance of the area.
7. The proposal suggests a number of agricultural management practices to reduce soil erosion (Spies 2014). One of these is *“using filter strips – of suitable width and ground cover – to*

filter run-off before it enters a water body or water course (see maps Appendix A)". This is a reasonable and important practice to implement in order to reduce off-site transport of sediment and nutrients. Unfortunately the maps do not appear to have these filter strips located in a planning design. Frequently placed filter strips on contour, or perhaps constructed contour banks, could be essential to mitigating water, soil, and nutrient runoff from the proposed clearings.

8. The agricultural development proposal outlined by Spies (2014) for Area 1 suggests that cattle will graze the residual sorghum stubble and reduce trash through the dry season. This suggests that cattle could be stocked inside the cleared Area 1 at a higher stocking rate than present. If increased stocking rates are planned, then the cattle activity along wetlands, stream channels and dambo valleys will also increase, which presents a moderate risk to increased erosion and water quality in these sensitive areas. The proposal does not mention fencing cattle out of these sensitive features along buffer lines. Fencing these areas at buffer edges would be important to mitigating accelerated erosion.
9. Clearing the potentially different soil type and vegetation community (Figure 9) in the centre of Area 1, as delineated by ASTER (Figure 9; Figure 23), could represent a risk to increased erosion. This area appears to be seasonally saturated with lower infiltration capacity as indicated by texture-contrast, slightly hardsetting loam soils, dissimilar to Kimba or Clark, abundant termite mounds, and differences in vegetation structure. The observations of sinkholes and soil piping (sub-surface erosion) suggest that this area has an increased risk to erosion from development (Figure 10). Additional field investigation will be needed to fully assess any erosion risk from agricultural development on these soils.
10. The proposal does not mention the future planned use of roads and tracks to access Area 1 by machinery for clearing, future sowing, and agricultural development. Roads, tracks and fence lines pose a direct anthropogenic risk to increased erosion, as reviewed above (Figure 11). Increasing the road density and use in this area represents an increased risk to erosion. A road construction and maintenance plan would be useful to implement best management practices (BMPs) to reduce erosion from these current and future linear disturbances.
11. The soil chemistry data analysed by Spies (2014) indicates that these Kandosols are low to very low in essential nutrients (N,P,K,S), carbon, exchangeable cations, and essential metals, with low water-holding capacity. These limitations call into question whether these soils are actually suitable for *'high-value agriculture'*. Spies (2014) states that they are class 3 land suitability class, suitable with moderate limitations. In many instances they are closer to class 4, marginal land needing additional studies to achieve long-term sustained economic production. It is likely that more detailed investigations of Area 1 would find pockets of both class 3 and class 4 land suitability within the proposed cleared area outside of the class 5 Hydrosols.
12. Regardless of land suitability class, these soils will need annually sustained nutrient inputs to maintain sorghum production with *"high rates of the required fertiliser, application of dolomite or lime and stubble retention"* (Spies 2014). Herbicides will also be used annually for weed control. High rates of nutrient application into porous sandy Kandosols, in addition to herbicides, present a water quality risk to downstream receiving waters, which is a major issue below existing agricultural areas in the Normanby catchment (Howley et al. 2013). The potential for nutrient leaching along deep drainage lines underlying the Kandosols is considerable. This sub-surface drainage is connected along soil profiles (catenas) down toward dambo valleys, wetland pans, and creeks, as indicated in Figure 6 and sketches in Spies (2014). The observation of soil pipes within soils of Area 1, and along creek banks and wetland pans, highlights some of these sub-surface drainage connections. Therefore, the

risks of nutrient and herbicide pollution to downstream receiving water needs to be taken into account, in addition to soil erosion and sedimentation.

13. These risk of off-site nutrient and herbicide pollution could be enhanced further if agricultural production switched from the proposed sorghum to an irrigated crop of higher value. The groundwater bores in the area around Area 1, and the Kimba Plateau, could have sufficient water from the underlying Gilbert River Formation to irrigate crops (Grimes et al. 2015c). This is perhaps one reason that this Area 1 has been targeted for development on the edge of the Kimba Plateau. However, the impacts of water resource development on the ecology of springs around the Kimba Plateau, such as along Jones Creek, could be substantial (Shellberg et al. 2015).

4.2 Increased Sediment and Nutrient Loads

From these field observations of existing erosion and general predictions of increased erosion and pollution associated with land use intensification, there will be an off-site increase in sediment (and nutrient) loads from Area 1 on Kingvale Station following the proposed agricultural development as it stands currently (Spies 2014). The proposal has a moderate risk of increasing sediment erosion beyond natural background levels, as well as above currently elevated levels associated with low density cattle grazing land use. This increase will come from a variety of cumulative sources on site: sheet erosion, rill and gully erosion, bank erosion, road and fence erosion, and possible sub-surface erosion (piping). The erosion risk is concentrated in and around the most sensitive parts of the landscape prone to erosion, which could be delineated and protected more accurately in the field to reduce potential impacts. Furthermore, an increase in nutrient pollution from agricultural application on these sandy Kandosols could increase nutrient pollution downstream, as found in other agricultural areas of the Normanby catchment (Howley et al. 2013).

Quantifying the extent of the future increase in sediment load production from Area 1 is difficult without much more intensive studies and monitoring. The clearing and construction phases of agricultural development projects often have the highest increases in water and sediment yield (e.g., Grip et al. 2005). This is especially the case where sensitive areas are cleared or impacted by adjacent clearing (Hamilton 2005). Gully erosion has been shown to increase with agricultural clearing and development in the Normanby catchment (Shellberg and Brooks 2013). It is possible that the sediment load from Area 1 could dramatically increase during the construction and early adjustment phases (2-10x), during the firsts few years, and then decline toward but not reach background conditions after the system stabilizes to a new land use and many sensitive sediment sources are exhausted. Long term changes in sediment yield are contingent on the intensity of ongoing agricultural disturbance, and the degree of implementation of best management practices to minimize erosion on- and off-site. In other agricultural settings in the eastern GBR catchments of Australia, sediment yields have at least doubled (2x) following agricultural development, with the most intensive agricultural areas experiencing a five-fold (5x) increase or greater at river mouths (Kroon et al. 2012). Larger increases in sediment loads up to 10x or more have been experienced in sub-catchments heavily developed with agriculture.

Quantifying the contribution of sub-catchment increases in sediment load to the greater sediment loads of the Normanby catchment is also difficult without much more intensive studies and monitoring. The current empirical tracing data the Normanby catchment (Olley et al. 2013) suggest that sub-surface sediment dominates the supply of fine sediment to rivers, Princess Charlotte Bay, and the Great Barrier Reef. In the case of the Hann River catchment, ~ 15% of the fine sediment comes from surface soils, while the remaining ~ 85% comes from subsurface soils including tilled

soils, scalds, rills, gullies, and stream banks (Olley et al. 2013). Therefore, while subsurface sources are more of a concern than surface sources, both can contribute fine sediment to the GBR. Modelled sediment budget estimates in the Normanby catchment (Brooks et al. 2013; McCloskey et al. 2014) indicate that 37% of the sediment sources come from gully/rill erosion, 54% from small creek channel erosion, 8% from river bank erosion, and 1% from hillslopes (Brooks et al. 2013). From these model estimates, small channel erosion and gully/rill erosion seem to be the biggest threat to sediment production. However, the production of fine sediment from agricultural areas and roads have not been well quantified in these models, which need more field research. Furthermore, surface erosion contributes a disproportionately high fraction of the bioavailable particulate nutrients in the Normanby catchment (Burton et al – in preparation). Most importantly, there is currently a lack of empirical sediment load data from the western Normanby sub-catchments (including the Kennedy, Hann, and Morehead Rivers). Thus modelled sediment load data, calibrated to local gauge data, is particularly unreliable from these sub-catchments (Brooks et al. 2013; McCloskey et al. 2014). Therefore, it is difficult to quantify the degree that increased sediment loads from land clearing in the Hann and Kennedy catchments will have on the actual greater Normanby catchment sediment budget.

4.3 Potential Downstream Impacts

The greatest potential impacts of increased sediment yields will be felt immediately downstream of the development site of Area 1 within the Hann and Kennedy River catchments. This will include both sand deposition and sedimentation of creek beds, as well as increased concentrations of suspended sediment, and fine sediment deposition on inset floodplains and beds of creeks. Sand transport on channel beds and sand slugs released from development will take decades to a century to move downstream through main river channels (e.g., Rustomji et al. 2010), and will mostly effect instream pool habitat. Sand slugs and pool habitat have implications for fish habitat quality in rivers and estuaries, for example the vulnerable Freshwater Sawfish (*Pristis pristis*) present in the Normanby and Kennedy Rivers and some of their tributaries.

The finer fractions of silt and clay from these headwater catchments, along with associated nutrients natural or anthropogenic, could be flushed far downstream by one or several flood events, some of which will be deposited on floodplains and some exported to Princess Charlotte Bay and toward the Great Barrier Reef in flood plumes (Figure 26). Generally there can be a dilution effect in suspended sediment concentrations in the downstream direction if other sub-catchments with cleaner water are not experiencing the same type or degree of development pressure. However, degradation of downstream water quality is a cumulative impact from multiple sources and land uses, and in this case in the Hann/Kennedy River catchments, sediment yields are already elevated from other land uses such as cattle grazing, road construction, and agricultural cleared areas. So the dilution effect may not be as pronounced.

The increased fine sediment pollution from Area 1 on Kingvale Station could contribute to the cumulative impacts of degraded water quality from land use delivered to the Great Barrier Reef, even if a minor source at the Normanby catchment scale. Fine sediment and associated nutrients and herbicides in sediment plumes influenced by cumulative land use impacts (e.g., Figure 26) is a major factor directly or indirectly influencing the health of the Great Barrier Reef (De'ath and Fabricius 2010; Lewis et al. 2009; De'ath et al. 2012; Fabricius et al. 2010; 2014). These health impacts and water quality decline are increasing with land use intensification in the northern Great Barrier Reef catchments (Howley et al. 2013), which could push the currently healthy local reef beyond thresholds of ecological stability (Fabricius et al 2005; Halpern et al. 2008; De'ath et al. 2012).



Figure 26 The 7th January 2016 flood plume off the Normanby and Kennedy River mouths in Princess Charlotte Bay drifting northeast toward the Flinders Island Group and Great Barrier Reef. The plume would be composed of clay, nutrients, and organic matter derived from cumulative natural and anthropogenic sources in the Normanby catchment. Landsat image from NASA courtesy of Norman Kuring.

4.4 Cumulative Impacts

Cumulative impact or cumulative effect can be defined as *“the impact on the environment which results from the incremental impact of the actions when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.”* (CEQ 1971). Thus, environmental impacts are not just caused by a single action, location and/or source, but also the cumulative sum of individual actions, locations and/or sources across space and time in response to land management practices within a catchment. Cumulative impacts and effects can be either additive or synergistic. Management and legislation in Australia generally has not fully incorporated cumulative effects issues when assessing, managing or planning land use or development activities at the catchment scale to minimise impacts to the environment (e.g., Dales 2011).

In the greater Normanby Catchment (2,422,800 ha), it is estimated that 76% (1,849,500 km²) of the area is under grazing land use, 0.14% (3,500 ha) under horticulture, and the remaining under natural conservation and forestry (Brooks et al. 2013). A review of both historic Statewide Landcover and Trees Study (SLATS) data and newer remote sensing data indicate that cleared forests for pasture

and agriculture currently cover ~22,678 ha of land, including recent clearings on Fairview Station (1,678 ha). At least another >5,700 ha of land has been cleared for major roads and tracks in the catchment (Brooks et al. 2013). Thus, at least 1.1% (28,378 ha) of the catchment has already been cleared. An additional 2,408 ha at Kingvale and 31,376 ha at Fairview/Olivevale Station are proposed to be cleared in the near future. The Kingvale proposal (2,408 ha) would increase the existing cleared area in the Hann Catchment (4543 ha) by 1.53x or 53%. It would increase the cleared area in the Normanby catchment by 1.085x or 8.5%. The combination of both the Kingvale and Fairview/Olivevale proposals would increase the cleared area in the Normanby catchment by 2.3x or 230%.

In summary, both the Kingvale and Fairview/Olivevale clearing proposals would significantly increase the area of anthropogenic disturbances in the Normanby catchment. However, how this translates into quantified increases in sediment loads is uncertain. What can be said with confidence at this point is that sub-catchment increases in sediment loads are likely to occur downstream of Area 1 on Kingvale, and that these increases will contribute in part to the cumulative input of coarse and fine sediment to Hann and Kennedy sub-catchments and the greater Normanby catchment as a whole.

5 Summary and Recommendations

The conclusion of Spies (2014) that the proposed clearing of Area 1 on Kingvale “*will not result in soil erosion stemming from mass movement, gully erosion, rill erosion, sheet erosion, wind erosion, or scalding*” is incorrect. To the contrary following field observations and supporting information above, soil erosion will increase in Area 1 following the proposal as it now stands. Nutrient and herbicide loads could also increase. The proposal has a moderate risk of increasing sediment erosion beyond natural background levels, as well as above currently elevated levels associated with low density cattle grazing land use. This increase will come from a variety of cumulative sources on site: sheet erosion, rill and gully erosion, bank erosion, road and fence erosion, and possible sub-surface erosion (piping). The erosion risk is concentrated in and around the most sensitive parts of the landscape prone to erosion. These could be delineated more accurately in the field, and protected accordingly, to reduce potential impacts. The exact degree that soil erosion and sediment yields will increase following development is contingent on 1) the accuracy of the delineation of sensitive erosion areas during the planning stage, 2) the intensity of initial clearing and ongoing agricultural disturbance, and 3) the degree of implementation of best management practices to minimize on-site erosion and reduce off-site water, sediment and nutrient yields in the short- and long-term. Any increases in soil erosion will contribute in part to the cumulative input of coarse and fine sediment to Hann and Kennedy sub-catchments, the greater Normanby catchment as a whole, and eventually the Great Barrier Reef.

Both rapid assessments by Spies (2014) and Shellberg (2016 this report) are insufficient to fully and properly assess the potential risks to erosion and downstream sedimentation from agricultural clearing and development in Area 1 at Kingvale. Nor are they sufficient to design a development plan to properly mitigate any potential impacts during the construction and implementation phases. It is recommended that a more detailed environmental impacts assessment (EIA) be implemented by independent geomorphologists, soil scientists and hydrologists for soil erosion assessment. Other disciplines and assessments might also be appropriate for a fully balanced EIA.

Following an fully assessment, if the project continues forward toward development, a detailed project design and soil conservation plan would be recommended to implement appropriate best

management practices (BMPs) to mitigate against soil erosion, as recommended by an EIA. The paradigm of '**Precision Agriculture**' should be followed using the latest science, remote sensing and on-ground technology (Srinivasan 2006; Gebbers and Adamchuk 2010; Oliver et al. 2013). Entire scientific journals are now devoted to Precision Agriculture (<http://link.springer.com/journal/11119>). Precision Agriculture could be used as a minimum prerequisite following the precautionary principle for land owners wanting to development agricultural lands in highly sensitive and relatively intact catchments, such as the Normanby Catchment, and relatively pristine areas of the Great Barrier Reef (Fabricius et al 2005; Halpern et al. 2008; De'ath et al. 2012).

As a few examples, to properly delineate and buffer sensitive areas from development impacts for effective conservation, LiDAR (Light Detection and Ranging) surveys could accurately depict topographic and hydrologic drainage patterns, small creeks and dambo wetlands, and landscape connectivity (e.g., Galzki et al. 2011; Zhang and Kovacs 2012; Brooks et al. 2013; Shellberg and Brooks 2013). This high accuracy topographic data could also be used to install soil conservation measures such as filter strips on contour or contour banks, as well as identifying critical areas of pollution potential (Galzki et al. 2011). The location of roads and fences could also be targeted for stable locations, and LiDAR slope data could be used to determine the frequency and location of '*whoa boys*' to safely disperse overland flow back onto the forest floor (Shellberg and Brooks 2013). Many other ideas and technologies would also follow from using a precision agriculture paradigm, such as managing precise nutrient application to save costs and reduce downstream pollution (e.g., Bongiovanni and Lowenberg-Deboer 2004). However, more local education and training in precision agriculture would be needed (Kitchen et al. 2002). Overall, the application of Precision Agriculture would greatly reduce, but not eliminate, the risk that land use development could cumulatively increase sediment and nutrient loads to downstream receiving waters in the Normanby Catchment and the Great Barrier Reef.

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Commonwealth of Australia

Environment Protection and Biodiversity Conservation (Minister to Department and Director of National Parks) Delegation 2013

I, Greg Hunt, Minister for the Environment, make this Delegation under section 515(1) of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) and regulation 19.01A(1) of the *Environment Protection and Biodiversity Conservation Regulations 2000* (Cth).



Minister for the Environment

Dated:

19:9:2013

PART 1 – PRELIMINARY

1. Name of Delegation

This Delegation is the *Environment Protection and Biodiversity Conservation (Minister to Department and Director of National Parks) Delegation 2013*.

2. Commencement

This Delegation commences when signed.

3. Revocation of Former Delegation Instruments

All previous delegations made under section 515(1) of the EPBC Act and under regulation 19.01A(1) of the EPBC Regulations are revoked.

4. Definitions

In this Delegation, unless otherwise stated the following definitions apply:

Department means the Department administered by the Minister.

EPBC Act means the *Environment Protection and Biodiversity Conservation Act 1999 (Cth)*, as amended from time to time.

EPBC Regulations means the *Environment Protection and Biodiversity Conservation Regulations 2000 (Cth)*, as amended from time to time.

Minister means the Minister administering the EPBC Act.

PART 2 – DELEGATIONS AND DIRECTIONS UNDER THE EPBC ACT

5. Delegations under section 515 of the EPBC Act

- (a) Delegations under Schedule 1 are made under section 515(1) of the EPBC Act.
- (b) The delegates for the purposes of section 515(1) of the EPBC Act are the persons for the time being holding, occupying or performing the duties of the positions or levels specified in Parts 1, 2 or 3 of Schedule 1.

6. Directions under section 515 of the EPBC Act

- (a) These directions are made under section 515(1) of the EPBC Act.
- (b) Each delegate in Schedule 1 is subject to the directions contained in Schedule 3.



PART 3 – DELEGATIONS AND DIRECTIONS UNDER THE EPBC REGULATIONS

7. Delegations under regulation 19.01A of the EPBC Regulations

- (a) Delegations under Schedule 2 are made under regulation 19.01A(1) of the EPBC Regulations.
- (b) The delegates for the purposes of regulation 19.01A(1) of the EPBC Regulations are the persons for the time being holding, occupying or performing the duties of the positions or levels specified in Schedule 2.

8. Directions under regulation 19.01A of the EPBC Regulations

- (a) These directions are made under regulation 19.01A(2) of the EPBC Regulations.
- (b) Each delegate in Schedule 2 is subject to the directions contained in Schedule 3.

Note: The text in column 2 of a table in Schedule 1 or 2, is provided for explanatory purposes only and does not purport to limit or in any way qualify the delegation of the powers and functions in the sections of the Act listed in column 1 of the table.

SCHEDULE 1

DELEGATION OF POWERS AND FUNCTIONS UNDER THE EPBC ACT

PART 1 - DELEGATION TO THE SECRETARY AND DEPUTY SECRETARIES OF THE DEPARTMENT

1. DELEGATES

Secretary and Deputy Secretaries of the Department.

2. POWERS AND FUNCTIONS DELEGATED

All of the Minister's powers and functions under the EPBC Act, except the following powers and functions:

PART 3 – REQUIREMENTS FOR ENVIRONMENTAL APPROVALS

Legislative Authority	EPBC Act Power/Function
s14	declaring a property to be a declared World Heritage property
s15	amending or revoking a declaration of a declared World Heritage property
s17A	making and revoking declarations of Ramsar wetlands
s25B	the Minister may issue evidentiary certificates
s25C	the Minister must give a copy of evidentiary certificates to the person concerned
s25D	the Minister may certify that a document is a copy of an evidentiary certificate
s25E	the Minister may vary an evidentiary certificate
s25F	the Minister may revoke an evidentiary certificate
s28	declaring that certain actions are not subject to section 28

PART 4 – CASES IN WHICH ENVIRONMENTAL APPROVALS ARE NOT NEEDED

Legislative Authority	EPBC Act Power/Function
s35	revoking section 33 declarations
s37A	making declarations that an action or a class of actions taken in accordance with a bioregional plan do not need approval under Part 9
s37K	revoking section 37A declarations
s40	making declarations related to forestry operations in regions not yet covered by regional forestry agreements
s41	in relation to regional forestry agreements the Minister must be satisfied that proposed regulations will not give preference to one State over another State

PART 5 – BILATERAL AGREEMENTS

Legislative Authority	EPBC Act Power/Function
s45(1)	Minister may enter into a bilateral agreement
s46	the Minister may accredit a management process or arrangement relating to bilateral agreements
s47	in a bilateral agreement the Minister may declare classes of actions do not need assessment
s57(2)	decision as to whether a bilateral agreement has been contravened
s59(1)	decision to suspend or cancel a bilateral agreement
s60	decision to suspend a bilateral agreement in an emergency
s61	decision to cancel a bilateral agreement while it is suspended
s62	the Minister may revoke notice of suspension or cancellation of a bilateral agreement
s63(1)	the Minister must give notice of suspension or cancellation of a bilateral agreement

PART 8 – ASSESSING IMPACTS OF CONTROLLED ACTIONS

Legislative Authority	EPBC Act Power/Function
s84(2)	making a declaration that assessment not required
s84(6)	revoke a declaration that assessment not required
s90	revoking and substituting an assessment decision made with a decision that an inquiry is required
s107	the Minister may appoint commissioners and set terms of reference for an inquiry
s125	the Minister may grant a leave of absence for a commissioner to an inquiry
s127	the Minister may terminate the appointment of a commissioner to an inquiry

PART 11 – MICELLANEOUS RULES ABOUT ASSESSMENTS AND APPROVALS

Legislative Authority	EPBC Act Power/Function
s158(3)	granting of an exemption from Part 3 and Chapter 4
s167	making an agreement with a State or Territory Minister to apply Subdivision C – Assessment under agreement with a State or Territory

PART 12 – IDENTIFYING AND MONITORING BIODIVERSITY AND MAKING BIOREGIONAL PLANS

Legislative Authority	EPBC Act Power/Function
s171	the Minister may give financial assistance to identify and monitor biodiversity

PART 13 – SPECIES AND COMMUNITIES

Legislative Authority	EPBC Act Power/Function
s178	the Minister must establish a list of threatened species
s181	the Minister must establish a list of threatened ecological communities
s183	the Minister must establish a list of key threatening processes
s184(1)(a) – (c)	the Minister may amend lists of threatened species, ecological communities, and key threatening processes
s193(1)	determination not to list a species which poses a serious threat to human health
s194C	determination of the starting date of the assessment period
s194D	determination of conservation themes for an assessment period
s194K	the Minister may make changes to the priority assessment list
s194P(3)	the Minister may extend the assessment completion time by which assessments are to be provided to the Minister
s194Q(1), (2), (4)	decision about inclusion of an item in the threatened species or ecological communities list
s209(1), (2), (4)	the Minister must establish a migratory species list
s226	the Minister must obtain agreement of State or Territory Ministers before coastal waters can become prescribed waters for the Australian Whale Sanctuary
s228	the Minister may make a declaration that coastal waters are prescribed waters for the Australian Whale Sanctuary
s228A	the Minister may declare a specified area in the Australian Whale Sanctuary to be an important cetacean habitat area
s236	the Minister may give written permission allowing entry of a whaling vessel into a port in Australia or an external Territory
s248(1)	the Minister must establish a list of marine species
s249(1)(a),(b)	the Minister may add to or delete items from the list of marine species
s249(4)	the Minister must cause a statement to be laid before each House of Parliament explaining why an item was included in or deleted from the list of marine species
s269AA(1)	the Minister must make a decision whether to have a recovery plan
s270A(1), (3)	the Minister may decide whether to have a threat abatement plan
s273(2), (3), (5)	the Minister must ensure plans are in force, and extend the period for a plan to be made
s285(1), (3)	the Minister may make or adopt a wildlife conservation plan
s291	the Minister may consider comments and revise a wildlife conservation plan
s294	the Minister may vary a wildlife conservation plan
s302	the Minister may provide financial aid for conservation of species in foreign countries
s303A(2) – (6)	the Minister may grant an exemption from Part 13

PART 13A – INTERNATIONAL MOVEMENT OF WILDLIFE SPECIMENS

Legislative Authority	EPBC Act Power/Function
s303CA(1)	establish a list of CITES species
s303CB(1)	make declaration of a stricter domestic measure
s303DB(1)	establish a list of exempt native specimens
s303EB(1)	establish a list of specimens that are taken to be suitable for live import
s303EC(1)(a),(b), (d),(e)	amend the list of specimens suitable for live import
s303EG(1)(b)	specify longer time period to make a decision about a proposed amendment
s303EJ	review decision to amend or not amend list of specimens suitable for live import
s303FG(4)	establish a list of native household pets
s303FG(6)(a),(b)	amend the list of native household pets
s303GX(2)	make declaration of an area in the vicinity of the Protected Zone

PART 15 – PROTECTED AREAS

Legislative Authority	EPBC Act Power/Function
s316(1)	making plans for managing World Heritage properties within Commonwealth areas
s324G(2)	make determination of day on which assessment period commences for nominations to the National Heritage List
s324H(1)	make determination of heritage themes for National Heritage List assessment period
s324JE(1)	make changes to the proposed priority assessment list for National Heritage nominations
s324JI(3)	extend assessment completion time for assessments of National Heritage nominations
s324JJ(1)	make decision on inclusion of a place in the National Heritage List
s324JJ(3)	extend timeframe for making decision on inclusion of a place in the National Heritage List
s324JL(1)	include a place in the National Heritage List if under threat
s324JQ(1)	make decision about emergency listed place remaining in the National Heritage List
s324L(3)	make decision to remove places, parts of places, or values of places from the National Heritage List
s324M(5)	make decision to remove places, parts of places, or values of places from the National Heritage List – emergency process
s324ZC	review and report on the National Heritage List
s328(1)	make management plans for Ramsar wetlands within Commonwealth areas
s328(2)	amend, or revoke and remake management plans for Ramsar wetlands within Commonwealth areas
s328(4)	amend, or revoke and replace management plans for Ramsar wetlands within Commonwealth areas to be consistent with management principles
s335	decide that proposed Australian Ramsar management principles are consistent with Australia's obligations under Ramsar

Legislative Authority	EPBC Act Power/Function
	Convention
s338	make management plans for Biosphere reserves
s340	decide that proposed Australian Biosphere reserve management principles are consistent with the Statutory Framework of the World Network of Biosphere Reserves
s341G	make determination of the day on which assessment period commences for nominations to the Commonwealth Heritage List
s341JD(1)	make changes to the proposed priority assessment list for Commonwealth Heritage nominations
s341JH(3)	extend assessment completion time for assessments of Commonwealth Heritage nominations
s341JI(1)	make decision on inclusion of a place in the Commonwealth Heritage List
s341JI(3)	extend timeframe for making decision on inclusion of a place in the Commonwealth Heritage List
s341JK	include a place in the Commonwealth Heritage List if under threat
s341JP(1)	make decision about emergency listed place remaining in the Commonwealth Heritage List
s341L(1)	make decision to remove places, parts of places, or values of places from the Commonwealth Heritage List
s341M(5)	make decision to remove places, parts of places, or values of places from the Commonwealth Heritage List – emergency process
s351	consider a report relating to declaring or revoking Commonwealth Reserves
s363(1)	resolve disagreements between land council and Director over implementation of management plans for a Commonwealth Reserve
s364	resolve disagreements between Director and Board over implementation of management plans for a Commonwealth Reserve
s369	resolve disagreements between Director and Board in planning process
s370(3), (5)	make decision on approval of management plans for Commonwealth reserves
s377	establish Board for Commonwealth Reserve on indigenous people's land
s378	alter the constitution of a Board or abolish a Board for a Commonwealth Reserve
s379	make decisions to appoint members to Boards for a Commonwealth Reserve
s382	make decisions to terminate appointments of members of Boards for a Commonwealth Reserve
s390(2)	resolve disagreements over implementation of management plans for a Commonwealth Reserve in Kakadu, Uluru and Jervis Bay Territory
s390(7)	resolve disagreements over implementation of management plans for a Commonwealth Reserve in Kakadu, Uluru and Jervis Bay Territory
s390A(4)	refer appointment of a Northern Territory nominee to Commonwealth Reserves Board to Commonwealth Ombudsman
s390D(2)	be satisfied relating to the proposed proclamation of conservation zones

Legislative Authority	EPBC Act Power/Function
s390J	be satisfied relating to the proposed proclamation revoking and altering conservation zones

PART 15A – THE LIST OF OVERSEAS PLACES OF HISTORIC SIGNIFICANCE

Legislative Authority	EPBC Act Power/Function
s390L	make decision to include places in the List of Overseas Places of Historic Significance to Australia
s390M	make decision to remove places from, or vary statements of historic significance of places on, the List of Overseas Places of Historic Significance to Australia
s390P	seek advice from Australian Heritage Council and others relating to listing of places on the List of Overseas Places of Historic Significance to Australia

PART 15B – DECLARED COMMERCIAL FISHING ACTIVITIES

Legislative Authority	EPBC Act Power/Function
s390SG	revoking an interim declaration under section 390SD or a final declaration under section 390SF
s390SH(1)(a)	appointing one or more persons as an expert panel to conduct an assessment and report to the Minister about a declared commercial fishing activity
s390SH(1)(b)	specifying the terms of reference for an expert panel
s390SH(3)	varying or revoking the terms of reference for an expert panel
s390SH(4)	publishing a copy of the terms of reference for an expert panel on the Department's website and tabling a copy of the terms of reference before each House of Parliament
s390SI	determine the terms and conditions of appointment applicable to members of an expert panel
s390SL	Minister must publish report of expert panel and table report before each House of Parliament

PART 19 – ORGANISATIONS

Legislative Authority	EPBC Act Power/Function
s502	the Minister is to appoint the Threatened Species Scientific Committee
s504	the Minister is to appoint the Biological Diversity Advisory Committee
s505A	the Minister is to appoint the Indigenous Advisory Committee
s505B	the Minister may give the Indigenous Advisory Committee written guidelines about its function
s505C	the Minister is to appoint the Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining
s509	the Minister may terminate the appointments of Committee members
s511	the Minister may establish advisory committees
s512	the Minister may appoint members to advisory committees
s514F	the Minister must be satisfied that the Director has suitable

Legislative Authority	EPBC Act Power/Function
	qualifications and experience prior to appointment
s514G	the Minister may appoint a person as acting Director
s514M	the Minister may grant the Director leave of absence

PART 20 – DELEGATIONS

Legislative Authority	EPBC Act Power/Function
s515	make delegations under the Act
s515AA	delegation by Minister in relation to Great Barrier Reef Marine Park

PART 21 – REPORTING

Legislative Authority	EPBC Act Power/Function
s516	EPBC Act annual report to be presented to Parliament
s516B	state of the environment report to be presented to Parliament

PART 22 – MISCELLANEOUS

Legislative Authority	EPBC Act Power/Function
s517	determinations that distinct populations of biological entities are species
s517A(2)	determinations relating to activities that might harm particular species introduced into particular areas
s518	report on non-compliance with time limits to be presented to Parliament
s520A	issue statements about the application of the Act
s522A(4)	review of operation of Act to be presented to Parliament

RELATING TO SCHEDULE 1 – PROVISIONS RELATING TO DETENTION OF SUSPECTED FOREIGN OFFENDERS

Legislative Authority	EPBC Act Power/Function
clause 26	before the Governor General makes regulations prescribing an identifier, the Minister must be satisfied of several requirements

PART 2 – DELEGATION TO THE DIRECTOR OF NATIONAL PARKS AND ALL SES EMPLOYEES IN THE DEPARTMENT (OTHER THAN DEPUTY SECRETARIES)

1. DELEGATES

The Director of National Parks and all SES employees (other than Deputy Secretaries) in the Department.

2. POWERS AND FUNCTIONS DELEGATED

All of the Minister's powers and functions under the EPBC Act except the following powers and functions:

PART 3 – REQUIREMENTS FOR ENVIRONMENTAL APPROVALS

Legislative Authority	EPBC Act Power/Function
s14	declaring a property to be a declared World Heritage property
s15	amending or revoking a declaration of a declared World Heritage property
s17A	making and revoking declarations of Ramsar wetlands
s25B	the Minister may issue evidentiary certificates
s25C	the Minister must give a copy of evidentiary certificates to the person concerned
s25D	the Minister may certify that a document is a copy of an evidentiary certificate
s25E	the Minister may vary an evidentiary certificate
s25F	the Minister may revoke an evidentiary certificate
s28	declaring that certain actions are not subject to section 28

PART 4 – CASES IN WHICH ENVIRONMENTAL APPROVALS ARE NOT NEEDED

Legislative Authority	EPBC Act Power/Function
s35	revoking section 33 declarations
s37A	making declarations that an action or a class of actions taken in accordance with a bioregional plan do not need approval under Part 9
s37K	revoking section 37A declarations
s40	making declarations related to forestry operations in regions not yet covered by regional forestry agreements
s41	in relation to regional forestry agreements the Minister must be satisfied that proposed regulations will not give preference to one State over another State

PART 5 – BILATERAL AGREEMENTS

Legislative Authority	EPBC Act Power/Function
s45(1)	the Minister may enter into a bilateral agreement
s46	the Minister may accredit a management process or arrangement relating to bilateral agreements
s47	in a bilateral agreement the Minister may declare classes of actions do not need assessment
s57(2)	decision as to whether a bilateral agreement has been contravened
s59(1)	decision to suspend or cancel a bilateral agreement
s60	decision to suspend a bilateral agreement in an emergency
s61	decision to cancel a bilateral agreement while it is suspended
s62	the Minister may revoke notice of suspension or cancellation of a bilateral agreement
s63(1)	the Minister must give notice of suspension or cancellation of a bilateral agreement

PART 7 – DECIDING WHETHER APPROVAL OF ACTIONS IS NEEDED

Legislative Authority	EPBC Act Power/Function
s70	the Minister may request referral from a person

PART 8 – ASSESSING IMPACTS OF CONTROLLED ACTIONS

Legislative Authority	EPBC Act Power/Function
s84(2)	making a declaration that assessment not required
s84(6)	revoke a declaration that assessment not required
s90	revoking and substituting an assessment decision made with a decision that an inquiry is required
s107	the Minister may appoint commissioners and set terms of reference for an inquiry
s125	the Minister may grant a leave of absence for a commissioner to an inquiry
s127	the Minister may terminate the appointment of a commissioner to an inquiry

PART 11 – MISCELLANEOUS RULES ABOUT ASSESSMENTS AND APPROVALS

Legislative Authority	EPBC Act Power/Function
s158(3)	granting of an exemption from Part 3 and Chapter 4
s167	making an agreement with a State or Territory Minister to apply Subdivision C – Assessment under agreement with a State or Territory

PART 12 – IDENTIFYING AND MONITORING BIODIVERSITY AND MAKING BIOREGIONAL PLANS

Legislative Authority	EPBC Act Power/Function
s171	the Minister may give financial assistance to identify and monitor biodiversity

PART 13 – SPECIES AND COMMUNITIES

Legislative Authority	EPBC Act Power/Function
s178	the Minister must establish a list of threatened species
s181	the Minister must establish a list of threatened ecological communities
s183	the Minister must establish a list of key threatening processes
s184(1)(a) – (c)	the Minister may amend lists of threatened species, ecological communities, and key threatening processes
s193(1)	determination not to list a species which poses a serious threat to human health
s194C	determination of the starting date of the assessment period
s194D	determination of conservation themes for an assessment period
s194K	the Minister may make changes to the priority assessment list
s194P(3)	the Minister may extend the assessment completion time by which assessments are to be provided to the Minister
s194Q(1), (2), (4)	decision about inclusion of an item in the threatened species or ecological communities list
s209(1), (2), (4)	the Minister must establish a migratory species list
s226	the Minister must obtain agreement of State or Territory Ministers before coastal waters can become prescribed waters for the Australian Whale sanctuary
s228	the Minister may make a declaration that coastal waters are prescribed waters for the Australian Whale sanctuary
s228A	the Minister may declare a specified area in the Australian Whale Sanctuary to be an important cetacean habitat area
s236	the Minister may give written permission allowing entry of a whaling vessel into a port in Australia or an external Territory
s248(1)	the Minister must establish a list of marine species
s249(1)(a), (b)	the Minister may add to or delete items from the list of marine species
s249(4)	the Minister must cause a statement to be laid before each House of Parliament explaining why an item was included in or deleted from the list of marine species
s269AA(1)	the Minister must make a decision whether to have a recovery plan
s270A(1), (3)	the Minister may decide whether to have a threat abatement plan
s273(2), (3), (5)	the Minister must ensure plans are in force, and extend the period for a plan to be made
s285(1), (3)	the Minister may make or adopt a wildlife conservation plan
s291	the Minister may consider comments and revise a wildlife conservation plan
s294	the Minister may vary a wildlife conservation plan

Legislative Authority	EPBC Act Power/Function
s302	the Minister may provide financial aid for conservation of species in foreign countries
s303A(2) – (6)	the Minister may grant an exemption from Part 13

PART 13A – INTERNATIONAL MOVEMENT OF WILDLIFE SPECIMENS

Legislative Authority	EPBC Act Power/Function
s303CA(1)	establish a list of CITES species
s303CB(1)	make declaration of a stricter domestic measure
s303DB(1)	establish a list of exempt native specimens
s303EB(1)	establish a list of specimens that are taken to be suitable for live import
s303EC(1)(a),(b) (d),(e)	amend the list of specimens suitable for live import
s303EG(1)(b)	specify longer time period to make a decision about a proposed amendment
s303EJ	review decision to amend or not amend list of specimens suitable for live import
s303FG(4)	establish a list of native household pets
s303FG(6)(a),(b)	amend the list of native household pets
s303GX(2)	make declaration of an area in the vicinity of the Protected Zone

PART 15 – PROTECTED AREAS

Legislative Authority	EPBC Act Power/Function
s316(1)	making plans for managing World Heritage properties within Commonwealth areas
s324G(2)	make determination of day on which assessment period commences for nominations to the National Heritage List
s324H(1)	make determination of heritage themes for National Heritage List assessment period
s324JE(1)	make changes to the proposed priority assessment list for National Heritage nominations
s324JI(3)	extend assessment completion time for assessments of National Heritage nominations
s324JJ(1)	make decision on inclusion of a place in the National Heritage List
s324JJ(3)	extend timeframe for making decision on inclusion of a place in the National Heritage List
s324JL(1)	include a place in the National Heritage List if under threat
s324JQ(1)	make decision about emergency listed place remaining in the National Heritage List
s324L(3)	make decision to remove places, parts of places, or values of places from the National Heritage List
s324M(5)	make decision to remove places, parts of places, or values of places from the National Heritage List – emergency process
s324ZC	review and report on the National Heritage List
s328(1)	make management plans for Ramsar wetlands within Commonwealth areas
s328(2)	amend, or revoke and remake management plans for Ramsar wetlands within Commonwealth areas

Legislative Authority	EPBC Act Power/Function
s328(4)	amend, or revoke and replace management plans for Ramsar wetlands within Commonwealth areas to be consistent with management principles
s335	decide that proposed Australian Ramsar management principles are consistent with Australia's obligations under Ramsar Convention
s338	make management plans for Biosphere reserves
s340	decide that proposed Australian Biosphere reserve management principles are consistent with the Statutory Framework of the World Network of Biosphere Reserves
s341G	make determination of the day on which assessment period commences for nominations to the Commonwealth Heritage List
s341JD(1)	make changes to the proposed priority assessment list for Commonwealth Heritage nominations
s341JH(3)	extend assessment completion time for assessments of Commonwealth Heritage nominations
s341JI(1)	make decision on inclusion of a place in the Commonwealth Heritage List
s341JI(3)	extend timeframe for making decision on inclusion of a place in the Commonwealth Heritage List
s341JK	include a place in the Commonwealth Heritage List if under threat
s341JP(1)	make decision about emergency listed place remaining in the Commonwealth Heritage List
s341L(1)	make decision to remove places, parts of places, or values of places from the Commonwealth Heritage List
s341M(5)	make decision to remove places, parts of places, or values of places from the Commonwealth Heritage List – emergency process
s351	consider a report relating to declaring or revoking Commonwealth Reserves
s363(1)	resolve disagreements between land council and Director over implementation of management plans for a Commonwealth Reserve
s364	resolve disagreements between Director and Board over implementation of management plans for a Commonwealth Reserve
s369	resolve disagreements between Director and Board in planning process
s370(3), (5)	make decision on approval of management plans for Commonwealth reserves
s377	establish Board for Commonwealth Reserve on indigenous people's land
s378	alter the constitution of a Board or abolish a Board for a Commonwealth Reserve
s379	make decisions to appoint members to Boards for a Commonwealth Reserve
s382	make decisions to terminate appointments of members of Boards for a Commonwealth Reserve
s390(2)	resolve disagreements over implementation of management plans for a Commonwealth Reserve in Kakadu, Uluru and Jervis Bay Territory

Legislative Authority	EPBC Act Power/Function
s390(7)	resolve disagreements over implementation of management plans for a Commonwealth Reserve in Kakadu, Uluru and Jervis Bay Territory
s390A(4)	refer appointment of a Northern Territory nominee to Commonwealth Reserves Board to Commonwealth Ombudsman
s390D(2)	be satisfied relating to the proposed proclamation of conservation zones
s390J	be satisfied relating to the proposed proclamation revoking and altering conservation zones

PART 15A – THE LIST OF OVERSEAS PLACES OF HISTORIC SIGNIFICANCE

Legislative Authority	EPBC Act Power/Function
s390L	make decision to include places in the List of Overseas Places of Historic Significance to Australia
s390M	make decision to remove places from, or vary statements of historic significance of places on, the List of Overseas Places of Historic Significance to Australia
s390P	seek advice from Australian Heritage Council and others relating to listing of places on the List of Overseas Places of Historic Significance to Australia

PART 15B – DECLARED COMMERCIAL FISHING ACTIVITIES

Legislative Authority	EPBC Act Power/Function
s390SG	revoking an interim declaration under section 390SD or a final declaration under section 390SF
s390SH(1)(a)	appointing one or more persons as an expert panel to conduct an assessment and report to the Minister about a declared commercial fishing activity
s390SH(1)(b)	specifying the terms of reference for an expert panel
s390SH(3)	varying or revoking the terms of reference for an expert panel
s390SH(4)	publishing a copy of the terms of reference for an expert panel on the Department's website and tabling a copy of the terms of reference before each House of Parliament
s390SI	determine the terms and conditions of appointment applicable to members of an expert panel
s390SL	Minister must publish report of expert panel and table report before each House of Parliament

PART 17 – ENFORCEMENT

Legislative Authority	EPBC Act Power/Function
s464(1), (4)(a)	the Minister may make a conservation order
s466	the Minister must review a conservation order and then confirm, vary or revoke the conservation order
s467	after making or reviewing a conservation order the Minister must inform the Secretary
s469	the Minister must reconsider a conservation order and then confirm, vary or revoke the conservation order

Legislative Authority	EPBC Act Power/Function
s471	the Minister must refer a proposed action which may contravene a conservation order to the Secretary
s475	the Minister may apply to the Federal Court for an injunction for contravention of the Act
s476	the Minister may apply to the Federal Court for an injunction for contraventions of conservation agreements
s480A(5)	the Minister may apply to the Federal Court for a remediation order
s480B	the Minister may apply to the Federal Court to discharge or vary a remediation order
s480D	the Minister may make a remediation determination
s480J(2)	the Minister may affirm, vary or set aside a remediation determination
s480L	the Minister may make an application to the Federal Court for an order to comply with a remediation determination
s480N	the Minister may vary or revoke a remediation determination
s481	the Minister may make an application to the Federal Court for an order to pay a pecuniary penalty for contravening a civil penalty provision
s486DA	the Minister may accept a written undertaking in relation to payment of a specified amount relating to the contravention of a civil penalty provision
s486DB	the Minister may make an application to Federal Court for enforcement of written undertakings

PART 18 – REMEDYING ENVIRONMENTAL DAMAGE

Legislative Authority	EPBC Act Power/Function
s499	the Minister may cause to be taken such steps as he or she thinks proper to remedy environmental damage

PART 19 – ORGANISATIONS

Legislative Authority	EPBC Act Power/Function
s502	the Minister is to appoint the Threatened Species Scientific Committee
s504	the Minister is to appoint the Biological Diversity Advisory Committee
s505A	the Minister is to appoint the Indigenous Advisory Committee
s505B	the Minister may give the Indigenous Advisory Committee written guidelines about its function
s505C	the Minister is to appoint the Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining
s509	the Minister may terminate the appointments of Committee members
s511	the Minister may establish advisory committees
s512	the Minister may appoint members to advisory committees
s514F	the Minister must be satisfied that the Director has suitable qualifications and experience prior to appointment
s514G	the Minister may appoint a person as acting Director
s514M	the Minister may grant the Director leave of absence

PART 20 – DELEGATIONS

Legislative Authority	EPBC Act Power/Function
s515	make delegations under the Act
s515AA	delegation by Minister in relation to Great Barrier Reef Marine Park

PART 21 – REPORTING

Legislative Authority	EPBC Act Power/Function
s516	EPBC Act annual report to be presented to Parliament
s516B	state of the environment report to be presented to Parliament

PART 22 – MISCELLANEOUS

Legislative Authority	EPBC Act Power/Function
s517	determinations that distinct populations of biological entities are species
s517A(2)	determinations relating to activities that might harm particular species introduced into particular areas
s518	report on non-compliance with time limits to be presented to Parliament
s520A	issue statements about the application of the Act
s522A(4)	review of operation of Act to be presented to Parliament

RELATING TO SCHEDULE 1 – PROVISIONS RELATING TO DETENTION OF SUSPECTED FOREIGN OFFENDERS

Legislative Authority	EPBC Act Power/Function
clause 26	before the Governor General makes regulations prescribing an identifier, the Minister must be satisfied of several requirements

3. SCOPE OF DELEGATION

- (a) The powers and functions delegated to an SES employee of the Department under this Part are only delegated to the extent that the exercise of those powers or the performance of those functions is related to matters for which the SES employee's Division has administrative responsibility.
- (b) The powers and functions delegated to the Director of National Parks under this Part are only delegated to the extent that the exercise of those powers or the performance of those functions is related to matters for which the Director of National Parks' Division has administrative responsibility.

PART 3 – DELEGATION TO DIRECTORS AND ASSISTANT DIRECTORS IN THE DEPARTMENT

1. DELEGATE

All Directors and Assistant Directors in the Department.

2. POWERS AND FUNCTIONS DELEGATED

All of the Minister's powers and functions under the EPBC Act, except the following powers and functions:

PART 3 – REQUIREMENTS FOR ENVIRONMENTAL APPROVALS

Legislative Authority	EPBC Act Power/Function
s14	declaring a property to be a declared World Heritage property
s15	amending or revoking a declaration of a declared World Heritage property
s17A	making and revoking declarations of Ramsar wetlands
s25B	the Minister may issue evidentiary certificates
s25C	the Minister must give a copy of evidentiary certificates to the person concerned
s25D	the Minister may certify that a document is a copy of an evidentiary certificate
s25E	the Minister may vary an evidentiary certificate
s25F	the Minister may revoke an evidentiary certificate
s28	declaring that certain actions are not subject to section 28

PART 4 – CASES IN WHICH ENVIRONMENTAL APPROVALS ARE NOT NEEDED

Legislative Authority	EPBC Act Power/Function
s33(1)	making declarations that actions in a class of actions taken in accordance with an accredited management arrangement or accredited authorisation process do not need approval under Part 9
s33(3)	accrediting management arrangements or authorisation processes
s33(4)	tabling management arrangement or authorisation process in each House of Parliament
s35	revoking section 33 declarations
s37A	making declarations that an action or a class of actions taken in accordance with a bioregional plan do not need approval under Part 9
s37K	revoking section 37A declarations
s40	making declarations related to forestry operations in regions not yet covered by regional forestry agreements
s41	in relation to regional forestry agreements the Minister must be satisfied that proposed regulations will not give preference to one State over another State

PART 5 – BILATERAL AGREEMENTS

Legislative Authority	EPBC Act Power/Function
s45(1)	the Minister may enter into a bilateral agreement
s46	the Minister may accredit a management process or arrangement relating to bilateral agreements
s47	in a bilateral agreement the Minister may declare classes of actions do not need assessment
s57(2)	decision as to whether a bilateral agreement has been contravened
s59(1)	decision to suspend or cancel a bilateral agreement
s60	decision to suspend a bilateral agreement in an emergency
s61	decision to cancel a bilateral agreement while it is suspended
s62	the Minister may revoke notice of suspension or cancellation of a bilateral agreement
s63(1)	the Minister must give notice of suspension or cancellation of a bilateral agreement

PART 7 – DECIDING WHETHER APPROVAL OF ACTIONS IS NEEDED

Legislative Authority	EPBC Act Power/Function
s70	the Minister may request referral from a person

PART 8 – ASSESSING IMPACTS OF CONTROLLED ACTIONS

Legislative Authority	EPBC Act Power/Function
s84(2)	making a declaration that assessment not required
s84(6)	revoke a declaration that assessment not required
s90	revoking and substituting an assessment decision made with a decision that an inquiry is required
s107	the Minister may appoint commissioners and set terms of reference for an inquiry
s125	the Minister may grant a leave of absence for a commissioner to an inquiry
s127	the Minister may terminate the appointment of a commissioner to an inquiry

PART 9 – APPROVAL OF ACTIONS

Legislative Authority	EPBC Act Power/Function
s131AB	the Minister must obtain advice from Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development

PART 11 – MISCELLANEOUS RULES ABOUT ASSESSMENTS AND APPROVALS

Legislative Authority	EPBC Act Power/Function
s158(3)	granting of an exemption from Part 3 and Chapter 4
s167	making an agreement with a State or Territory Minister to apply Subdivision C – Assessment under agreement with a State or Territory

PART 12 – IDENTIFYING AND MONITORING BIODIVERSITY AND MAKING BIOREGIONAL PLANS

Legislative Authority	EPBC Act Power/Function
s171	the Minister may give financial assistance to identify and monitor biodiversity

PART 13 – SPECIES AND COMMUNITIES

Legislative Authority	EPBC Act Power/Function
s178	the Minister must establish a list of threatened species
s181	the Minister must establish a list of threatened ecological communities
s183	the Minister must establish a list of key threatening processes
s184(1)(a) – (c)	the Minister may amend lists of threatened species, ecological communities, and key threatening processes
s193(1)	determination not to list a species which poses a serious threat to human health
s194C	determination of the starting date of the assessment period
s194D	determination of conservation themes for an assessment period
s194K	the Minister may make changes to the priority assessment list
s194P(3)	the Minister may extend the assessment completion time by which assessments are to be provided to the Minister
s194Q(1), (2), (4)	decision about inclusion of an item in the threatened species or ecological communities list
s209(1), (2), (4)	the Minister must establish a migratory species list
s226	the Minister must obtain agreement of State or Territory Ministers before coastal waters can become prescribed waters for the Australian Whale sanctuary
s228	the Minister may make a declaration that coastal waters are prescribed waters for the Australian Whale sanctuary
s228A	the Minister may declare a specified area in the Australian Whale Sanctuary to be an important cetacean habitat area
s236	the Minister may give written permission allowing entry of a whaling vessel into a port in Australia or an external Territory
s248(1)	the Minister must establish a list of marine species
s249(1)(a),(b)	the Minister may add to or delete items from the list of marine species
s249(4)	the Minister must cause a statement to be laid before each House of Parliament explaining why an item was included in or deleted from the list of marine species
s269AA(1)	the Minister must make a decision whether to have a recovery plan
s270A(1), (3)	the Minister may decide whether to have a threat abatement plan

Legislative Authority	EPBC Act Power/Function
s273(2), (3), (5)	the Minister must ensure plans are in force, and extend the period for a plan to be made
s285(1), (3)	the Minister may make or adopt a wildlife conservation plan
s291	the Minister may consider comments and revise a wildlife conservation plan
s294	the Minister may vary a wildlife conservation plan
s302	the Minister may provide financial aid for conservation of species in foreign countries
s303A(2) – (6)	the Minister may grant an exemption from Part 13

PART 13A – INTERNATIONAL MOVEMENT OF WILDLIFE SPECIMENS

Legislative Authority	EPBC Act Power/Function
s303CA(1)	establish a list of CITES species
s303CA(9)	amend the list of CITES species
s303CB(1)	make declaration of a stricter domestic measure
s303DB(1)	establish a list of exempt native specimens
s303EB(1)	establish a list of specimens that are taken to be suitable for live import
s303EC(1)(a),(b), (d),(e)	amend the list of specimens suitable for live import
s303EG(1)(b)	specify longer time period to make a decision about a proposed amendment
s303EJ	review decision to amend or not amend list of specimens suitable for live import
s303FG(4)	establish a list of native household pets
s303FG(6)(a),(b)	amend the list of native household pets
s303GX(2)	make declaration of an area in the vicinity of the Protected Zone

PART 15 – PROTECTED AREAS

Legislative Authority	EPBC Act Power/Function
s316(1)	making plans for managing World Heritage properties within Commonwealth areas
s324G(2)	make determination of day on which assessment period commences for nominations to the National Heritage List
s324H(1)	make determination of heritage themes for National Heritage List assessment period
s324JE(1)	make changes to the proposed priority assessment list for National Heritage nominations
s324JI(3)	extend assessment completion time for assessments of National Heritage nominations
s324JJ(1)	make decision on inclusion of a place in the National Heritage List
s324JJ(3)	extend timeframe for making decision on inclusion of a place in the National Heritage List
s324JL(1)	include a place in the National Heritage List if under threat
s324JQ(1)	make decision about emergency listed place remaining in the National Heritage List
s324L(3)	make decision to remove places, parts of places, or values of places from the National Heritage List

Legislative Authority	EPBC Act Power/Function
s324M(5)	make decision to remove places, parts of places, or values of places from the National Heritage List – emergency process
s324ZC	review and report on the National Heritage List
s328(1)	make management plans for Ramsar wetlands within Commonwealth areas
s328(2)	amend, or revoke and remake management plans for Ramsar wetlands within Commonwealth areas
s328(4)	Amend, or revoke and replace management plans for Ramsar wetlands within Commonwealth areas to be consistent with management principles
s335	decide that proposed Australian Ramsar management principles are consistent with Australia's obligations under the Ramsar Convention
s338	make management plans for Biosphere reserves
s340	decide that proposed Australian Biosphere reserve management principles are consistent with the Statutory Framework of the World Network of Biosphere Reserves
s341G	make determination of the day on which assessment period commences for nominations to the Commonwealth Heritage List
s341JD(1)	make changes to the proposed priority assessment list for Commonwealth Heritage nominations
s341JH(3)	extend assessment completion time for assessments of Commonwealth Heritage nominations
s341JI(1)	make decision on inclusion of a place in the Commonwealth Heritage List
s341JI(3)	extend timeframe for making decision on inclusion of a place in the Commonwealth Heritage List
s341JK	include a place in the Commonwealth Heritage List if under threat
s341JP(1)	make decision about emergency listed place remaining in the Commonwealth Heritage List
s341L(1)	make decision to remove places, parts of places, or values of places from the Commonwealth Heritage List
s341M(5)	make decision to remove places, parts of places, or values of places from the Commonwealth Heritage List – emergency process
s351	consider a report relating to declaring or revoking Commonwealth Reserves
s363(1)	resolve disagreements between land council and Director over implementation of management plans for a Commonwealth Reserve
s364	resolve disagreements between Director and Board over implementation of management plans for a Commonwealth Reserve
s369	resolve disagreements between Director and Board in planning process
s370(3), (5)	make decision on approval of management plans for Commonwealth reserves
s377	establish Board for Commonwealth Reserve on indigenous people's land
s378	alter the constitution of a Board or abolish a Board for a Commonwealth Reserve
s379	make decisions to appoint members to Boards for a Commonwealth Reserve

Legislative Authority	EPBC Act Power/Function
s382	make decisions to terminate appointments of members of Boards for a Commonwealth Reserve
s390(2)	resolve disagreements over implementation of management plans for a Commonwealth Reserve in Kakadu, Uluru and Jervis Bay Territory
s390(7)	resolve disagreements over implementation of management plans for a Commonwealth Reserve in Kakadu, Uluru and Jervis Bay Territory
s390A(4)	refer appointment of a Northern Territory nominee to Commonwealth Reserves Board to Commonwealth Ombudsman
s390D(2)	be satisfied relating to the proposed proclamation of conservation zones
s390J	be satisfied relating to the proposed proclamation revoking and altering conservation zones

PART 15A – THE LIST OF OVERSEAS PLACES OF HISTORIC SIGNIFICANCE

Legislative Authority	EPBC Act Power/Function
s390L	make decision to include places in the List of Overseas Places of Historic Significance to Australia
s390M	make decision to remove places from, or vary statements of historic significance of places on, the List of Overseas Places of Historic Significance to Australia
s390P	seek advice from Australian Heritage Council and others relating to listing of places on the List of Overseas Places of Historic Significance to Australia

PART 15B – DECLARED COMMERCIAL FISHING ACTIVITIES

Legislative Authority	EPBC Act Power/Function
s390SG	revoking an interim declaration under section 390SD or a final declaration under section 390SF
s390SH(1)(a)	appointing one or more persons as an expert panel to conduct an assessment and report to the Minister about a declared commercial fishing activity
s390SH(1)(b)	specifying the terms of reference for an expert panel
s390SH(3)	varying or revoking the terms of reference for an expert panel
s390SH(4)	publishing a copy of the terms of reference for an expert panel on the Department's website and tabling a copy of the terms of reference before each House of Parliament
s390SI	determine the terms and conditions of appointment applicable to members of an expert panel
s390SL	Minister must publish report of expert panel and table report before each House of Parliament

PART 17 – ENFORCEMENT

Legislative Authority	EPBC Act Power/Function
s398(1), (2)	the Minister may enter an agreement with a State or Territory to appoint inspectors
s464(1), (4)(a)	the Minister may make a conservation order
s466	the Minister must review a conservation order and then confirm, vary or revoke the conservation order
s467	after making or reviewing a conservation order the Minister must inform the Secretary
s469	the Minister must reconsider a conservation order and then confirm, vary or revoke the conservation order
s471	the Minister must refer a proposed action which may contravene a conservation order to the Secretary
s475	the Minister may apply to the Federal Court for an injunction for contravention of the Act
s476	the Minister may apply to the Federal Court for an injunction for contraventions of conservation agreements
s480A(5)	the Minister may apply to the Federal Court for a remediation order
s480B	the Minister may apply to the Federal Court to discharge or vary a remediation order
s480D	the Minister may make a remediation determination
s480J(2)	the Minister may affirm, vary or set aside a remediation determination
s480L	the Minister may make an application to the Federal Court for an order to comply with a remediation determination
s480N	the Minister may vary or revoke a remediation determination
s481	the Minister may make an application to the Federal Court for an order to pay a pecuniary penalty for contravening a civil penalty provision
s486DA	the Minister may accept a written undertaking in relation to payment of a specified amount relating to the contravention of a civil penalty provision
s486DB	the Minister may make an application to Federal Court for enforcement of written undertakings
s499	the Minister may cause to be taken such steps as he or she thinks proper to remedy environmental damage

PART 18 – REMEDYING ENVIRONMENTAL DAMAGE

Legislative Authority	EPBC Act Power/Function
s499	the Minister may cause to be taken such steps as he or she thinks proper to remedy environmental damage.

PART 19 – ORGANISATIONS

Legislative Authority	EPBC Act Power/Function
s502	the Minister is to appoint the Threatened Species Scientific Committee
s504	the Minister is to appoint the Biological Diversity Advisory Committee
s505A	the Minister is to appoint the Indigenous Advisory Committee

Legislative Authority	EPBC Act Power/Function
s505B	the Minister may give the Indigenous Advisory Committee written guidelines about its function
s505C	the Minister is to appoint the Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining
s505D	the Minister may request advice from the Independent Expert Scientific Committee
s509	the Minister may terminate the appointments of Committee members
s511	the Minister may establish advisory committees
s512	the Minister may appoint members to advisory committees
s514F	the Minister must be satisfied that the Director has suitable qualifications and experience prior to appointment
s514G	the Minister may appoint a person as acting Director
s514M	the Minister may grant the Director leave of absence

PART 20 – DELEGATIONS

Legislative Authority	EPBC Act Power/Function
s515	make delegations under the Act
s515AA	delegation by Minister in relation to Great Barrier Reef Marine Park

PART 21 – REPORTING

Legislative Authority	EPBC Act Power/Function
s516	EPBC Act annual report to be presented to Parliament
s516B	state of the environment report to be presented to Parliament

PART 22 – MISCELLANEOUS

Legislative Authority	EPBC Act Power/Function
s517	determinations that distinct populations of biological entities are species
s517A(2)	determinations relating to activities that might harm particular species introduced into particular areas
s518	report on non-compliance with time limits to be presented to Parliament
s520A	issue statements about the application of the Act
s522A(4)	review of operation of Act to be presented to Parliament

RELATING TO SCHEDULE 1 – PROVISIONS RELATING TO DETENTION OF SUSPECTED FOREIGN OFFENDERS

Legislative Authority	EPBC Act Power/Function
clause 26	before the Governor General makes regulations prescribing an identifier, the Minister must be satisfied of several requirements

3. SCOPE OF DELEGATION

3.1 – Directors

- (a) The powers and functions delegated to a Director by this Part are only delegated to the extent that the exercise of those powers or the performance of those functions:
- (i) is related to matters for which the Director’s Branch has administrative responsibility; and
 - (ii) subject to paragraph (b), involves routine administrative functions such as publication and notification requirements.
- (b) The powers and functions delegated to Directors do not include decision-making powers and functions, except for the following powers and functions which Directors may exercise:

PART 7 – DECIDING WHETHER APPROVAL OF ACTIONS IS NEEDED

Legislative Authority	EPBC Act Power/Function
s74	inviting provision of information on referred proposal

PART 8 – ASSESSING IMPACTS OF CONTROLLED ACTIONS

Legislative Authority	EPBC Act Power/Function
s95A(2)	the Minister must request the designated proponent to give the Minister specified information relevant to assessing the relevant impacts of the action

PART 9 – APPROVAL OF ACTIONS

Legislative Authority	EPBC Act Power/Function
s145B	transfer of approval

PART 13A – INTERNATIONAL MOVEMENT OF WILDLIFE SPECIMENS

Legislative Authority	EPBC Act Power/Function
s303CC(5)	issuing of a certificate to enable the export of specimens acquired before the provisions of CITES applied
s303CF	request further information and refuse to consider application in relation to import and export of CITES specimens
s303CG	issue of permits relating to the import and export of CITES and regulated native specimens
s303DF	request further information and refuse to consider application in relation to export of regulated native specimens
s303DG	issue of permits in relation to the export of regulated native specimens
s303EM	request further information and refuse to consider application in relation to import of regulated live specimens
s303EN	issue of permits for specimens suitable for live import
s303FG(6)(c)	correcting the list of native household pets for import and export
s303GD	testing permit for live import specimens

Legislative Authority	EPBC Act Power/Function
s303GE	vary or revoke conditions of permits
s303GH	transfer of permits
s303GI	suspension or cancellation of permits
s486F	requiring persons to provide information for the purposes of an investigation or preventing an offence.
s486G	requiring a person to appear before an official to answer questions and produce documents for the purposes of an investigation or preventing an offence.

3.2 – Assistant Directors

- (a) The powers and functions delegated to an Assistant Director by this Part are only delegated to the extent that the exercise of those powers or the performance of those functions:
- (i) is related to matters for which the Assistant Director's Branch has administrative responsibility; and
 - (ii) subject to paragraph (b), involves routine administrative functions such as publication and notification requirements.
- (b) The powers and functions delegated to Assistant Directors do not include decision-making powers and functions, except for the following powers and functions which Assistant Directors may exercise:

PART 9 – APPROVAL OF ACTIONS

Legislative Authority	EPBC Act Power/Function
s145B	transfer of approval

PART 13A – INTERNATIONAL MOVEMENT OF WILDLIFE SPECIMENS

Legislative Authority	EPBC Act Power/Function
s303CC(5)	issuing of a certificate to enable the export of specimens acquired before the provisions of CITES applied
s303CF	request further information and refuse to consider application in relation to import and export of CITES specimens
s303CG	issue of permits relating to the import and export of CITES and regulated native specimens
s303DF	request further information and refuse to consider application in relation to export of regulated native specimens
s303DG	issue of permits in relation to the export of regulated native specimens
s303EM	request further information and refuse to consider application in relation to import of regulated live specimens
s303EN	issue of permits for specimens suitable for live import
s303GE	vary or revoke conditions of permits
s303GH	transfer of permits
s303GI	suspension or cancellation of permits

SCHEDULE 2

**DELEGATION OF POWERS AND FUNCTIONS
UNDER THE EPBC REGULATIONS**

1. DELEGATES

Secretary, SES employees, Directors and Assistant Directors in the Department.

2. MINISTERIAL POWERS AND FUNCTIONS UNDER THE REGULATIONS

All of the Minister's powers and functions under the EPBC Regulations, except the following powers and functions:

PART 7 – SPECIES AND COMMUNITIES

Legislative Authority	EPBC Regulations Power/Function
r7.13	variation and termination of conservation agreements

PART 8A – ACCESS TO BIOLOGICAL RESOURCES IN COMMONWEALTH AREAS

Legislative Authority	EPBC Regulations Power/Function
r8A.05	exemption for specified biological resources or collections

PART 19 – MISCELLANEOUS

Legislative Authority	EPBC Regulations Power/Function
r19.01A	delegations

3. SCOPE OF DELEGATION

3.1 – SES employees (other than Deputy Secretaries)

- (a) The powers and functions delegated to an SES employee (other than a Deputy Secretary) by Schedule 2 of this Delegation are only delegated to the extent that the exercise of those powers or the performance of those functions is related to matters for which the SES employee's Division has administrative responsibility.

3.2 – Directors

- (a) The powers and functions delegated to a Director by Schedule 2 of this Delegation are only delegated to the extent that the exercise of those powers or the performance of those functions:
- (i) is related to matters for which the Director's Branch has administrative responsibility; and
 - (ii) subject to paragraph (b), involves routine administrative functions such as publication and notification requirements.

- (b) The delegations to Directors do not include decision-making powers and functions, except for the following powers and functions which Directors may exercise:

Legislative Authority	EPBC Regulations Power/Function
Part 9A	international movement of wildlife specimens
Part 17	permits

3.3 – Assistant Directors

- (a) The powers and functions delegated to an Assistant Directors by Schedule 2 of this Delegation are only delegated to the extent that the exercise of those powers or the performance of those functions:
- (i) is related to matters for which the Assistant Director's Branch has administrative responsibility; and
 - (ii) subject to paragraph (b), involves routine administrative functions such as publication and notification requirements.
- (b) The delegations to Assistant Directors do not include decision-making powers and functions, except for the following powers and functions which Assistant Directors may exercise:

Legislative Authority	EPBC Regulations Power/Function
r9A.01	determine that an export or import is a non-commercial exchange between scientific organisations

SCHEDULE 3

DIRECTIONS FOR DELEGATED DECISION MAKING UNDER THE EPBC ACT AND THE EPBC REGULATIONS

1. Subject to the Minister's direction, the Minister must be briefed to make decisions on all strategic, complex or controversial matters, where there is likely to be a major disagreement with a State or Territory Government, or where there is likely to be disagreement with an Australian Government Minister or agency.
2. The Secretary, Deputy Secretary, the Director of National Parks and SES employees may make decisions on matters where:
 - (a) the significant impacts, controlling provisions and/or appropriate conditions can be clearly identified;
 - (b) in relation to the exercise of compliance and enforcement powers, the relevant breach of the EPBC Act and the grounds to exercise the power can be clearly identified;
 - (c) all the relevant matters regarding plans, regimes or other instruments to be approved or accredited can be clearly identified;
 - (d) there are clear precedents for determining the most appropriate decision;
 - (e) the provision of reasons or advice is straightforward; and
 - (f) the application of guidelines and policy is clear.
3. A Director cannot exercise delegated powers and functions under sections 486F and 486G of the EPBC Act unless the Director holds appropriate investigation qualifications in accordance with the *Australian Government Investigations Standards*.
4. The normal protocols will apply for dealing with Australian Government or State/Territory Ministers and officials at a corresponding and appropriate level. Any correspondence from a Departmental employee to an Australian Government or State/Territory Minister must state that the employee is acting as a delegate of the Minister under the EPBC Act.
5. A general principle of continuity will apply so that the decision-maker for the threshold decisions, such as whether an action needs approval or the level of assessment, will make the subsequent decisions on that action. This principle will be applied flexibly to cater for exceptions in order to result in a more timely or streamlined process or to enable routine administrative functions to be undertaken by employees.
6. The Minister's Office must be consulted on matters where the Secretary, the Director of National Parks or SES employees are unsure whether the Minister should be briefed to make a decision or whether a Departmental delegation should be exercised.

ATTACHMENT F

REQUEST FOR REFERRAL OF PROPOSAL – KINGVALE STATION VEGETATION CLEARANCE

I, Dean Knudson, make the following findings in requesting Mr Scott Alexander Harris to refer a proposed action to the Minister for the Environment, pursuant to section 70(1)(a) of the *Environment Protection and Biodiversity Conservation Act 1999* (**the Act**).

FINDINGS

1. Proposing to take an action

- a. Mr Harris (**the landholder**) is registered on title as the leaseholder of Lot 1 on KG3 in Queensland. This land is also known as Lot 1 of Survey Plan 280074, and **Kingvale Station**.
- b. The landholder applied for, and was granted, a permit to clear vegetation under the *Sustainable Planning Act 2009* (Qld) for dryland sorghum cultivation in particular areas on Kingvale Station (**the permit**). Those areas are identified as Area A3, A4 and A5 on the attached map titled "*Referral Agency Response (Vegetation) Plan. Plan of Area A (Parts A1 - A5) in Lot 1 on KG3*".
- c. This permit was granted by the Queensland Government on 16 April 2014.
- d. As far as I am aware, the landholder is the only person permitted to undertake work of the type described in the permit. I am not aware of any other persons having sought a similar permit. Accordingly, I conclude that the landowner is the person who proposes to take the action to clear vegetation in accordance with the permit, and accordingly is the appropriate person to receive this section 70 request.
- e. On 7 December 2015, a Departmental officer spoke with **Section 47F** the landholder's farm manager. The Departmental officer prepared a note of that discussion in which he recorded that when **Section 47F** was asked when clearing would be undertaken at Kingvale Station, he said words to the effect of "*I don't know, it could be tomorrow, next week or April. The dozers are onsite and ready to go, I'm just waiting for drivers and depending on weather conditions, it could be any day but really I can't tell you when*".
- f. On 9 December 2015, an officer of the Department of the Environment (**the Department**) wrote to the landholder. In that letter the officer explained that the Department held concerns that clearing subject to the permit was prohibited by Part 3 of the Act, and asked the landholder to agree to provide 14 days advance notice to the Department prior to the proposed clearing.
- g. On 22 December 2015, the Department revised this request, asking only to be notified 14 days in advance of the commencement of clearing in areas A3, A4 and A5.
- h. The landholder has not provided any such notice, nor agreed to provide such notice.
- i. Satellite imagery of Kingvale Station taken on 28 April 2016 appears to show that clearing had commenced in areas A1 and A2 by this date. Further satellite images taken on 12 May 2016 and 14 May 2016 indicate that by this time clearing in A1 and

A2 was complete, or at least very substantially advanced. I formed these views by comparing the groundcover visible in the satellite imagery in the Areas A1 and A2 in 28 April 2016, 12 May 2016 and 14 May 2016 with satellite images of the same area from 7 April 2016.

- j. I also examined the satellite imagery of areas A3, A4 and A5 dated 30 May 2016. Based on this examination and a comparison of this imagery with images from 12 April 2016 I formed the view that as of 30 May 2016 that clearing is yet to commence, or at least has not been substantially completed, in areas A3, A4 or A5 of Kingvale Station.
- k. The analysis of the satellite imagery that I have described above indicates that while clearing may not yet have been undertaken in Areas A3, A4 and A5, it has been undertaken in Areas A1 and A2. I infer from the fact of the permit having been sought in relation to all of these areas that it is likely that clearing will commence in Areas A3, A4 and A5 in the near future, if it has not already.
- l. I am not aware that any person other than the landholder, or a person acting on the landholder's behalf, has any authority or proposal to clear vegetation in area A1 or A2 at Kingvale. I infer that this clearing of A1 and A2 was undertaken by the landowner.
- m. In material provided to the Queensland Government in support of the landholder's application for the permit, the proposed timing of steps in the project was described as:
- *"Pull timber after the wet season (after April) when it is dry enough to get dozers on country. This time of year also has maximum ground cover.*
 - *"September – burn the fallen timber. This avoids the more intense dry period later in the year.*
 - *"September – December, Stick rake the area and ground preparation by using disc ploughs*
 - *"On receipt of the first showers of rain ... the proponents will spray weed with ground –rig (boom) and start planting using a large Multiplanter (zero tillage machines that can direct sow and have high clearance)"¹.*
- n. The timing of the clearing of A1 and A2 is consistent with the landholder pursuing the timetable for the project with a view to clearing on all areas, including A3, A4 and A5, being complete in time for the fallen timber to be burned in September.
- o. **On the basis of the information above, I believe that the landholder proposes to clear vegetation in area A3, A4 and/or A5 on Kingvale Station and cultivate sorghum crops on that land, either personally or by other persons acting on his behalf, in the near future.**
- 2. Action may be a controlled action – significant impact on the Great Barrier Reef**

¹ Proposed Dryland Cropping of Sorghum and Forage Sorghum for green chop at Kingvale Station west of Laura Peter Spies, Pinnacle Pocket Consulting, p1

- 2.1. Areas A3, A4 and A5 constitute an aggregate area of approximately 2,100 hectares of native vegetation.
- 2.2. These areas are near to the Hann and Kennedy sub-catchments within the headwaters of the Normanby catchment.
- 2.3. The Normanby catchment flows into the Great Barrier Reef Marine Park (**the Park**) which is part of the Great Barrier Reef World Heritage Area (**the World Heritage Area**).
- 2.4. The Great Barrier Reef Marine Park Authority (GBRMPA) prepared a Strategic Assessment Report (**the report**) about the World Heritage Area². The Report was endorsed by the Minister pursuant to section 146 of the Act as adequately addressing the impacts of actions within the Park.
- 2.5. The report identifies that there are a range of activities in the catchment area for the World Heritage Area which may have an impact on its outstanding universal values .
- 2.6. The report identifies that agriculture in the catchment area for the World Heritage Area can have a range of adverse effects, including increased:
 - freshwater inflow into the World Heritage Area;
 - nutrients from catchment run-off flowing into the World Heritage Area; and
 - sediment from catchment run-off flowing into the World Heritage Area (page 6-8).
- 2.7. The report characterises the adverse impact of nutrients and sediment on coral reefs as very high, meaning that the effects of the impact are widespread to the extent that the outstanding universal values of that habitat are severely compromised. The impact of increased freshwater inflow has been assessed as high, meaning that the effects of the impact are obvious in many locations or for many species to the extent that significant additional intervention would be required to maintain the values (p6-46 to 6-47).
- 2.8. Abnormally large freshwater inflows can contribute to low salinity bleaching and mortality in corals, or widespread damage to seagrass meadows (The Report, p 6-17).
- 2.9. Inorganic nutrients, including nitrogen, phosphorus and potassium, cause imbalances in the nutrient cycle of the reef with a wide range of negative impacts.
- 2.10. Increased nutrient loads have also been linked to outbreaks of crown of thorn starfish, because the increased nutrients provide food for their larvae. Such outbreaks have been one of the major causes of coral death and reef damage on the Great Barrier Reef since surveys began in the 1980s (The Report, p 6-18 to 6-19).
- 2.11. Increased sediment loads have far reaching effects for the Great Barrier Reef values. In relation to fine sediment, these can include smothering seagrass and corals,

² <http://www.gbrmpa.gov.au/managing-the-reef/strategic-assessment>

making it harder or impossible for them to grow, survive and reproduce (The Report, p 6-22).

2.12. Clearing of native vegetation, and sowing agricultural crops in its place, can increase the loads of nutrients and sediment entering the Normanby catchment, due to:

- clearing leading to erosion of the soil, with fine sediment washing into the waterways because it is no longer held in place by the native vegetation;
- fertilisers and pesticides being applied to crops to maximise yield washing into waterways³.

2.13. Fertiliser requirements for the project have been assessed by the landholder's expert, as part of the permit application process, as:

- high; and
- including Nitrogen and Phosphorus⁴.

2.14. Noting that stocking rates will vary according to seasonal conditions, erosion associated with cattle movement across the property, such as bank erosion⁵, may increase as a result an expected intensified stocking rate following the establishment of farming crops on the property. Advice provided by the proponent indicate that average stocking rates could triple⁶ from 1000 to 3400 head.

2.15. The Department sought expert advice from a fluvial geomorphology consultant, Dr Jeffrey Shellberg, about the potential downstream impacts from the proposed vegetation clearing at Kingvale, taking into account the work already conducted by the landholder's expert.

2.16. Key conclusions from Dr Shellberg's report⁷ include that:

- The conclusion of the landholder's expert that clearing in areas A3, A4 and A5 "will not result in soil erosion stemming from mass movement, gully erosion, rill erosion, sheet erosion, wind erosion, or scalding" is incorrect⁸;
- Fine sediment pollution from Kingvale Station could contribute to the cumulative impacts of degraded water quality from land use delivered to the Great Barrier Reef, and that the operational and ongoing works at Kingvale could contribute to

³ *Soil Erosion and Downstream Sedimentation Risks Associated with Proposed Vegetation Clearing for Agricultural Development on Kingvale Station, Lot 1 on Plan KG2, Cape York Peninsula*, Dr Jeffrey Shellberg, January 2016, p10, 24

⁴ *Proposed Dryland Cropping of Sorghum and Forage Sorghum for green chop at Kingvale Station west of Laura Peter Spies*, Pinnacle Pocket Consulting, 5 February 2014, p9

⁵ *Soil Erosion and Downstream Sedimentation Risks Associated with Proposed Vegetation Clearing for Agricultural Development on Kingvale Station, Lot 1 on Plan KG2, Cape York Peninsula*, Dr Jeffrey Shellberg, January 2016, p16

⁶ Property Report submitted to DILGP in support of an application to be granted a permit to undertake a High Value Agriculture farming practice pp19

⁷ *Soil Erosion and Downstream Sedimentation Risks Associated with Proposed Vegetation Clearing for Agricultural Development on Kingvale Station, Lot 1 on Plan KG2, Cape York Peninsula*, Dr Jeffrey Shellberg, January 2016, p28

⁸ *Ibid*, p28. Dr Shellberg describes A3, A4 and A5 as 'Area 1'. The link between these terms is made clear by Figure 2 in Dr Shellberg's report.

cumulative adverse impacts on the reef which could push the currently healthy local reef beyond thresholds of ecological stability⁹;

- Such health impacts and water quality decline are increasing with land use intensification in the northern Great Barrier Reef¹⁰; and
- Neither the assessment by Dr Shellberg nor the assessment by the landholder's expert was sufficient to fully and properly assess the potential risks to erosion and downstream sedimentation from agricultural clearing and development of this area.¹¹

2.17. I place greater weight on the conclusions on Dr Shellberg than the conclusions of the landholder's expert, having regard to their respective areas of speciality¹².

2.18. The Department obtained specific advice from GBRMPA about the proposed clearing at Kingvale Station. GBRMPA's advice acknowledged that there is uncertainty about the effect of particular individual instances of vegetation clearing in the Normanby catchment, but indicated:

- individually, each proposal like Kingvale is certain to increase erosion;
- it is almost guaranteed that the resulting erosion from large scale clearing will result in fine sediment entering Princess Charlotte Bay during flood events; and
- GBRMPA considers that caution should be taken in approving any further clearing in the Normandy catchment because this catchment has already been subject to such a large amount of increased erosion.

2.19. In light of the above, I consider that the proposed action is likely to result in additional nitrogen, phosphorus and/or sediment entering the Great Barrier Reef Marine Park via the Normanby catchment, which has been scientifically linked to coral bleaching, outbreaks of crown of thorns starfish, and smothering of seagrasses and coral.

2.20. Coral and seagrasses are a part of the environment of the Park, and are key elements of the beauty, integrity and diversity of the World Heritage Area which go to its outstanding universal value.

2.21. A proposed action which increases sediment and nutrient load in the Park may accordingly have a significant impact on the environment within the Park, the world heritage values of the World Heritage Area, and the national heritage values of the World Heritage Area.

2.22. I am informed by officers of the Department that they have checked the Department's database of approvals and can see no record of any approval have been sought or

⁹ Ibid p26

¹⁰ Ibid p26

¹¹ Ibid p28

¹² For Mr Spies, see *Proposed Dryland Cropping of Sorghum and Forage Sorghum for green chop at Kingvale Station west of Laura* Peter Spies, Pinnacle Pocket Consulting, 5 February 2014, page.1
For Dr Shellberg, see page 4

granted for this proposed action under the EPBC Act.

- 2.23. The clearing, cropping and intensification of grazing of the land involved in the proposed action is a new or intensification of the use of that land, which has to date been used as a breeding enterprise carrying approximately 1000 cattle¹³.
- 2.24. Information available to the Department indicates that intense cattle in tropical savannah landscapes of northern Australia can trigger increased erosion¹⁴.
- 2.25. The concept of a controlled action is defined in s 67 of the Act. It specifies that:

An action that a person proposes to take is a controlled action if the taking of the action by the person without approval under Part 9 for the purposes of a provision of Part 3 would be (or would, but for section 25AA or 28AB, be) prohibited by the provision. The provision is a controlling provision for the action.

- 2.26. **On the basis of the information above, I think that the proposed action may be prohibited by the following provisions of Part 3: sections 12, 15A, 24B(2) and 24C(5) of the Act. Accordingly, I think that the proposed action may be a controlled action within the meaning of section 67 of the Act.**

3. Materials on which findings were based

- 3.1. In making these findings, I have had regard to the materials listed below. I have attached a copy of each of these materials to this letter, except where it is material that was provided by the landowner, has previously been provided to the landowner, or is publicly available. Copies of any of this previously provided or publicly available material will be provided to the landowner on request
 - Report by Mr Peter Spies, Pinnacle Pocket Consulting titled “Proposed Dryland cropping of sorghum and forage sorghum for green chop at Kingvale Station west of Laura”, provided to the Queensland Government by Scott Harris, or his agents, in applying for a High Value Agricultural permit under the *Sustainable Planning Act 2009* (Qld) to clear native vegetation in particular areas of Lot 1 of KG3 (Lot 1 of Survey Plan 280074).
 - All relevant correspondence relating to the proposal including communications with or between:
 - Mr Harris or persons acting on his behalf;
 - The Department of the Environment and/or other Commonwealth agencies and/or or officers of those Departments;
 - The Queensland Department of State Development, Infrastructure and Planning.
 - EPBC Act referral guidelines for the Outstanding Universal Value of the Great Barrier Reef World Heritage Area, Commonwealth of Australia 2014’ (available at

¹³ Property Report submitted to DILGP in support of an application to be granted a permit to undertake a High Value Agriculture farming practice pp19

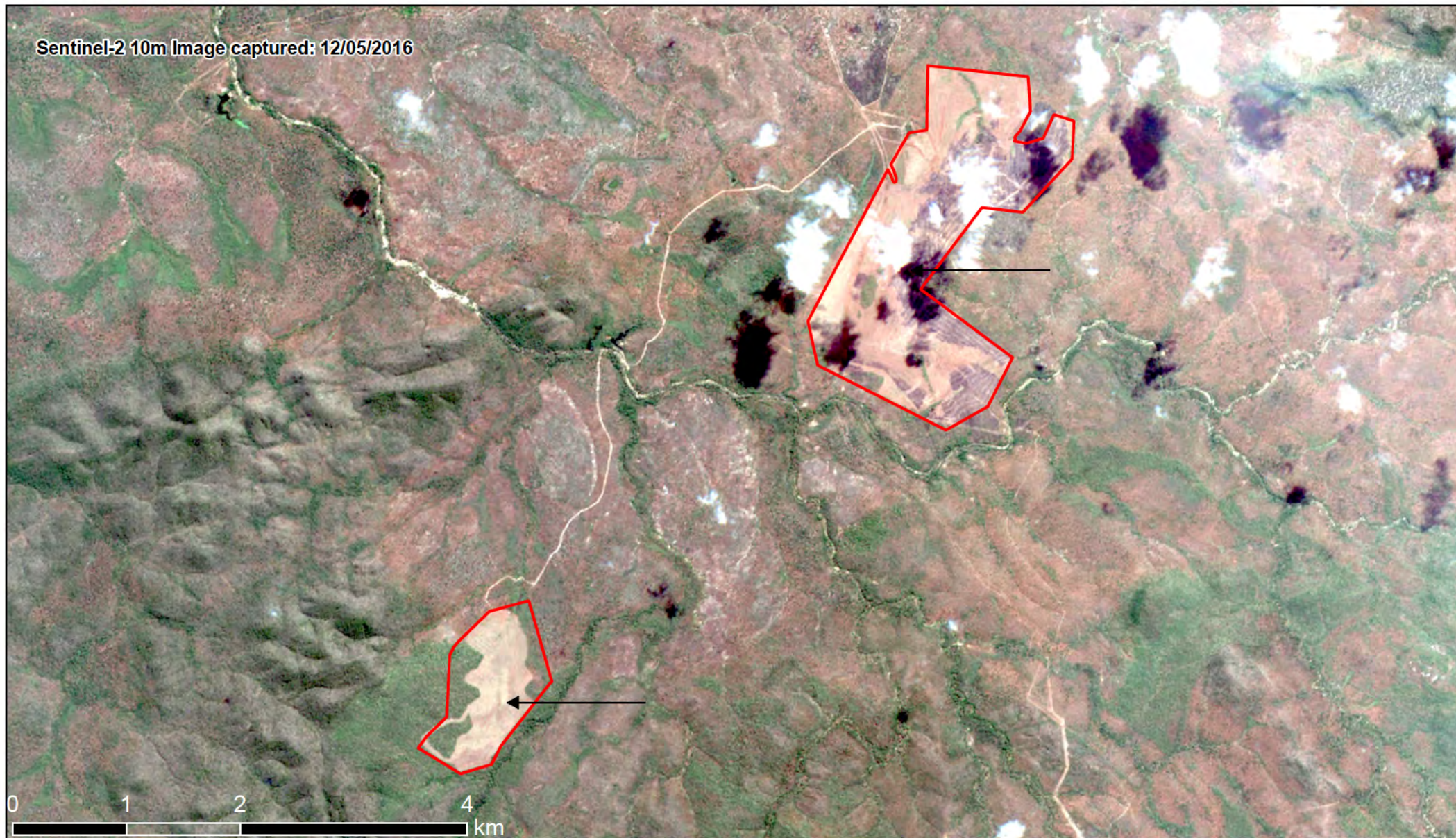
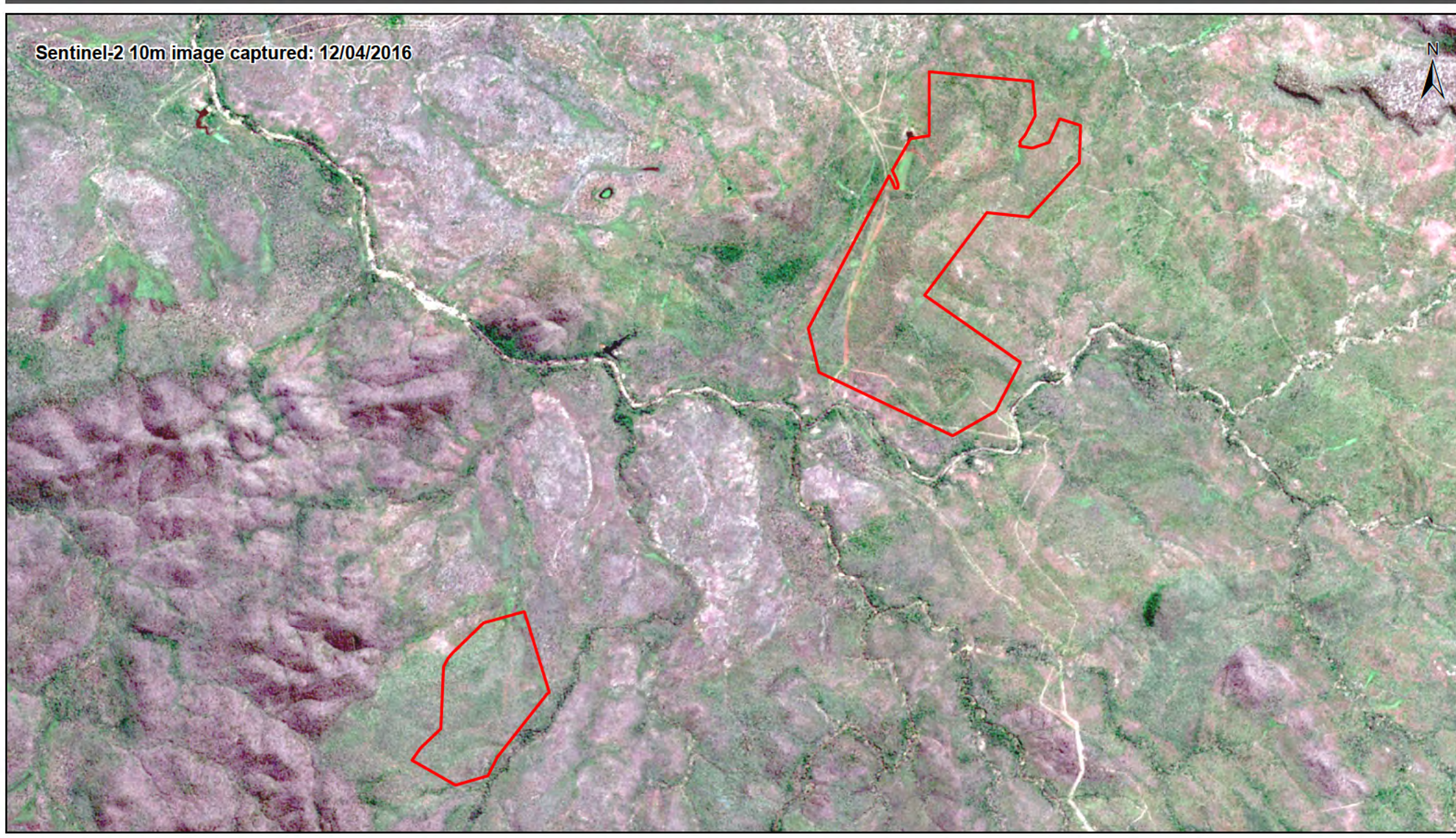
¹⁴ Alluvial Gully Erosion; A dominant erosion process across tropical northern Australia. J Shellberg, A Brooks. Griffith University November 2012 page 11 - 15


http://www.environment.gov.au/system/files/resources/e8e47508-5ea4-457b-adeb-b9c1364e9bec/files/referral-guidelines-great-barrier-reef_0.pdf).

- GBRWHA Strategic Assessment Report (available at <http://www.qbrmpa.gov.au/managing-the-reef/strategic-assessment>).
- Report titled:
 - “Soil Erosion and Downstream Sedimentation Risks Associated with Proposed Vegetation Clearing for Agricultural Development on Kingvale Station, Lot 1 on Plan KG2, Cape York Peninsula” by Dr. Jeffrey Shellberg, a Fluvial Geomorphology Consultant;
 - “Alluvial Gully Erosion; A dominant erosion process across tropical northern Australia”. J Shellberg, A Brooks. Griffith University November 2012 (available at http://www.track.org.au/sites/default/files/managed/file-attach/biblio/Full_Report_Alluvial_Gully_Erosion_final.pdf) ;
 - “Alluvial Gully Prevention and Rehabilitation Options for reducing Sediment loads in the Normanby Catchment and Northern Australia” J Shellberg, A Brooks. Griffith University, Australian Rivers Institute December 2013
- GBRMPA advice about potential impacts of the proposed action on the environment in the Great Barrier Reef Marine Park.
- A Notice of decision given under section 334 of the *Sustainable Planning Act 2009* (Qld) for Kingvale Station – Lot 1 of KG3 dated 16 April 2014.
- Significant impact Guidelines 1.1
<http://www.environment.gov.au/epbc/publications/significant-impact-guidelines-11-matters-national-environmental-significance>
- Information about the Normanby catchment from Griffith University Australian Rivers Institute, “An Empirically-based sediment budget for the Normanby Basin: Sediment Sources, Sinks and Drivers on the Cape York Savannah”, AP Brooks, J Spencer, J Olley, T Pietsch, D Borombovits; G Curwen, JG Shellberg (available at <http://www.capeyorkwaterquality.info/references/cywq-229>).
- *EPBC Act Policy Statement - 'Indirect consequences' of an action: Section 527E of the EPBC Act* <http://www.environment.gov.au/resource/epbc-act-policy-statement-indirect-consequences-action-section-527e-epbc-act>
- EPBC Act Policy Statement - Definition of 'Environment' under section 528 of the EPBC Act <http://www.environment.gov.au/resource/epbc-act-policy-statement-definition-environment-under-section-528-epbc-act>
- LandSat 8 and Sentinel- 2 satellite imagery of Kingvale Station.
- Title search – Lot 1 of Survey Plan 280074.

June 2016

Map 2: Kingvale Station (SDA 0214-008018) imagery comparison (southern parcels)



Legend
 Kingvale Station - SDA 0214-008018

Acknowledgements:

Inset basemap produced using the Environmental Reporting Tool of the Department of the Environment.
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 © European Space Agency (2016). Sentinel-2 10m images captured on 12/04/2016 and 12/05/2016.
 © Department of the Environment (2016). Qld High Value Agricultural Land.

Disclaimer:

The Commonwealth gives no warranty in relation to the data (including accuracy, reliability, completeness or suitability) and accepts no liability (including without limitation, liability in negligence) for any loss, damage or costs (including consequential damage) relating to any use of the data.

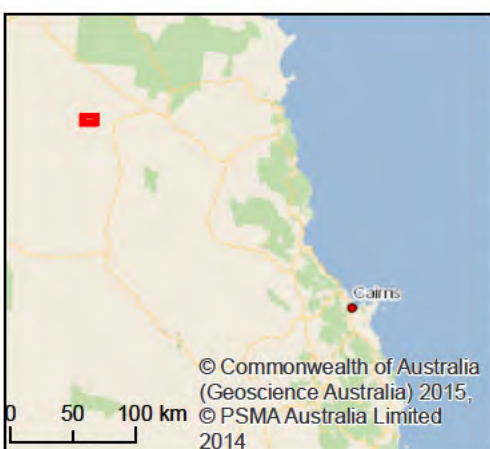
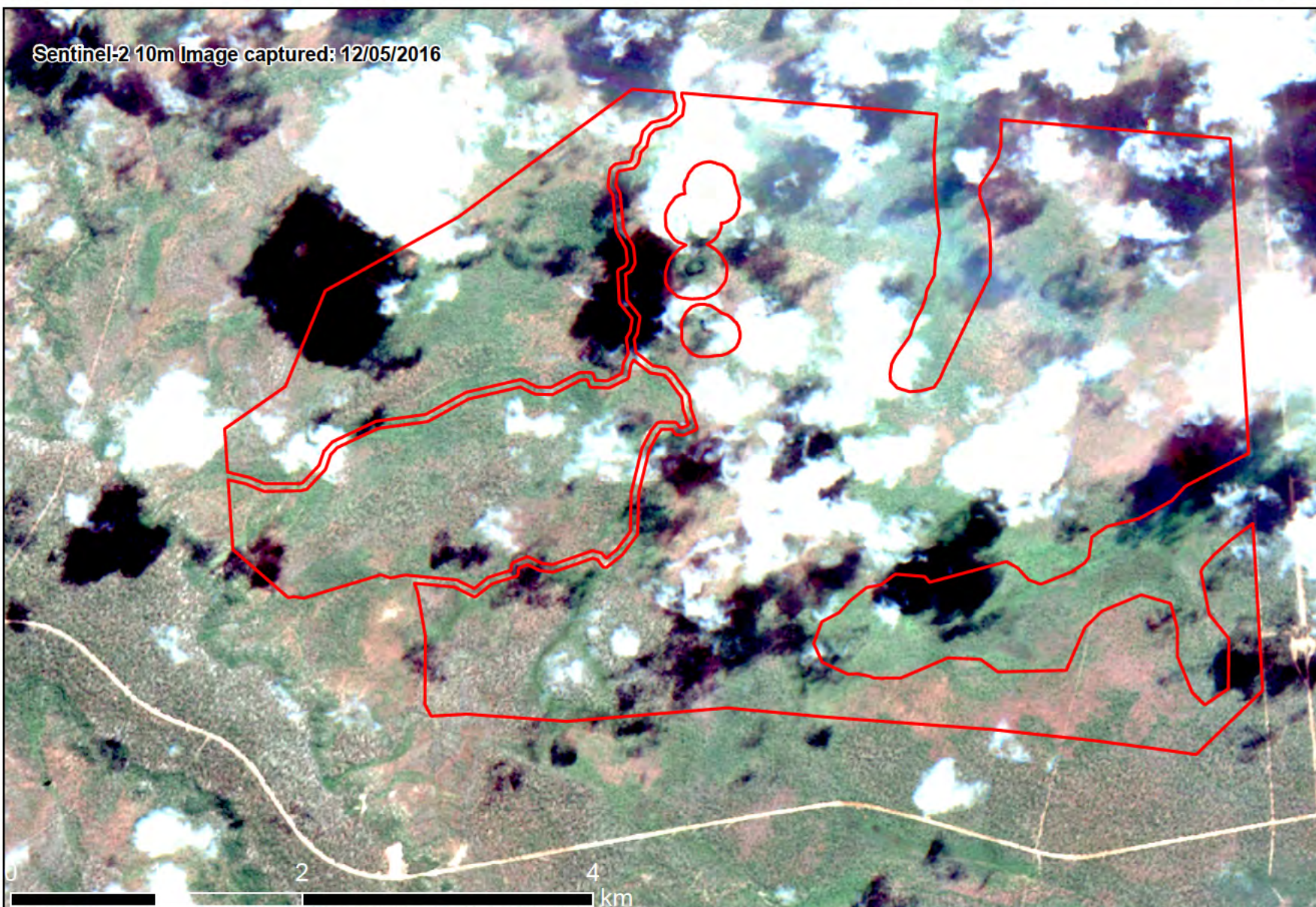
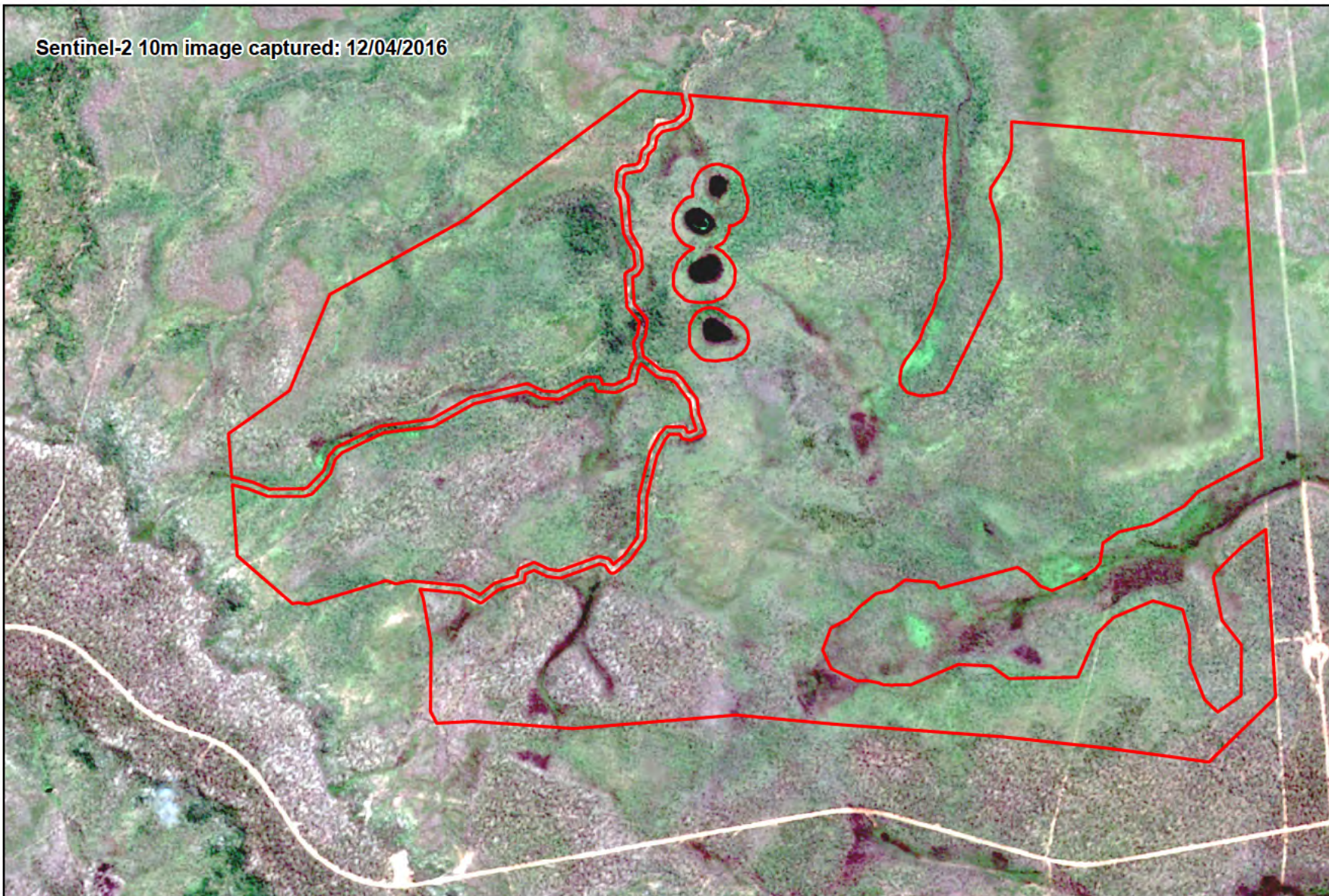
Produced by the Environmental Resources Information Network (ERIN), Australian Government Department of the Environment. © Commonwealth of Australia, 2016.

Coordinate System: GDA 1994 MG;
 Projection: Transverse Mercator
 Datum: GDA 1994
 False Easting: 500,000 0000
 False Northing: 10,000,000 0000
 Central Meridian: 141 0000
 Scale Factor: 0.9996
 Latitude Of Origin: 0.0000
 Units: Meter



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Map 1: Kingvale Station (SDA 0214-008018) imagery comparison (northern parcel)



Legend

Kingvale Station - SDA 0214-008018

Acknowledgements:

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 © European Space Agency (2016). Sentinel-2 10m images captured on 12/04/2016 and 12/05/2016.
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Coordinate System: GCS GDA 1994
 Datum: GDA 1994
 Units: Degree



Australian Government
 Department of the Environment

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Examples of projects with similar impacts to land clearing for agriculture in Queensland

- A number of projects have been referred that involve land clearing in Queensland.
- Significant direct impacts may occur through land clearing, irrespective of whether the subsequent land use is for agriculture or mining.
- Large scale land clearing is likely to trigger the Act for impacts to a range of threatened species and ecological communities. Our understanding of the species and ecological communities likely to be impacted will vary depending on the timing and intensity of the surveying. For example, the species and ecological communities impacted by the Galilee coal projects were only located after surveys occurred during the assessment processes.
- Indirect impacts may also result from land management for agriculture. Those indirect impacts include nutrient and sediment runoff.
- Recent research under the National Environmental Research program indicates that channel and gully erosion from changed land use is a dominant source of sediment entering the Great Barrier Reef.
- Impacts from nutrient and sediment runoff associated with tourism and residential projects, in catchments of the Great Barrier Reef, would be expected to be similar to the indirect impacts from agricultural land use.
- Lower Fitzroy River Infrastructure Project (EPBC 2009/5173) - the Department required the proponent to consider the facilitated impacts of agriculture on water quality in the Great Barrier Reef. The proponent is also required to discuss how the facilitated agricultural development will affect Reef 2050 targets. The Department has recently been provided with the attached report that discusses the generated nutrient and sediment runoff that may result from agriculture facilitated by the provision of water (1,600 ha irrigated cropping, 700 ha irrigated agriculture and 4,000 ha cattle feedlots).

Some examples of non-mining projects in Northern Qld that involved significant land clearing, and also nutrient and sediment runoff

EPBC No	Project name	Assessment	MNES trigger	Issues
2009/5173	Lower Fitzroy River Infrastructure Project	CA	Great Barrier Reef World Heritage Area; listed threatened species and	Facilitates agricultural impacts through the provision of water (1,600 ha irrigated cropping, 700 ha irrigated agriculture and 4,000 ha cattle feedlots).

			ecological communities	
2010/5514	The Burdekin Integrated Cassava Project, QLD	CA	Great Barrier Reef World Heritage Area; listed threatened species and ecological communities	The first stage involves the conversion of three grazing and cropping properties comprising 9,269 ha to a single 6,000ha cassava farm.
2010/5521	Great Keppel Island Resort	CA	Great Barrier Reef World Heritage Area; listed threatened species and ecological communities; listed migratory species	Impacts to Great Barrier Reef World Heritage Area from construction over 940 ha, resulting in increased sediment deposition.
2014/7155	Iwasaki Capricorn Resort, Yeppoon	CA	Great Barrier Reef World Heritage Area; listed threatened species and ecological communities; Ramsar; migratory species	Development of 1,500 ha of land located in 9,000 ha landholding. At present 300 ha existing resort; cattle grazing over much of landholding. Issues: increased nutrients into Great Barrier Reef golf course; coastal erosion - increased sedimentation.
2014/7410	Northern Water Infrastructure System	CA	Great Barrier Reef World Heritage; Ramsar; listed threatened species and ecological communities; migratory species	<p>The proposed project includes the construction of approximately 64 km of open channels, a 123 km pipeline and five water storage cells ranging in size from 500 to 2,320 hectares, with a total capacity of approximately 650,000 megalitres. It will disturb approximately 7,173 hectares of land.</p> <p>The diversion of the proposed amount of water from the rivers is likely to cause impacts to river water quality, river ecosystems and also to the Bowling Green Bay Ramsar wetland and the Great Barrier Reef World Heritage Area.</p>
2015/7440	Agricultural clearing, Munbura	CA	Great Barrier Reef World Heritage Area; listed threatened species and	Impacts to Great Barrier Reef World Heritage Area and protected species from construction of 68 ha, resulting in

			ecological communities	increased nutrients and sediment deposition.
2015/7506	Three Rivers Irrigation Project, 90km S of Normanton Qld	CA	Listed threatened species and ecological communities; migratory species	15,000 ha irrigation project aiming to produce cotton. The action is likely to result in impacts to: breeding and pupping habitat for the vulnerable Largetooth Sawfish (<i>Pristis pristis</i>) as a result of changes in water quantity and quality in the Flinders River and associated estuaries; and staging and non-breeding areas for listed threatened and migratory bird species as a result of reduced or regulated flow impeding sediment delivery to river mouths and reduction in inundation of freshwater wetlands in the Flinders River.

Some examples of non mining project in WA and NT that included broad scale clearing of vegetation

2010/5491	Weaber Plain Development Project WA	CA	Ramsar; listed threatened species and ecological communities; listed migratory species	Clearing of 9 375 ha of vegetation for irrigation and infrastructure
2014/7143	Knox Creek Plain Irrigation Development WA	CA	listed threatened species and ecological communities; listed migratory species; Ramsar	Develop and irrigate 12 695 ha - of which approx. 6 280 ha to be cleared will be developed for agriculture and 6 415 ha will be managed as a buffer.

2014/7269	Noonamah Ridge Residential Estate, Lloyd Creek NT	CA	listed threatened species and ecological communities	Clearing over a 2 600 ha area for a residential development
2015/7527	Project Sea Dragon Stage 1 Prawn Aquaculture Project, Legune Station, NT	CA	Migratory species, listed threatened species and ecological communities	The total project footprint is 8567 ha.
2016/7647	Clearing for orchard expansion, Lot 400 Canning Rd Carmel WA	referral decision not made yet	likely impacts are listed threatened species and ecological communities	Clearing of 16.8 ha for expansion of orchard. Likely significant impact to black cockatoo.

To: Deputy Secretary Dean Knudson (for decision)

Through: Matt Cahill First Assistant Secretary, Environment Standards Division

KINGVALE STATION- DECISION UNDER SECTION 70(3)- DEEMED REFERRAL

Timing: 11 August 2016, to meet statutory timeframes in which a decision under s70(3) must be made

Recommendation/s:

1. That you determine that the action has been deemed to have been referred under section 70(3) of the EPBC Act.

Agreed / Not agreed

2. That you sign the covering letter to Mr Scott Harris at **Attachment A**.

Signed / Not signed

3. That you sign the *Deemed Referral Instrument* at **Attachment B**.

Signed / Not signed

4. That you confirm that Attachment 2 to the Determination accurately represents your findings and does not omit any factors you took into account in making your decision.

Agreed/ Not agreed

Deputy Secretary: Dean Knudson

Date:

8-8-16

Comments:

Key Points:


Requested referral under s70(1) EPBC Act

1. On 23 June 2016, you requested Mr Scott Alexander Harris of Kingvale Station in Queensland to refer an action, pursuant to section 70(1) of the *Environment Protection and Biodiversity Conservation Act 1999 (the Act)*(**Attachment B2(i)**). That action was described as:

The clearing of vegetation at Kingvale Station (Lot 1 on KG3, Cook Shire Council) as described in the development permit issued to Mr Scott Alexander Harris on 16 April 2014 by the Queensland Department of State Development, Infrastructure and Planning, to the extent that it occurs in the areas identified as A3, A4 or A5 of the map (see Attachment 1), the subsequent use of that cleared land for the production of sorghum, and intensification of cattle grazing.

2. Mr Harris was requested to refer the action by 15 July 2016, or provide submissions/information in support of why you should not deem the action to have been referred under section 70(3) of the Act.
3. Mr Harris has neither referred the action nor provided any submissions/information. On 13 July 2016 Mr Harris, through his solicitor, notified the Department that Mr Harris does not intend to refer the proposed action as requested (**Attachment B2(iv)**).
4. Mr Harris's solicitor has corresponded with the Department in that period, to:
 - a. ask for documents and information; and
 - b. notify the Department that Mr Harris had commenced legal proceedings.
5. The information provided to the Federal Court by Mr Harris did not include any submissions or factual material about why the action should not be referred. Mr Harris has also not claimed by his court documents that he does not intend to take the action you have requested him to refer.

Section 42



Statutory basis for decision

6. Under section 70(3) of the Act, if:
 - a. the Minister or delegate has made a request under section 70(1); and
 - b. the period for compliance with the request has ended; and
 - c. the requested person has not referred the proposal to the Minister in accordance with the request,the Minister or delegate may, within 20 business days after the end of that period, determine in writing that the Act has effect as if the requested person had referred the proposed action to the Minister.
7. The Minister has delegated you as decision maker for this matter pursuant to section 515 of the Act.
8. On 15 July 2016, the period for compliance with the request to Mr Harris under section 70(1) of the Act ended.
9. As such, until 12 August 2016, you may determine in writing that the Act has effect as if Mr Harris had referred the proposed action.

Current information about the proposed action

10. The state of information about the proposed action at Kingvale Station remains largely the same as that at the time you requested Mr Harris to refer the action. There are some differences, however, which are:
 - a. We have obtained a copy of a dealing with the land in question, which indicates that it is now correctly referred to as 'Lot 1 on Survey Plan 280074' (**Attachment C**), following changes to the description of the land made by the Queensland Government;

- b. On 23 June 2016, compliance officers attended on site pursuant to a monitoring warrant, and subsequently prepared a report (annexed to **Attachment B2(iii)**). That report indicates that:
- i. the farm manager on site declined to answer questions and referred the compliance officers instead to Mr Harris's solicitor;
 - ii. the compliance officers attended at A1 and visually confirmed that the area had been cleared, as suggested by earlier satellite imagery;
 - iii. the compliance officers were not able to attend at A2 due to track conditions and an obstruction on the track;
 - iv. the compliance officers attended at A3, A4 and A5 and confirmed that no clearing had occurred in those areas at this time, consistent with previous satellite imagery; and
 - v. the compliance officers observed that one bulldozer was in a shed undergoing maintenance, while another was parked in a manner which would facilitate its loading for transport;
- c. Subsequent satellite imagery taken on 9 July 2016 and 22 July 2016 indicates that clearing has still not commenced in areas A3, A4 and A5 (**Attachment D**).

11. None of this additional information raises new adverse matters which have not previously been raised with Mr Harris so that he could respond to them.

Decision whether to deem proposed action referred

12. In making a decision under section 70(3) of the Act, you need to be satisfied that:

- a. You believe, on a reasonable basis, that Mr Harris is proposing to take an action; and
- b. You think that the action may be a controlled action.

13. In these circumstances, we consider that there is a sound basis to make a decision under section 70(3) of the Act to 'deem' the action to be referred. A draft determination under section 70(3) to this effect is attached for your consideration.

Publication of information

14. Under the Act, the determination will be the document which is published on the website, in the absence of a referral from Mr Harris himself.

15. The published version of the determination will be redacted to remove information which is either personal in nature and/or contains information which is not relevant to the public consultation process.

Shane Gaddes
Assistant Secretary
Compliance and Enforcement Branch

Ph: 6274 2760

Mob: Section 22

[/08/2016]

Contact Officer: Section 22
Compliance and Enforcement Branch
Ph: Section 22

ATTACHMENTS

- A. Letter to Mr Scott Harris **[For signature]**
- B. Deemed referral instrument **[for signature]**
 - 1. Map
 - 2. Findings of fact
 - i. Request dated 23 June 2016 to Mr Scott Harris to refer the proposed action
 - ii. Letter from Mr David Kempton to Department dated 29 June 2016
 - iii. Letter from Department to Mr Kempton dated 4 July 2016
 - a. Report by Dr Jeffrey Shellberg, 'Soil Erosion and Downstream Sedimentation Risks associated with Proposed Vegetation Clearing o for Agricultural Development on Kingvale Station', January 2016
 - b. Report of compliance inspection conducted on 23 June 2016
 - iv. Letter from Mr Kempton to Department dated 13 July 2016
- C. Title documents in relation to Kingvale Station, which indicates that it is now correctly referred to as 'Lot 1 on Survey Plan 280074'
- D. Satellite imagery of 9 July 2016 and 22 July 2016



Mr Scott Harris
c/o Mr David Kempton
PO Box 732
EDGE HILL QLD 4870

By Email to dkempton@bigpond.com

Dear Mr Harris

Kingvale Station, Cape York, Queensland: Deemed referral of action under section 70 of the *Environment Protection and Biodiversity Conservation Act 1999*

I refer to my letter of 23 June 2016 regarding your proposal to clear vegetation at Kingvale Station. That letter formally requested that you refer the proposed action to the Federal Minister for the Environment and Energy under section 70(1) of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) by **Friday 15 July 2016**.

You did not refer the proposal to the Minister in accordance with the request, nor did you provide any advice that the action will not be taken. As such, as explained in the letter of 23 June 2016, it was open to the Minister, or me as the Minister's delegate, to deem that the proposed action had been referred pursuant to s 70(3) of the EPBC Act (that is, decide that the EPBC Act applies to the proposed action as if it had been referred).

Deemed referral

I have now determined that the EPBC Act has effect as if you had referred the proposal to the Minister under section 68(1) of the EPBC Act.

A copy of my determination is at **Attachment A** to this letter, in accordance with section 70(5) of the EPBC Act. I have made this determination based on the findings of fact set out in Attachment 2 to the Determination.

Implications of referral

As I have now determined that the proposed action has been deemed to have been referred to the Minister under the EPBC Act, you must not take the action unless a decision is made under the EPBC Act to approve the taking of the proposed action or that the action does not require an approval under the EPBC Act.

Taking the proposed action without an approval under the EPBC Act is an offence and is punishable by a penalty of up to \$90,000 (see s 74AA of the EPBC Act).

Next steps

The determination and an invitation for public comment on the referral will be published on the Department's website shortly (www.environment.gov.au) in accordance with section 74(3) of the EPBC Act (as applied by s 70(8)). The action will be considered in accordance with the Department's standard procedures for referrals. An overview of the referral and assessment process is attached for your reference.

Contact

Section 22 [redacted] Director, Queensland Major Projects, will be assisting you with the referral and assessment process. If you have any questions, or for further information about this matter, please contact on Section 22 [redacted] or by email at Section 22 [redacted]

For any questions relating to the Federal Court proceedings that you have commenced, your legal representative should contact Section 22 [redacted] Senior Lawyer, Australian Government Solicitor on (02) 6253 [redacted] or by email Section 22 [redacted]@ags.gov.au.

Yours sincerely



Dean Knudson
Deputy Secretary

8 August 2016

Attachment A Determination of referral made under s70(3)

Attachment B EPBC Act referral and assessment fact sheet



DECISION TO DEEM REFERRAL

Clearing of Vegetation at Kingvale Station Lot 1 on Survey Plan 280074 in Queensland, and related activities

EPBC 2016/7751

This decision is made under section 70(3) of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

Proposed action

person proposing to take the action	Mr Scott Harris c/o Mr David Kempton PO Box 732 EDGE HILL QLD 4870
--	---

ABN	NA
------------	----

proposed action	The clearing of vegetation at Kingvale Station (Lot 1 on Survey Plan 280074, Queensland) as described in the development permit issued to Mr Scott Alexander Harris on 16 April 2014 by the Queensland Department of State Development, Infrastructure and Planning, to the extent that it occurs in the areas identified as A3, A4 or A5 of the map (see Attachment 1), the subsequent use of that cleared land for the production of sorghum, and intensification of cattle grazing
------------------------	---

Pursuant to section 70(3) of the EPBC Act, I hereby determine that the EPBC Act has effect as if the person proposing to take the action had referred that proposed action to me under section 68(1) of the EPBC Act, on the basis of my findings at Attachment 2.

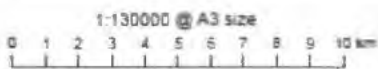
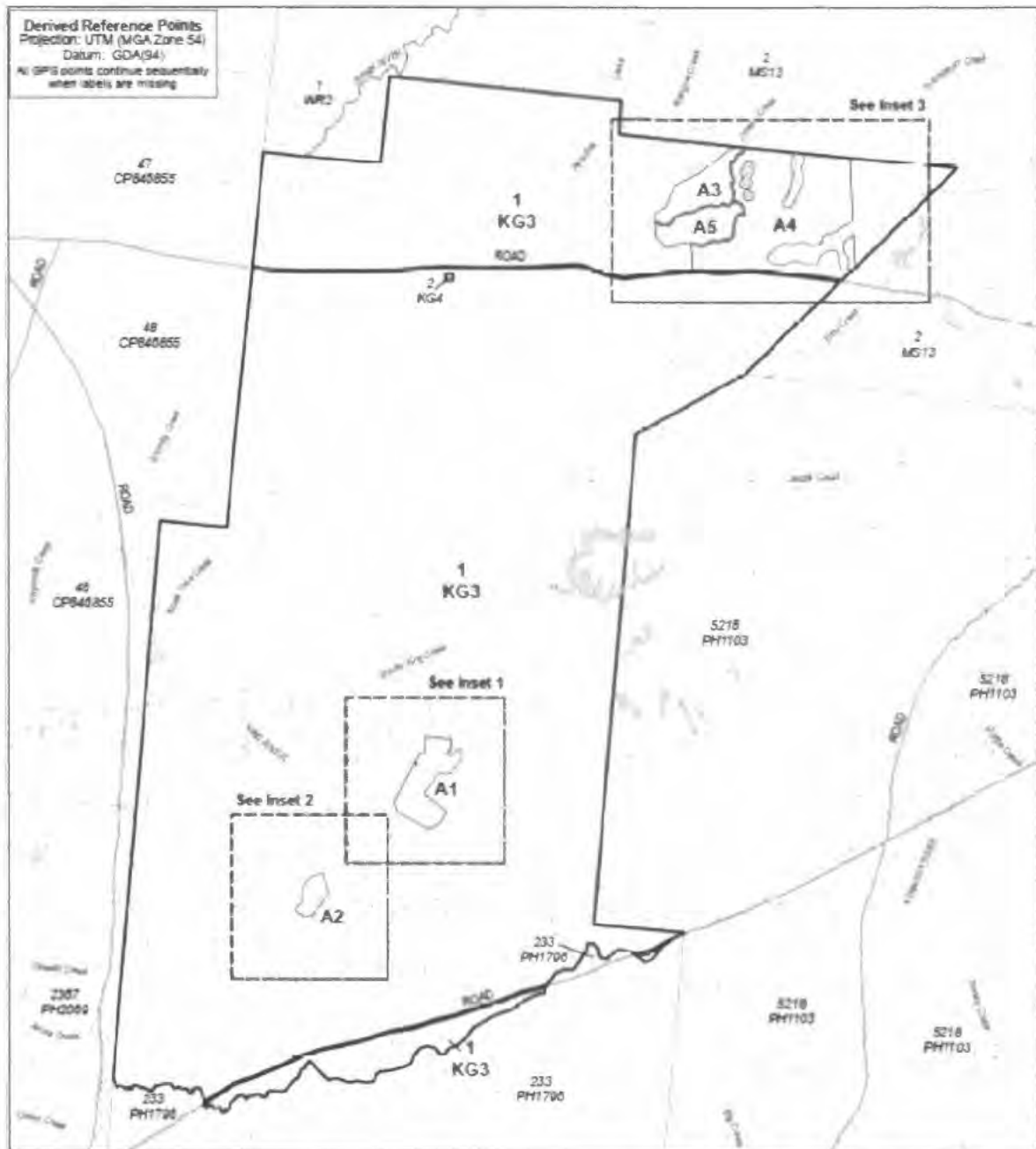
Decision-maker

name and position	Dean Knudson Deputy Secretary Department of the Environment and Energy In his position as delegate to the Minister of the Environment and Energy
--------------------------	---

signature

date of decision	8-8-16
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Map of proposed action location



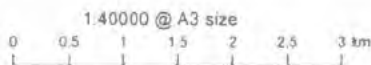
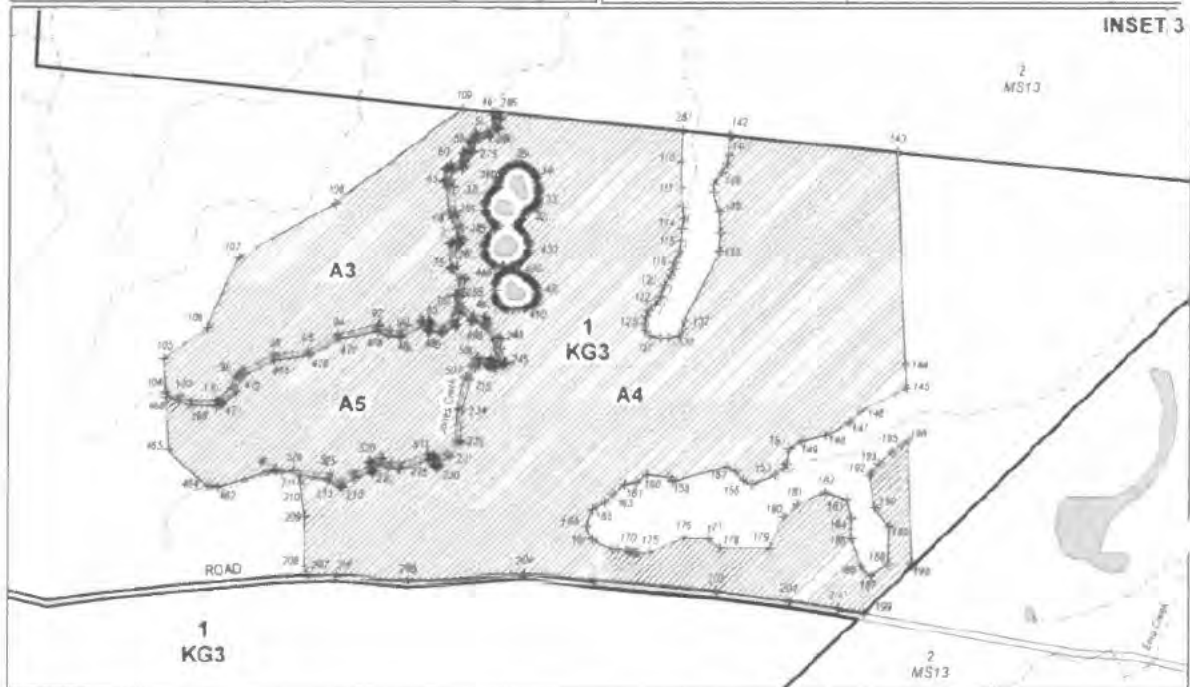
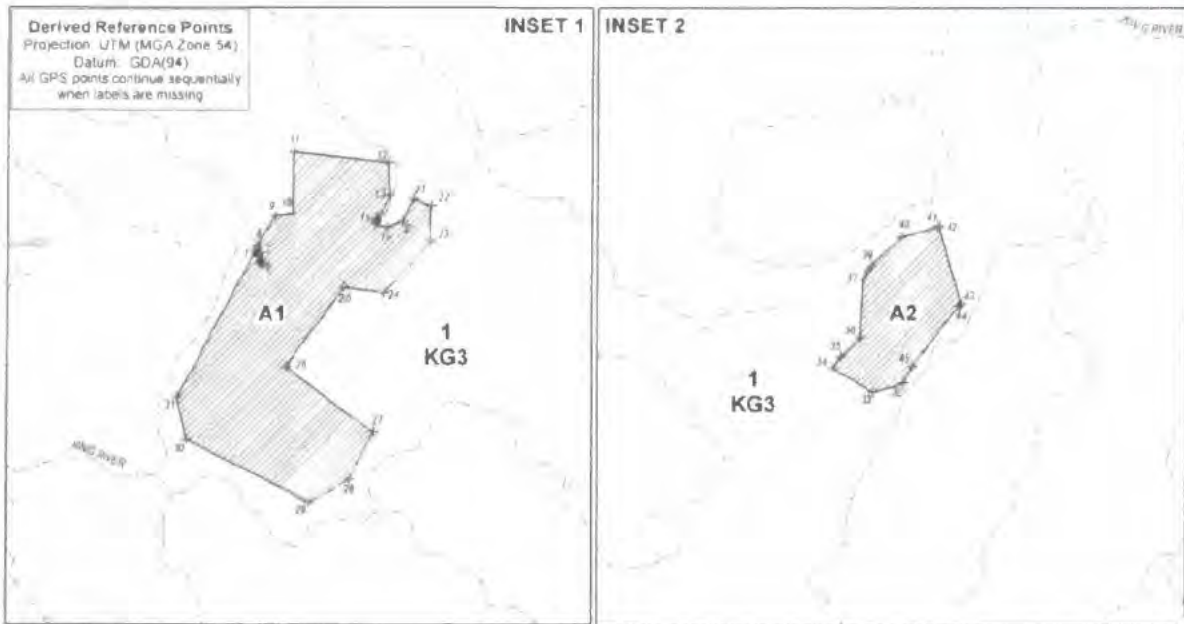
Projection: UTM (MGA Zone 54) Datum: GDA94

Note: Derived Reference Points are provided to assist in the location of the Referral Agency Response boundaries. Responsibility for locating these boundaries lies solely with the landholder and delegated contractor(s).

The property boundaries shown on this plan are APPROXIMATE ONLY. They are NOT an accurate representation of the legal boundaries.

Note: This plan must be read in conjunction with Referral Agency Response 2014/000805

LEGEND • Derived Reference Points for GPS Subject Lot(s) Area A Watercourse Wetlands	Referral Agency Response (Vegetation) Plan Plan of Area A (Parts A1 - A5) in Lot 1 on KG3		 RARP 2014/000805 Sheet 1 of 3
	CENTRE: TOWNSVILLE LOCALITY OF LAURA Map Reference: 7566,7566,7796 R/L Reference: 2014/000805	REGION: NORTH LOCAL GOV'T: COOK SHIRE Compiled from: DCDE, PAMP & VMO Notes Prepared by: SJR Date: 3 March 2014	



Projection: UTM (MGA Zone 54) Datum: GDA94

Note: Derived Reference Points are provided to assist in the location of the Referral Agency Response boundaries. Responsibility for locating these boundaries lies solely with the landholder and delegated contractor(s).

The property boundaries shown on this plan are APPROXIMATE ONLY. They are NOT an accurate representation of the legal boundaries.
Note: This plan must be read in conjunction with Referral Agency Response 2014/000805

LEGEND * Derived Reference Points for GPS Subject Lot(s) Area A Watercourse Welllands Non Remnant RE	Referral Agency Response (Vegetation) Plan Plan of Area A (Parts A1 - A5) in Lot 1 on KG3		 	
	CENTRE: TOWNSVILLE LOCALITY OF LAURA			REGION: NORTH LOCAL GOVT: COOK SHIRE
	Map Reference: T566.7566.7756		Compiled from: DCOB PUMP & VMO Notes	
	File Reference: 2014/000805		Prepared by: EMR Date: 3 March 2014	
			RARP 2014/000805 Sheet 2 of 3	

Derived Reference Points
Projection: UTM (MGA Zone 54)
Datum: GDA(94)
All GPS points continue sequentially
when sheets are matted

Point	Parcel	Easting	Northing	Point	Parcel	Easting	Northing	Point	Parcel	Easting	Northing	Point	Parcel	Easting	Northing	Point	Parcel	Easting	Northing				
1	A1	794271	8258215	03	A1	804817	8273581	171	A1	807553	8275592	365	A1	805145	8278819	153	A1	805642	8279003	441	A1	805240	8277993
2	A1	794276	8258173	04	A1	804632	8277485	178	A1	807566	8275502	366	A1	805177	8278864	154	A1	805676	8278993	442	A1	805250	8277990
3	A1	794316	8258137	01	A1	804529	8277493	179	A1	805018	8275508	367	A1	805110	8278800	155	A1	805609	8278993	443	A1	805252	8277986
4	A1	794330	8258204	02	A1	804444	8277540	180	A1	804815	8275799	370	A1	805091	8278938	156	A1	805592	8278923	444	A1	805266	8277978
5	A1	794346	8258337	03	A1	804332	8277542	181	A1	804558	8275910	389	A1	805090	8278946	157	A1	805578	8278925	445	A1	805294	8277970
6	A1	794356	8258344	04	A1	804071	8277640	182	A1	804920	8276018	390	A1	805105	8278959	158	A1	805567	8278935	446	A1	805302	8277963
7	A1	794375	8258398	05	A1	803802	8277712	183	A1	804713	8276954	391	A1	805100	8278971	159	A1	805550	8278933	447	A1	805302	8277963
8	A1	794376	8258464	06	A1	803476	8277721	184	A1	804575	8277975	392	A1	805103	8278978	160	A1	805544	8278931	448	A1	805306	8277972
9	A1	794456	8258438	07	A1	803187	8277719	185	A1	804355	8277992	393	A1	805111	8279011	161	A1	805538	8278933	449	A1	805309	8277964
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11	A1	794617	8258322	09	A1	803089	8276972	187	A1	804032	8275758	395	A1	805186	8279139	163	A1	805534	8278840	451	A1	805326	8277960
12	A1	795499	8259327	10	A1	803061	8276857	188	A1	803908	8275768	396	A1	805203	8279131	164	A1	805538	8278902	452	A1	805332	8277959
13	A1	795573	8259474	101	A1	802956	8276850	189	A1	803796	8275771	397	A1	805207	8279200	165	A1	805539	8278974	453	A1	805340	8277966
14	A1	795628	8259755	101	A1	802730	8276852	190	A1	803679	8275780	398	A1	805212	8279218	166	A1	805540	8278978	454	A1	805348	8277966
15	A1	795689	8259709	103	A1	802535	8276801	191	A1	803517	8275731	399	A1	805240	8279261	167	A1	805546	8278905	455	A1	805359	8277969
16	A1	795734	8259697	104	A1	802485	8276937	192	A1	803390	8275700	400	A1	805251	8279268	168	A1	805547	8278929	456	A1	805361	8277965
17	A1	795785	8259584	105	A1	802499	8277351	193	A1	803266	8276787	401	A1	805251	8279255	169	A1	805540	8278935	457	A1	805366	8277962
18	A1	795830	8259664	106	A1	802373	8277217	194	A1	803115	8276580	402	A1	805252	8279327	170	A1	805548	8278941	458	A1	805375	8277960
19	A1	795885	8259664	107	A1	802346	8277617	195	A1	802992	8276443	403	A1	805260	8278405	171	A1	805548	8278925	459	A1	805387	8277964
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21	A1	795974	8259896	109	A1	802316	8278250	197	A1	802754	8276354	405	A1	805266	8279453	173	A1	805547	8278936	461	A1	805393	8277963
22	A1	795999	8259897	110	A1	802289	8278257	198	A1	802632	8276232	406	A1	805266	8279484	174	A1	805547	8278930	462	A1	805393	8277966
23	A1	796034	8259907	111	A1	802264	8278264	199	A1	802510	8276110	407	A1	805266	8279515	175	A1	805548	8278935	463	A1	805393	8277966
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25	A1	796119	8259913	113	A1	802214	8278276	201	A1	802266	8275874	409	A1	805266	8279577	177	A1	805548	8278935	465	A1	805393	8277964
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54	A1	797251	8259999	142	A1	801489	8278450	230	A1	798644	8272452	438											



Australian Government

Department of the Environment and Energy

Attachment 2

FINDINGS ON WHICH DETERMINATION WAS BASED – KINGVALE STATION

I, Dean Knudson, make the following findings in determining that, pursuant to s 70(3) of the *Environment Protection and Biodiversity Conservation Act 1999* (**the Act**), the provisions of the Act have effect as if Mr Scott Alexander Harris has referred the following action to the Minister under section 68(1) of the Act:

The clearing of vegetation at Kingvale Station (Lot 1 on Survey Plan 280074, Queensland) as described in the development permit issued to Mr Scott Alexander Harris on 16 April 2014 by the Queensland Department of State Development, Infrastructure and Planning, to the extent that it occurs in the areas identified as A3, A4 or A5 of the map (see **Attachment 1**), the subsequent use of that cleared land for the production of sorghum, and intensification of cattle grazing (**the Action**)

Request for referral of proposal and subsequent correspondence

1. On 23 June 2016, Dean Knudson, Deputy Secretary of the Department of the Environment and Energy (formerly called the Department of the Environment) (hereafter referred to as the **Department**) made a request to Mr Harris, pursuant to s 70(1) of the Act, that Mr Harris refer the Action to the Minister within 15 business days of the request. The letter making that request was transmitted to Mr Harris by email that day. A copy of that letter and its 4 attachments is attached to these findings and marked **2(i)**.
2. Also on 23 June 2016, Department officers executed a monitoring warrant at Kingvale Station. Those officers prepared a report that is attached to these findings and annexed to attachment **2(iii)**.
3. On 29 June 2016, Mr Harris' representative, Mr Kempton, responded to that request and asked for additional information. A copy of that letter is attached to these findings and marked **2(ii)**.
4. On 4 July 2016, a Department representative wrote to Mr Kempton, as Mr Harris' representative, and provided the information requested by in Mr Kempton's letter of 29 June 2016, or provided a hyperlink to that information where it was publicly available. A copy of that letter is attached to these findings and marked **2(iii)**.
5. By Originating Application dated 7 July 2016, Mr Harris made an application to the Federal Court of Australia for review of the request made under section 70(1) of the Act to him on 23 June 2016.
6. In a letter dated 13 July 2016, Mr Kempton, as Mr Harris' representative, wrote to the Department enclosing the Originating Application and advising that Mr Harris 'does not intend to refer the action pursuant to section 70 EPBC Act...'. A copy of that letter is attached to these findings and marked **2(iv)**. Mr Kempton also served an Applicant's Genuine Steps Statement relating to the Originating Application on the Australian Government Solicitor.

Findings on the criteria under s 70(3) of the Act

7. On the basis of the correspondence I have described, I find that:
 - a. Mr Harris was given a request to refer the Action under s 70(1) of the Act on 23 June 2016, and by 4 July 2016 Mr Harris had been provided with all requested supporting information.

- b. Mr Harris has not referred the Action in response to the request made pursuant to s 70(1) of the Act, within the period for compliance with that request, fixed at 15 July 2016.
 - c. Mr Harris has not made a request for a longer period within which to refer the proposed action, and instead has informed the Department that he does not intend to refer the Action.
 - d. The 20th business day after the end of the period for compliance is 12 August 2016, being 20 business days after 15 July 2016.
8. In light of the findings set out in paragraph 6 above, I conclude that the criteria set out in s 70(3) of the Act have been met so as to give the Minister or Minister's delegate the power to determine that the Act has effect as if Mr Harris (being the requested person) had referred the proposal to the Minister under subsection 68(1) at the time this determination was made.
9. The Minister has delegated his power to make decisions under s 70 to me in my capacity as a Deputy Secretary of the Department.

Decision to exercise power under s 70(3) of the Act

10. I consider that a determination should be made under s 70(3). I formed this view for the same reasons as set out in the letter of 23 June 2016 that is attached to these findings and marked **2(i)**, namely that:
- a. on the basis of reasons set out in Attachment 3 to that letter, I think that the Action may be a controlled action as that term is defined in the Act; and
 - b. I consider that the appropriate way to determine if the Action is a controlled action, and if so, whether it should be approved under the EPBC Act, is by using the statutory assessment process set out in the Act.
11. In forming the view I describe in paragraph 10 above, I considered the letter sent by Mr Kempton to the Department dated 13 July 2016 and attached to these findings and marked **2(iv)**. In that letter Mr Kempton explains that he is instructed that Mr Harris did not intend to refer the Action pursuant to s 70, on the basis that the Action:
- a. is not an action that results, or will result, or be likely to result in a significant impact (as defined in the EPBC Act) in the Great Barrier Reef Marine Park
 - b. not a controlled action, and that on that basis and in the circumstances there were no grounds upon which the Minister may have formed the requisite belief under s 70 of the EPBC Act.
12. I do not consider either of these submissions to be a reason why a determination should not be made under s 70(3). This is because:
- a. I am satisfied that there is, and was as at 23 June 2016, a sound evidentiary basis for the view that the Action may be a controlled action, on the basis of the reasons set out in Attachment 3 to the letter of 23 June 2016;
 - b. the proper basis for determining if the Action is a controlled action is, in all the circumstances, to use the statutory assessment process set out in the Act;
 - c. no material has been provided that suggests that the evidence referred to in the 23 June 2016 letter is inaccurate or misleading or otherwise does not provide a basis for thinking the Action may be a controlled action; and
 - d. satellite imagery of Kingvale Station taken on 9 July 2016 and 22 July 2016 showed that the action had not yet been taken.

13. In forming the view I describe in paragraph 10 above, I also had regard to the report of the execution of the monitoring warrant that took place on 23 June 2016. Nothing in that report affected my assessment that the Action maybe a controlled action, or my assessment that Mr Harris intends to carry out the Action.
14. The fact that Mr Harris has filed an Originating Application in the Federal Court of Australia challenging the making of the request pursuant to s 70(1) of the Act does not automatically prevent me making a decision under s 70(3) of the Act. Mr Harris has not sought, and the Federal Court has not made, any orders that would require me not to make a decision under s 70(3) of the Act.
15. Nor do I consider that the fact of Mr Harris having filed this Originating Application provides a reason why I should refuse, on a discretionary basis, to make a decision under s 70(3) of the Act.



Australian Government
Department of the Environment

Mr Scott Harris
c/o Mr David Kempton
PO Box 732
EDGE HILL QLD 4870

By Email: dkempton@bigpond.com

Dear Mr Harris

Kingvale Station, Cape York, Queensland: Request for referral of action under section 70 of the *Environment Protection and Biodiversity Conservation Act 1999*

I refer to the Department's previous correspondence with you concerning high value agricultural activities at Kingvale Station. The Department has been seeking to engage with you about the potential impacts of your activities on matters protected under the *Environment Protection and Biodiversity Conservation Act 1999*.

As we have not been able to engage with you about this matter, and I have concerns about imminent clearing at Kingvale and its potential to impact on matters protected by the EPBC Act, the Department has applied to the Cairns Magistrates Court for a monitoring warrant concerning Kingvale Station. The Court issued the monitoring warrant on Wednesday, 21 June 2016. The Department will write to you separately about this.

Request for referral under the EPBC Act

The purpose of this letter is to formally request that you refer the proposed action to the Federal Minister for the Environment under section 70 of the EPBC Act. The proposed action is:

*The clearing of vegetation at Kingvale Station (Lot 1 on KG3, Cook Shire Council) as described in the development permit issued to Mr Scott Alexander Harris on 16 April 2014 by the Queensland Department of State Development, Infrastructure and Planning, to the extent that it occurs in the areas identified as A3, A4 or A5 of the map [see **Attachment 1**], the subsequent use of that cleared land for the production of sorghum, and intensification of cattle grazing.*

Section 70 of the EPBC Act

I have attached a copy of section 70 of the EPBC Act to this letter. Section 70(1) Act provides:

(1) If the Minister believes a person proposes to take an action that the Minister thinks may be or is a controlled action, the Minister may request:

(a) the person; or

(b) a State, self-governing Territory or agency of a State or self-governing Territory that the Minister believes has administrative responsibilities relating to the action;

to refer the proposal to the Minister within 15 business days or a longer period agreed by the Minister and the requested person, State, Territory or agency (as appropriate).

Under section 515 of the EPBC Act the Minister may delegate any of his powers under the EPBC Act to an officer or employee in the Department of the Environment. The Minister has delegated his power to make decisions under section 70 to me in my capacity as a Deputy Secretary of the Department.

Section 70(2) of the EPBC Act requires that in making a request under section 70(1) the decision maker must act in accordance with the regulations, if any. No applicable regulations have been made.

Request for referral

I believe that you intend to take the proposed action described above, and I think this action may be a 'controlled action', as that term is defined in the EPBC Act.

For these reasons, I request that you refer the proposed action to the Minister within 15 business days of the date of this letter, which is **Friday, 15 July 2016**.

To refer the proposed action you should complete enclosed form (**Attachment 2**) (which is available online at: <http://www.environment.gov.au/protection/environment-assessments/assessment-and-approval-process/refer-an-action>) and submit it in the way set out in the instructions on the form.

You are not obliged to make a referral concerning the proposed action. However, if you do not, then:

- The Minister or his delegate may decide that the EPBC Act has effect as if the proposal had been referred, as described in section 70.
- If you take the proposed action and the taking of this action without approval contravenes Part 3 of the EPBC Act then the Department may:
 - seek an injunction to stop the proposed action;
 - apply to the court to impose a civil remedy and pecuniary penalty;
 - seek an order for you to remediate the damage caused by the proposed action; or
 - refer you for prosecution for a criminal offence, which is punishable by imprisonment or a fine.

Considerations relevant to my decision to request you to refer the matter

I have set out in **Attachment 3** to this letter the findings on which I have based my belief that you propose to take the proposed action and why I think that this action may be a controlled action for the purposes of the EPBC Act.

I have not reached a concluded view that the proposed action is a controlled action. Nor have I formed a view as to whether or not the proposed action, if referred, would be approved under Part 9 of the EPBC Act.

The EPBC Act does not require me to make either of those decisions for the purpose of making this request. Section 70(1) requires only that I think that the proposed action may be a controlled action.

Preliminary view on whether to deem the proposal to be referred

Based on the information presently available to me, I have formed a preliminary view that, should you decide not to refer the proposed action to the Minister, the Minister or his delegate should make a decision under section 70(3) of the EPBC Act to deem you to have referred the proposed action to the Minister.

I have formed this view because:

- I think that the proposed action may be a controlled action for the reasons explained in Attachment 3; and
- I consider that the appropriate way to determine if the proposed action is a controlled action and, if so, whether it should be approved under the EPBC Act, is by using the statutory assessment process set out in the Act.

Invitation to make submission if you do not intend to refer the action

If you do not intend to refer the proposed action to the Minister, then I invite you to write to me to set out the reasons why you think that the proposed action is not a controlled action for the purposes of the EPBC Act. In doing so, you may also set out any other reasons why I should or should not make a decision under section 70(3) to deem the proposed action to be referred. Please provide any relevant supporting information or documents.

You should provide any submissions, information or documents by **4.00pm on Friday, 15 July 2016**. The Minister or his delegate will then consider any submissions, information or documents in making a decision under section 70(3) of the EPBC Act.

You are not obliged to provide any response to this letter. However, if the Department does not receive any response by **4.00pm on Friday, 15 July 2016** then the Minister or his delegate may make a decision under section 70(3) of the EPBC Act without further notice to you. You will be notified if any such decision is made.

How to respond to this letter

To provide a written response to the matters raised in this letter, please submit your response by email to compliance@environment.gov.au or by post to:

Director - Compliance Section
Environment Standards Division
Department of the Environment
GPO Box 787
Canberra ACT 2601

Please note that, if you post your response, you should provide sufficient time for the Department to receive it by **4.00pm on Friday, 15 July 2016**.

Important matters to note when preparing your response

It is a criminal offence, punishable by fine or imprisonment, to provide false or misleading information to an officer of the Department (section 491 of the EPBC Act).

The Department may use any information you provide to determine whether the requirements of the EPBC Act have been complied with. If there is any apparent non-compliance with the Act, any information you provide may be used as evidence in subsequent court proceedings or for taking other compliance actions.

Contact information

For further information about this matter, please contact Section 22 [REDACTED] Director - Compliance Section, on Section 22 [REDACTED] or by email: Section 22 [REDACTED].

Yours sincerely

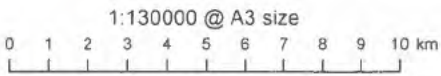
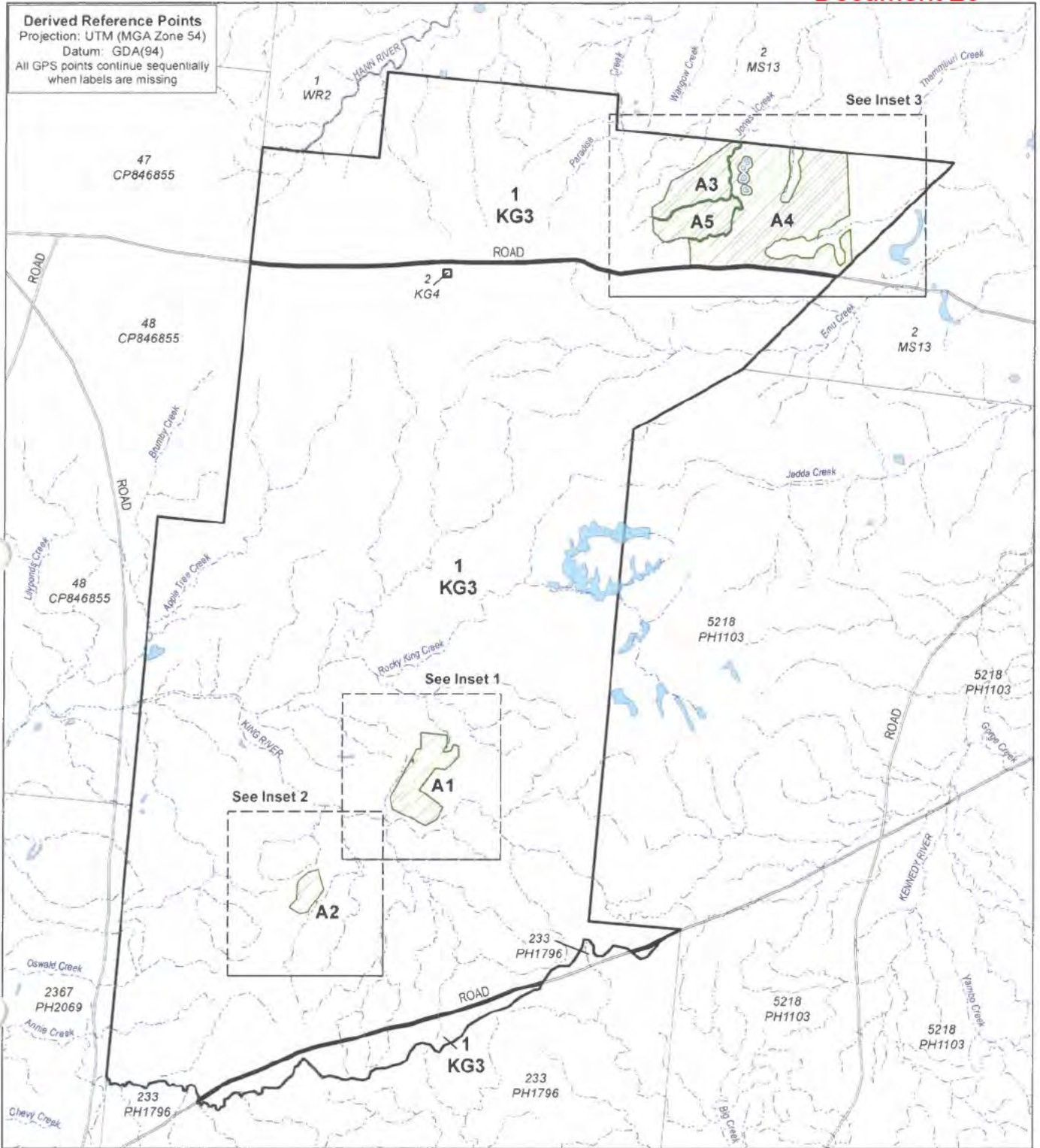


Dean Knudson
Deputy Secretary

23 June 2016

ATTACHMENTS


- Attachment 1 Map showing location of areas proposed, or actually cleared within property boundary
- Attachment 2 EPBC Act Referral Form
- Attachment 3 Information used for the consideration
- Attachment 4 Section 70 EPBC Act

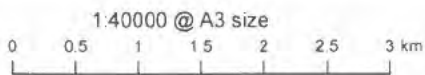
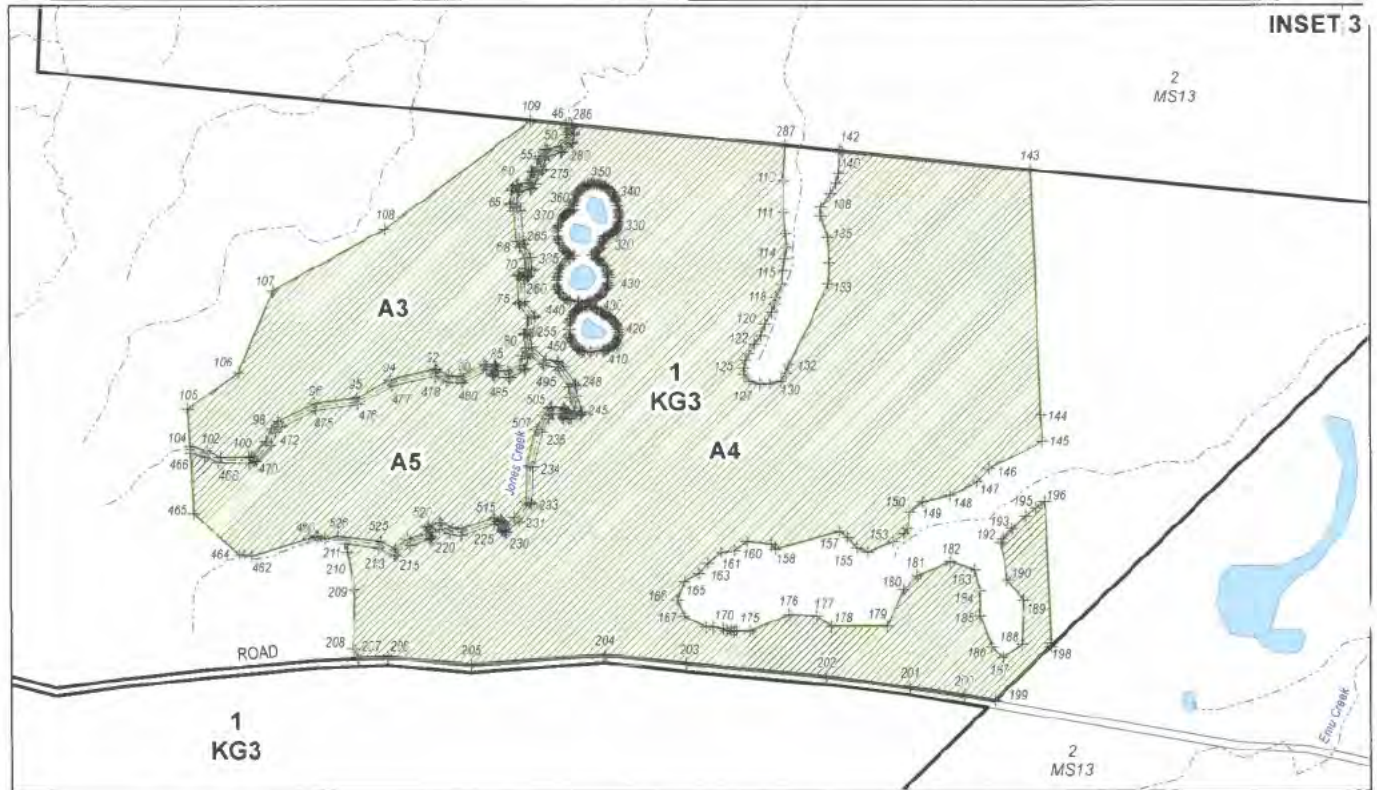
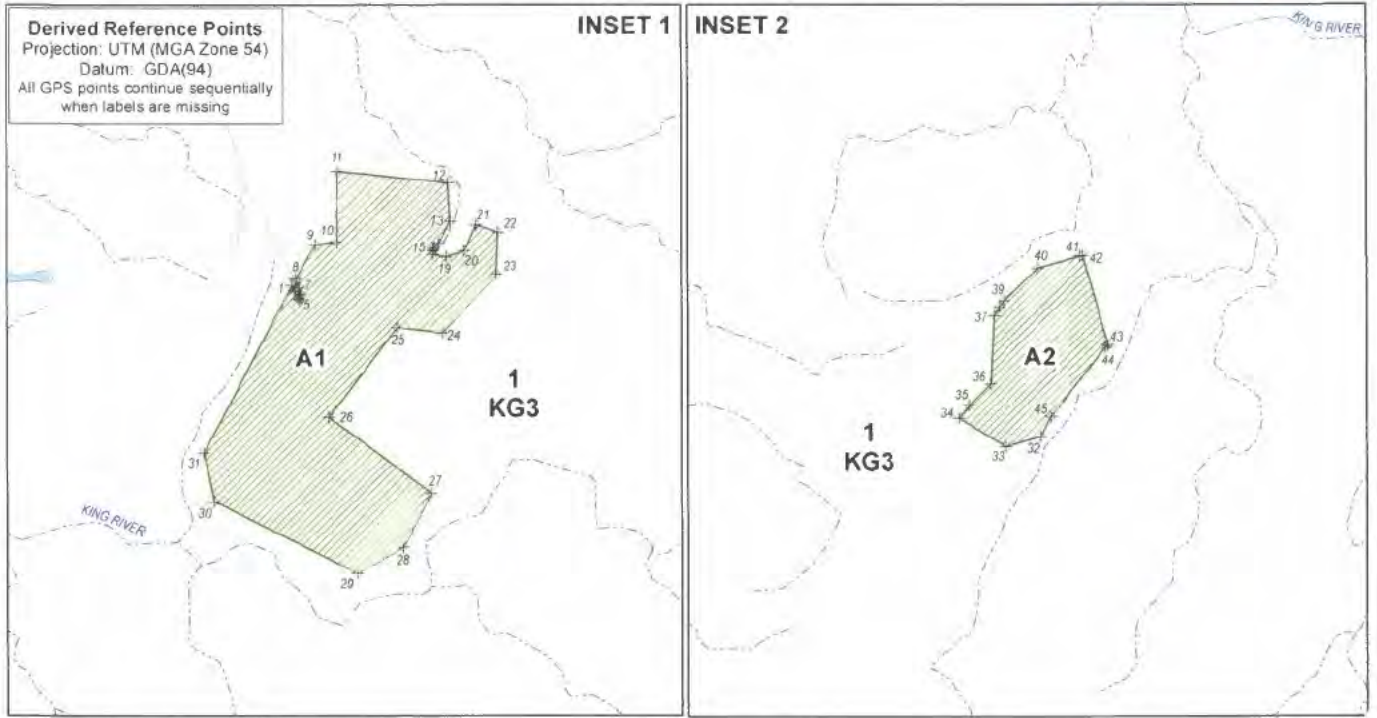


Projection: UTM (MGA Zone 54) Datum: GDA94

Note: Derived Reference Points are provided to assist in the location of the Referral Agency Response boundaries. Responsibility for locating these boundaries lies solely with the landholder and delegated contractor(s).

The property boundaries shown on this plan are APPROXIMATE ONLY. They are NOT an accurate representation of the legal boundaries.
Note: This plan must be read in conjunction with Referral Agency Response 2014/000805

LEGEND ◻ Derived Reference Points for GPS ◻ Subject Lot(s) ▨ Area A - - - Watercourse ■ Wetlands	Referral Agency Response (Vegetation) Plan Plan of Area A (Parts A1 - A5) in Lot 1 on KG3		 N Queensland Government	
	CENTRE: TOWNVILLE LOCALITY OF LAURA			REGION: NORTH LOCAL GOVT: COOK SHIRE
	Map Reference: 7566,7666,7766	Compiled from: DCDB, PVMP & VMO Notes		
File Reference: 2014/000805	Prepared by: EMR	Date: 3 March 2014	RARP 2014/000805 Sheet 1 of 3	



Projection: UTM (MGA Zone 54) Datum: GDA94

Note: Derived Reference Points are provided to assist in the location of the Referral Agency Response boundaries. Responsibility for locating these boundaries lies solely with the landholder and delegated contractor(s).

The property boundaries shown on this plan are APPROXIMATE ONLY. They are NOT an accurate representation of the legal boundaries.

Note: This plan must be read in conjunction with Referral Agency Response 2014/000805

LEGEND <ul style="list-style-type: none"> ○ Derived Reference Points for GPS □ Subject Lot(s) ▨ Area A ~ Watercourse ■ Wetlands □ Non Remnant RE 	Referral Agency Response (Vegetation) Plan Plan of Area A (Parts A1 - A5) in Lot 1 on KG3			
	CENTRE: TOWNSVILLE LOCALITY OF LAURA			REGION: NORTH LOCAL GOVT: COOK SHIRE
	Map Reference: 7566,7665,7766			Compiled from: DCDB, PVMP & VMO Notes
	File Reference: 2014/000805			Prepared by: EMR Date: 3 March 2014
RARP 2014/000805 Sheet 2 of 3				

Derived Reference Points
Projection: UTM (MGA Zone 54)
Datum: GDA(94)
All GPS points continue sequentially
when labels are missing

Point	Parcel	Easting	Northing	Point	Parcel	Easting	Northing	Point	Parcel	Easting	Northing	Point	Parcel	Easting	Northing	Point	Parcel	Easting	Northing	Point	Parcel	Easting	Northing
1	A1	794271	8258415	89	A3	804817	8277581	177	AA	807452	8275592	265	AA	805165	8278528	353	AA	805647	8279001	441	AA	805540	8277993
2	A1	794292	8258473	90	A3	804637	8277486	178	AA	807566	8275508	266	AA	805127	8278564	354	AA	805626	8278993	442	AA	805530	8277980
3	A1	794316	8258531	91	A3	804539	8277491	179	AA	808018	8275508	267	AA	805110	8278600	355	AA	805609	8278993	443	AA	805513	8277946
4	A1	794330	8258590	92	A3	804444	8277540	180	AA	808145	8275759	268	AA	805081	8278858	356	AA	805595	8278972	444	AA	805506	8277928
5	A1	794346	8258631	93	A3	804432	8277542	181	AA	808258	8275910	269	AA	805090	8278946	357	AA	805578	8278953	445	AA	805503	8277930
6	A1	794366	8258632	94	A3	804071	8277460	182	AA	808520	8276018	270	AA	805103	8278959	358	AA	805567	8278939	446	AA	805502	8277869
7	A1	794325	8258639	95	A3	803802	8277312	183	AA	808713	8275954	271	AA	805190	8278972	359	AA	805560	8278921	447	AA	805502	8277815
8	A1	794296	8258642	96	A3	803476	8277271	184	AA	808755	8275785	272	AA	805203	8278978	360	AA	805544	8278891	448	AA	805504	8277797
9	A1	794456	8258738	97	A3	803187	8277136	185	AA	808755	8275595	273	AA	805231	8279011	361	AA	805538	8278873	449	AA	805509	8277780
10	A1	794614	8258761	98	A3	803138	8277075	186	AA	808848	8275347	274	AA	805250	8279084	362	AA	805534	8278855	450	AA	805517	8277764
11	A1	794622	8258823	99	A3	803089	8276972	187	AA	808832	8275297	275	AA	805286	8279119	363	AA	805534	8278840	451	AA	805526	8277750
12	A1	795499	8259227	100	A3	802981	8276857	188	AA	809088	8275368	276	AA	805293	8279131	364	AA	805536	8278802	452	AA	805533	8277719
13	A1	795517	8259324	101	A3	802956	8276850	189	AA	809096	8275711	277	AA	805307	8279200	365	AA	805519	8278794	453	AA	805567	8277705
14	A1	795428	8259755	102	A3	802730	8276652	190	AA	808969	8275880	278	AA	805342	8279238	366	AA	805502	8278788	454	AA	805581	8277696
15	A1	795289	8259709	103	A3	802620	8276901	191	AA	808917	8276171	279	AA	805440	8279261	367	AA	805486	8278780	455	AA	805594	8277689
16	A1	795384	8259697	104	A3	802485	8276937	192	AA	808930	8276200	280	AA	805451	8279266	368	AA	805472	8278769	456	AA	805616	8277685
17	A1	795385	8259694	105	A3	802469	8277231	193	AA	809006	8276282	281	AA	805521	8279325	369	AA	805460	8278755	457	AA	805664	8277682
18	A1	795380	8259662	106	A3	802873	8277517	194	AA	809115	8276380	282	AA	805529	8279337	370	AA	805448	8278741	458	AA	803557	8276200
19	A1	795485	8259694	107	A3	803146	8278167	195	AA	809197	8276449	283	AA	805540	8279405	371	AA	805438	8278726	459	AA	803497	8276219
20	A1	795632	8259690	108	A3	804033	8278656	196	AA	809266	8276492	284	AA	805540	8279417	372	AA	805417	8278668	460	AA	803485	8276220
21	A1	795724	8259806	109	A3	805196	8279515	197	AA	809314	8275373	285	AA	805526	8279459	373	AA	805412	8278676	461	AA	803492	8276203
22	A1	795899	8259837	110	AA	807189	8279037	198	AA	809315	8275352	286	AA	805525	8279484	374	AA	805407	8278659	462	AA	803295	8276070
23	A1	795884	8259807	111	AA	807254	8278784	199	AA	808870	8274921	287	AA	807212	8279316	375	AA	805405	8278641	463	AA	803216	8276080
24	A1	795454	8259040	112	AA	807210	8278620	200	AA	808627	8274961	288	AA	807189	8279037	376	AA	805408	8278589	464	AA	802873	8276074
25	A1	795095	8259808	113	AA	807220	8278505	201	AA	808197	8275026	289	AA	805755	8278076	377	AA	805409	8278576	465	AA	802514	8276405
26	A1	794559	8257368	114	AA	807204	8278419	202	AA	807524	8275110	290	AA	805638	8278079	378	AA	805414	8278559	466	AA	802485	8276884
27	A1	795365	8256768	115	AA	807189	8278321	203	AA	806422	8275210	291	AA	805656	8278081	379	AA	805422	8278542	467	AA	802601	8276855
28	A1	795145	8256943	116	AA	807189	8278217	204	AA	805773	8275281	292	AA	805673	8278087	380	AA	805453	8278498	468	AA	802714	8276805
29	A1	794778	8256134	117	AA	807130	8278117	205	AA	804706	8275204	293	AA	805715	8278105	381	AA	805466	8278463	469	AA	802939	8276800
30	A1	793654	8256705	118	AA	807119	8278057	206	AA	804048	8275262	294	AA	805730	8278113	382	AA	805480	8278472	470	AA	803001	8276811
31	A1	793569	8257089	119	AA	807096	8277992	207	AA	803809	8275253	295	AA	805744	8278124	383	AA	805495	8278463	471	AA	803013	8276818
32	A2	790803	8257209	120	AA	807045	8277904	208	AA	803770	8275333	296	AA	805754	8278136	384	AA	805539	8278447	472	AA	803129	8276942
33	A2	790527	8257310	121	AA	807014	8277806	209	AA	803779	8275798	297	AA	805783	8278174	385	AA	805506	8278427	473	AA	803169	8277046
34	A2	790158	8253356	122	AA	806698	8277739	210	AA	803732	8276097	298	AA	805794	8278197	386	AA	805495	8278419	474	AA	803212	8277093
35	A2	790233	8253457	123	AA	806916	8277667	211	AA	803710	8276162	299	AA	805800	8278208	387	AA	805446	8278369	475	AA	803486	8277222
36	A2	790407	8253627	124	AA	806890	8277616	212	AA	803977	8276131	300	AA	805803	8278225	388	AA	805433	8278352	476	AA	803813	8277263
37	A2	790435	8256166	125	AA	806880	8277549	213	AA	804097	8276067	301	AA	805808	8278273	389	AA	805429	8278336	477	AA	804085	8277412
38	A2	790475	8254241	126	AA	806880	8277503	214	AA	804109	8276064	302	AA	805808	8278291	390	AA	805415	8278305	478	AA	804429	8277491
39	A2	790514	8254289	127	AA	806922	8277451	215	AA	804121	8276067	303	AA	805805	8278309	391	AA	805406	8278281	479	AA	804520	8277444
40	A2	790781	8254567	128	AA	807009	8277425	216	AA	804227	8276150	304	AA	805798	8278325	392	AA	805402	8278265	480	AA	804636	8277435
41	A2	791108	8254638	129	AA	807081	8277431	217	AA	804380	8276197	305	AA	805774	8278368	393	AA	805401	8278248	481	AA	804648	8277438
42	A2	791129	8254642	130	AA	807168	8277451	218	AA	804491	8276203	306	AA	805762	8278383	394	AA	805401	8278212	482	AA	804834	8277534
43	A2	791329	8253935	131	AA	807210	8277513	219	AA	804400	8276218	307	AA	805740	8278408	395	AA	805402	8278195	483	AA	804874	8277534
44	A2	791310	8253917	132	AA	807235	8277525	220	AA	804404	8276255	308	AA	805728	8278419	396	AA	805407	8278177	484	AA	804884	8277501
45	A2	790881	8253371	133	AA	807549	8278218	221	AA	804460	8276278	309	AA	805716	8278427	397	AA	805415	8278163	485	AA	804892	8277489
46	A3	805476	8279489	134	AA	807554	8278398	222	AA	804539	8276238	310	AA	805716	8278427	398	AA	805426	8278147	486	AA	804903	8277483
47	A3	805476	8279454	135	AA	807544	8278398	223	AA	804428	8276225	311	AA	805708	8278467	399	AA	805459	8278112	487	AA	805011	8277477
48	A3	805490	8279407	136	AA	807488	8278359	224	AA	804539	8276226	312	AA	805723	8278477	400	AA	805475	8278100	488	AA	805024	8277480
49	A3	805482	8279358	137	AA	807493	8278826	225	AA	804892	8276216	313	AA	805736	8278489	401	AA	805491	8278109	489	AA	805184	8277534
50	A3	805423	8279308	138	AA	807585	8278934	226	AA	804926	8276305	314	AA	805747	8278504	402	AA	805508	8278086	490	AA	805145	8277544
51	A3	805324	8279285	139	AA	807611	8279016	227	AA	804955	8276264	315	AA	805764	8278538	403	AA	805566	8278077	491	AA	805163	8277632
52	A3	805311	8279278	140	AA	807632	8279093	228	AA	804968	8276253	316	AA	805771	8278556	404	AA	805664	8277682	492	AA	805182	8277667
53	A3	805265	8279228	141	AA	807636	8279274	229	AA	804981	8276252	317	AA	805774	8278573	405	AA	805675	8277682	493	AA	805283	8277580
54	A3	805259	8279217	142	AA	807655	8279272																



Referral of proposed action

What is a referral?

The *Environment Protection and Biodiversity Conservation Act 1999* (the EPBC Act) provides for the protection of the environment, especially matters of national environmental significance (NES). Under the EPBC Act, a person must not take an action that has, will have, or is likely to have a significant impact on any of the matters of NES without approval from the Australian Government Environment Minister or the Minister's delegate. (Further references to 'the Minister' in this form include references to the Minister's delegate.) To obtain approval from the Environment Minister, a proposed action should be referred. The purpose of a referral is to obtain a decision on whether your proposed action will need formal assessment and approval under the EPBC Act.

Your referral will be the principal basis for the Minister's decision as to whether approval is necessary and, if so, the type of assessment that will be undertaken. These decisions are made within 20 business days, provided sufficient information is provided in the referral.

Who can make a referral?

Referrals may be made by or on behalf of a person proposing to take an action, the Commonwealth or a Commonwealth agency, a state or territory government, or agency, provided that the relevant government or agency has administrative responsibilities relating to the action.

When do I need to make a referral?

A referral must be made for actions that are likely to have a significant impact on the following matters protected by Part 3 of the EPBC Act:

- World Heritage properties (sections 12 and 15A)
- National Heritage places (sections 15B and 15C)
- Wetlands of international importance (sections 16 and 17B)
- Listed threatened species and communities (sections 18 and 18A)
- Listed migratory species (sections 20 and 20A)
- Protection of the environment from nuclear actions (sections 21 and 22A)
- Commonwealth marine environment (sections 23 and 24A)
- Great Barrier Reef Marine Park (sections 24B and 24C)
- A water resource, in relation to coal seam gas development and large coal mining development (sections 24D and 24E)
- The environment, if the action involves Commonwealth land (sections 26 and 27A), including:
 - actions that are likely to have a significant impact on the environment of Commonwealth land (even if taken outside Commonwealth land);
 - actions taken on Commonwealth land that may have a significant impact on the environment generally;
- The environment, if the action is taken by the Commonwealth (section 28)
- Commonwealth Heritage places outside the Australian jurisdiction (sections 27B and 27C)

You may still make a referral if you believe your action is not going to have a significant impact, or if you are unsure. This will provide a greater level of certainty that Commonwealth assessment requirements have been met.

To help you decide whether or not your proposed action requires approval (and therefore, if you should make a referral), the following guidance is available from the Department's website:

- the Policy Statement titled Significant Impact Guidelines 1.1 – Matters of National Environmental Significance. Additional sectoral guidelines are also available.

- the Policy Statement titled Significant Impact Guidelines 1.2 - Actions on, or impacting upon, Commonwealth land, and actions by Commonwealth agencies.
- the Policy Statement titled Significant Impact Guidelines: Coal seam gas and large coal mining developments—Impacts on water resources.
- the interactive map tool (enter a location to obtain a report on what matters of NES may occur in that location).

Can I refer part of a larger action?

In certain circumstances, **the Minister may not accept a referral for an action that is a component of a larger action and may request the person proposing to take the action to refer the larger action for consideration under the EPBC Act (Section 74A, EPBC Act)**. If you wish to make a referral for a staged or component referral, read 'Fact Sheet 6 Staged Developments/Split Referrals' and contact the Referrals Gateway (1800 803 772).

Do I need a permit?

Some activities may also require a permit under other sections of the EPBC Act or another law of the Commonwealth. Information is available on the Department's web site.

Is your action in the Great Barrier Reef Marine Park?

If your action is in the Great Barrier Reef Marine Park it may require permission under the *Great Barrier Reef Marine Park Act 1975* (GBRMP Act). If a permission is required, referral of the action under the EPBC Act is deemed to be an application under the GBRMP Act (see section 37AB, GBRMP Act). This referral will be forwarded to the Great Barrier Reef Marine Park Authority (the Authority) for the Authority to commence its permit processes as required under the Great Barrier Reef Marine Park Regulations 1983. If a permission is not required under the GBRMP Act, no approval under the EPBC Act is required (see section 43, EPBC Act). The Authority can provide advice on relevant permission requirements applying to activities in the Marine Park.

The Authority is responsible for assessing applications for permissions under the GBRMP Act, GBRMP Regulations and Zoning Plan. Where assessment and approval is also required under the EPBC Act, a single integrated assessment for the purposes of both Acts will apply in most cases. Further information on environmental approval requirements applying to actions in the Great Barrier Reef Marine Park is available from <http://www.gbrmpa.gov.au/> or by contacting GBRMPA's Environmental Assessment and Management Section on (07) 4750 0700.

The Authority may require a permit application assessment fee to be paid in relation to the assessment of applications for permissions required under the GBRMP Act, even if the permission is made as a referral under the EPBC Act. Further information on this is available from the Authority:

Great Barrier Reef Marine Park Authority

2-68 Flinders Street PO Box 1379

Townsville QLD 4810

AUSTRALIA

Phone: + 61 7 4750 0700

Fax: + 61 7 4772 6093

www.gbrmpa.gov.au

What information do I need to provide?

Completing all parts of this form will ensure that you submit the required information and will also assist the Department to process your referral efficiently. If a section of the referral document is not applicable to your proposal enter N/A.

You can complete your referral by entering your information into this Word file.

Instructions

Instructions are provided in blue text throughout the form.

Attachments/supporting information

The referral form should contain sufficient information to provide an adequate basis for a decision on the likely impacts of the proposed action. You should also provide supporting documentation, such as environmental reports or surveys, as attachments.

Coloured maps, figures or photographs to help explain the project and its location should also be submitted with your referral. Aerial photographs, in particular, can provide a useful perspective and context. Figures should be good quality as they may be scanned and viewed electronically as black and white documents. Maps should be of a scale that clearly shows the location of the proposed action and any environmental aspects of interest.

Please ensure any attachments are below three megabytes (3mb) as they will be published on the Department's website for public comment. To minimise file size, enclose maps and figures as separate files if necessary. If unsure, contact the Referrals Gateway (email address below) for advice. Attachments larger than three megabytes (3mb) may delay processing of your referral.

Note: the Minister may decide not to publish information that the Minister is satisfied is commercial-in-confidence.

How do I pay for my referral?

From 1 October 2014 the Australian Government commenced cost recovery arrangements for environmental assessments and some strategic assessments under the EPBC Act. If an action is referred on or after 1 October 2014, then cost recovery will apply to both the referral and any assessment activities undertaken. Further information regarding cost recovery can be found on the [Department's website](#).

Payment of the referral fee can be made using one of the following methods:

- **EFT Payments can be made to:**

BSB: 092-009
Bank Account No. 115859
Amount: \$7352
Account Name: Department of the Environment.
Bank: Reserve Bank of Australia
Bank Address: 20-22 London Circuit Canberra ACT 2601
Description: The reference number provided (see note below)

- **Cheque** - Payable to "Department of the Environment". Include the reference number provided (see note below), and if posted, address:

The Referrals Gateway
Environment Assessment Branch
Department of the Environment
GPO Box 787
Canberra ACT 2601

- **Credit Card**

Please contact the Collector of Public Money (CPM) directly (call (02) 6274 2930 or 6274 20260 and provide the reference number (see note below).

Note: In order to receive a reference number, submit your referral and the Referrals Gateway will email you the reference number.

How do I submit a referral?

Referrals may be submitted by mail or email.

Mail to:

Referrals Gateway
Environment Assessment Branch
Department of Environment
GPO Box 787
CANBERRA ACT 2601

- If submitting via mail, electronic copies of documentation (on CD/DVD or by email) are required.

Email to: epbc.referrals@environment.gov.au

- Clearly mark the email as a 'Referral under the EPBC Act'.
- Attach the referral as a Microsoft Word file and, if possible, a PDF file.
- **Follow up with a mailed hardcopy including copies of any attachments or supporting reports.**

What happens next?

Following receipt of a valid referral (containing all required information) you will be advised of the next steps in the process, and the referral and attachments will be published on the Department's web site for public comment.

The Department will write to you within 20 business days to advise you of the outcome of your referral and whether or not formal assessment and approval under the EPBC Act is required. There are a number of possible decisions regarding your referral:

The proposed action is NOT LIKELY to have a significant impact and does NOT NEED approval

No further consideration is required under the environmental assessment provisions of the EPBC Act and the action can proceed (subject to any other Commonwealth, state or local government requirements).

The proposed action is NOT LIKELY to have a significant impact IF undertaken in a particular manner

The action can proceed if undertaken in a particular manner (subject to any other Commonwealth, state or local government requirements). The particular manner in which you must carry out the action will be identified as part of the final decision. You must report your compliance with the particular manner to the Department.

The proposed action is LIKELY to have a significant impact and does NEED approval

If the action is likely to have a significant impact a decision will be made that it is a *controlled action*. The particular matters upon which the action may have a significant impact (such as World Heritage values or threatened species) are known as the *controlling provisions*.

The controlled action is subject to a public assessment process before a final decision can be made about whether to approve it. The assessment approach will usually be decided at the same time as the controlled action decision. (Further information about the levels of assessment and basis for deciding the approach are available on the Department's web site.)

The proposed action would have UNACCEPTABLE impacts and CANNOT proceed

The Minister may decide, on the basis of the information in the referral, that a referred action would have clearly unacceptable impacts on a protected matter and cannot proceed.

Compliance audits

If a decision is made to approve a project, the Department may audit it at any time to ensure that it is completed in accordance with the approval decision or the information provided in the referral. If the project changes, such that the likelihood of significant impacts could vary, you should write to the Department to advise of the changes. If your project is in the Great Barrier Reef Marine Park and a decision is made to approve it, the Authority may also audit it. (See "*Is your action in the Great Barrier Reef Marine Park*," p.2, for more details).

For more information

- call the Department of the Environment Community Information Unit on 1800 803 772 or
- visit the web site <http://www.environment.gov.au/topics/about-us/legislation/environment-protection-and-biodiversity-conservation-act-1999>

All the information you need to make a referral, including documents referenced in this form, can be accessed from the above web site.

Referral of proposed action

Project title:

1 Summary of proposed action

NOTE: You must also attach a map/plan(s) and associated geographic information system (GIS) vector (shapefile) dataset showing the location and approximate boundaries of the area in which the project is to occur. Maps in A4 size are preferred. You must also attach a map(s)/plan(s) showing the location and boundaries of the project area in respect to any features identified in 3.1 & 3.2, as well as the extent of any freehold, leasehold or other tenure identified in 3.3(i).

1.1 Short description

Use 2 or 3 sentences to uniquely identify the proposed action and its location.

1.2 Latitude and longitude

Latitude and longitude details are used to accurately map the boundary of the proposed action. If these coordinates are inaccurate or insufficient it may delay the processing of your referral.

location point	Latitude			Longitude		
	degrees	minutes	seconds	degrees	minutes	seconds

The Interactive Mapping Tool may provide assistance in determining the coordinates for your project area.

If the area is less than 5 hectares, provide the location as a single pair of latitude and longitude references. If the area is greater than 5 hectares, provide bounding location points.

There should be no more than 50 sets of bounding location coordinate points per proposal area.

Bounding location coordinate points should be provided sequentially in either a clockwise or anticlockwise direction.

If the proposed action is linear (eg. a road or pipeline), provide coordinates for each turning point.

Also attach the associated GIS-compliant file that delineates the proposed referral area. If the area is less than 5 hectares, please provide the location as a point layer. If greater than 5 hectares, please provide a polygon layer. If the proposed action is linear (eg. a road or pipeline) please provide a polyline layer (refer to GIS data supply guidelines at [Attachment A](#)).

Do not use AMG coordinates.

1.3 Locality and property description

Provide a brief physical description of the property on which the proposed action will take place and the project location (eg. proximity to major towns, or for off-shore projects, shortest distance to mainland).

1.4 Size of the development footprint or work area (hectares)

1.5 Street address of the site

1.6 Lot description

Describe the lot numbers and title description, if known.

1.7 Local Government Area and Council contact (if known)

If the project is subject to local government planning approval, provide the name of the relevant council contact officer.

1.8 **Time frame**
Specify the time frame in which the action will be taken including the estimated start date of construction/operation.

1.9	Alternatives to proposed action Were any feasible alternatives to taking the proposed action (including not taking the action) considered but are not proposed?		No
			Yes, you must also complete section 2.2
1.10	Alternative time frames etc Does the proposed action include alternative time frames, locations or activities?		No
			Yes, you must also complete Section 2.3. For each alternative, location, time frame, or activity identified, you must also complete details in Sections 1.2-1.9, 2.4-2.7 and 3.3 (where relevant).
1.11	State assessment Is the action subject to a state or territory environmental impact assessment?		No
			Yes, you must also complete Section 2.5
1.12	Component of larger action Is the proposed action a component of a larger action?		No
			Yes, you must also complete Section 2.7
1.13	Related actions/proposals Is the proposed action related to other actions or proposals in the region (if known)?		No
			Yes, provide details:
1.14	Australian Government funding Has the person proposing to take the action received any Australian Government grant funding to undertake this project?		No
			Yes, provide details:
1.15	Great Barrier Reef Marine Park Is the proposed action inside the Great Barrier Reef Marine Park?		No
			Yes, you must also complete Section 3.1 (h), 3.2 (e)

2 Detailed description of proposed action

NOTE: It is important that the description is complete and includes all components and activities associated with the action. If certain related components are not intended to be included within the scope of the referral, this should be clearly explained in section 2.7.

2.1 Description of proposed action

This should be a detailed description outlining all activities and aspects of the proposed action and should reference figures and/or attachments, as appropriate.

2.2 Alternatives to taking the proposed action

This should be a detailed description outlining any feasible alternatives to taking the proposed action (including not taking the action) that were considered but are not proposed (note, this is distinct from any proposed alternatives relating to location, time frames, or activities – see section 2.3).

2.3 Alternative locations, time frames or activities that form part of the referred action

If you have identified that the proposed action includes alternative time frames, locations or activities (in section 1.10) you must complete this section. Describe any alternatives related to the physical location of the action, time frames within which the action is to be taken and alternative methods or activities for undertaking the action. For each alternative location, time frame or activity identified, you must also complete (where relevant) the details in sections 1.2-1.9, 2.4-2.7, 3.3 and 4. Please note, if the action that you propose to take is determined to be a controlled action, any alternative locations, time frames or activities that are identified here may be subject to environmental assessment and a decision on whether to approve the alternative.

2.4 Context, planning framework and state/local government requirements

Explain the context in which the action is proposed, including any relevant planning framework at the state and/or local government level (e.g. within scope of a management plan, planning initiative or policy framework). Describe any Commonwealth or state legislation or policies under which approvals are required or will be considered against.

2.5 Environmental impact assessments under Commonwealth, state or territory legislation

If you have identified that the proposed action will be or has been subject to a state or territory environmental impact statement (in section 1.11) you must complete this section. Describe any environmental assessment of the relevant impacts of the project that has been, is being, or will be carried out under state or territory legislation. Specify the type and nature of the assessment, the relevant legislation and the current status of any assessments or approvals. Where possible, provide contact details for the state/territory assessment contact officer.

Describe or summarise any public consultation undertaken, or to be undertaken, during the assessment. Attach copies of relevant assessment documentation and outcomes of public consultations (if available).

2.6 Public consultation (including with Indigenous stakeholders)

Your referral must include a description of any public consultation that has been, or is being, undertaken. Where Indigenous stakeholders are likely to be affected by your proposed action, your referral should describe any consultations undertaken with Indigenous stakeholders. Identify the relevant stakeholders and the status of consultations at the time of the referral. Where appropriate include copies of documents recording the outcomes of any consultations.

2.7 A staged development or component of a larger project

If you have identified that the proposed action is a component of a larger action (in section 1.12) you must complete this section. Provide information about the larger action and details of any interdependency between the stages/components and the larger action. You may also provide justification as to why you believe it is reasonable for the referred action to be considered separately from the larger proposal (eg. the referred action is 'stand-alone' and viable in its own right, there are separate responsibilities for component actions or approvals have been split in a similar way at the state or local government levels).

3 Description of environment & likely impacts

3.1 Matters of national environmental significance

Describe the affected area and the likely impacts of the proposal, emphasising the relevant matters protected by the EPBC Act. Refer to relevant maps as appropriate. The interactive map tool can help determine whether matters of national environmental significance or other matters protected by the EPBC Act are likely to occur in your area of interest.

Your assessment of likely impacts should refer to the following resources (available from the Department's web site):

- specific values of individual World Heritage properties and National Heritage places and the ecological character of Ramsar wetlands;
- profiles of relevant species/communities (where available), that will assist in the identification of whether there is likely to be a significant impact on them if the proposal proceeds;
- *Significant Impact Guidelines 1.1 – Matters of National Environmental Significance*, and
- associated sectoral and species policy statements available on the web site, as relevant.

Your assessment of likely impacts should consider whether a bioregional plan is relevant to your proposal. The Minister has prepared four marine bioregional plans (MBP) in accordance with section 176. It is likely that the MBP's will be more commonly relevant where listed threatened species, listed migratory species or a Commonwealth marine area is considered.

Note that even if your proposal will not be taken in a World Heritage area, Ramsar wetland, Commonwealth marine area, the Great Barrier Reef Marine Park or on Commonwealth land, it could still impact upon these areas (for example, through downstream impacts). Consideration of likely impacts should include both direct and indirect impacts.

3.1 (a) World Heritage Properties

Description

Nature and extent of likely impact

Address any impacts on the World Heritage values of any World Heritage property.

3.1 (b) National Heritage Places

Description

Nature and extent of likely impact

Address any impacts on the National Heritage values of any National Heritage place.

3.1 (c) Wetlands of International Importance (declared Ramsar wetlands)

Description

Nature and extent of likely impact

Address any impacts on the ecological character of any Ramsar wetlands.

3.1 (d) Listed threatened species and ecological communities

Description

Nature and extent of likely impact

Address any impacts on the members of any listed threatened species (except a conservation dependent species) or any threatened ecological community, or their habitat.

3.1 (e) Listed migratory species

Description

Nature and extent of likely impact

Address any impacts on the members of any listed migratory species, or their habitat.

3.1 (f) Commonwealth marine area

(If the action is in the Commonwealth marine area, complete 3.2(c) instead. This section is for actions taken outside the Commonwealth marine area that may have impacts on that area.)

Description

Nature and extent of likely impact

Address any impacts on any part of the environment in the Commonwealth marine area.

3.1 (g) Commonwealth land

(If the action is on Commonwealth land, complete 3.2(d) instead. This section is for actions taken outside Commonwealth land that may have impacts on that land.)

Description

If the action will affect Commonwealth land also describe the more general environment. The Policy Statement titled *Significant Impact Guidelines 1.2 - Actions on, or impacting upon, Commonwealth land, and actions by Commonwealth agencies* provides further details on the type of information needed. If applicable, identify any potential impacts from actions taken outside the Australian jurisdiction on the environment in a Commonwealth Heritage Place overseas.

Nature and extent of likely impact

Address any impacts on any part of the environment in the Commonwealth land. Your assessment of impacts should refer to the *Significant Impact Guidelines 1.2 - Actions on, or impacting upon, Commonwealth land, and actions by Commonwealth agencies* and specifically address impacts on:

- ecosystems and their constituent parts, including people and communities;
 - natural and physical resources;
 - the qualities and characteristics of locations, places and areas;
 - the heritage values of places; and
 - the social, economic and cultural aspects of the above things.
-

3.1 (h) The Great Barrier Reef Marine Park

Description

Nature and extent of likely impact

Address any impacts on any part of the environment of the Great Barrier Reef Marine Park.

Note: If your action occurs in the Great Barrier Reef Marine Park you may also require permission under the *Great Barrier Reef Marine Park Act 1975* (GBRMP Act). If so, section 37AB of the GBRMP Act provides that your referral under the EPBC Act is deemed to be an application under the GBRMP Act and Regulations for necessary permissions and a single integrated process will generally apply. Further information is available at www.gbrmpa.gov.au

3.1 (i) A water resource, in relation to coal seam gas development and large coal mining development

Description

If the action is a coal seam gas development or large coal mining development that has, or is likely to have, a significant impact on water resources, the draft *Policy Statement Significant Impact Guidelines: Coal seam gas and large coal mining developments—Impacts on water resources* provides further details on the type of information needed.

Nature and extent of likely impact

Address any impacts on water resources. Your assessment of impacts should refer to the draft *Significant Impact Guidelines: Coal seam gas and large coal mining developments—Impacts on water resources*.

3.2 Nuclear actions, actions taken by the Commonwealth (or Commonwealth agency), actions taken in a Commonwealth marine area, actions taken on Commonwealth land, or actions taken in the Great Barrier Reef Marine Park

You must describe the nature and extent of likely impacts (both direct & indirect) on the whole environment if your project:

- is a nuclear action;
- will be taken by the Commonwealth or a Commonwealth agency;
- will be taken in a Commonwealth marine area;
- will be taken on Commonwealth land; or
- will be taken in the Great Barrier Reef marine Park.

Your assessment of impacts should refer to the *Significant Impact Guidelines 1.2 - Actions on, or impacting upon, Commonwealth land, and actions by Commonwealth agencies* and specifically address impacts on:

- ecosystems and their constituent parts, including people and communities;
- natural and physical resources;
- the qualities and characteristics of locations, places and areas;
- the heritage values of places; and
- the social, economic and cultural aspects of the above things.

3.2 (a)	Is the proposed action a nuclear action?	<input type="checkbox"/>	No
		<input type="checkbox"/>	Yes (provide details below)

If yes, nature & extent of likely impact on the whole environment

3.2 (b)	Is the proposed action to be taken by the Commonwealth or a Commonwealth agency?	<input type="checkbox"/>	No
		<input type="checkbox"/>	Yes (provide details below)

If yes, nature & extent of likely impact on the whole environment

3.2 (c)	Is the proposed action to be taken in a Commonwealth marine area?	<input type="checkbox"/>	No
		<input type="checkbox"/>	Yes (provide details below)

If yes, nature & extent of likely impact on the whole environment (in addition to 3.1(f))

3.2 (d)	Is the proposed action to be taken on Commonwealth land?	<input type="checkbox"/>	No
		<input type="checkbox"/>	Yes (provide details below)

If yes, nature & extent of likely impact on the whole environment (in addition to 3.1(g))

3.2 (e)	Is the proposed action to be taken in the Great Barrier Reef Marine Park?	<input type="checkbox"/>	No
		<input type="checkbox"/>	Yes (provide details below)

If yes, nature & extent of likely impact on the whole environment (in addition to 3.1(h))

3.3 Other important features of the environment

Provide a description of the project area and the affected area, including information about the following features (where relevant to the project area and/or affected area, and to the extent not otherwise addressed above). If at Section 2.3 you identified any alternative locations, time frames or activities for your proposed action, you must complete each of the details below (where relevant) for each alternative identified.

3.3 (a) Flora and fauna

3.3 (b) Hydrology, including water flows

3.3 (c) Soil and Vegetation characteristics

3.3 (d) Outstanding natural features

3.3 (e) Remnant native vegetation

3.3 (f) Gradient (or depth range if action is to be taken in a marine area)

3.3 (g) Current state of the environment

Include information about the extent of erosion, whether the area is infested with weeds or feral animals and whether the area is covered by native vegetation or crops.

3.3 (h) Commonwealth Heritage Places or other places recognised as having heritage values

3.3 (i) Indigenous heritage values

3.3 (j) Other important or unique values of the environment

Describe any other key features of the environment affected by, or in proximity to the proposed action (for example, any national parks, conservation reserves, wetlands of national significance etc).

3.3 (k) Tenure of the action area (eg freehold, leasehold)

3.3 (l) Existing land/marine uses of area

3.3 (m) Any proposed land/marine uses of area

4 Environmental outcomes

Provide descriptions of the proposed environmental outcomes that will be achieved for matters of national environmental significance as a result of the proposed action. Include details of the baseline data upon which the outcomes are based, and the confidence about the likely achievement of the proposed outcomes. Where outcomes cannot be identified or committed to, provide explanatory details including any commitments to identify outcomes through an assessment process.

If a proposed action is determined to be a controlled action, the Department may request further details to enable application of the draft *Outcomes-based Conditions Policy 2015* and *Outcomes-based Conditions Guidance 2015* (<http://www.environment.gov.au/epbc/consultation/policy-guidance-outcomes-based-conditions>), including about environmental outcomes to be achieved, details of baseline data, milestones, performance criteria, and monitoring and adaptive management to ensure the achievement of outcomes. If this information is available at the time of referral it should be included.

General commitments to achieving environmental outcomes, particularly relating to beneficial impacts of the proposed action, CANNOT be taken into account in making the initial decision about whether the proposal is likely to have a significant impact on a matter protected under the EPBC Act. (But those commitments may be relevant at the later assessment and approval stages, including the appropriate level of assessment, and conditions of approval, if your proposal proceeds to these stages).

5 Measures to avoid or reduce impacts

Note: If you have identified alternatives in relation to location, time frames or activities for the proposed action at Section 2.3 you will need to complete this section in relation to each of the alternatives identified.

Provide a description of measures that will be implemented to avoid, reduce, manage or offset any relevant impacts of the action. Include, if appropriate, any relevant reports or technical advice relating to the feasibility and effectiveness of the proposed measures.

For any measures intended to avoid or mitigate significant impacts on matters protected under the EPBC Act, specify:

- what the measure is,
- how the measure is expected to be effective, and
- the time frame or workplan for the measure.

Examples of relevant measures to avoid or reduce impacts may include the timing of works, avoidance of important habitat, specific design measures, or adoption of specific work practices.

Provide information about the level of commitment by the person proposing to take the action to achieve the proposed environmental outcomes and implement the proposed mitigation measures. For example, if the measures are preliminary suggestions only that have not been fully researched, or are dependent on a third party's agreement (e.g. council or landowner), you should state that, that is the case.

Note, the Australian Government Environment Minister may decide that a proposed action is not likely to have significant impacts on a protected matter, as long as the action is taken in a particular manner (section 77A of the EPBC Act). The particular manner of taking the action may avoid or reduce certain impacts, in such a way that those impacts will not be 'significant'. More detail is provided on the Department's web site.

For the Minister to make such a decision (under section 77A), the proposed measures to avoid or reduce impacts must:

- clearly form part of the referred action (eg be identified in the referral and fall within the responsibility of the person proposing to take the action),
- be must be clear, unambiguous, and provide certainty in relation to reducing or avoiding impacts on the matters protected, and
- must be realistic and practical in terms of reporting, auditing and enforcement.

If a proposed action is determined to be a controlled action, the Department may request further details to enable application of the *Outcomes-based Conditions Policy 2016* (<http://www.environment.gov.au/epbc/publications/outcomes-based-conditions-policy-guidance>), including information about the environmental outcomes to be achieved by proposed avoidance, mitigation, management or offset measures, details of baseline data, milestones, performance criteria, and monitoring and adaptive management to ensure the achievement of outcomes. If this information is available at the time of referral it should be included in the description of the proposed measures.

More general commitments (e.g. preparation of management plans or monitoring), commitments to achieving environmental outcomes and measures aimed at providing environmental offsets, compensation or off-site benefits

CANNOT be taken into account in making the initial decision about whether the proposal is likely to have a significant impact on a matter protected under the EPBC Act. (But those commitments may be relevant at the later assessment and approval stages, including the appropriate level of assessment, if your proposal proceeds to these stages).

6 Conclusion on the likelihood of significant impacts

Identify whether or not you believe the action is a controlled action (ie. whether you think that significant impacts on the matters protected under Part 3 of the EPBC Act are likely) and the reasons why.

6.1 Do you THINK your proposed action is a controlled action?

- No, complete section 5.2
- Yes, complete section 5.3

6.2 Proposed action IS NOT a controlled action.

Specify the key reasons why you think the proposed action is NOT LIKELY to have significant impacts on a matter protected under the EPBC Act.

6.3 Proposed action IS a controlled action

Type 'x' in the box for the matter(s) protected under the EPBC Act that you think are likely to be significantly impacted. (The 'sections' identified below are the relevant sections of the EPBC Act.)

Matters likely to be impacted

- | | |
|--------------------------|---|
| <input type="checkbox"/> | World Heritage values (sections 12 and 15A) |
| <input type="checkbox"/> | National Heritage places (sections 15B and 15C) |
| <input type="checkbox"/> | Wetlands of international importance (sections 16 and 17B) |
| <input type="checkbox"/> | Listed threatened species and communities (sections 18 and 18A) |
| <input type="checkbox"/> | Listed migratory species (sections 20 and 20A) |
| <input type="checkbox"/> | Protection of the environment from nuclear actions (sections 21 and 22A) |
| <input type="checkbox"/> | Commonwealth marine environment (sections 23 and 24A) |
| <input type="checkbox"/> | Great Barrier Reef Marine Park (sections 24B and 24C) |
| <input type="checkbox"/> | A water resource, in relation to coal seam gas development and large coal mining development (sections 24D and 24E) |
| <input type="checkbox"/> | Protection of the environment from actions involving Commonwealth land (sections 26 and 27A) |
| <input type="checkbox"/> | Protection of the environment from Commonwealth actions (section 28) |
| <input type="checkbox"/> | Commonwealth Heritage places overseas (sections 27B and 27C) |

Specify the key reasons why you think the proposed action is likely to have a significant adverse impact on the matters identified above.

7 Environmental record of the responsible party

NOTE: If a decision is made that a proposal needs approval under the EPBC Act, the Environment Minister will also decide the assessment approach. The EPBC Regulations provide for the environmental history of the party proposing to take the action to be taken into account when deciding the assessment approach.

		Yes	No
7.1	<p>Does the party taking the action have a satisfactory record of responsible environmental management?</p> <p>Provide details</p>		
7.2	<p>Has either (a) the party proposing to take the action, or (b) if a permit has been applied for in relation to the action, the person making the application - ever been subject to any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources?</p> <p>If yes, provide details</p>		
7.3	<p>If the party taking the action is a corporation, will the action be taken in accordance with the corporation's environmental policy and planning framework?</p> <p>If yes, provide details of environmental policy and planning framework</p>		
7.4	<p>Has the party taking the action previously referred an action under the EPBC Act, or been responsible for undertaking an action referred under the EPBC Act?</p> <p>Provide name of proposal and EPBC reference number (if known)</p>		

8 Information sources and attachments

(For the information provided above)

8.1 References

- List the references used in preparing the referral.
- Highlight documents that are available to the public, including web references if relevant.

8.2 Reliability and date of information

For information in section 3 specify:

- source of the information;
- how recent the information is;
- how the reliability of the information was tested; and
- any uncertainties in the information.

8.3 Attachments

Indicate the documents you have attached. All attachments must be less than three megabytes (3mb) so they can be published on the Department's website. Attachments larger than three megabytes (3mb) may delay the processing of your referral.

		✓ attached	Title of attachment(s)
You must attach	figures, maps or aerial photographs showing the project locality (section 1)		
	GIS file delineating the boundary of the referral area (section 1)		
	figures, maps or aerial photographs showing the location of the project in respect to any matters of national environmental significance or important features of the environments (section 3)		
If relevant, attach	copies of any state or local government approvals and consent conditions (section 2.5)		
	copies of any completed assessments to meet state or local government approvals and outcomes of public consultations, if available (section 2.6)		
	copies of any flora and fauna investigations and surveys (section 3)		
	technical reports relevant to the assessment of impacts on protected matters that support the arguments and conclusions in the referral (section 3 and 4)		
	report(s) on any public consultations undertaken, including with Indigenous stakeholders (section 3)		

9 Contacts, signatures and declarations

NOTE: Providing false or misleading information is an offence punishable on conviction by imprisonment and fine (s 489, EPBC Act).

Under the EPBC Act a referral can only be made by:

- the person proposing to take the action (which can include a person acting on their behalf); or
- a Commonwealth, state or territory government, or agency that is aware of a proposal by a person to take an action, and that has administrative responsibilities relating to the action¹.

Project title:

9.1 Person proposing to take action

This is the individual, government agency or company that will be principally responsible for, or who will carry out, the proposed action.

If the proposed action will be taken under a contract or other arrangement, this is:

- the person for whose benefit the action will be taken; or
- the person who procured the contract or other arrangement and who will have principal control and responsibility for the taking of the proposed action.

If the proposed action requires a permit under the Great Barrier Reef Marine Park Act², this is the person requiring the grant of a GBRMP permission.

The Minister may also request relevant additional information from this person.

If further assessment and approval for the action is required, any approval which may be granted will be issued to the person proposing to take the action. This person will be responsible for complying with any conditions attached to the approval.

If the Minister decides that further assessment and approval is required, the Minister must designate a person as a proponent of the action. The proponent is responsible for meeting the requirements of the EPBC Act during the assessment process. The proponent will generally be the person proposing to take the action³.

1. Name and Title:

2. Organisation (if applicable):

Organisation name should match entity identified in ABN/ACN search

3. EPBC Referral Number (if known):

4: ACN / ABN (if applicable):

5. Postal address

6. Telephone:

7. Email:

8. Name of proposed proponent (if not the same person at item 1 above and if applicable):

9. ACN/ABN of proposed

¹ If the proposed action is to be taken by a Commonwealth, state or territory government or agency, section 8.1 of this form should be completed. However, if the government or agency is aware of, and has administrative responsibilities relating to, a proposed action that is to be taken by another person which has not otherwise been referred, please contact the Referrals Gateway (1800 803 772) to obtain an alternative contacts, signatures and declarations page.

² If your referred action, or a component of it, is to be taken in the Great Barrier Reef Marine Park the Minister is required to provide a copy of your referral to the Great Barrier Reef Marine Park Authority (GBRMPA) (see section 73A, EPBC Act). For information about how the GBRMPA may use your information, see http://www.gbrmpa.gov.au/privacy/privacy_notice_for_permits.

proponent (if not the same person named at item 1 above):

COMPLETE THIS SECTION ONLY IF YOU QUALIFY FOR EXEMPTION FROM THE FEE(S) THAT WOULD OTHERWISE BE PAYABLE

I qualify for exemption from fees under section 520(4C)(e)(v) of the EPBC Act because I am:

- an individual; OR
- a small business entity (within the meaning given by section 328-110 (other than subsection 328-119(4)) of the *Income Tax Assessment Act 1997*); OR
- not applicable.

If you are small business entity you must provide the Date/Income Year that you became a small business entity:

Note: You must advise the Department within 10 business days if you cease to be a small business entity. Failure to notify the Secretary of this is an offence punishable on conviction by a fine (regulation 5.23B(3) *Environment Protection and Biodiversity Conservation Regulations 2000* (Cth)).

COMPLETE THIS SECTION ONLY IF YOU WOULD LIKE TO APPLY FOR A WAIVER

I would like to apply for a waiver of full or partial fees under Schedule 1, 5.21A of the EPBC Regulations. Under sub regulation 5.21A(5), you must include information about the applicant (if not you) the grounds on which the waiver is sought and the reasons why it should be made:
Declaration

- not applicable.

I declare that to the best of my knowledge the information I have given on, or attached to this form is complete, current and correct.
I understand that giving false or misleading information is a serious offence.
I agree to be the proponent for this action.
I declare that I am not taking the action on behalf of or for the benefit of any other person or entity.

Signature

Date

9.2 Person preparing the referral information (if different from 8.1)

Individual or organisation who has prepared the information contained in this referral form,

Name

Title

Organisation

ACN / ABN (if applicable)

Postal address

Telephone

Organisation name should match entity identified in ABN/ACN search

Email

Declaration

I declare that to the best of my knowledge the Information I have given on, or attached to this form is complete, current and correct.
I understand that giving false or misleading information is a serious offence.

Signature

Date

REFERRAL CHECKLIST

NOTE: This checklist is to help ensure that all the relevant referral information has been provided. It is not a part of the referral form and does not need to be sent to the Department.

HAVE YOU:

- Completed all required sections of the referral form?
- Included accurate coordinates (to allow the location of the proposed action to be mapped)?
- Provided a map showing the location and approximate boundaries of the project area?
- Provided a map/plan showing the location of the action in relation to any matters of NES?
- Provided a digital file (preferably ArcGIS shapefile, refer to guidelines at [Attachment A](#)) delineating the boundaries of the referral area?
- Provided complete contact details and signed the form?
- Provided copies of any documents referenced in the referral form?
- Ensured that all attachments are less than three megabytes (3mb)?
- Sent the referral to the Department (electronic and hard copy preferred)?

Geographic Information System (GIS) data supply guidelines

If the area is less than 5 hectares, provide the location as a point layer. If the area greater than 5 hectares, please provide as a polygon layer. If the proposed action is linear (eg. a road or pipeline) please provide a polyline layer.

GIS data needs to be provided to the Department in the following manner:

- Point, Line or Polygon data types: ESRI file geodatabase feature class (preferred) or as an ESRI shapefile (.shp) zipped and attached with appropriate title
- Raster data types: Raw satellite imagery should be supplied in the vendor specific format.
- Projection as GDA94 coordinate system.

Processed products should be provided as follows:

- For data, uncompressed or lossless compressed formats is required - GeoTIFF or Imagine IMG is the first preference, then JPEG2000 lossless and other simple binary+header formats (ERS, ENVI or BIL).
- For natural/false/pseudo colour RGB imagery:
 - If the imagery is already mosaiced and is ready for display then lossy compression is suitable (JPEG2000 lossy/ECW/MrSID). Prefer 10% compression, up to 20% is acceptable.
 - If the imagery requires any sort of processing prior to display (i.e. mosaicing/colour balancing/etc) then an uncompressed or lossless compressed format is required.

Metadata or 'information about data' will be produced for all spatial data and will be compliant with ANZLIC Metadata Profile. (http://www.anzlic.org.au/policies_guidelines#guidelines).

The Department's preferred method is using ANZMet Lite, however the Department's Service Provider may use any compliant system to generate metadata.

All data will be provide under a Creative Commons license (<http://creativecommons.org/licenses/by/3.0/au/>)

REQUEST FOR REFERRAL OF PROPOSAL TO TAKE AN ACTION – KINGVALE STATION

I, **Dean Knudson**, Deputy Secretary of the Department of the Environment, make the following findings in requesting Mr Scott Alexander Harris to refer a proposed action to the Minister for the Environment, pursuant to section 70(1)(a) of the *Environment Protection and Biodiversity Conservation Act 1999* (the **EPBC Act**).

FINDINGS

Proposal to take an action

1. Mr Harris is registered on title as the leaseholder of Lot 1 on KG3 in Queensland. This land is also known as Lot 1 of Survey Plan 280074, and Kingvale Station.
2. Mr Harris applied for, and was granted, a permit to clear vegetation under the *Sustainable Planning Act 2009* (Qld) for dryland sorghum cultivation in particular areas on Kingvale Station (the **permit**). Those areas are identified as Area A1, A2, A3, A4 and A5 on the attached map titled "Referral Agency Response (Vegetation) Plan. Plan of Area A (Parts A1 - A5) in Lot 1 on KG3".
3. The Queensland Government granted Mr Harris the permit on 16 April 2014.
4. As far as I am aware, Mr Harris is the only person permitted to undertake work of the type described in the permit. I am not aware of any other persons having sought a similar permit. Accordingly, I conclude that Mr Harris is the person who proposes to take the action to clear vegetation in accordance with the permit, and accordingly is the appropriate person to receive this section 70 request.
5. On 7 December 2015, an officer of the Department of the Environment spoke with [redacted] Section 47F [redacted]. The Department officer prepared a note of that discussion in which he recorded that when [redacted] Section 47F [redacted] was asked when clearing would be undertaken at Kingvale Station, he said words to the effect of "I don't know, it could be tomorrow, next week or April. The dozers are onsite and ready to go, I'm just waiting for drivers and depending on weather conditions, it could be any day but really I can't tell you when".
6. On 9 December 2015, a Department officer wrote to Mr Harris. In that letter the officer explained that the Department held concerns that clearing subject to the permit was prohibited by Part 3 of the Act, and asked Mr Harris to agree to provide 14 days advance notice to the Department prior to the proposed clearing.
7. On 22 December 2015, the Department revised this request, asking only to be notified 14 days in advance of the commencement of clearing in areas A3, A4 and A5.
8. Mr Harris has not provided any such notice, nor has he agreed to provide such notice.
9. Satellite imagery of Kingvale Station taken on 28 April 2016 appears to show that clearing had commenced in areas A1 and A2 by this date. Further satellite images taken on 12 May 2016 and 14 May 2016 indicate that by this time clearing in A1 and A2 was complete, or at

least very substantially advanced. I formed these views by comparing the groundcover visible in the satellite imagery in the Areas A1 and A2 in 28 April 2016, 12 May 2016 and 14 May 2016 with satellite images of the same area from 7 April 2016.

10. I also examined the satellite imagery of areas A3, A4 and A5 dated 30 May and 11 June 2016. Based on this examination and a comparison of this imagery with images from 12 April 2016 I formed the view that as of 30 May 2016 clearing was yet to commence, or at least had not been substantially completed, and as of 11 June 2016 it was difficult to tell (but it appears that nothing had changed), in areas A3, A4 or A5 of Kingvale Station.
11. The analysis of the satellite imagery that I have described above indicates that while clearing may not yet have been undertaken in Areas A3, A4 and A5, it has been undertaken in Areas A1 and A2. I infer from the fact of the permit having been sought in relation to all of these areas that it is likely that clearing will commence in Areas A3, A4 and A5 in the near future, if it has not already.
12. I am not aware that any person other than Mr Harris, or a person acting on his behalf, has any authority or proposal to clear vegetation in area A1 or A2 at Kingvale. I infer that this clearing of A1 and A2 was undertaken by Mr Harris, or a person acting on his behalf.
13. In material provided to the Queensland Government in support of Mr Harris's application for the permit, the proposed timing of steps in the project was described as:
 - *"Pull timber after the wet season (after April) when it is dry enough to get dozers on country. This time of year also has maximum ground cover.*
 - *"September – burn the fallen timber. This avoids the more intense dry period later in the year.*
 - *"September – December, Stick rake the area and ground preparation by using disc ploughs*
 - *"On receipt of the first showers of rain ... the proponents will spray weed with ground –rig (boom) and start planting using a large Multiplanter (zero tillage machines that can direct sow and have high clearance)"¹.*
14. The timing of the clearing of A1 and A2 is consistent with Mr Harris pursuing the timetable for the project with a view to clearing on all areas, including A3, A4 and A5, being complete in time for the fallen timber to be burned in September.

Finding concerning the proposal to take an action

On the basis of the information above, I believe that Mr Harris proposes to clear vegetation in area A3, A4 and/or A5 on Kingvale Station and cultivate sorghum crops and intensify cattle grazing on that land, either personally or by other persons acting on his behalf, in the near future.

¹ *Proposed Dryland Cropping of Sorghum and Forage Sorghum for green chop at Kingvale Station west of Laura Peter Spies, Pinnacle Pocket Consulting, p1*

Action may be a controlled action – significant impact on the Great Barrier Reef

15. Areas A3, A4 and A5 constitute an aggregate area of approximately 2,100 hectares of native vegetation.
16. These areas are near to the Hann and Kennedy sub-catchments within the headwaters of the Normanby catchment. The Normanby catchment flows into the Great Barrier Reef Marine Park (**the Park**) which is part of the Great Barrier Reef World Heritage Area (**the World Heritage Area**).
17. The Great Barrier Reef Marine Park Authority (**GBRMPA**) prepared a Strategic Assessment Report (the **GBRMPA Report**) about the World Heritage Area². The GBRMPA Report was endorsed by the Minister pursuant to section 146 of the EPBC Act as adequately addressing the impacts of actions within the Park.
18. The GBRMPA Report identifies that there are a range of activities in the catchment area for the World Heritage Area which may have an impact on its outstanding universal values.
19. The GBRMPA Report identifies that agriculture in the catchment area for the World Heritage Area can have a range of adverse effects, including increased:
 - freshwater inflow into the World Heritage Area;
 - nutrients from catchment run-off flowing into the World Heritage Area; and
 - sediment from catchment run-off flowing into the World Heritage Area (page 6-8).
20. The GBRMPA Report characterises the adverse impact of nutrients and sediment on coral reefs as very high, meaning that the effects of the impact are widespread to the extent that the outstanding universal values of that habitat are severely compromised. The impact of increased freshwater inflow has been assessed as high, meaning that the effects of the impact are obvious in many locations or for many species to the extent that significant additional intervention would be required to maintain the values (the GBRMPA Report, pages 6-46 to 6-47).
21. Abnormally large freshwater inflows can contribute to low salinity bleaching and mortality in corals, or widespread damage to seagrass meadows (the GBRMPA Report, page 6-17).
22. Inorganic nutrients, including nitrogen and phosphorus, cause imbalances in the nutrient cycle of the reef with a wide range of negative impacts.
23. Increased nutrient loads have also been linked to outbreaks of crown of thorn starfish, because the increased nutrients provide food for their larvae. Such outbreaks have been one of the major causes of coral death and reef damage on the Great Barrier Reef since surveys began in the 1980s (the GBRMPA Report, pages 6-18 to 6-19).
24. Increased sediment loads have far reaching effects for the Great Barrier Reef values. In relation to fine sediment, these can include smothering seagrass and corals, making it harder or impossible for them to grow, survive and reproduce (the GBRMPA Report, pages 6-22).
25. Clearing of native vegetation, and sowing agricultural crops in its place, can increase the loads of nutrients and sediment entering the Normanby catchment, due to:

² <http://www.gbrmpa.gov.au/managing-the-reef/strategic-assessment>

- clearing leading to erosion of the soil, with fine sediment washing into the waterways because it is no longer held in place by the native vegetation;
 - fertilisers and pesticides being applied to crops to maximise yield washing into waterways³.
26. Fertiliser requirements for the project have been assessed by Mr Harris's expert, as part of the permit application process, as:
- high; and
 - including nitrogen and phosphorus⁴.
27. Noting that stocking rates will vary according to seasonal conditions, erosion associated with cattle movement across the property, such as bank erosion⁵, may increase as a result an expected intensified stocking rate following the establishment of farming crops on the property. Advice provided by Mr Harris indicates that average stocking rates could triple⁶ from 1,000 to 3,400 head.
28. The Department sought expert advice from a fluvial geomorphology consultant, Dr Jeffrey Shellberg, about the potential downstream impacts from the proposed vegetation clearing at Kingvale, taking into account the work already conducted by Mr Harris's expert.
29. Key conclusions from Dr Shellberg's report⁷ include that:
- The conclusion of Mr Harris's expert that clearing in areas A3, A4 and A5 "will not result in soil erosion stemming from mass movement, gully erosion, rill erosion, sheet erosion, wind erosion, or scalding" is incorrect⁸;
 - Fine sediment pollution from Kingvale Station could contribute to the cumulative impacts of degraded water quality from land use delivered to the Great Barrier Reef, and that the operational and ongoing works at Kingvale could contribute to cumulative adverse impacts on the reef which could push the currently healthy local reef beyond thresholds of ecological stability⁹;
 - Such health impacts and water quality decline are increasing with land use intensification in the northern Great Barrier Reef¹⁰; and

³ *Soil Erosion and Downstream Sedimentation Risks Associated with Proposed Vegetation Clearing for Agricultural Development on Kingvale Station, Lot 1 on Plan KG2, Cape York Peninsula*, Dr Jeffrey Shellberg, January 2016, p10, 24

⁴ *Proposed Dryland Cropping of Sorghum and Forage Sorghum for green chop at Kingvale Station west of Laura Peter Spies*, Pinnacle Pocket Consulting, 5 February 2014, p9

⁵ *Soil Erosion and Downstream Sedimentation Risks Associated with Proposed Vegetation Clearing for Agricultural Development on Kingvale Station, Lot 1 on Plan KG2, Cape York Peninsula*, Dr Jeffrey Shellberg, January 2016, p16

⁶ Property Report submitted to DILGP in support of an application to be granted a permit to undertake a High Value Agriculture farming practice pp19

⁷ *Soil Erosion and Downstream Sedimentation Risks Associated with Proposed Vegetation Clearing for Agricultural Development on Kingvale Station, Lot 1 on Plan KG2, Cape York Peninsula*, Dr Jeffrey Shellberg, January 2016, p28

⁸ *Ibid*, p28. Dr Shellberg describes A3, A4 and A5 as 'Area 1'. The link between these terms is made clear by Figure 2 in Dr Shellberg's report.

⁹ *Ibid* p26

¹⁰ *Ibid* p26

- Neither the assessment by Dr Shellberg nor the assessment by Mr Harris's expert was sufficient to fully and properly assess the potential risks to erosion and downstream sedimentation from agricultural clearing and development of this area.¹¹
30. I place greater weight on the conclusions on Dr Shellberg than the conclusions of Mr Harris's expert, having regard to their respective areas of speciality¹².
31. The Department obtained specific advice from GBRMPA about the proposed clearing at Kingvale Station. GBRMPA's advice acknowledged that there is uncertainty about the effect of particular individual instances of vegetation clearing in the Normanby catchment, but indicated:
- individually, each proposal like Kingvale is certain to increase erosion;
 - it is almost guaranteed that the resulting erosion from large scale clearing will result in fine sediment entering Princess Charlotte Bay during flood events; and
 - GBRMPA considers that caution should be taken in approving any further clearing in the Normanby catchment because this catchment has already been subject to such a large amount of increased erosion.
32. In light of the above, I consider that the proposed action is likely to result in additional nitrogen, phosphorus and/or sediment entering the Great Barrier Reef Marine Park via the Normanby catchment, which has been scientifically linked to coral bleaching, outbreaks of crown of thorns starfish, and smothering of seagrasses and coral.
33. Coral and seagrasses are a part of the environment of the Park, and are key elements of the beauty, integrity and diversity of the World Heritage Area which go to its outstanding universal value.
34. A proposed action which increases sediment and nutrient load in the Park may accordingly have a significant impact on the environment within the Park, the world heritage values of the World Heritage Area, and the national heritage values of the World Heritage Area.
35. I am informed by officers of the Department that they have checked the Department's database of approvals and can see no record of any approval have been sought or granted for this proposed action under the EPBC Act.
36. The clearing, cropping and intensification of grazing of the land involved in the proposed action is a new or intensification of the use of that land, which has to date been used as a breeding enterprise carrying approximately 1,000 cattle¹³.
37. Information available to the Department indicates that intense cattle in tropical savannah landscapes of northern Australia can trigger increased erosion¹⁴.

¹¹ Ibid p28

¹² For Mr Spies, see *Proposed Dryland Cropping of Sorghum and Forage Sorghum for green chop at Kingvale Station west of Laura* Peter Spies, Pinnacle Pocket Consulting, 5 February 2014, page.1
For Dr Shellberg, see page 4

¹³ Property Report submitted to DILGP in support of an application to be granted a permit to undertake a High Value Agriculture farming practice pp19

¹⁴ Alluvial Gully Erosion; A dominant erosion process across tropical northern Australia. J Shellberg, A Brooks. Griffith University November 2012 page 11 - 15

38. The concept of a controlled action is defined in section 67 of the EPBC Act. It specifies that:

An action that a person proposes to take is a controlled action if the taking of the action by the person without approval under Part 9 for the purposes of a provision of Part 3 would be (or would, but for sections 25AA or 28AB, be) prohibited by the provision. The provision is a controlling provision for the action.

Finding concerning whether an action may be a controlled action – significant impact on the Great Barrier Reef

On the basis of the information above, I think that the proposed action may be prohibited by the following provisions of Part 3: sections 12, 15A, 24B(2) and 24C(5) of the EPBC Act. Accordingly, I think that the proposed action may be a controlled action within the meaning of section 67 of the Act.

Materials on which findings are based

39. In making these findings, I have had regard to the materials listed below. I have attached a copy of each of these materials to this letter, except where it is material that was provided by Mr Harris, has previously been provided to Mr Harris, or is publicly available. Copies of any of this previously provided or publicly available material will be provided to Mr Harris on request.

- Report by Mr Peter Spies, Pinnacle Pocket Consulting titled “Proposed Dryland cropping of sorghum and forage sorghum for green chop at Kingvale Station west of Laura”, provided to the Queensland Government by Mr Harris, or his agents, in applying for a High Value Agricultural permit under the Sustainable Planning Act 2009 (Qld) to clear native vegetation in particular areas of Lot 1 of KG3 (Lot 1 of Survey Plan 280074).
- All relevant correspondence relating to the proposal including communications with or between:
 - : Mr Harris or persons acting on his behalf;
 - : The Department of the Environment and/or other Commonwealth agencies and/or or officers of those Departments;
 - : The Queensland Department of State Development, Infrastructure and Planning.
- EPBC Act referral guidelines for the Outstanding Universal Value of the Great Barrier Reef World Heritage Area, Commonwealth of Australia 2014’ (available at http://www.environment.gov.au/system/files/resources/e8e47508-5ea4-457b-adeb-b9c1364e9bec/files/referral-guidelines-great-barrier-reef_0.pdf).
- GBRWHA Strategic Assessment Report (available at <http://www.gbrmpa.gov.au/managing-the-reef/strategic-assessment>).
- Reports titled:
 - : “Soil Erosion and Downstream Sedimentation Risks Associated with Proposed Vegetation Clearing for Agricultural Development on Kingvale Station, Lot 1 on

Plan KG2, Cape York Peninsula" by Dr. Jeffrey Shellberg, a Fluvial Geomorphology Consultant;

- "Alluvial Gully Erosion; A dominant erosion process across tropical northern Australia". J Shellberg, A Brooks. Griffith University November 2012 (available at http://www.track.org.au/sites/default/files/managed/file-attach/biblio/Full_Report_Alluvial_Gully_Erosion_final.pdf);
- "Alluvial Gully Prevention and Rehabilitation Options for reducing Sediment loads in the Normanby Catchment and Northern Australia" J Shellberg, A Brooks. Griffith University, Australian Rivers Institute December 2013
- GBRMPA advice about potential impacts of the proposed action on the environment in the Great Barrier Reef Marine Park.
- A Notice of decision given under section 334 of the *Sustainable Planning Act 2009* (Qld) for Kingvale Station – Lot 1 of KG3 dated 16 April 2014.
- Significant impact Guidelines 1.1
<http://www.environment.gov.au/epbc/publications/significant-impact-guidelines-11-matters-national-environmental-significance>
- Information about the Normanby catchment from Griffith University Australians Rivers Institute, "An Empirically-based sediment budget for the Normanby Basin: Sediment Sources, Sinks and Drivers on the Cape York Savannah", AP Brooks, J Spencer, J Olley, T Pietsch, D Borombovits; G Curwen, JG Shellberg (available at <http://www.capeyorkwaterquality.info/references/cywq-229>).
- EPBC Act Policy Statement - 'Indirect consequences' of an action: Section 527E of the EPBC Act" <http://www.environment.gov.au/resource/epbc-act-policy-statement-indirect-consequences-action-section-527e-epbc-act>
- EPBC Act Policy Statement - Definition of 'Environment' under section 528 of the EPBC Act <http://www.environment.gov.au/resource/epbc-act-policy-statement-definition-environment-under-section-528-epbc-act>
- LandSat 8 and Sentinel- 2 satellite imagery of Kingvale Station.
- Title search – Lot 1 of Survey Plan 280074.

Dean Knudson
Deputy Secretary

23 June 2016

**EXTRACT FROM THE ENVIRONMENT PROTECTION AND BIODIVERSITY
CONSERVATION ACT 1999**

Compilation #50 16 June 2016, Included amendments up to Act No.47, 2016

Registered 20 June 2016 <https://www.legislation.gov.au/Details/C2016C00521/Download>

70 Minister may request referral of proposal

- (1) If the Minister believes a person proposes to take an action that the Minister thinks may be or is a controlled action, the Minister may request:
- (a) the person; or
 - (b) a State, self-governing Territory or agency of a State or self-governing Territory that the Minister believes has administrative responsibilities relating to the action;
- to refer the proposal to the Minister within 15 business days or a longer period agreed by the Minister and the requested person, State, Territory or agency (as appropriate).

Note 1: If the proposal to take the action is not referred, the person cannot get an approval under Part 9 to take the action. If taking the action without approval contravenes Part 3, an injunction could be sought to prevent or stop the action, or the person could be ordered to pay a pecuniary penalty.

Note 2: Section 156 sets out rules about time limits.

- (2) In making a request, the Minister must act in accordance with the regulations (if any).

Deemed referral of proposal

- (3) If:
- (a) the Minister has made a request under subsection (1); and
 - (b) the period for compliance with the request has ended; and
 - (c) the requested person has not referred the proposal to the Minister in accordance with the request;
- the Minister may, within 20 business days after the end of that period, determine in writing that this Act has effect as if:
- (d) if paragraph (1)(a) applies—the requested person had referred the proposal to the Minister under subsection 68(1) at the time the determination was made; or
 - (e) if paragraph (1)(b) applies—the requested person had referred the proposal to the Minister under subsection 69(1) at the time the determination was made.
- (4) A determination under subsection (3) has effect accordingly.
- (5) A copy of a determination under subsection (3) is to be given to the requested person.
- (6) Subsection 68(3) and section 72 do not apply to a referral covered by subsection (3) of this section.
- (8) Subsection 74(3) applies to a referral covered by subsection (3) of this section as if the reference in paragraph 74(3)(a) to the referral were a reference to the determination concerned.

David Kempton
Lawyer
PO BOX 732
EDGE HILL QLD 4870

The Director
Compliance Section
Department of Environment
GPO Box 787
Canberra ACT 2601.

Reference CAS 2097

Section 22

Dear Sir

Re Kingvale Station

I refer to your letter of the 23rd June 2016 (the **Section 70 Notice**) and to your letter of 28th June 2016.

Section 70 Notice

In this notice, the basis for the monitoring warrant obtained and the concerns about the imminent clearing is stated to be because "...I have not been able to engage with you about this matter".

Please advise as to each occasion and the method of communication by which the Department sought to engage with my client in relation to the inspection of Kingvale Station which occurred on the 23rd June 2016.

By email at 4.24pm on 23 June 2016, **Section 22** forwarded to me the following documents referring to her email earlier that day enclosing the Section 70 Notice –

- Satellite images – Map 1: Kingvale Station (SDA 0214-008018) imagery comparison (northern parcel) (12/4/2016)
- Satellite images – Map 2 Kingvale (SDA 0214-008018) imagery comparison (southern parcels) (7/4/2016)
- Satellite images – Map 1: Kingvale Station (SDA 0214-00818) imagery comparison (northern parcel) (12/5/2016)
- Satellite images – Map 1: Kingvale Station (SDA 0214-00818) imagery comparison (northern parcel) 14/5/2016
- Satellite images – Map 2: Kingvale Station (SDA 0214-00818) imagery comparison (southern parcels) 12/4/2016
- Satellite images – Map 2: Kingvale Station (SDA 0214-00818) imagery comparison (southern parcels) 14/5/2016

- Redacted email communication unknown author, unknown recipient and dated 14 December 2015 regarding Kingvale Station enclosing redacted email communication from author at the Great Barrier Reef Marine Park Authority to unknown recipient dated 8 December 2015
- Redacted email communications dated 3 December 2016 from unknown author at Reef Branch – BioDiversity Conservation Division Department of Environment to unknown recipient regarding ‘Erosion Hazard Potential’.

The Section 70 Notice invites my client to make a submission if he does not intend to refer the action the subject of the notice. So that my client may consider whether or not to make the requested referral or to make a submission the following information is requested on an urgent basis.

- 1) In respect to the redacted emails provided to me by **Section 22** please provide –
 - unredacted copies or identify the precise basis for each and every redaction contained in those emails;
 - an explanation as to the relevance of these emails to the Section 70 Notice.
- 2) A complete copy of ‘Soil Erosion and Downstream Sedimentation Risks Associated with Proposed Vegetation Clearing for Agricultural Development on Kingvale Station, Lot 1 on Plan KG2, Cape York Peninsula’ by Dr Jeffrey Shellberg, January 2016.
- 3) All other reports and findings relied upon for issuing the Section 70 Notice.
- 4) The inspection report from the 23rd June 2016 undertaken by your department.

Please provide this material to me as a matter of urgency so that my client may obtain the necessary technical or other advice required to make a considered response to the Section 70 Notice.

Correspondence of 28 June 2016

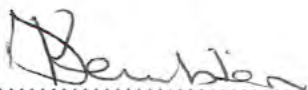
I note that your letter of 28 June 2016 states that -

- no further investigations concerning areas A1 and A2 will be undertaken;
- you do not consider there to be any evidence of a contravention of the Act;
- you do not propose to ‘call-in’ those actions for assessment under the EPBC Act.

I further note that areas A1 and A2 are not the subject of the Section 70 Notice.

I await your reply.

Yours sincerely



.....
David Kempton
29 June 2016

From: Section 22
To: "David Kempton"
Cc: Section 22 Gaddes, Shane; Section 22 Section 22
Subject: Kingvale Station
Date: Monday, 4 July 2016 1:39:12 PM
Attachments: [Shellberg_Kingvale_Clearing_Erosion_Risk_FINAL.pdf](#)
[160623_Inspection_Report_Kingvale_Station.pdf](#)
[Corro_160704_Kempton.pdf](#)

Dear Mr Kempton

Please refer the enclosures.

For convenience , the hyperlinks detailed in the attached correspondence follow:

- EPBC Act referral guidelines for the Outstanding Universal Value of the Great Barrier Reef World Heritage Area, Commonwealth of Australia 2014' (available at http://www.environment.gov.au/system/files/resources/e8e47508-5ea4-457b-adeb-b9c1364e9bec/files/referral-guidelines-great-barrier-reef_0.pdf).
- GBRWHA Strategic Assessment Report (available at <http://www.gbrmpa.gov.au/managing-the-reef/strategic-assessment>).
- "Alluvial Gully Erosion; A dominant erosion process across tropical northern Australia". J Shellberg, A Brooks. Griffith University November 2012 (available at http://www.track.org.au/sites/default/files/managed/file-attach/biblio/Full_Report_Alluvial_Gully_Erosion_final.pdf).
- "Alluvial Gully Prevention and Rehabilitation Options for reducing Sediment loads in the Normanby Catchment and Northern Australia" J Shellburg, A Brooks. Griffith University, Australian Rivers Institute December 2013 (available at <http://www.capeyorkwaterquality.info/references/cywq-223>).
- Significant impact Guidelines 1.1 (available at <http://www.environment.gov.au/epbc/publications/significant-impact-guidelines-11-matters-national-environmental-significance>).
- Information about the Normanby catchment from Griffith University Australians Rivers Institute, "An Empirically-based sediment budget for the Normanby Basin: Sediment Sources, Sinks and Drivers on the Cape York Savannah", AP Brooks, J Spencer, J Olley, T Pietsch, D Borombovits; G Curwen, JG Shellberg (available at <http://www.capeyorkwaterquality.info/references/cywq-229>).
- *EPBC Act Policy Statement - 'Indirect consequences' of an action: Section 527E of the EPBC Act* <http://www.environment.gov.au/resource/epbc-act-policy-statement-indirect-consequences-action-section-527e-epbc-act>
- EPBC Act Policy Statement - Definition of 'Environment' under section 528 of the EPBC Act <http://www.environment.gov.au/resource/epbc-act-policy-statement-definition-environment-under-section-528-epbc-act>

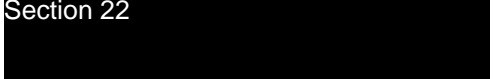
Yours sincerely

Section 22 Assistant Director |
Compliance

Environment Standards Division |

Department of Environment
GPO Box 787 Canberra ACT 2601

Section 22





Australian Government
Department of the Environment

Mr David Kempton
PO Box 732
EDGE HILL QLD 4870

By Email to dkempton@bigpond.com

Dear Mr Kempton

Environment Protection and Biodiversity Conservation Act 1999
Re: Kingvale Station, Cape York, Queensland

I refer to your letter of 29 July 2016, which raised a number of questions. I have dealt with each separately below.

1. Previous engagement in relation to potential environmental impacts

I refer you to our letters of 6 May 2015, 9 December 2015, 11 December 2015, 22 December 2015, and 13 January 2016 and your client's responses (or those of his representatives) dated 9 June 2015, 10 June 2015, 9 December 2015, 11 December 2015, 15 February 2016. I also refer you to the telephone conversations between an officer from the Department and [REDACTED] **Section 47F** on 7 December 2015, and a number of recent phone calls between senior executives of this Department and yourself, most recently on 23 June 2016.

2. Documents supporting the section 70 notice

We sent you the section 70 letter by email on the morning of 23 June 2016, and also called you at that time.

Paragraph 39 of Attachment 3 to that letter lists the material on which the Findings were made, and notes that copies of documents will be provided, except where it is material that has previously been provided to Mr Harris, or is publicly available.

We provided those documents through a separate email to you on the afternoon of 23 June 2016.

Redacted emails

The emails that you refer to (from 3, 8 and 14 December 2015) were redacted on the grounds that they contain personal information (such as names of Departmental officers), or were not relevant to the Findings.

As to the relevance of the content of those emails to the Findings, they provide information regarding potential impact of the proposed action on matters protected by the EPBC Act (specifically, the Great Barrier Reef Marine Park).

Shellberg Report, January 2016

A copy of 'Soil Erosion and Downstream sedimentation Risks Associated with Proposed Vegetation Clearing for Agricultural Development on Kingvale Station, Lot 1 on Plan KG2, Cape York Peninsula' by Dr Jeffrey Shellberg, January 2016, was provided to you as an attachment to our letter of 13 January 2016, and is also attached to this letter.

All other reports and findings

As indicated in our letter dated 23 June 2016, Attachment 3 sets out the Findings relied upon for requesting the referral of the proposed action and paragraph 39 of that Attachment lists the material upon which the Findings were based.

As noted above and in our letter of 23 June 2016, we did not provide copies of publicly available reports. These reports can be accessed at the links below:

- EPBC Act referral guidelines for the Outstanding Universal Value of the Great Barrier Reef World Heritage Area, Commonwealth of Australia 2014' (available at http://www.environment.gov.au/system/files/resources/e8e47508-5ea4-457b-adeb-b9c1364e9bec/files/referral-guidelines-great-barrier-reef_0.pdf).
- GBRWHA Strategic Assessment Report (available at <http://www.gbrmpa.gov.au/managing-the-reef/strategic-assessment>).
- "Alluvial Gully Erosion; A dominant erosion process across tropical northern Australia", J Shellberg, A Brooks. Griffith University November 2012 (available at http://www.track.org.au/sites/default/files/managed/file-attach/biblio/Full_Report_Alluvial_Gully_Erosion_final.pdf).
- "Alluvial Gully Prevention and Rehabilitation Options for reducing Sediment loads in the Normanby Catchment and Northern Australia" J Shellburg, A Brooks. Griffith University, Australian Rivers Institute December 2013 (available at <http://www.capeyorkwaterquality.info/references/cywq-223>).
- Significant impact Guidelines 1.1 (available at <http://www.environment.gov.au/epbc/publications/significant-impact-guidelines-11-matters-national-environmental-significance>).
- Information about the Normanby catchment from Griffith University Australians Rivers Institute, "An Empirically-based sediment budget for the Normanby Basin: Sediment Sources, Sinks and Drivers on the Cape York Savannah", AP Brooks, J Spencer, J Olley, T Pietsch, D Borombovits; G Curwen, JG Shellberg (available at <http://www.capeyorkwaterquality.info/references/cywq-229>).
- EPBC Act Policy Statement - 'Indirect consequences' of an action: Section 527E of the EPBC Act" <http://www.environment.gov.au/resource/epbc-act-policy-statement-indirect-consequences-action-section-527e-epbc-act>

- FOI 190322
Document 2e
- EPBC Act Policy Statement - Definition of 'Environment' under section 528 of the EPBC Act <http://www.environment.gov.au/resource/epbc-act-policy-statement-definition-environment-under-section-528-epbc-act>

If you would like copies of these publicly available reports on a USB, or in hard copy, please let us know an appropriate postal address to send them to.

The inspection report

A copy of the Inspection report is enclosed for your information.

Contact

For further information about this matter, please contact **Section 22**, Director Compliance Section, compliance@environment.gov.au.

Yours sincerely

S. Gaddes

Shane Gaddes
Assistant Secretary
Compliance and Enforcement Branch

4 July 2016

**Soil Erosion and Downstream Sedimentation Risks Associated with
Proposed Vegetation Clearing for Agricultural Development
on Kingvale Station, Lot 1 on Plan KG2, Cape York Peninsula**

Produced By:

Dr. Jeffrey Shellberg

Fluvial Geomorphology Consultant

January 2016



Produced For:

Department of the Environment

Commonwealth of Australia

Report Limitations:

The information in this report is for the exclusive use of the Department of the Environment, Commonwealth of Australia, the only intended beneficiary of the work. The author cannot be held liable for third party reliance on this document. The information herein could be different if the information upon which it is based is determined to be inaccurate or incomplete. The results of work carried out by others may have been used in the preparation of this report. These results have been used in good faith, and the author is not responsible for their accuracy. The work herein is a professional account of the site conditions at the time of investigation; it is prepared in the context of inherent limitations associated with any investigation of this type. The views and assessments expressed in this report are those of the author and do not necessarily reflect those of the Commonwealth of Australia. While reasonable effort has been made to ensure that the contents of this publication are factually correct, the author shall not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance on, the contents of this publication.

Citation:

Shellberg, J., 2016. *Soil Erosion and Downstream Sedimentation Risks Associated with Proposed Vegetation Clearing for Agricultural Development on Kingvale Station, Lot 1 on Plan KG2, Cape York Peninsula*. Produced for the Department of the Environment, Commonwealth of Australia, 33pp.

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1 Introduction

It is currently proposed to clear and develop 2,863 hectares of forested land for agricultural cropping on Kingvale Station, Lot 1 on Plan KG2, Cape York Peninsula (Spies 2014). The proposal is to clear native forest vegetation from 2408 ha of land in the headwaters of the Normanby Catchment (Hann and Kennedy River sub-catchments) and 455 ha of land in the headwaters of the Mitchell Catchment (King and Palmer River sub-catchments) (Figure 1). This proposed clearing was approved in January 2015 by the previous Queensland State Government, but clearing has not yet commenced at the time of this report in January 2016. The Commonwealth of Australia, Department of Environment, commissioned Dr. Jeffrey Shellberg [BSc Geoscience, MSc Forest Hydrology, PhD Fluvial Geomorphology) to advise on the risks to soil and gully erosion that the proposed project could generate and accelerate, as well as downstream sedimentation impacts. The specific scope of the assessment were to:

- 1) Examine the formation and structure of the geological features within Kingvale Station;
- 2) Advise as to whether or not the soil types and topography of those portions of the property upon which the clearing is proposed to be undertaken, have the potential to result in increased erosion risk;
- 3) Advise as to how, should there be an increase in erosion, could this impact on sediment load delivered into the Normanby catchment and subsequently onto the Great Barrier Reef;
- 4) Report on any limitations and assumptions associated with predictions and assessments; and
- 5) Advise on the need for further surveys or assessments to address data deficiencies.

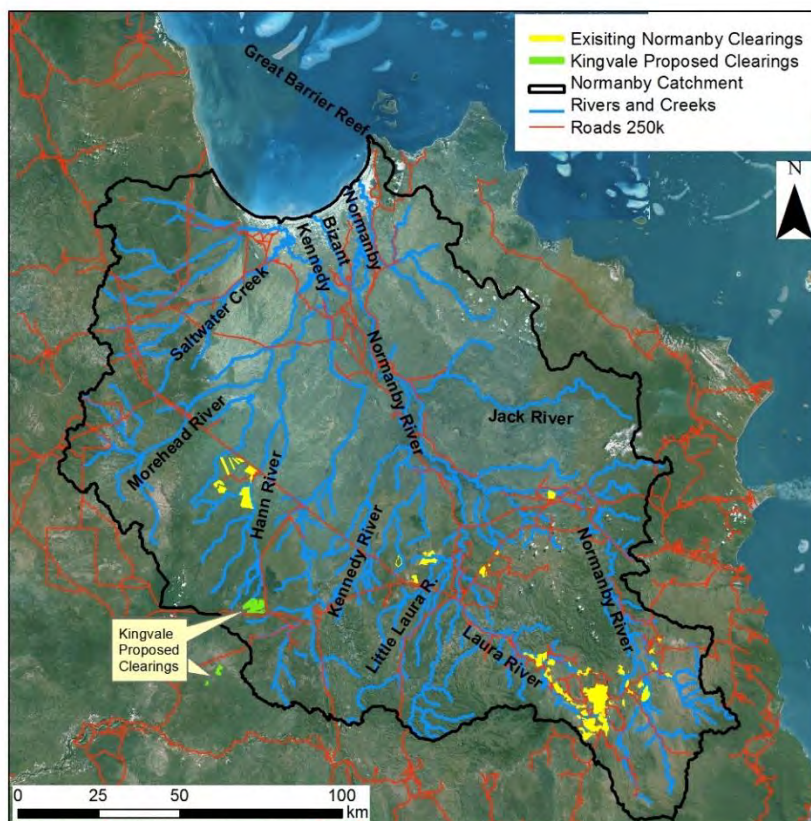


Figure 1 Locations of the proposed forest clearings for agriculture on Kingvale Station in the Normanby Catchment (Area 1) and the adjacent Mitchell Catchment (Area 2 and 3). Also shown are the exiting forest clearings for agricultural and pasture in the Normanby catchment, as well as other proposed clearings.

Time limitations at the beginning of the 2015/2016 rainfall wet season only allowed for the preliminary field assessment of Area 1 (2408 ha) proposed to be cleared on Kingvale Station. Area 1 is located the headwaters of the Normanby Catchment (Hann/Kennedy River sub-catchments) at the edge of the Kimba Plateau (Figure 2; Spies 2014). Proposed Areas 2 and 3 (455 ha of land) in the Mitchell Catchment were not assessed for their potential land use impact on soil erosion, but should be in the near future.

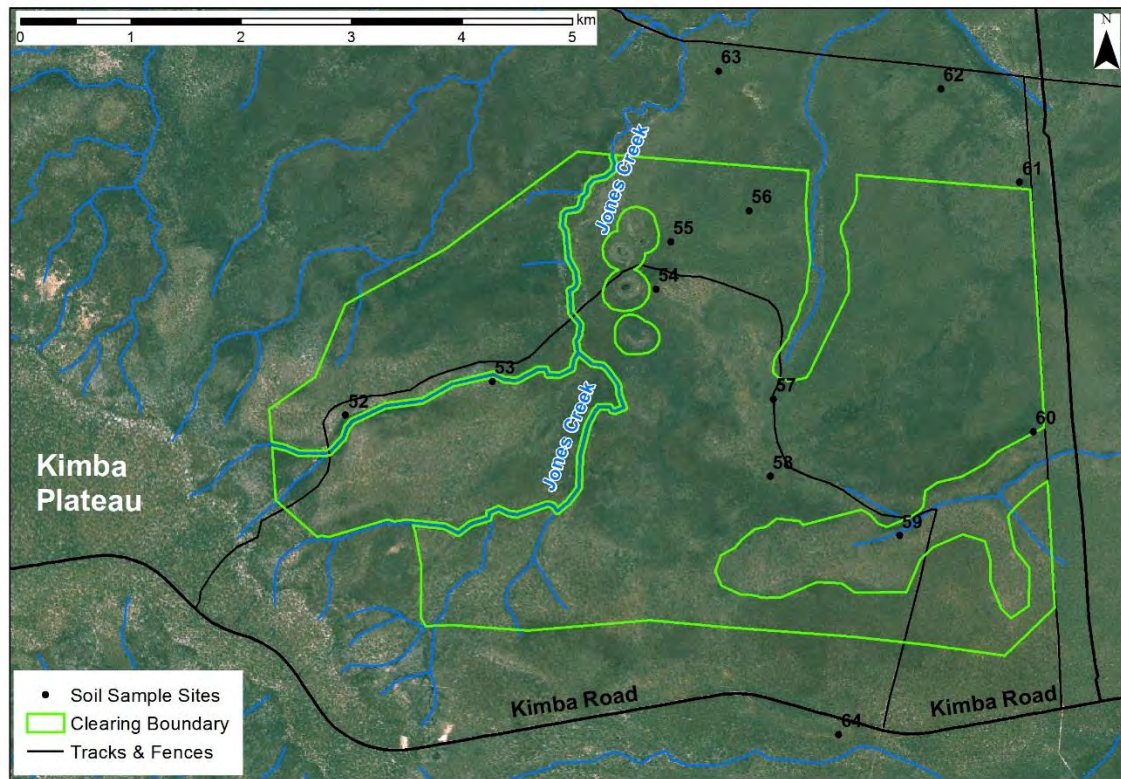


Figure 2 The proposed Area 1 (2408 ha) to be cleared for agriculture (green area) in the Normanby catchment and headwaters of the Hann River (Jones Creek) and Kennedy River (Emu Creek). Soil site numbers from Spies 2014 are included in the map.

2 Methods

The supporting detail provided for the proposed clearings on Kingvale Station is the report titled *“Proposed Dryland Cropping of Sorghum and Forage Sorghum for green chop at Kingvale Station west of Laura”* (Spies 2014), along with associated soil test data. A detailed Environmental Impact Assessment has not been conducted for this proposed development. Thus for this preliminary assessment of soil erosion risk, the proposal and report by Spies (2014) is reviewed for context, data, and assessment validity, as is the field potential for accelerated erosion from the proposed land use development.

2.1 Desk-Based Review of Regional Data and Literature Relevant to Soil Erosion Risk

Existing data and reports on the physical landscape of the Kimba Plateau and surroundings were consulted to provide the hydrogeomorphic context for the site of the proposed clearing at Area 1 on Kingvale Station. Historic reports and data on soils (Isbell et al. 1968; Biggs 1994a; Biggs and Philip 1995ab), land systems (Galloway et al., 1970), topography (SRTM DTED2, 2000), geology (Whitaker and Grimes 1977; Wilford et al. 1995; Blewett and Wilford 1996), and hydrology (Horn 1995; Horn et al. 1995) were consulted for general site context. Much of the physical landscape information

contained in these reports and others has already been summarised for the Kimba Plateau region, along with new local data and information, which are contained in a detailed synthesis report (Shellberg et al. 2015). A wider scientific literature review of the physical and biological values of this part of the Great Dividing Range is provided by Shellberg (2014).

The regional context of soil and gully erosion on Cape York Peninsula is provided by detailed work on sediment sources and sediment budgets in the Normanby catchment (Brooks et al. 2013; Gleeson 2012) and Mitchell catchment (Rustomji et al. 2010; Shellberg 2011). Soil and gully erosion observations from similar land systems to those on Kingvale on the edges of the Great Dividing Range (Shellberg and Grimes 2012; Barber et al. 2012; Shellberg et al. 2015) also are relied upon to assess risks to gully erosion from land use development. International scientific journal articles relevant to these Quaternary and Tertiary landscapes are cited as supporting documentation for erosion risk. Knowledge of regionally appropriate Best Management Practices (BMPs) to prevent or minimise soil and gully erosion are also utilised to assess the risks to erosion and downstream sedimentation (Shellberg and Brooks 2013).

These detailed reviews and reports are not repeated here in detail, but are relied upon for context and supporting information where appropriate and needed for the site situation at Kingvale.

2.2 Field Visit to Kingvale

A field visit and preliminary site assessment of Area 1 (2408 ha) proposed to be cleared on Kingvale Station was conducted on 14th of December 2015 accompanied by Department of Environment (DoE) staff and the Manager of Kingvale Station. The internal and external landscape of Area 1 was traversed by vehicle and foot to assess on-site erosion and off-site sedimentation potential. A variety of geomorphic features and soil types were visited. The assessment of erosion risk focused on sensitive features of the landscape, as indicated by existing erosion under current grazing land use. These observations, along with regional data and observations of erosion in similar land systems, are used to assess potential future erosion risks from agricultural development.

3 Results

3.1 Landscape Context

The proposed clearing of Area 1 is located just below the eastern edge of the Kimba Plateau located at 250m above sea level (Figure 3). Elevations within the proposed clearing area range from 150m to 200m with average slopes less than 1.2%, but with greater local slopes along banks of creeks and drainage valleys. The proposed Area 1 is drained on its western half by the headwaters of Jones Creek, a tributary of Wangow Creek and the Hann River, whereas the south-eastern part of Area 1 is drained by a tributary of Emu Creek, a spring-fed tributary to the Kennedy River.

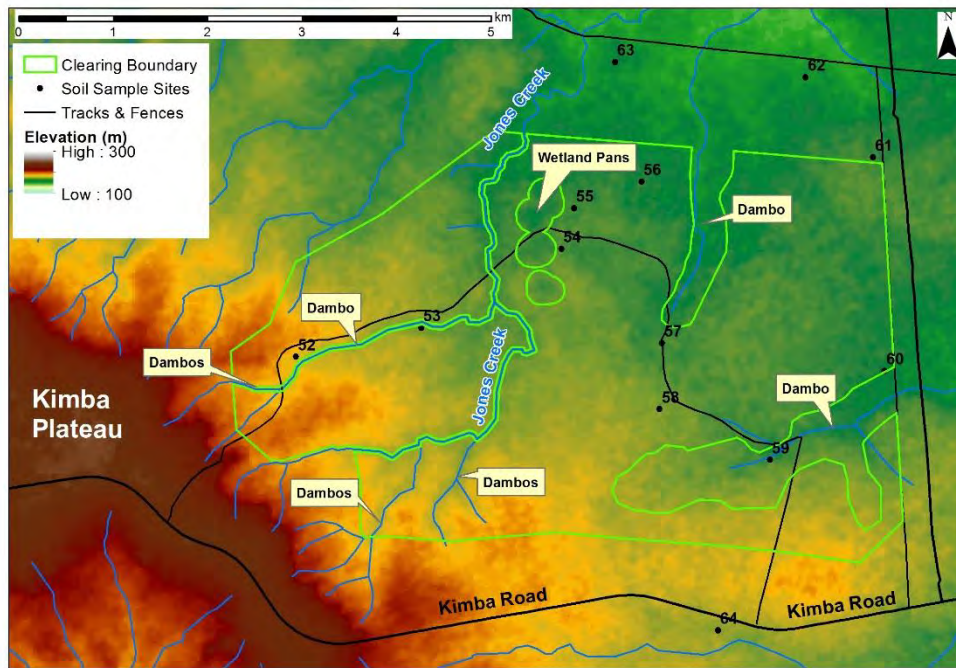


Figure 3 The topography and elevation (SRTM DTED2 2000) of the proposed Area 1 (2408 ha) to be cleared for agriculture. Locations of some wetland pans and dambos (seasonally waterlogged valleys) are identified.

The geology of the Kimba Plateau consists of Quaternary residual sandy soils and deeply-weathered Tertiary sandstone overlying Mesozoic sandstone and older granite and metamorphic basement rock (Grimes 2015c). The edge of the Kimba Plateau near Area 1 at the head of Jones Creek contains outcrops of the Rolling Downs Group (Klr, mudstone, siltstone, sandstone) with the Gilbert River Formation (JKg, sandstone) at depth, which in places are mantled by colluvial footslope sediments (Qfc, sands and minor gravels in a sandy clay matrix) (Whitaker and Grimes 1977; Blewett and Wilford 1996). The top of the Kimba Plateau is blanketed by white to reddish clayey sandy soils (Qrs) formed by in-situ deep weathering of the sandstones of the Bulimba Formation (KTI) and Gilbert River Formation (JKg) (Grimes 2015c). Below the edge of the Kimba Plateau, residual sandy soils also blanket the underlying formations where weathered sandy material has been transported a short distance by sheet wash and soil creep onto the gentle slopes below. These blankets of residual sandy soil can range from a few centimetres to several meters thick, and may contain ironstone nodules.

Within the proposed Area 1 boundary, outcrops of the Gilbert River Formation (JKg, sandstone) were observed along the bed of Jones Creek at a permanent spring just downstream of the confluence of its western tributary (Figure 4). The aquifer of the Gilbert River Formation (JKg, sandstone) is what feeds the permanent spring at Jones Creek, which is a groundwater dependent ecosystem similar to other springs around the Kimba Plateau (Shellberg et al. 2015). This aquifer is also the likely source

of water for the groundwater bores present just northeast of Area 1 on Kingvale, which is currently being piped and stored for watering cattle troughs and yards, and potentially future irrigation development.



Figure 4 Sandstone outcrops of the Gilbert River Formation (JKg) along the bed of Jones Creek that seep groundwater into a permanent spring and groundwater dependent ecosystem that supports fish, crabs and freshwater crocodiles.

Outcrops of indurated alluvium (conglomerates and sandstone) and ferricrete (ironstone) are present within Area 1, which are likely of Quaternary or late Tertiary of age. These ferricrete outcrops were observed within the banks of Jones Creek and tributaries, as well as the surface outcrops near the wetland pans east of Jones Creek. It is possible that this indurated alluvium underlies much of the sandy soils of Area 1 below typical soil auger depths, but is likely concentrated along older drainage lines and deeply-weathered wetland pans where induration has been most intense.



Figure 5 Outcrops of the indurated alluvium (ferricrete) near a) the ridgelines between wetland pans, and b) a tributary of Jones Creek with overlying sandy soils on the banks.

A majority of Area 1 consists of a gently rolling landscape typical of the Balurga and Mottle Land Systems (Galloway et al. 1970) (e.g., Figure 6). These land systems consist of wide shallow ridges (interfluvies) of residual sandy soils that have been deeply leached, periodic wetland pans on ridges

that have been deeply weathered into underlying geology, and shallow valleys (dambos) and larger creeks that have accumulated weathering products (sand, silt, clay, solutes) over the Holocene and late-Quaternary periods. Dambos are seasonally waterlogged, predominantly grass-covered, shallow, linear depressions, commonly without a marked stream channel, that occur at the upper ends of a drainage system (Boast 1990; Von der Heyden 2004; Shellberg and Grimes 2012). Wetland pans are shallow, seasonally flooded, swampy closed depressions found on sandy interfluvial (Shellberg and Grimes 2012). Wetland pans are often near the heads of dambo tributaries, and can be connected to dambos via sub-surface seepage.

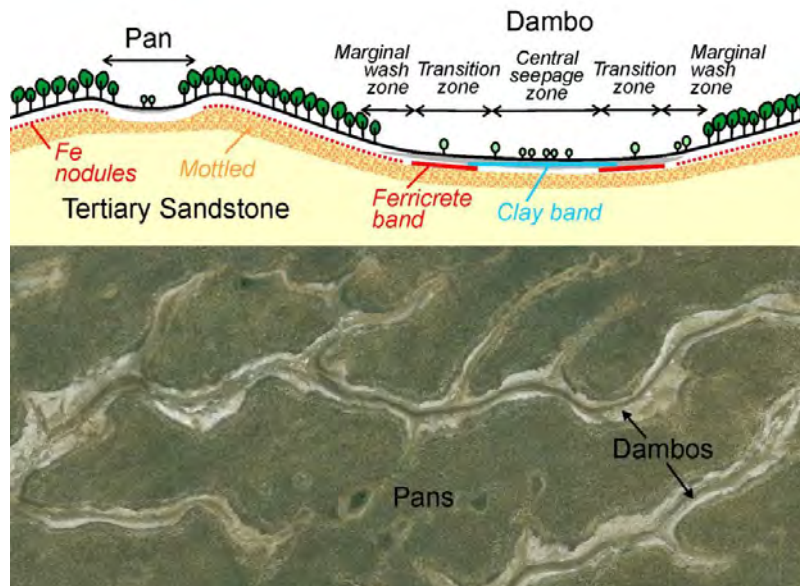


Figure 6 Top: Cross-section of zones of a dambo valley and pans on a ridgeline, and Bottom: a satellite image of typical dambos and pans of the Balurga and Mottle Land Systems (Galloway et al. 1970) common on both the east and west sides of the Great Dividing Range. Image created by Ken Grimes in Shellberg and Grimes (2012).

3.2 Soils

The sandy ridges between the dambo areas (interfluvial) are the targeted soils for agricultural development in Area 1 on Kingvale Station. In contrast, the wetland pans, dambos, and creeks within Area 1 have generally been excluded from development (Spies 2014); however inaccuracies in their field delineation and inadequate buffering are discussed below.

The available soil information for Area 1 is reviewed by Spies (2014). The coarse nature of historic soil surveys in this area at a scale of 1:900,000 (Isbell et al. 1968; Biggs and Philip 1995ab) is correctly highlighted as problematic by Spies (2014). The eighteen (18) additional soil test sites improved the understanding of the surface soils in Area 1, in terms of the soil texture, chemistry, and fertility. While the additional soil samples increased the scale of soil mapping toward a 1:100,000 scale, the samples were not well distributed across the potential soil types in the area (focused along tracks and fences), which is also discussed below.

The soil survey results of Spies (2014), supported by earlier soil surveys (Isbell et al. 1968; Biggs and Philip 1995ab), indicated that soils of the wide shallow ridges (interfluvial) are Kandosols, which generally are deep sandy soils that grade from fine sand to sandy loam to sandy clay loam at depth. Rock and ferricrete nodules can be present at depth or near surface within these soils, depending on landscape position (Figure 7). The soils termed Kimba and Clarke by Biggs and Philip (1995ab) vary in colour and textures with landscape position and depth. They generally are of very low fertility (N,P,K,S), with low organic matter, exchange cations and metals, as confirmed by soil test by Spies

(2014). They have a low water-holding capacity. These Kandosols vary along soil catenas influenced by landscape position, elevation, and degree of drainage and weathering as sketched by Spies (2014) following Biggs and Philip (1995ab). However, the complexity of the terrain and drainage patterns in Area 1 results in considerable variability in soil catenas that are oversimplified in the conceptual model provided.



Figure 7 An exposed Kandosol soil profile at a road cut near Area 1 on Kingvale Station. Note the potential for soil piping (sub-surface drainage through macropores) at depth as indicated by dark areas in centre right of picture, as well as stony fragments.

Based on earlier soil classifications (Biggs 1994a; Biggs and Philip 1995ab), Spies (2014) assumes that the Kandosols are stable and not erodible. However, this erosion classification is a relative term, as these soils and their landscape position evolved *from* erosion and weathering on the landscape. All soils, especially in the tropics, are prone to erosion, with some more than others. For example, increased clay content with depth in Kandosols and high volumes of tropical rainfall can lead to saturation excess overland flow that enhances surface soil erosion. Alternatively, low surface organic cover (due to fire or road tracks) can lead to hydrophobic conditions or reduced infiltration capacity on the sandy soil surface, and generate Horton overland flow that promotes surface erosion (as seen in a rain storm during the site visit). The relatively high permeability of Kandosols and increased clay content with depth also can lead to water concentrating at depth in the profile before moving laterally toward drainage depressions. Increases in slope toward drainage depressions along with slight increases in clay content can lead to soil piping and sub-surface erosion through macro-pores, which can promote soil profile collapse and drainage network development (rills and gullies). Furthermore, soil erosion in most soils can be exacerbated by clearing native vegetation and agricultural disturbance of soils with machinery.

The soils of the seasonally waterlogged valleys (dambos) in Area 1 are classified as Redoxic Hydrosols (assumed to be Lydia in Area 1, Biggs and Philip 1995ab) due to seasonal wetting and drying and complex oxidation / reduction reactions that strongly influence soil development through the profile. They often grade from fine sandy loams and silty clay loams on the surface to mottled clays potentially with ferruginous nodules at depth. These soils are hard-setting in the dry season and can be highly dispersive and erodible in the wet season. In many locations they can have high values of exchangeable sodium percentage (ESP) compared to other exchangeable cations, which predisposes the soils to dispersion and erosion, especially in silty sections of a profile. These soils would need to be physically and chemically tested in Area 1 for further investigation of their properties.



Figure 8 An exposed Hydrosols soil profile in a dambo and gully headcut in Area 1 on Kingvale Station, showing the hardsetting silty loam in the top of the profile, sharply grading into a loamy clay with mottling in the lower profile.

In general, dambo soils on Cape York Peninsula (Barber et al. 2012; Shellberg and Grimes 2012; Shellberg et al. 2015) and globally in the tropics (Mackel 1974, Roberts 1988; McFarlane and Whitow 1990; Boast 1990; Chidumayo 1992; Matiza 1992; Von der Heyden 2004) are highly vulnerable to gully erosion and land degradation from direct physical disturbance or excess water runoff and altered hydrology from surrounding land uses. Spies (2014) reports that the soil type in dambos of Area 1 were unstable, possibly sodic, and prone to erosion. However, the assumption that the underlying geology of these dambos is the Rolling Downs Group (Klr, siltstone or mudstone) is indeterminate. Dambos can form on top of a variety of geologies (mostly weathered sandstone or other basement rock in this area) and retain water because of the accumulation of weathering products (sand, silt, clay, solutes) in the shallow valley bottom over geologic time.

Satellite imagery from ASTER (Advanced Spaceborne Thermal Emission and Reflection Radiometer) was analysed for this report using a false colour (near infrared) spectrum (15m resolution) to distinguish between vegetation types and thus potential land systems and soil types in Area 1 on Kingvale. The ASTER imagery highlighted several distinct light-red coloured areas that are less densely forested compared to the surrounding red coloured Stringybark and Bloodwood Forests, dark-red grassy dambo valleys, and pink coloured wetland and spring areas (Figure 9). These light-red coloured areas likely differentiate a different soil type or land system from the combination of geology, soils and vegetation. During the field visit, the northern edge of this distinct area was briefly visited. The area had a more open canopy of bloodwoods, melaleuca and other mixed species, and abundant termite mounds scattered across a sparse grassland (Figure 10a). The presence of termite mounds such as magnetic (*Amitermes laurensis*) and others indicated that the area could be seasonally saturated with water or have lower infiltration capacity. The soil appeared to be a texture-contrast, slightly hardsetting loams with a few pebble lags, but detailed soil analysis was not conducted for confirmation. This soil type appears to be different than Kimba or Clark reviewed by Spies (2014). In addition, several small sinkholes were observed in-line, suggesting the potential for piping, sub-surface erosion, and soil collapse (Figure 10b). These areas (Figure 9) will need more field investigation for determination of exact soil type and any limitation, along with other more remote areas of the proposed clearing at Area 1.

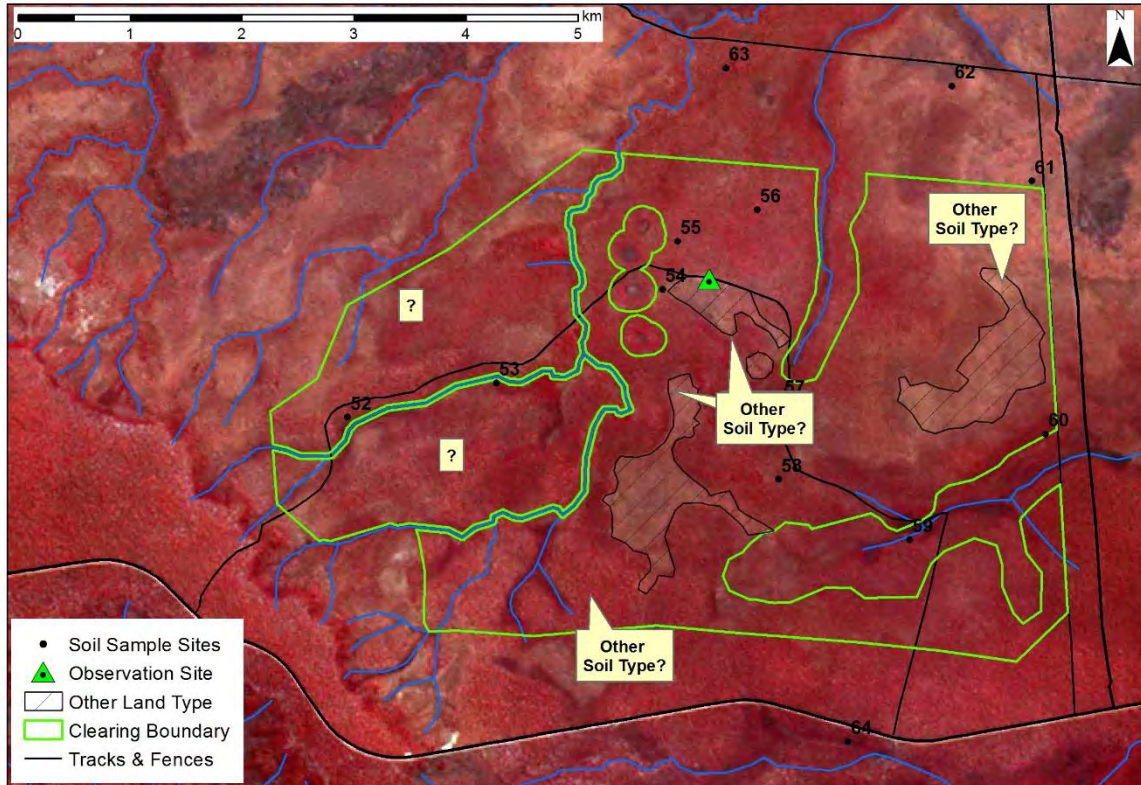


Figure 9 ASTER (Advanced Spaceborne Thermal Emission and Reflection Radiometer) satellite image (15m resolution) of Area 1 on Kingvale Station, highlighting additional potential vegetation and soil types.



Figure 10 A potentially unmapped land system and soil type in Area 1 at Kingvale (potentially different than Kimba or Clarke) as indicated by ASTER imagery and field observations of a) open canopy and grassland with termite mounds indicating seasonal saturation or reduced infiltration, and b) small sinkholes and piping into texture-contrast, slightly hardsetting loam loam soils.

3.3 Observed Existing Erosion

The field visit in December 2015 focused on existing soil erosion in Area 1 resulting from both natural processes and land use impacts from cattle grazing land use. The assessment of erosion risk focused on sensitive features of the landscape and anthropogenic disturbances. These observations were used as indicators for potential future erosion under land use intensification.

Road Erosion

Roads, tracks and fencelines are a common and major source of sediment in the Normanby catchment (Gleeson 2012; Brooks et al. 2013) and road density, location, design, and maintenance are major factors that influence sediment production. Best management practices are needed to minimise and reduce erosion from these linear disturbances (e.g., Shellberg and Brooks 2013).

Road erosion was observed immediately upon entry to the property and Area 1 along both old and newly bulldozed tracks and fence lines. A newly re-cleared road and cattle lane-way along the eastern boundary of Area 1 has signs of sheet and rill erosion associated with recent rainfall (Figure 11). No runoff control structures ('whoa boys') and BMPs were built in this area to divert runoff off these roads and laneways. A ~ 15mm rainstorm in the afternoon of the visit generated considerable runoff and Horton overland flow along these disturbed Kandosols. While these soils are porous at depth, any surface disturbance from machinery and loss of vegetative cover can promote compaction, reduced soil organic matter, reduced infiltration, and increase water runoff and erosion. During the rainstorm, both sand transport and fine suspended clays (note red and tan coloured water) were observed moving along the sheet flow. Thus the silt and clay content in these Kandosols is capable of being mobilised and transported off-site if disturbed, which is applicable to not just roads but also cleared areas and agricultural development. These observations indicate that considerable surface water runoff and sediment transport can occur from these Kandosols if disturbed by machinery.



a)



b)

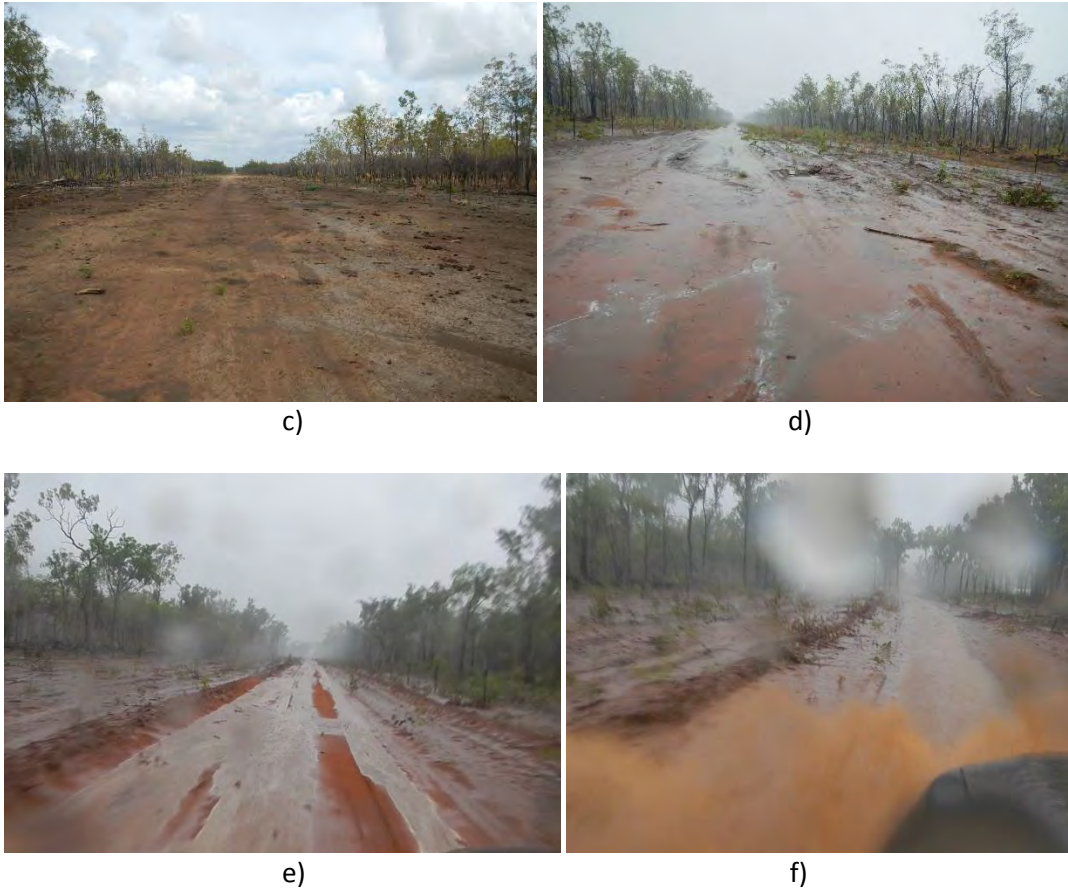


Figure 11 Sheet and rill erosion along a road and laneway just east of Area 1 on Kingvale during a small rainstorm.

On internal road tracks with Area 1, several water diversion structures (whoa boys) have been created (a year or two earlier) to divert water runoff from the road surface (Figure 12). This is a positive step toward improving BMP implementation. However, the whoa boys were very infrequently spaced and thus were not as effective as they could be if periodically installed every 25-100 meters depending on slope and anticipated surface runoff (Shellberg and Brooks 2013). Most of the ‘whoa boys’ observed had been recently filled in with sand/silt runoff from recent rainfall events several days and weeks earlier (Figure 12). They soon will be overtopped and ineffective unless additional frequent structures are built to divert water and sediment runoff onto stable infiltration areas.



Figure 12 Sand/silt infilling a ‘whoa boy’ in Area 1 from excess water runoff and infrequent whoa boy placement.

Other water and sediment diversions off tracks in Area 1 consisted of cut drains near creek crossings (Figure 13). Cutting drains off roads and tracks can promote gully erosion and lead to the direct input

of sediment into waterways (Gleeson 2012). Building frequent diversion banks is preferable (Shellberg and Brooks 2013). In this case, sand, silt and clay are directly being input into a local creek from a road drain, contributing to instream sedimentation and downstream delivery of finer sediment (Figure 13). Buffering creeks, dambos and wetlands with vegetation zones can be ineffective if sediment is delivered through buffers via rills, gullies, and road drains.

Gully and rill erosion was observed along other road tracks in and around Area 1 where grader machines had cut deep tracks through creek crossings (Figure 14). This is a ubiquitous erosion issue in the Normanby catchment anywhere tracks and fences are cut across the drainage network (Shellberg and Brooks 2013). BMPs to reducing erosion at these sites would entail 1) not cutting into the bank through the crossing, 2) armouring the approaches with rock, and 3) constructing whoa boys above the crossing to divert water runoff before the steep banks of the creek.



Figure 13 A cut drain off a track in Area 1 delivering sand, silt and clay directly into an adjacent waterway.



Figure 14 A road cut through a creek crossing near Area 1 that is accelerating rill and gully erosion.

Bank Erosion

Bank erosion is both a natural process and accelerated process from human land use. In Area 1 on Kingvale, bank erosion was observed along Jones Creek on the outside of meander bends, which is largely a natural process. However, increased water runoff from land use disturbance (fire, grazing, agriculture) and increased sand sediment loads from catchment erosion can enhance bank erosion. Increased sand loads in small creeks can promote channel widening and bank erosion (as sand bars force flow to outer banks). Subsequently, bank erosion can liberate additional fine sediment that can be delivered to downstream and off-shore environments. Accelerated bank erosion in small ephemeral channels is a major sediment source in the Normanby catchment (Brooks et al. 2013).



Figure 15 Bank erosion along Jones Creek, which could be accelerated from increased water runoff and sand accumulation in the bed that promotes channel widening and bank erosion.

Along Jones Creek, surface, rill and small gully erosion were observed along the banks from cattle pads (tracks), over-grazing, and trampling. This is a common occurrence in the Normanby catchment when cattle come down to creeks and rivers to access water (Shellberg and Brooks 2013). This erosion was especially pronounced near the permanent water spring and cattle yard at Jones Creek (Figure 16). Fencing these sensitive areas off from cattle would be needed, in conjunction with vegetation buffers along creeks, dambos and wetlands, to prevent and reduce this type of bank erosion.



Figure 16 Rill and gully erosion along the banks of Jones Creek enhanced by cattle pads, trampling and local overgrazing.

Gully Erosion

Gully erosion was observed in Area 1 at a large gully within a dambo valley, tributary to Jones Creek, which is currently proposed to be cleared without a buffer. Smaller gullies were also observed along road track creek crossings, along some stream banks, and just initiating (proto-gullies) in the bottom of other dambo valleys.

The large gully in Area 1 (Figure 17) is located in a shallow dambo valley with a ~ 1.8 m headcut eroding upslope into the valley. The gully has multiple lobes and side-wall collapse, along with downstream sedimentation of the sand fraction. The headcut is eroding into mottled clay Hydrosols at depth, and the clay soils are partially resisting the upslope advance of the headcut. However, the silty upper soil horizon is more dispersible and erodible, leading to a two-phased headward retreat with top soils being stripped off first. Water runoff into the gully head is generated from sheet flow down the dambo valley, which in this case is partially channelized down several cattle pads (tracks) that feed into the gully head cuts (Figure 18a). Fire and overgrazing in the upslope dambo catchment could also reduce ground cover, infiltration and roughness resistance to overland flow, accelerating water runoff. Downstream of the gully headcut, 300m, a farm dam has been constructed for cattle watering (Figure 18b). Construction of this dam could have changed local base level elevations, and promoted head-cutting, which along with land use accelerated water runoff and concentrated flow down cattle pads, promoted the gully erosion. The dam currently traps much of the sandy sediment generated from the gully, but finer sediment during floods easily bypasses the dam. Furthermore, sediment eroded from the spillway and the incised channel downstream also contribute to the fine sediment load in the Jones Creek catchment (Figure 19).



Figure 17 Gully erosion into a dambo valley, tributary to Jones Creek.



Figure 18 Potential factors initiating or accelerating gully erosion in Area 1 include a) increased water runoff down dambo valleys, concentrated along cattle pads into headcuts, and b) changes in downstream base-level elevations from farm dam construction or roads.



Figure 19 Channel and gully erosion into a dambo valley downstream of a farm dam and road crossing.

These observations of gully erosion into dambo valleys on Kingvale Station highlight the sensitivity and vulnerability of these valleys to land use disturbance. Their broad flat valleys with dense grass cover provide much natural resistance to erosion or the creation of permanent channels and gullies. However, land use impacts such as excessive cattle grazing, inappropriate fire regimes, road development, agriculture development, and catchment land use change can alter the vegetation and water balance, and thus the stability of dambos. The instability of dambos to land use has been well documented in the tropics of Africa (Mackel 1974, Roberts 1988; McFarlane and Whitow 1990; Boast 1990; Chidumayo 1992; Matiza 1992; Von der Heyden 2004) as well as Australia (Barber et al. 2012; Shellberg and Grimes 2012; Shellberg et al. 2015). Once channels are cut into dambos, they can become self-perpetuating, lower the local groundwater table, alter wetland vegetation communities, and accelerate sediment output to downstream waterbodies (McFarlane and Whitow 1990; Boast 1990; Barber et al. 2012). Future land use planning should fully accommodate the sensitivity of these dambo valleys to disturbance from both local and upslope catchment land use.

For example, the beginning phases of gully and channel erosion were observed in the northeastern dambo of Area 1, tributary to Jones Creek (Figure 9). This erosion is caused by a combination of reduced vegetative resistance and catchment water runoff during storm events. If the upstream catchment is further disturbed by vegetation clearing and agricultural development, then accelerated water runoff could cause a stability threshold to be crossed (Schumm 1973) and fuel gully erosion into this dambo. This could potentially convert it from a wide channel-less valley water-

logged in the wet season, to a continuous or discontinuous gully channel without the capacity to buffer outgoing water and sediment loads.



Figure 20 A potential new channel and gully location in a northern dambo in Area 1.

Sheet Erosion

Field evidence for sheet flow and sheet erosion was not ubiquitous within Area 1, but rather focused on soil areas with the lowest infiltration capacities, steepest slopes, and most anthropogenic disturbance. More observations of sheet erosion during heavy rainfall are needed to understand surface runoff patterns in Area 1, especially in paddock areas with Kandosols proposed to be cleared. Heavy use areas such as cattle yards and roads had obvious signs of sheet erosion. The convex slopes leading down toward streambank, 100m on either side, had signs of sheet flow and erosion. The potentially distinct soil type observed in the centre of Area 1 (Figure 9), with texture-contrast, slightly hardsetting loam soils with some pebble lags, dissimilar to Kimba or Clark, had signs of surface saturation, sheet flow, and piping and sub-surface erosion. More detailed investigation would be needed in this area to assess its exact soil type and vulnerability to sheet erosion after proposed clearing, with or without vegetation and stubble retention.



Figure 21 Evidence of soil saturation (or reduced infiltration) and modest sheet erosion in a potentially different soil type in the centre of Area 1 (Figure 9).

Downstream Sedimentation

Observations of existing sedimentation in creeks and dambos within and downstream of Area 1 were generally common. Sand deposits in-channel are common along Jones Creek and its tributaries, with both natural and human accelerated sources. These deposits likely have been increased to an unquantified degree from existing grazing land use, roads, tracks and fence lines, and as well as the gully, bank and sheet erosion mentioned above. While sand can be assumed to be the major constituent of the erosion of Kandosols, fine silt and clay were also observed to have been winnowed from the Kandosols and transported downslope and downstream. This is especially evident from disturbed areas such as roads and yards (Figure 11; Figure 13). Further downstream on both Jones Creek and the northern dambo draining Area 1, thin deposits of mud have blanketed the sandy creek bed from recent rainstorms in December at the start of the wet season (Figure 22). These observations suggest that fine sediment export can indeed be generated from both Kandosols and Hydrosols in Area 1.



Figure 22 Deposits of mud blanketed over sand on creek beds from recent rainstorms in December at the start of the wet season.

4 Discussion

4.1 Potential Risks of Erosion Associated with Existing Clearing and Development Plans

The observations of existing erosion in and around Area 1 on Kingvale Station from current cattle grazing land use highlight the sensitivity of this headwater landscape to erosion. Moderate erosion is currently occurring at human disturbed and sensitive parts of the landscape, and this erosion risk will be increased by land use intensification as currently planned. Prediction and quantification of future erosion from land use is difficult, but general areas at risk to increased erosion can be highlighted and addressed. Under the current plan for clearing and agricultural development (Spies 2014), the following areas are at risk of increased erosion:

1. As currently mapped, numerous headwater stream and dambo valleys (seasonal wetlands) in upper Jones Creek are not mapped and not buffered from clearing (Figure 23). An example is the gully and dambo valley in Figure 17 and Figure 18. These areas and others are at risk from gully, sheet and bank erosion. This buffer omission is likely an artefact of the scale of mapping products used for office delineation of buffers (1:250,000), rather than detailed field delineation. The slightly more detailed 1:100,000 streamlines used here highlight additional creeks present, while use of the SRTM topographic data and ASTER satellite data indicate many additional dambo valleys are unmapped and unbuffered. Use of 1:25,000 scale topographic maps may improve stream and valley delineation to some degree. However, detailed LiDAR (Light Detection and Ranging) topographic surveys (1m² resolution) would be needed to detect all the ephemeral stream lines (with annual scour and fill) and dambo wetlands with Hydrosols within Area 1.

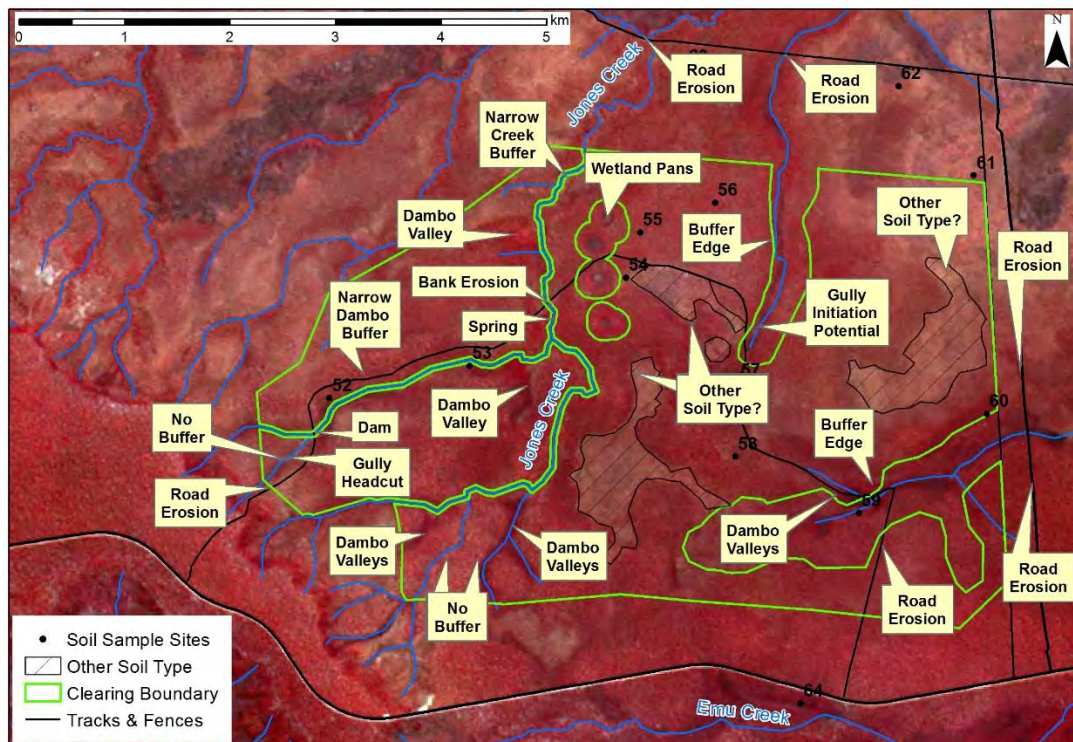


Figure 23 Locations of erosion risks across the proposed Area 1 at Kingvale Station.

2. The existing mapped dambo valleys tributary to Jones Creek, and the mainstem of Jones Creek, are only buffered with 25m buffers on either side of mapped centrelines of these valleys (Figure 23). However, in many places these dambo valleys are up to 150m wide and located offset from the incorrectly mapped centreline. If these buffers were installed as mapped, these features would experience significant disturbance and inadequate protection. Buffers should start not at the centreline of a mapped streamline, but rather from the field-delineated bank of a stream or the edge of a wetland dambo or pan. In the case of dambos and Hydrosols, the edge of the seasonal wetland can easily be identified in the field from the combination of topographic change, the presence/absence of magnetic (*Amitermes laurensis*) and other termite mounds, and the distinct changes in grass and tree vegetation (i.e., marginal wash zone in Figure 6; Figure 24).



Figure 24 The edge of a dambo valley in Area 1 (centre of picture) as indicated by termites, open vegetation and Hydrosols to the right, and thicker vegetation on sloped sandy soils to the left.

In addition, the northern and eastern large dambos in Area 1 (Figure 23), while buffered significantly and fairly appropriately sized, are not delineated completely according to the distribution of Hydrosols and streamlines. Several sections of these dambos have been inadvertently omitted, likely due to map rather than field delineation (Figure 23). This increases the erosion risk in several areas.

3. The assumption that Jones Creek and its tributaries are 1st and 2nd order streams is an artefact of the scale of mapping used to delineate streamlines (1:250k). If 1:100k streamlines are used (Figure 23), then Jones Creek becomes a 3rd or 4th order stream with a recommended 50m buffer or greater. If actual streamlines and valleys were delineated on the ground, or using detailed LiDAR data, then Jones Creek would likely be a 5th order or larger stream with a 100m buffer. To adequately protect Jones Creek and its dambo tributaries (seasonal wetlands), 100m buffers from the bank or valley edge would be needed similar to other wetlands on the property. For example, a 50m buffer from the bank edge would not fully protect the sloped lands on either side of Jones Creek in many places from disturbance or cattle grazing (Figure 25). These steeper slopes are vulnerable to sheet, rill and gully erosion, and are the discharge areas of lateral drainage from surrounding Kandosols. Furthermore, the science of buffering headwater streams suggest that buffer width should be scaled to erosion risk, not necessarily to stream order (e.g., McIntosh and Laffan 2005). Headwater streams produce the majority of water, sediment and nutrients in most landscapes, and should be protected from increased disturbance accordingly (e.g., MacDonald and Coe 2007; Alexander et al. 2007).



Figure 25 The steeper sloped valley sides draining toward Jones Creek needing adequate buffering for erosion protection.

4. The permanent freshwater spring along Jones Creek (Figure 4, near the cattle yard; Figure 23) is a groundwater dependent ecosystem (officially un-mapped) that supports fish, crabs and freshwater crocodiles, similar to other springs around the Kimba Plateau (Shellberg et al. 2015). The banks of this creek and spring are vulnerable to soil erosion as observed in the field (Figure 16). This section of the creek is a permanent wetland, and would warrant a greater buffer of 100m, similar to other nearby wetlands, to protect its ecological value.
5. The agricultural development proposal outlined by Spies (2014) for Area 1 states that *“ground cover (in excess of what is there now) will be achieved throughout the wet season to protect the soil”*. However, this statement ignores the fact that there will be essentially zero live standing ground cover or root cohesion at the start of the wet season and first heavy rains typical in December. The sorghum planted will be an annual crop that will be sowed after the first 50mm of rain. At least a month will pass into the wet season before the sorghum grows to equal the height and density of current perennial grass cover. Retention of sorghum stubble and minimal tillage will help improve cover and is encouraged, but this cover highly depends on the degree that *“cattle will graze the residual sorghum stubble and reduce trash for the following cultivation/planting”*. Therefore, there will likely be a critical window of soil exposure in November and December most years when bare soil surface will be exposed to heavy rainfall erosivity experienced in this part of the tropics in the early wet season (Yu 1998). This has the potential to accelerate overland flow and sheet erosion from cultivated lands, at least early in the season. This represents a long-term erosion risk of the proposal across 2408 ha of cleared land, as indicated by recent rainfall runoff from bare soil surfaces along cleared soils in the field (Figure 11). Bulldozing timber, burning, stick raking the rubbish, and disc ploughing the first year, and subsequent years with any additional minimal tillage, will also leave large soil areas vulnerable to sheet erosion.
6. Reduced vegetation cover early in the wet season (Nov-Dec) in the cleared area, even with some stubble retention, could reduce rainfall infiltration, roughness resistance to overland flow, and root cohesion. This could increase and accelerate water runoff rates during the *“first flush”* rain events. Increased water runoff has implications for the stability of downstream receiving area, such as dambo wetlands. Dambos are prone to gully and channel erosion, and are sensitive to land use that increases water runoff into them (Roberts 1988; McFarlane and Whitow 1990; Boast 1990; Von der Heyden 2004). Thus, the erosion implications of clearing 2408ha of Kandosols might be that they accelerate erosion off-site in dambo wetlands by changing the hydrological balance of the area.
7. The proposal suggests a number of agricultural management practices to reduce soil erosion (Spies 2014). One of these is *“using filter strips – of suitable width and ground cover – to*

filter run-off before it enters a water body or water course (see maps Appendix A)". This is a reasonable and important practice to implement in order to reduce off-site transport of sediment and nutrients. Unfortunately the maps do not appear to have these filter strips located in a planning design. Frequently placed filter strips on contour, or perhaps constructed contour banks, could be essential to mitigating water, soil, and nutrient runoff from the proposed clearings.

8. The agricultural development proposal outlined by Spies (2014) for Area 1 suggests that cattle will graze the residual sorghum stubble and reduce trash through the dry season. This suggests that cattle could be stocked inside the cleared Area 1 at a higher stocking rate than present. If increased stocking rates are planned, then the cattle activity along wetlands, stream channels and dambo valleys will also increase, which presents a moderate risk to increased erosion and water quality in these sensitive areas. The proposal does not mention fencing cattle out of these sensitive features along buffer lines. Fencing these areas at buffer edges would be important to mitigating accelerated erosion.
9. Clearing the potentially different soil type and vegetation community (Figure 9) in the centre of Area 1, as delineated by ASTER (Figure 9; Figure 23), could represent a risk to increased erosion. This area appears to be seasonally saturated with lower infiltration capacity as indicated by texture-contrast, slightly hardsetting loam soils, dissimilar to Kimba or Clark, abundant termite mounds, and differences in vegetation structure. The observations of sinkholes and soil piping (sub-surface erosion) suggest that this area has an increased risk to erosion from development (Figure 10). Additional field investigation will be needed to fully assess any erosion risk from agricultural development on these soils.
10. The proposal does not mention the future planned use of roads and tracks to access Area 1 by machinery for clearing, future sowing, and agricultural development. Roads, tracks and fence lines pose a direct anthropogenic risk to increased erosion, as reviewed above (Figure 11). Increasing the road density and use in this area represents an increased risk to erosion. A road construction and maintenance plan would be useful to implement best management practices (BMPs) to reduce erosion from these current and future linear disturbances.
11. The soil chemistry data analysed by Spies (2014) indicates that these Kandosols are low to very low in essential nutrients (N,P,K,S), carbon, exchangeable cations, and essential metals, with low water-holding capacity. These limitations call into question whether these soils are actually suitable for *'high-value agriculture'*. Spies (2014) states that they are class 3 land suitability class, suitable with moderate limitations. In many instances they are closer to class 4, marginal land needing additional studies to achieve long-term sustained economic production. It is likely that more detailed investigations of Area 1 would find pockets of both class 3 and class 4 land suitability within the proposed cleared area outside of the class 5 Hydrosols.
12. Regardless of land suitability class, these soils will need annually sustained nutrient inputs to maintain sorghum production with *"high rates of the required fertiliser, application of dolomite or lime and stubble retention"* (Spies 2014). Herbicides will also be used annually for weed control. High rates of nutrient application into porous sandy Kandosols, in addition to herbicides, present a water quality risk to downstream receiving waters, which is a major issue below existing agricultural areas in the Normanby catchment (Howley et al. 2013). The potential for nutrient leaching along deep drainage lines underlying the Kandosols is considerable. This sub-surface drainage is connected along soil profiles (catenas) down toward dambo valleys, wetland pans, and creeks, as indicated in Figure 6 and sketches in Spies (2014). The observation of soil pipes within soils of Area 1, and along creek banks and wetland pans, highlights some of these sub-surface drainage connections. Therefore, the

risks of nutrient and herbicide pollution to downstream receiving water needs to be taken into account, in addition to soil erosion and sedimentation.

13. These risk of off-site nutrient and herbicide pollution could be enhanced further if agricultural production switched from the proposed sorghum to an irrigated crop of higher value. The groundwater bores in the area around Area 1, and the Kimba Plateau, could have sufficient water from the underlying Gilbert River Formation to irrigate crops (Grimes et al. 2015c). This is perhaps one reason that this Area 1 has been targeted for development on the edge of the Kimba Plateau. However, the impacts of water resource development on the ecology of springs around the Kimba Plateau, such as along Jones Creek, could be substantial (Shellberg et al. 2015).

4.2 Increased Sediment and Nutrient Loads

From these field observations of existing erosion and general predictions of increased erosion and pollution associated with land use intensification, there will be an off-site increase in sediment (and nutrient) loads from Area 1 on Kingvale Station following the proposed agricultural development as it stands currently (Spies 2014). The proposal has a moderate risk of increasing sediment erosion beyond natural background levels, as well as above currently elevated levels associated with low density cattle grazing land use. This increase will come from a variety of cumulative sources on site: sheet erosion, rill and gully erosion, bank erosion, road and fence erosion, and possible sub-surface erosion (piping). The erosion risk is concentrated in and around the most sensitive parts of the landscape prone to erosion, which could be delineated and protected more accurately in the field to reduce potential impacts. Furthermore, an increase in nutrient pollution from agricultural application on these sandy Kandosols could increase nutrient pollution downstream, as found in other agricultural areas of the Normanby catchment (Howley et al. 2013).

Quantifying the extent of the future increase in sediment load production from Area 1 is difficult without much more intensive studies and monitoring. The clearing and construction phases of agricultural development projects often have the highest increases in water and sediment yield (e.g., Grip et al. 2005). This is especially the case where sensitive areas are cleared or impacted by adjacent clearing (Hamilton 2005). Gully erosion has been shown to increase with agricultural clearing and development in the Normanby catchment (Shellberg and Brooks 2013). It is possible that the sediment load from Area 1 could dramatically increase during the construction and early adjustment phases (2-10x), during the firsts few years, and then decline toward but not reach background conditions after the system stabilizes to a new land use and many sensitive sediment sources are exhausted. Long term changes in sediment yield are contingent on the intensity of ongoing agricultural disturbance, and the degree of implementation of best management practices to minimize erosion on- and off-site. In other agricultural settings in the eastern GBR catchments of Australia, sediment yields have at least doubled (2x) following agricultural development, with the most intensive agricultural areas experiencing a five-fold (5x) increase or greater at river mouths (Kroon et al. 2012). Larger increases in sediment loads up to 10x or more have been experienced in sub-catchments heavily developed with agriculture.

Quantifying the contribution of sub-catchment increases in sediment load to the greater sediment loads of the Normanby catchment is also difficult without much more intensive studies and monitoring. The current empirical tracing data the Normanby catchment (Olley et al. 2013) suggest that sub-surface sediment dominates the supply of fine sediment to rivers, Princess Charlotte Bay, and the Great Barrier Reef. In the case of the Hann River catchment, ~ 15% of the fine sediment comes from surface soils, while the remaining ~ 85% comes from subsurface soils including tilled

soils, scalds, rills, gullies, and stream banks (Olley et al. 2013). Therefore, while subsurface sources are more of a concern than surface sources, both can contribute fine sediment to the GBR. Modelled sediment budget estimates in the Normanby catchment (Brooks et al. 2013; McCloskey et al. 2014) indicate that 37% of the sediment sources come from gully/rill erosion, 54% from small creek channel erosion, 8% from river bank erosion, and 1% from hillslopes (Brooks et al. 2013). From these model estimates, small channel erosion and gully/rill erosion seem to be the biggest threat to sediment production. However, the production of fine sediment from agricultural areas and roads have not been well quantified in these models, which need more field research. Furthermore, surface erosion contributes a disproportionately high fraction of the bioavailable particulate nutrients in the Normanby catchment (Burton et al – in preparation). Most importantly, there is currently a lack of empirical sediment load data from the western Normanby sub-catchments (including the Kennedy, Hann, and Morehead Rivers). Thus modelled sediment load data, calibrated to local gauge data, is particularly unreliable from these sub-catchments (Brooks et al. 2013; McCloskey et al. 2014). Therefore, it is difficult to quantify the degree that increased sediment loads from land clearing in the Hann and Kennedy catchments will have on the actual greater Normanby catchment sediment budget.

4.3 Potential Downstream Impacts

The greatest potential impacts of increased sediment yields will be felt immediately downstream of the development site of Area 1 within the Hann and Kennedy River catchments. This will include both sand deposition and sedimentation of creek beds, as well as increased concentrations of suspended sediment, and fine sediment deposition on inset floodplains and beds of creeks. Sand transport on channel beds and sand slugs released from development will take decades to a century to move downstream through main river channels (e.g., Rustomji et al. 2010), and will mostly effect instream pool habitat. Sand slugs and pool habitat have implications for fish habitat quality in rivers and estuaries, for example the vulnerable Freshwater Sawfish (*Pristis pristis*) present in the Normanby and Kennedy Rivers and some of their tributaries.

The finer fractions of silt and clay from these headwater catchments, along with associated nutrients natural or anthropogenic, could be flushed far downstream by one or several flood events, some of which will be deposited on floodplains and some exported to Princess Charlotte Bay and toward the Great Barrier Reef in flood plumes (Figure 26). Generally there can be a dilution effect in suspended sediment concentrations in the downstream direction if other sub-catchments with cleaner water are not experiencing the same type or degree of development pressure. However, degradation of downstream water quality is a cumulative impact from multiple sources and land uses, and in this case in the Hann/Kennedy River catchments, sediment yields are already elevated from other land uses such as cattle grazing, road construction, and agricultural cleared areas. So the dilution effect may not be as pronounced.

The increased fine sediment pollution from Area 1 on Kingvale Station could contribute to the cumulative impacts of degraded water quality from land use delivered to the Great Barrier Reef, even if a minor source at the Normanby catchment scale. Fine sediment and associated nutrients and herbicides in sediment plumes influenced by cumulative land use impacts (e.g., Figure 26) is a major factor directly or indirectly influencing the health of the Great Barrier Reef (De'ath and Fabricius 2010; Lewis et al. 2009; De'ath et al. 2012; Fabricius et al. 2010; 2014). These health impacts and water quality decline are increasing with land use intensification in the northern Great Barrier Reef catchments (Howley et al. 2013), which could push the currently healthy local reef beyond thresholds of ecological stability (Fabricius et al 2005; Halpern et al. 2008; De'ath et al. 2012).



Figure 26 The 7th January 2016 flood plume off the Normanby and Kennedy River mouths in Princess Charlotte Bay drifting northeast toward the Flinders Island Group and Great Barrier Reef. The plume would be composed of clay, nutrients, and organic matter derived from cumulative natural and anthropogenic sources in the Normanby catchment. Landsat image from NASA courtesy of Norman Kuring.

4.4 Cumulative Impacts

Cumulative impact or cumulative effect can be defined as *“the impact on the environment which results from the incremental impact of the actions when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.”* (CEQ 1971). Thus, environmental impacts are not just caused by a single action, location and/or source, but also the cumulative sum of individual actions, locations and/or sources across space and time in response to land management practices within a catchment. Cumulative impacts and effects can be either additive or synergistic. Management and legislation in Australia generally has not fully incorporated cumulative effects issues when assessing, managing or planning land use or development activities at the catchment scale to minimise impacts to the environment (e.g., Dales 2011).

In the greater Normanby Catchment (2,422,800 ha), it is estimated that 76% (1,849,500 km²) of the area is under grazing land use, 0.14% (3,500 ha) under horticulture, and the remaining under natural conservation and forestry (Brooks et al. 2013). A review of both historic Statewide Landcover and Trees Study (SLATS) data and newer remote sensing data indicate that cleared forests for pasture

and agriculture currently cover ~22,678 ha of land, including recent clearings on Fairview Station (1,678 ha). At least another >5,700 ha of land has been cleared for major roads and tracks in the catchment (Brooks et al. 2013). Thus, at least 1.1% (28,378 ha) of the catchment has already been cleared. An additional 2,408 ha at Kingvale and 31,376 ha at Fairview/Olivevale Station are proposed to be cleared in the near future. The Kingvale proposal (2,408 ha) would increase the existing cleared area in the Hann Catchment (4543 ha) by 1.53x or 53%. It would increase the cleared area in the Normanby catchment by 1.085x or 8.5%. The combination of both the Kingvale and Fairview/Olivevale proposals would increase the cleared area in the Normanby catchment by 2.3x or 230%.

In summary, both the Kingvale and Fairview/Olivevale clearing proposals would significantly increase the area of anthropogenic disturbances in the Normanby catchment. However, how this translates into quantified increases in sediment loads is uncertain. What can be said with confidence at this point is that sub-catchment increases in sediment loads are likely to occur downstream of Area 1 on Kingvale, and that these increases will contribute in part to the cumulative input of coarse and fine sediment to Hann and Kennedy sub-catchments and the greater Normanby catchment as a whole.

5 Summary and Recommendations

The conclusion of Spies (2014) that the proposed clearing of Area 1 on Kingvale “*will not result in soil erosion stemming from mass movement, gully erosion, rill erosion, sheet erosion, wind erosion, or scalding*” is incorrect. To the contrary following field observations and supporting information above, soil erosion will increase in Area 1 following the proposal as it now stands. Nutrient and herbicide loads could also increase. The proposal has a moderate risk of increasing sediment erosion beyond natural background levels, as well as above currently elevated levels associated with low density cattle grazing land use. This increase will come from a variety of cumulative sources on site: sheet erosion, rill and gully erosion, bank erosion, road and fence erosion, and possible sub-surface erosion (piping). The erosion risk is concentrated in and around the most sensitive parts of the landscape prone to erosion. These could be delineated more accurately in the field, and protected accordingly, to reduce potential impacts. The exact degree that soil erosion and sediment yields will increase following development is contingent on 1) the accuracy of the delineation of sensitive erosion areas during the planning stage, 2) the intensity of initial clearing and ongoing agricultural disturbance, and 3) the degree of implementation of best management practices to minimize on-site erosion and reduce off-site water, sediment and nutrient yields in the short- and long-term. Any increases in soil erosion will contribute in part to the cumulative input of coarse and fine sediment to Hann and Kennedy sub-catchments, the greater Normanby catchment as a whole, and eventually the Great Barrier Reef.

Both rapid assessments by Spies (2014) and Shellberg (2016 this report) are insufficient to fully and properly assess the potential risks to erosion and downstream sedimentation from agricultural clearing and development in Area 1 at Kingvale. Nor are they sufficient to design a development plan to properly mitigate any potential impacts during the construction and implementation phases. It is recommended that a more detailed environmental impacts assessment (EIA) be implemented by independent geomorphologists, soil scientists and hydrologists for soil erosion assessment. Other disciplines and assessments might also be appropriate for a fully balanced EIA.

Following an fully assessment, if the project continues forward toward development, a detailed project design and soil conservation plan would be recommended to implement appropriate best

management practices (BMPs) to mitigate against soil erosion, as recommended by an EIA. The paradigm of '**Precision Agriculture**' should be followed using the latest science, remote sensing and on-ground technology (Srinivasan 2006; Gebbers and Adamchuk 2010; Oliver et al. 2013). Entire scientific journals are now devoted to Precision Agriculture (<http://link.springer.com/journal/11119>). Precision Agriculture could be used as a minimum prerequisite following the precautionary principle for land owners wanting to development agricultural lands in highly sensitive and relatively intact catchments, such as the Normanby Catchment, and relatively pristine areas of the Great Barrier Reef (Fabricius et al 2005; Halpern et al. 2008; De'ath et al. 2012).

As a few examples, to properly delineate and buffer sensitive areas from development impacts for effective conservation, LiDAR (Light Detection and Ranging) surveys could accurately depict topographic and hydrologic drainage patterns, small creeks and dambo wetlands, and landscape connectivity (e.g., Galzki et al. 2011; Zhang and Kovacs 2012; Brooks et al. 2013; Shellberg and Brooks 2013). This high accuracy topographic data could also be used to install soil conservation measures such as filter strips on contour or contour banks, as well as identifying critical areas of pollution potential (Galzki et al. 2011). The location of roads and fences could also be targeted for stable locations, and LiDAR slope data could be used to determine the frequency and location of '*whoa boys*' to safely disperse overland flow back onto the forest floor (Shellberg and Brooks 2013). Many other ideas and technologies would also follow from using a precision agriculture paradigm, such as managing precise nutrient application to save costs and reduce downstream pollution (e.g., Bongiovanni and Lowenberg-Deboer 2004). However, more local education and training in precision agriculture would be needed (Kitchen et al. 2002). Overall, the application of Precision Agriculture would greatly reduce, but not eliminate, the risk that land use development could cumulatively increase sediment and nutrient loads to downstream receiving waters in the Normanby Catchment and the Great Barrier Reef.

6 References

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Compliance Inspection

EPBC Compliance Section

Kingvale Stations

23 June 2016

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Report prepared by attending officers:

Section 22
Assistant Director
Compliance Section

Section 22
Compliance Officer
Compliance Section

Date 04/07/16

For Official Use Only

Summary

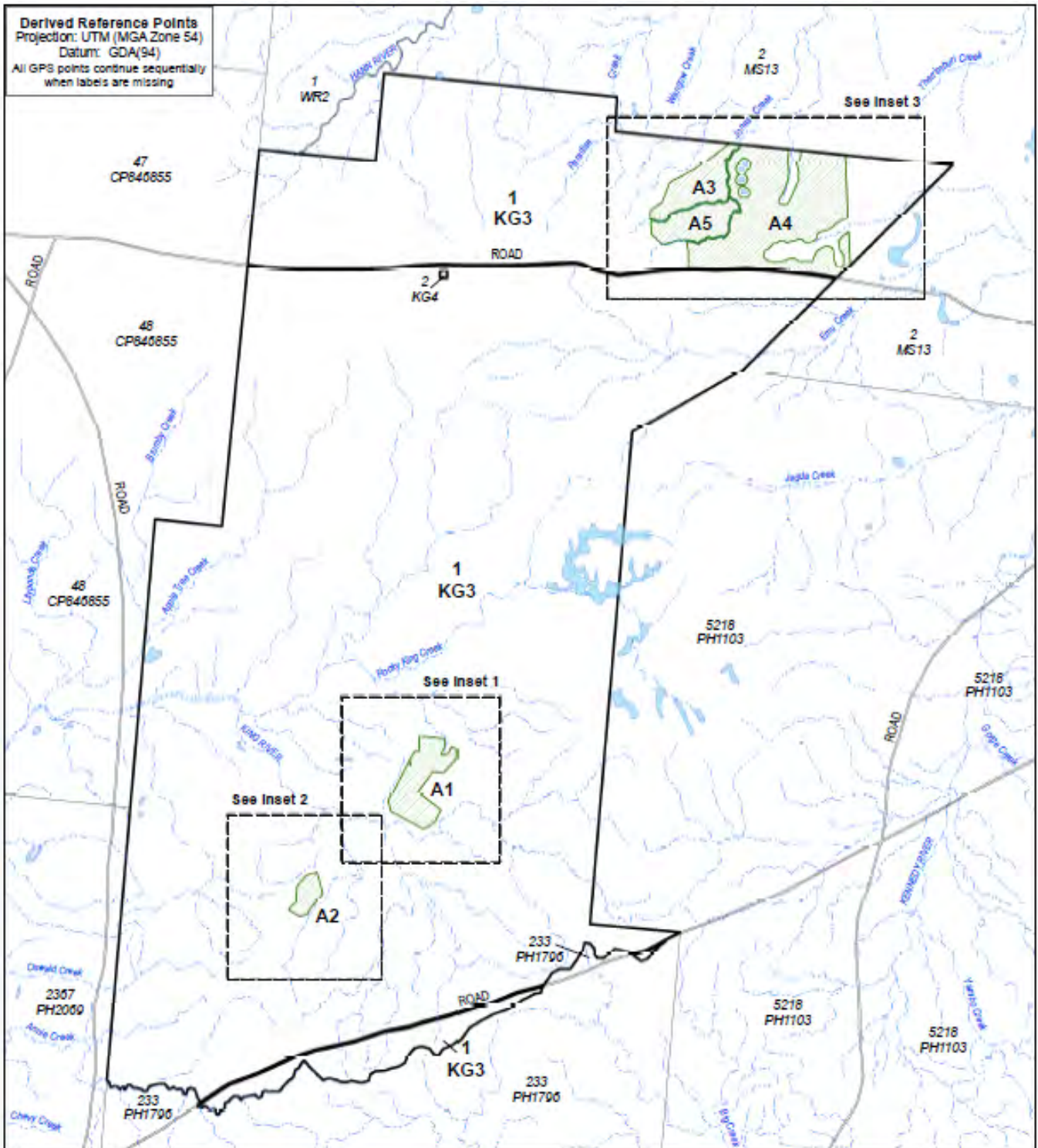
- A Monitoring Warrant to enter Kingvale Station, Lot 1 on KG3, Cook Shire Council, Cape York Queensland was granted by the Cairns Magistrates Court on 22 June 2016. On the same day **Section 22** signed over the Monitoring warrant pursuant to s409 (4) (a) to **Section 22** an inspector pursuant to the *Environment Protection and Biodiversity Conservation Act 1999*.
- At 12:57 pm on Thursday 23 June 2016, officers arrived at Kingvale Station Homestead and introduced themselves to **Section 47F** is believed to be the station manager of Kingvale Station.
- The Monitoring Warrant was executed by **Section 22** at 13:00. **Section 22** was accompanied by **Section 22** who is also an authorised inspector under the EPBC Act. **Section 47F** was provided a copy of the Monitoring warrant and given the opportunity to inspect the Authorised officer's identity cards.
- **Section 47F** was asked the following questions by **Section 47F**:
 - 1) *Under what ABN is the farm business at Kingvale Station operated?*
Section 47F answered along the lines of: "You will have to ring David Kempton"
 - 2) *Who is in charge of the clearing on the ground?*
Section 47F answered along the lines of: "I don't know who's in charge"
 - 3) *Does that person give progress reports on the clearing to any person?*
Section 47F answered along the lines of: "Not that I know of"
 - 4) *Has Mr Harris been on site at any point during the clearing?*
Section 47F answered along the lines of: "You will have to ring David Kempton"
 - 5) *Who owns the equipment which is being used to perform the clearing?*
Section 47F answered: "You will have to ring David Kempton"

At this point of time **Section 22** noted the instructions given to **Section 47F** and advised no further questions would be asked, he also advised that inspections would commence in areas A1 and A2 and following that an inspection of A3, A4 and A5 would follow.
- **Section 47F** was asked if he would like to accompany officers during the inspection. **Section 47F** declined the offer.
- Area A1 was inspected. Officers confirmed that satellite imagery recently examined by the Department was correct and the site is totally cleared, has had initial windrowing and has been burn in the last couple of weeks. No native vegetation remains on this part of the property.

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- Area A2 was not inspected as access to that site was impeded by a tree across the road. Officers decided that any attempt to access this portion of the property carried unacceptable risk.
- Areas A1 and A2 are unlikely to impact on MNES, however clearing was observed that the width of buffer zones to waterways was limited and lower order streams were cleared.
- Following inspection of A1, officers returned to the homestead and advised **Section 47F**
 1. That inspections were complete in areas A1 and A2
 2. Works in those areas were unlikely impact on protected matters
 3. Inspections would now continued in areas A3 A4 and A5
 4. Officers would advise **Section 47F** by telephone when they left the property
- An inspection of accessible areas A3, A4 & A5 indicate that no clearing has commenced on that portion of the property.
- No machinery was observed within any accessible clearing sites of A3, A4 or A5.
- Two (2) known bulldozers were observed outside the clearing zones, one appeared to be undergoing maintenance at the homestead, the second was positioned on the road into the station, and was positioned in such a way to facilitate loading onto a low-deck transporter.
- Officers Departed Areas A3, A4 and A5 at 1621 on Thursday 23 June 2016. A phone call was made to Kingvale Station homestead advising that inspections were complete and that officers were leaving the property.

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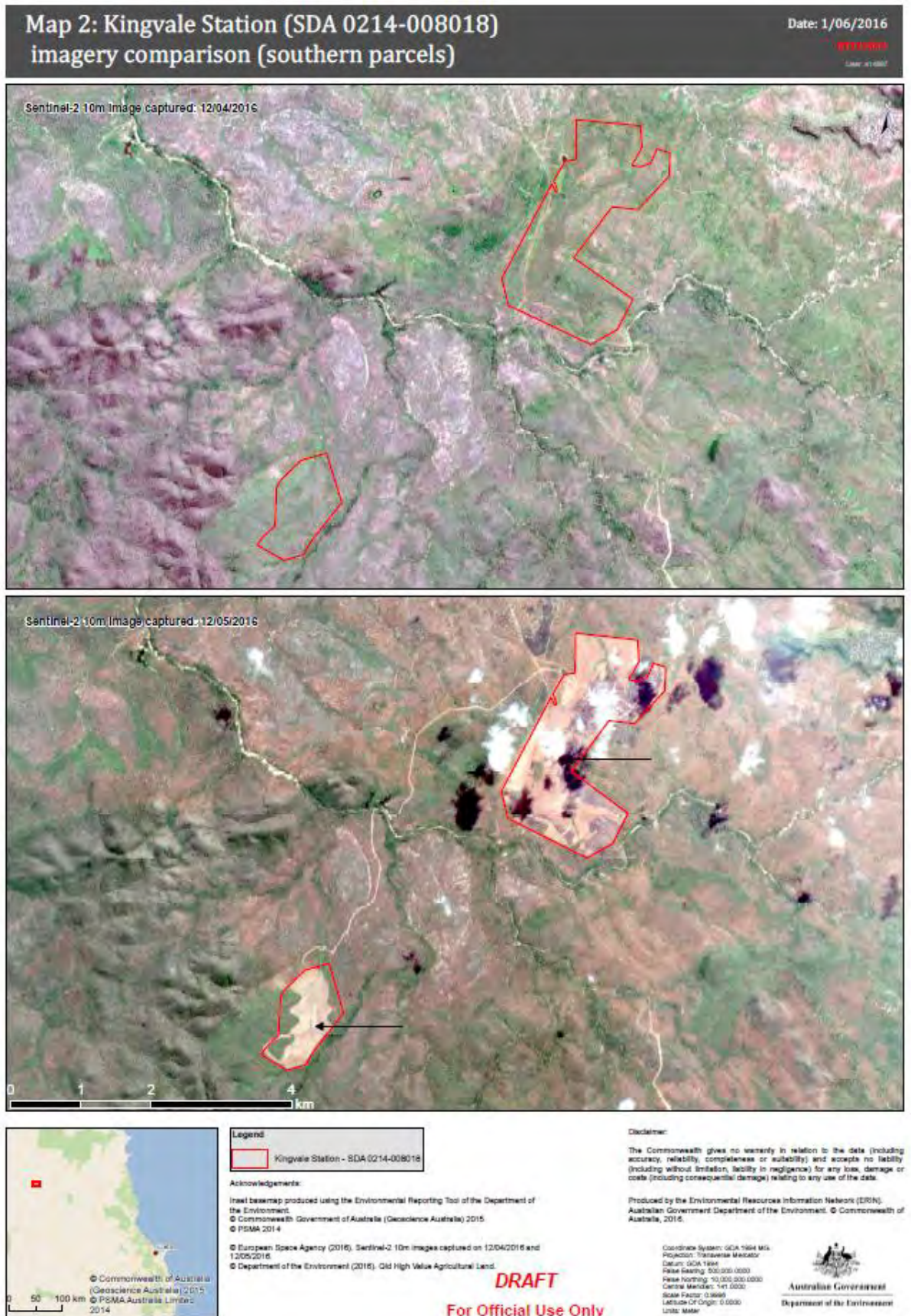


1:130000 @ A3 size

Note: Derived Reference Points are provided in inset in the location of the different. The property boundaries shown on this plan are APPROXIMATE ONLY. They are NOT an accurate

1. Map showing location of proposed clearing sites. Areas A1 and A2 drain to the Gulf of Carpentaria, Areas A3, A4 and A5 are within the Normanby catchment and drain to the Great Barrier Reef Marine Park.

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Satellite Imagery shows that clearing commenced within Areas A1 and A2

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sometime after 12 April 2016.

Area A1 was inspected. Officers confirmed that satellite imagery was correct and the site is totally cleared, has had initial windrowing and appeared to have been burnt in the last 1-2 of weeks. No native vegetation remains on this part of the property.



23 June 2016 Photo P6230014 Area A1. Shows clearing across the site is complete.

Area A2



23 June 2016 Photo P6230006 Road to Area A2. Access to A2 was not attempted because of the condition of the crossing and a tree which prevented safe access.

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Area A3, A4 and A5 were inspected. Officers confirmed that satellite imagery was correct and the site has not been subject to any clearing. There is no evidence of any adverse impacts on native vegetation in these portions of the property



23 June 2016 Photo P6230028 road on the boundary between A4 and A5 shows intact native vegetation.



23 June 2016 Photo 1027 Area A2. Shows indication that felled trees has been recently burnt.

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Site A2 16 December 2015 Photo 977



Site A2 23 June 2016 Photo 1026



23 June 2016 Photo 1031

Kingvale Station. Dozer parked at a location that would facilitate loading onto a drop-deck trailer



23 June 2016 Photo 1024

Kingvale Station. Dozer parked homestead workshop



For Official Use Only

A3 23 June 2016 Photo 1038
Areas A3-A5 remain intact and no
evidence of clearing.



A3 23 June 2016 Photo 1028
New erosion evident on tracks



A2 16 December 2015 Photo 0333
State of the environment prior to
clearing



A2 23 June 2016 Photo 1028
Shows all native vegetation cleared across
A2



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TRACK LOG KINGVALE STATION

Name: Track 213 KINGVALE

Date: 23 Jun 2016 1:06 pm

Distance: 84.5 kilometers

**Elapsed
Time:** 3:14:19

Avg Speed: 26.1 km/h

**Max
Speed:** 95.8 km/h

Start Time: 2016-06-23T03:06:47Z

**Start
Location:**

Latitude: 15.708157° S

**Longitude
:** 143.744653° E

**End
Location:**

Latitude: 15.580742° S

**Longitude
:** 143.814161° E

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Scan of Monitoring Warrant

COMMONWEALTH OF AUSTRALIA



ENVIRONMENT PROTECTION AND BIODIVERSITY CONSERVATION

ACT 1999: SECTION 409

MONITORING WARRANT

To: **Section 22** [Redacted]

27/6/16 [Signature]

1500
23/6/16

Executed [Signature]

1621
27/6/16 exiting
property

an authorised officer within the meaning of section 528 of the *Environment Protection and Biodiversity Conservation Act 1999*;

WHEREAS you have laid information on oath before me this day:

AND WHEREAS I am satisfied that it is reasonably necessary that you should have access to the premises specified in this warrant for the purpose of finding out whether any or all of the provisions of the *Environment Protection and Biodiversity Conservation Act 1999* or the regulations under that Act have been, are being or will be complied with;

AND WHEREAS I have been given any further information I required about the grounds on which the issue of this warrant was sought;

I Sandra Pearson, a magistrate within the meaning of the *Environment Protection and Biodiversity Conservation Act 1999*, hereby issue this warrant which authorises you, with such assistance and by such force as is necessary and reasonable, from time to time while this warrant remains in force:

- to enter the following premises:

**Lot 1 of KG3
Cook Shire Council, Cape York, Queensland**

Also known as 'Kingvale Station', Queensland

Being an area including a rural property; **and**

- to exercise the monitoring powers in relation to the premises.

Note that the monitoring powers set out in subsection 407(1) of the *Environment Protection and Biodiversity Conservation Act 1999* are as follows:

For Official Use Only

- (a) the power to inspect and search the premises;
- (b) the power to take photographs (including a video recording), or to make sketches, of the premises or of any substance or thing at the premises;
- (c) the power to inspect, examine and take samples of, any substance or thing on or in the premises;
- (ca) the power to take measurements of, and conduct tests on, the premises or any substance or thing on the premises;
- (cb) power to mark a live specimen on the premises;
- (d) the power to take extracts from, or make copies of, any document, book or record on the premises;
- (da) the powers to operate electronic equipment, and do other things, at the premises as mentioned in section 407A of that Act;
- (e) the power to take onto the premises any equipment or material reasonably necessary for the purpose of exercising a power referred to in any other paragraph of subsection 407(1).

And by virtue of section 409(5) of the *Environment Protection and Biodiversity Conservation Act 1999* you may also exercise the powers of seizure given under sections 444A or 445 of that Act while you are on the premises.

ENTRY UNDER THIS WARRANT MAY BE MADE AT ANY TIME OF THE DAY OR NIGHT ON ANY DAY OF THE WEEK

THIS WARRANT CEASES TO HAVE EFFECT AT THE START OF THE DAY THAT IS SIX MONTHS AFTER THE DATE OF ISSUE OF THE WARRANT

The purpose of this warrant is to authorise the authorised officer named in this warrant, with such assistance and by such force as necessary and reasonable, from time to time while the warrant remains in force, to enter the premises specified in the warrant to find out whether any or all of the provisions of the *Environment Protection and Biodiversity Conservation Act 1999* or the regulations under that Act have been, are being or will be complied with.

A copy of sections 410, 411, 412 and 412a of the *Environment Protection and Biodiversity Conservation Act 1999* is attached this warrant.

GIVEN under my hand at Cairns Magistrates Court.

in the State of Queensland this 22nd day of June 2016



A Magistrate in and for the State of Queensland

David Kempton
Lawyer
PO BOX 732
EDGE HILL QLD 4870

The Director
Compliance Section
Environmental Standards Division
Department of Environment
GPO Box 787
Canberra ACT 2601.

Reference CAS 2097

Section 22

Dear Sir

Re Kingvale Station Cape York Queensland: Request for referral of action under section 70 of the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act)

I refer to your letter of the 23rd June 2016 enclosing the section 70 Notice EPBC Act

I am instructed my client does not intend to refer the action pursuant to section 70 EPBC Act on the following grounds:

1) The Minister has determined that the Proposed Action may be a 'controlled action' and may be prohibited of the EPBC Act concerning a World Heritage property, namely the Great Barrier Reef Marine Park, relevantly by the following EPBC Act sections:

- a. section 12 - Requirement for approval of activities with a significant impact on a declared World Heritage property
 - (1) A person must not take an action that:
 - (a) has or will have a significant impact on the world heritage values of a declared World Heritage property; or
 - (b) is likely to have a significant impact on the world heritage values of a declared World Heritage property;
- b. section 15A - Offences relating to declared World Heritage properties
 - (1) A person commits an offence if:
 - (a) the person takes an action; and
 - (b) the action results or will result in a significant impact on the world heritage values of a property; and
 - (c) the property is a declared World Heritage property.

- (2) A person commits an offence if:
 - (a) the person takes an action; and
 - (b) the action is likely to have a significant impact on the world heritage values of a property; and
 - (c) the property is a declared World Heritage property;
- c. 24B(2) - Requirement for approval of activities in the Great Barrier Reef Marine Park
Actions outside Great Barrier Reef Marine Park affecting the environment in the Marine Park
 - (2) A person must not take outside the Great Barrier Reef Marine Park but in the Australian jurisdiction an action that:
 - (a) has or will have a significant impact on the environment in the Great Barrier Reef Marine Park; or
 - (b) is likely to have a significant impact on the environment in the Great Barrier Reef Marine Park;
- d. 24C(5) - Offences relating to Great Barrier Reef Marine Park
Actions outside Great Barrier Reef Marine Park affecting environment in the Marine Park
 - (5) A person commits an offence if:
 - (a) the person takes an action; and
 - (b) the action is taken outside the Great Barrier Reef Marine Park but in the Australian jurisdiction; and
 - (c) the action results in or will result in a significant impact on the environment in an area; and
 - (d) the area is the Great Barrier Reef Marine Park.

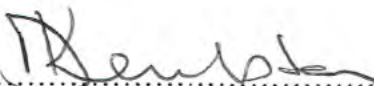
2) The Proposed Action is not an action that results, or will result, or be likely to result, in a significant impact (as defined in the EPBC Act) in the Great Barrier Reef Marine Park.

3) The Proposed Action is not a 'controlled action' and in these circumstances there were and are no grounds upon which the Minister may have formed the requisite belief under in section 70 of the EBPC Act.

I advise proceedings have been commenced in the Federal Court pursuant to the ADJR Act seeking a review of your decision.

A copy of the application is enclosed.

Yours sincerely



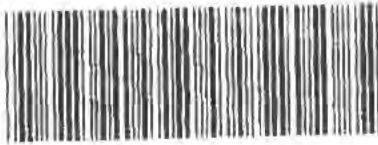
.....
David Kempton
13th July 2016

QUEENSLAND LAND REGISTRY
Land Title Act 1994, Land Act 1994 and Water Act 2000

GENERAL REQUEST

Form 14 Version 3
Page 1 of 1

Duty Imprint



716831753

NO FEE
20/10/2015 14:18

BE 903
and the water register.

1. Nature of request Leasehold Amendment	Lodger (Name, address & phone number) Dept of Natural Resources & Mines BRISBANE	Lodger Code
--	---	--------------------

2. Lot on Plan Description LOT 1 ON CP KG3	County KING	Parish KOPO	Title Reference 17666147
--	-----------------------	-----------------------	------------------------------------

3. Registered Proprietor/State Lessee
SCOTT ALEXANDER HARRIS

4. Interest
STATE LEASEHOLD

5. Applicant
The State of Queensland (represented by Department of Natural Resources & Mines)

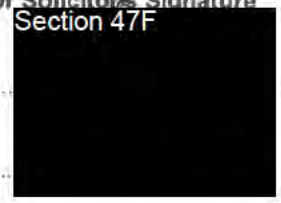
6. Request
I hereby request that: Refer to the attached 'Statement of Intent'

7. Execution by applicant

Execution Date

20/10/2015

Applicant's or Solicitor's Signature
Section 47F



Note: A Solicitor is required to print full name if signing on behalf of the Applicant

Title References [17666147]

eLVAS Case Id [2014/007053]

Plan lodgement under the *Land Act 1994*

Statement of Intent

1. Enter the Lot and Plan Number lodged eg. SP123456

Lot	Plan
1	SP280074

go to 2

2. Select the sections(s) under the *Land Act 1994* authorising the dealings(s) with the land
(one or more selections can be made)

- Section 18 exchange land
- Section 24 disposal of reservation no longer needed Executive Council
Minutes No.
- Section 31 dedication of a reserve
- Section 31A changing boundaries of reserve
- Section 33 whole or partial revocation of reserve Title Reference of
Reserve being fully
Revoked.
- Section 36 amalgamating land subject to deeds of grant in trust
- Section 44 appointment of trustees
- Section 55D whole or partial surrender of deed of grant in trust
- Section 94 dedication of road
- Section 98 permanent closure of road
- Section 109A change of description of deed of grant resulting from simultaneous opening and closing of roads
- Section 109B change of description trust land or lease resulting from simultaneous opening and closing of roads
- Section 162 renewal of lease
- Section 172 conversion of lease
- Section 176G subdivision of lease
- Section 176S amalgamation of leases
- Section 239 conversion of lease to a lesser area rather than forfeiture of lease
- Section 327E whole or partial surrender of lease
- Section 358 change of deed of grant description or boundary of land
- Section 360A(2) resurvey of lease land
- Section 360A(2) mutual exchange between lessees
- Section 360A(2) inclusion of unallocated state land
- Section 360A(2) absorption of no longer needed reservation
- Section 481E whole or partial cancellation of occupation licence
- Section 481F whole or partial surrender of occupation licence
- Subdivision of USL for further dealing
- Survey Plan to provide a more adequate and accurate description of State land

go to 3

**SCHEDULE / ENLARGED PANEL /
ADDITIONAL PAGE / DECLARATION**

Title References [17666147]

eLVAS Case Id [2014/007053]

3. Enter new description of continuing tenure affected (AMENDED) by the plan

New Lot / Plan number	Title Reference
1	SP280074

(If there is insufficient space, please attached information on a Schedule 20)

go to 4

4. Enter details of the AMENDMENT of the continuing tenure/s affected by the plan

(Lot on Plan)	Omit (AREA)	(Lot on Plan)	Insert (AREA)
LOT 1 ON KG3	55,500 ha (abt)	LOT 1 ON SP280074	55,500 ha (abt)

(If there is insufficient space, please attached information on a Schedule 20)

This item is not required for renewal, conversion, subdivision or amalgamation dealings as this item is used to amend the current tenure only. For these dealings the current tenure description will not be amended, it is the new tenure/s that will issue with the new description.

**PLEASE NOTE – ITEMS 5 TO 8 ARE ONLY TO BE COMPLETED WHERE A
NEW RESERVE IS BEING DEDICATED OTHERWISE LEAVE BLANK**

5. If land is dedicated as a reserve for a community purpose, the allocated title reference for the dedicated land:

Title Reference Number for new Reserve: 8 digit number allocated from A1S

Community purpose of new Reserve:

go to 6

6. Enter the names in full of the person(s) appointed as trustee by this notice

Subject to the conditions, if any on the attached page.

go to 7

7. Enter details of the particular item being created

Lot / Plan number	Area

go to 8

8. List of public utility easements continued under the authority of s 372 as a registered interest in the land

Dealing No	New Lot affected

All dealings registered against a continued public utility easement applicable to the land continue to the reserve dedicated by this notice.

go to 9

QUEENSLAND LAND REGISTRY
Land Title Act 1994, Land Act 1994
and Water Act 2000

**SCHEDULE / ENLARGED PANEL /
ADDITIONAL PAGE / DECLARATION**

Form 20 Version 3
Page [3] of [3]

Title References [17666147]

eLVAS Case Id [2014/007053]

9. Declaration

I hereby declare that this action is approved under the relevant legislation and request details shown in this notice be recorded in the Land Register.

Signature of Delegated Officer

Section 47F

Delegated Officers full name:

Section 47F

Delegated Officers position title:

SENIOR LAND OFFICER

Regional Office:

INNISFAIL

Date:

09/10 2015.

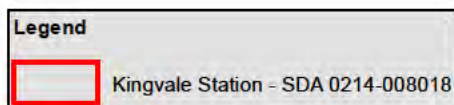
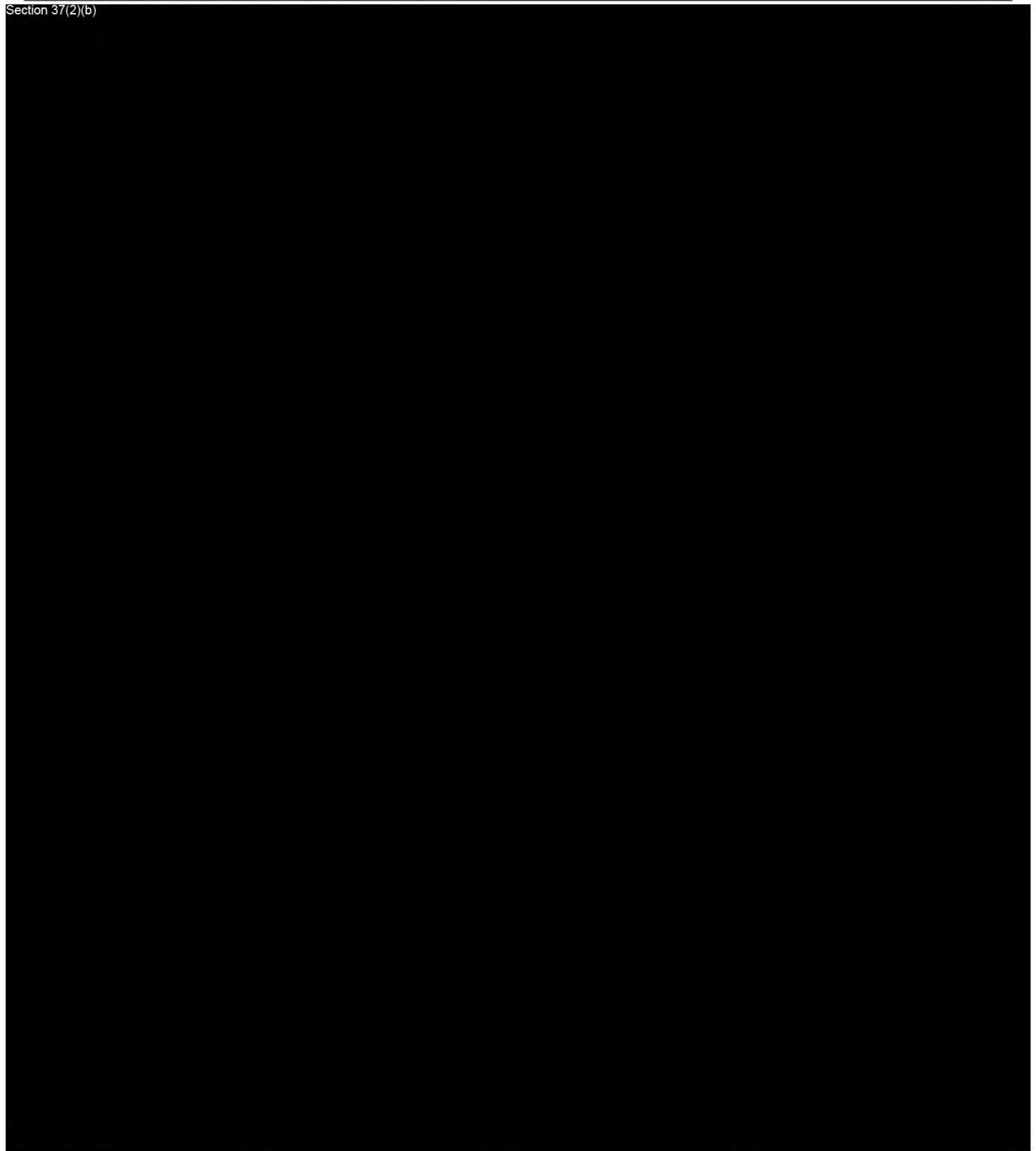
Map 1: Kingvale Station (SDA 0214-008018) imagery comparison (northern parcel)

Date: 20/07/2016

RT319059

User: a14897

Section 37(2)(b)



Acknowledgements:

Inset basemap produced using the Environmental Reporting Tool of the Department of the Environment.
© Commonwealth Government of Australia (Geoscience Australia) 2015
© PSMA 2014

USGS (2016). Landsat 8 pansharpned 15m image captured on 01/07/2016.
© CNES (2016). Pleiades 1A pansharpned 50cm image captured on 09/07/2016.
© Department of the Environment (2016). Qld High Value Agricultural Land.

Disclaimer:

The Commonwealth gives no warranty in relation to the data (including accuracy, reliability, completeness or suitability) and accepts no liability (including without limitation, liability in negligence) for any loss, damage or costs (including consequential damage) relating to any use of the data.

Produced by the Environmental Resources Information Network (ERIN), Australian Government Department of the Environment. © Commonwealth of Australia, 2016.

Coordinate System: GCS GDA 1994
Datum: GDA 1994
Units: Degree



Australian Government
Department of the Environment

DRAFT
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To: Assistant Secretary Gaddes (for decision)

BRIEF_AS_151202 SIGN FIRST LETTER S70 PROCESS

Timing: 4 December 2015

Recommendation/s:

1. That you agree there is sufficient reason to consider that the clearing at Kingvale Station may be a controlled action under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)

Agreed / Not agreed

2. That you agree to commence the process of requesting referral of a proposal as per section 70 of the EPBC Act.

Agreed / Not agreed

3. That you sign the letter at Attachment A which represents the first step in the section 70 call in process

Signed / Not signed

Assistant Secretary Gaddes:

Date:

Comments:


Key Points:

1. Kingvale Station, located near Laura about 100km west of Olive Vale, is owned by Harris Operations Pty Ltd, Director Scott Harris. Mr Harris also owns Strathmore Station.
2. During the Strathmore site inspection last week, compliance officers were made aware that bulldozers were already on site at Kingvale and when clearing was completed, which was imminent, the operators would be transported to Kingvale to clear almost 3,000ha approved under Queensland state legislation for high value agriculture.
3. The Department has previously engaged with Mr Harris about planned clearing at Kingvale, through Section 47F, in May and June 2015. The last correspondence was an email from Section 47F dated 10 June 2015 which included advice about EPBC Act protected matters (threatened species) prepared by consultant Section 47F. The email and advice are at Attachment B.
4. The Compliance Section remains concerned about the potential for a significant impact on matters of national environmental significance, in particular the Great Barrier Reef World Heritage Area.
5. It is difficult to obtain accurate information about listed threatened species that could potentially be impacted by the clearing, due to the size and remoteness of the property. The expert report prepared for Olive Vale (100km east) provides an indication, as there are

similarities between the two properties, and there are records of threatened species within 20km of the property.

6. The department has the option of recommending that the Minister request referral of the development under Section 70 of the EPBC Act. Under this provision the Minister has the power to request referral of actions that he thinks may be a controlled action.
7. AGS has previously provided advice regarding the Minister's powers under Section 70 The advice indicates that the Minister has to form an opinion on two related matters. Firstly the Minister must believe that the person proposes to take the action and then the Minister must think that the action is or may be a controlled action, allowing for a degree of uncertainty.
8. The Department believes that it could properly recommend that the Minister exercise his power under section 70 and request referral of the clearing.
9. The most likely trigger to call in the project under section 70 would appear to be the Great Barrier Reef, for impacts from diffuse nutrient and sediment runoff. A map showing the proposed clearing is part of Attachment B. The northernmost clearing (approx 2,000 ha) appears to be within the Cape York Reef catchment, approximately 200km (115km straight line) from the Reef.
10. Broad-scale clearing and sowing of sorghum crops within the catchment is likely to be inconsistent with the water quality improvement goals under the Reef Water Quality Protection Plan. In addition, the Referral Guidelines for the Great Barrier Reef World Heritage Area identify 'substantive land use change in the catchments' as an example of an activity with a high risk of significant impact. Referral of these activities is recommended.
11. The attached letter represents the first step in the section 70 call in process. The letter provides Harris Operations with 10 business days to make a further submission to the Department about why the clearing does not need to be considered under the EPBC Act.
12. Should the Minister decide to exercise the call in power, Harris Operations would have 15 business days to refer the action to the Minister after which the Minister has up to 20 business days to deem the action as referred.

Section 37(2)(b)



14. General Counsel Branch has reviewed the attached letter.

Section 22

Director
Compliance Section

Section 22

Contact Officer: Section 22

Compliance Section

Ph: Section 22

[4 / 12/2019]

ATTACHMENTS

A: Letter to Section 47F Harris Operation Pty Ltd, for signing

B: Email from Section 47F dated 10 June 2015 including map and advice from Peter Spies



Contact Officer: Section 22
Telephone: Section 22

Our reference: CAS2097
Email: compliance@environment.gov.au

Section 47F

Business & Finance Manager
Harris Operations Pty Ltd
9 Main Street
GEORGETOWN QLD 4871

Section 47F

Dear Section 47F

Thank you for your email of 10 June 2015, advising that Harris Operations Pty Ltd is of the opinion that a referral for the clearing of 2,863 hectares of native vegetation at Kingvale Station is not warranted under the *Environment Protection and Biodiversity Conservation Act 1999* (the Act). I note the advice by Mr Peter Spies (dated 6 June 2015) that no matters of national environmental significance will be impacted by the proposed clearing works.

The Department has considered this advice and, as per our correspondence of 6 May 2015, remains of the opinion that the proposed clearing of 2,863 hectares at Kingvale Station may directly impact on matters protected under the Act, such as listed threatened fauna species. The Department further anticipates that the clearing may result in ongoing impacts to downstream receiving environments, including impacts to habitat for listed threatened aquatic species and to the Great Barrier Reef World Heritage Area resulting from diffuse nutrient and sediment runoff. It is not clear that these downstream impacts have been assessed or considered in the planning of the clearing and/or development of the land for agriculture.

As you may be aware, in June this year, the Department, accompanied by an expert ecologist, conducted an inspection of a property in the Laura region in close proximity to Kingvale Station at which broad scale clearing had commenced under state permit. The expert advice provided sufficient information and evidence to conclude that the proposed clearing on this property may be, or is a controlled action and should be referred to the Minister for a decision under the Act. The Department considers that ecological attributes on the property at Laura would, more than likely, also exist at Kingvale Station.

In considering whether or not an action requires approval under section 75 of the Act, it is relevant to consider the proposed action at its broadest scope and any impacts that action may have on matters of national environmental significance. Given the scale of the proposed works, the potential for downstream impacts, and the lack of detailed information regarding the importance of the site to listed threatened species, the Department is of the opinion that a referral for the proposed clearing at Kingvale Station is warranted.

Having regard to the information available to the Department, including referral decisions for other proposals in the same region, I have formed a preliminary view that Harris Operations Pty Ltd proposes to undertake an activity which may constitute a controlled action under the Act. In particular I am concerned about the potential for the clearing of native vegetation to significantly impact on matters of national environmental significance which are likely to occur on the property, or downstream from the property.

The Act provides the Minister's delegate with powers under section 70(1) to request referral of actions that may be controlled actions, thereby needing approval under the Act. If an action is not referred within 15 business days of such a request the action may be deemed to have been referred. Further information on section 70 of the Act is attached.

In accordance with the requirements of procedural fairness, I invite you to make a submission on any matters which you believe should be taken into account prior to the Department recommending to the Minister's delegate that he consider using his powers under section 70.

I seek your submission on this issue in response by COB Friday 18 December 2015.

Should you have any queries about the matters raised in this letter please contact **Section 22** Director of the Compliance Section, by phone on **Section 22** or by e-mail at compliance@environment.gov.au.

Yours sincerely

Shane Gaddes
Assistant Secretary
Compliance and Enforcement Branch

4 December 2015

Att 1 EPBC Act – Section 70

ATTACHMENT 1

ENVIRONMENT PROTECTION AND BIODIVERSITY CONSERVATION ACT 1999

SECTION 70

Minister may request referral of proposal

(1) If the Minister believes a person proposes to take an action that the Minister thinks may be or is a controlled action, the Minister may request:

- (a) the person; or
- (b) a State, self-governing Territory or agency of a State or self-governing Territory that the Minister believes has administrative responsibilities relating to the action;

to refer the proposal to the Minister within 15 business days or a longer period agreed by the Minister and the requested person, State, Territory or agency (as appropriate).

Note 1: If the proposal to take the action is not referred, the person cannot get an approval under Part 9 to take the action. If taking the action without approval contravenes Part 3, an injunction could be sought to prevent or stop the action, or the person could be ordered to pay a pecuniary penalty.

Note 2: Section 156 sets out rules about time limits.

(2) In making a request, the Minister must act in accordance with the regulations (if any).

Deemed referral of proposal

(3) If:

- (a) the Minister has made a request under subsection (1); and
- (b) the period for compliance with the request has ended; and
- (c) the requested person has not referred the proposal to the Minister in accordance with the request;

the Minister may, within 20 business days after the end of that period, determine in writing that this Act has effect as if:

- (d) if paragraph (1)(a) applies--the requested person had referred the proposal to the Minister under subsection 68(1) at the time the determination was made; or
- (e) if paragraph (1)(b) applies--the requested person had referred the proposal to the Minister under subsection 69(1) at the time the determination was made.

(4) A determination under subsection (3) has effect accordingly.

(5) A copy of a determination under subsection (3) is to be given to the requested person.

(6) Subsection 68(3) and section 72 do not apply to a referral covered by subsection (3) of this section.

(8) Subsection 74(3) applies to a referral covered by subsection (3) of this section as if the reference in paragraph 74(3)(a) to the referral were a reference to the determination concerned.

Section 22

From: Section 47F
Sent: Wednesday, 10 June 2015 4:13 PM
To: Section 22
Subject: FW: Kingvale Response letter to EPBC
Attachments: KingvalePotentialHabitat_A4P.pdf; Kingvale_EPBC letter.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Assistant Director
EPBC Compliance
Dept of Environment
Australian Government

Attention Section 22

Re CAS 2097 Kingvale Station

We refer to your letter of the 6th May 2015 and confirm it is our view that a referral of the tree clearing activity on Kingvale Station is not warranted under the *EPBC Act 1999*.

We enclose for your information an independent review of the matters of potential national environmental significance including the existence of rare and threatened species that might be relevant to the specific area of activity on Kingvale. The report assesses the risk of impact by the activity as being low to unlikely.

Many of the example species listed by your Department are not found in the activity area and in some cases are not found at all in the region for example the *Koala, the Golden Shouldered Parrot and the Red Goshawk, Australian Painted Snipe and the Gouldian Finch* etc

Further we have discussed this matter with Section 47F of Kingvale who has resided on the property Section 47F and has an intimate knowledge of its habitat and the species that exist there.

He similarly is not aware of matters of potential national environmental significance including the existence of rare and threatened species that might be relevant to the specific area of activity on Kingvale Station and in particular he has not seen the *Koala, the Golden Shouldered Parrot and the Red Goshawk, Australian Painted Snipe and the Gouldian Finch* etc on Kingvale Station

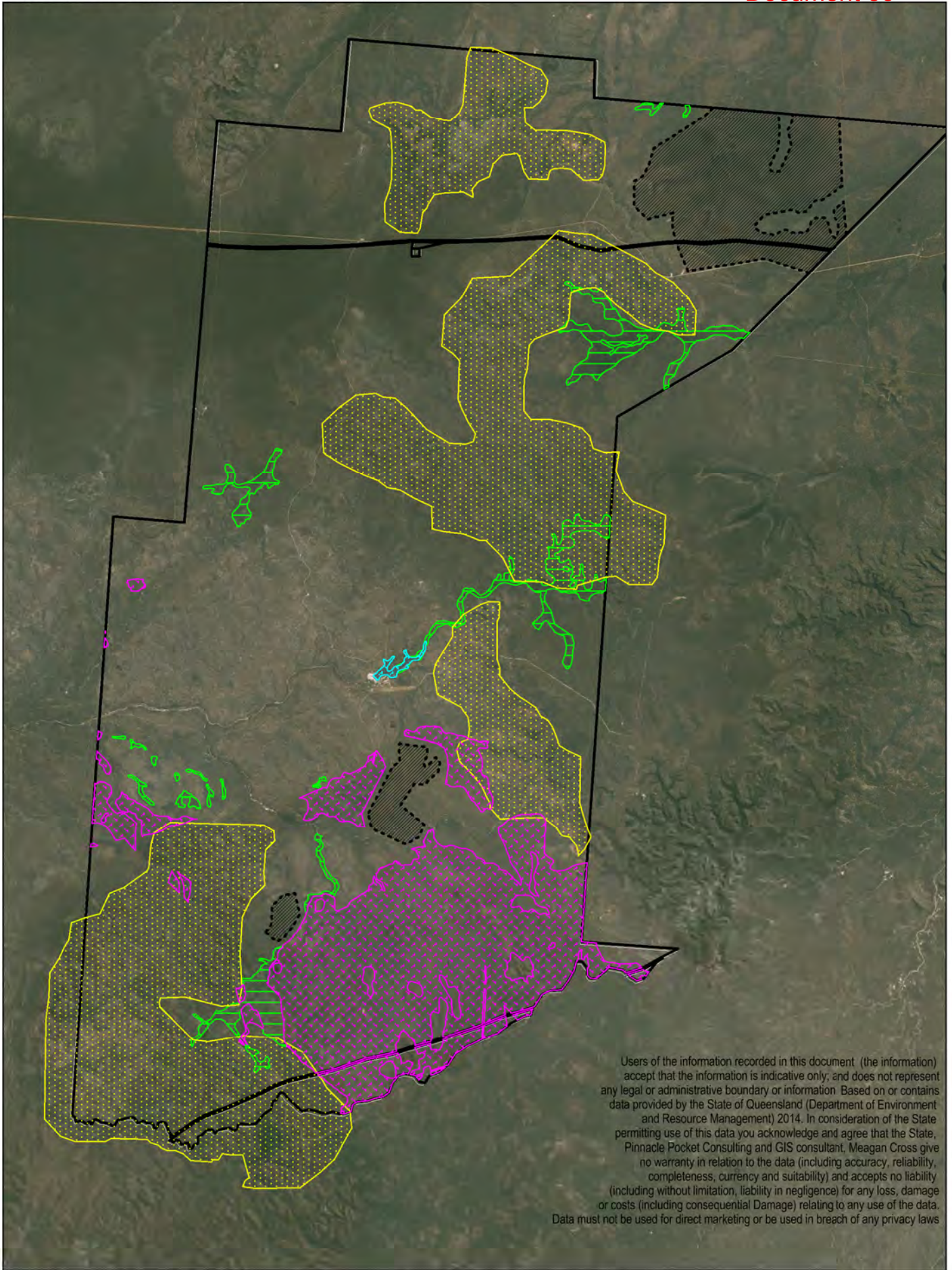
Section 47F will supervise the tree clearing activity and we have acquainted him with potential species of concern and in the event he experiences any such species he will inform us and we will act accordingly.

Should you require any further information please contact us.

Sincerely

Section 47F
Business & Finance Manager
Harris Operations Pty Ltd
Section 47F

KINGVALE STATION - POTENTIAL HABITAT AREAS





Users of the information recorded in this document (the information) accept that the information is indicative only, and does not represent any legal or administrative boundary or information. Based on or contains data provided by the State of Queensland (Department of Environment and Resource Management) 2014. In consideration of the State permitting use of this data you acknowledge and agree that the State, Pinnacle Pocket Consulting and GIS consultant, Meagan Cross give no warranty in relation to the data (including accuracy, reliability, completeness, currency and suitability) and accepts no liability (including without limitation, liability in negligence) for any loss, damage or costs (including consequential Damage) relating to any use of the data. Data must not be used for direct marketing or be used in breach of any privacy laws

Potential Habitat Mapping**

- | | | | |
|--|--------------------------|---|--------------------------|
|  | Golden Shouldered Parrot |  | Gouldian Finch |
|  | Northern Quoll |  | Australian Painted Snipe |

Legend

- | | |
|---|-------------------|
|  | Proposed Clearing |
|  | Property Boundary |

**Please note polygons are indicative habitat areas only, not recorded species sightings or known habitat on Kingvale station.

Pinnacle Pocket Consulting

09 June 2015

Section 22

Senior Compliance Officer
EPBC Compliance Section
Compliance and Enforcement Branch
Department of Environment
GPO Box 787 Canberra ACT 2601

Section 22

Dear Section 22

Re: Kingvale Clearing Application and Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act), CAS 2097

I am the consultant engaged by Mr Scott Harris in relation to the High Value Agriculture Proposal for Vegetation Clearing at Kingvale, Laura. I was contracted to investigate the suitability for sorghum over the subject land on Kingvale Station (Lot 1 KG3, Cook Shire) and prepared the reports for the state assessment process.

In preparing the application I assessed vegetation, regional ecosystems (RE) and animal habitat for any possible endangered, vulnerable, rare (EVR) or conservation dependent species and prepared potential habitat mapping for Kingvale. The application was approved under the Vegetation Management Act 1999.

The following sites were used as the point of reference for any likely EVRs: - Under Nature Conservation Act 1992 -

<https://www.legislation.qld.gov.au/LEGISLTN/CURRENT/N/NatureConWiR06.pdf>

EPBC Act List of Threatened Flora/Fauna -

<http://www.environment.gov.au/biodiversity/threatened/species>

I have been requested to prepare a response to the letter received by Mr Harris relating to a referral under the Environment Protection and Biodiversity Conservation Act 1999(EPBC Act).

It is my view based upon the research I have undertaken that none of the species mentioned inhabit the area or will be impacted by the Development permit issued by the Queensland Government pursuant to the Vegetation Management Act 1999.

I believe that many of the species you identified in your letter dated, 6 May 2015, are not found within or near to the permit area.

The Commonwealth mapping is broad at best and may be out by a couple of hundred kilometres, and, in the Case of the Koala – at least 300km.

In your letter five (5) species were mentioned as possibly being within the area – the Gouldian Finch (*Erythrura gouldiae*), Red Goshawk (*Erythrotriorchis radiatus*), Golden-shouldered Parrot (*Psephotus chrysopterygius*), Australian Painted Snipe (*Rostratula australis*), and the Koala. These five (5) and another four (4), identified from the EPBC Act List of Threatened Flora/Fauna - were further researched and investigated prior to inspection. These additional four (4) species are the Crimson

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Finch (white-bellied) - *Neochmia phaeton evangelinae*, masked owl (northern subspecies) *Tyto novaehollandiae kimberli*, Spectacled Flying-fox (*Pteropus conspicillatus*), and northern quoll (*Dasyurus hallucatus*). These were addressed in the Report... but only those that potentially could be found on Kingvale property were mapped. We went back to the published factors and requirements of that particular species survival, foraging (feeding) and roosting/ nesting/dwelling etc. habitat for the mapping.

For instance – if the Australian Painted Snipe requires wetlands, and there are no wetlands within the proposed area (as mapped wetlands cannot be approved under Queensland's Vegetation Management legislation) and it is unsuitable country. It does not exist within proposed areas.

The applicant has ensured that any such areas on the property, for instance around any ephemeral wetlands, being remnant vegetation, were then well-buffered and were connected by corridors.

This application was fully assessed by the Department of Natural Resources, with comment received from other State Agencies, and co-ordinated by the Queensland Department of State Development. There are a number of animals commonly listed between the State's Nature Conservation Act 1992 and the Commonwealth's EPBC Act. No animals listed under the NCA were identified... and we also considered EPBC-listed species for the habitat mapping.

The final approved area was 2863 Ha (Appendix A). Over 94% of the property will remain as remnant vegetation, including escarpment areas and watercourses, with connectivity maintained throughout the landscape. Actions were considered at their broadest possible scope when it came to not only matters of National Significance, but also matters of State Significance and water quality. Risks were identified and have been mitigated as detailed in the Report attached and through the final plan ensuring waterway and wetland buffers, connectivity and avoiding any identified 'potential' habitat.

To ensure coverage - 19 soil/landscape/habitat/land condition sites were surveyed, where tree and grass species were noted. This project has adopted a landscape planning approach to ensure balance between the environment and sustainable economic development.

Qualifications and Experience of Consultant

I am qualified as a Resource Management Officer with a Bachelor Degree in Rural Technology (Hons) through UQ. I undertook subjects in Botany and Plant Ecology and Rangeland Management. Course work with a botanical component including plant ID/taxonomy. I specialise in Vegetation, Soils, Natural Resource Management and Agricultural Suitability and have been previously employed in State Government for over 12 years with DNRM and DPI in Vegetation Management (6 years which involved flora survey), Soil Conservation, Land Management and Agricultural Extension. Subsequently, I have worked as a Land Management Consultant for two (2) years and I am contracted by the Regional NRM body – Cape York NRM to

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undertake Vegetation, Land condition, Land systems, soils and some information on potential conservation values, as part of their Sustainable Agriculture Program. I worked in Cape York, since 2000 and have Queensland Government training in Vegetation Structure, Regional Ecosystems and Plant identification, and have conducted training for other Vegetation Management Officers whilst employed in DNRM (qualified as trainer and assessor). In short, I am qualified and experienced to determine likely fauna habitat from plant species and know floristics. I have been deemed qualified as a 'suitable person' to conduct flora surveys in relation to the presence/absence of EVNT (Endangered, Vulnerable and Near-threatened) protected species in 'high risk' areas where clearing is proposed, by the Queensland Department Environment & Heritage Protection.

To map habitat there needs to be an understanding of firstly, Vegetation and ecosystems, Land systems, Landform, soils and geology that creates the habitat. I have broken this down to describe the vegetation and land systems to then address the species individually and why the habitat does not exist within the proposed areas.

Vegetation/Regional Ecosystems

The proposed clearing is not within any mapped endangered regional ecosystem (RE), or an of concern regional ecosystem.

In general the proposed clearing Area 1 is woodlands and tall woodlands on deeply Weathered plateaus and remnants... The canopy is broken and made up mostly of the dominant Darwin Stringybark (*E. tetrodonta*) and bloodwoods particularly Clarkson's Bloodwood (*C. clarksoniana*). The only other (but minor) constituent being Cooktown ironwood (*Erythrophleum chlorostachys*), constantly present but never in abundance. Other large trees occurring singly or in small groups here and there are Cullen's ironbark (*E. cullenii*), Molloy Box (*E. leptophleba*) and some scattered Dallachy's or Ghost gum (*C. dallachiana*). Of the smaller understory trees, those that are uncommon generally but common where found are Acacia spp. (*A. leptocarpa*, *A. platycarpa*, *A. calyculata*), *Alphitonia* sp. *Terminalia* spp. Pandanus in drainage lines, *Melaleuca* spp, and *Grevillea* spp. There are occasional patches of *Petalostigma banksii* or *Grewia retusifolia*.

The main grass species found at Kingvale within the proposed clearing areas included Blackspear grass (*Heteropogon contortus*), Giant speargrass (*Heteropogon triteceus*), *Sarga plumosum*, Wanderrie (*Eriachne* sp.), Lovegrasses (*Eragrostis* sp.) *Themeda triandra* (kangaroo grass), *Schizachyrium fragile* (fire grass), and Wiregrasses (*Aristida* spp.).

These woodlands best fit the RE descriptions within RE 3.5.7, 3.9.2, 3.5.12 and RE 3.12.10c. Sites are described and shown as pictures in Appendix H.

Areas of weeping paperbark (*Melaleuca* spp.) woodland, lagoons with waterlilies and sedges were not found within areas of proposed clearing and have been mapped out to exclude such areas.

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No critically endangered and endangered ecological communities are found within the area of proposed clearing on Kingvale Station (see Table 1).

The proposed clearing has met with the performance requirements of Queensland Government's code for clearing for High Value Agriculture. This means clearing is not to occur in, or within 100 metres of, any natural wetland or wetland regional ecosystem. The proposed clearing is not to occur in in any watercourse or within the relevant distance stipulated in the code of the defining bank of any watercourse i.e. Stream orders 1 & 2 have been buffered by at least 25m and stream orders 3 & 4 by at least 50m and stream order 5 or 6 by 100m.

Table 1: The RE's proposed to be developed as mapped include:-

RE	RE Description
3.5.12	Eucalyptus tetrodonta +/- Corymbia nesophila +/- C. clarksoniana woodland on undulating rises
3.5.7a	Woodland of Eucalyptus tetrodonta (Darwin stringybark) and/or Corymbia clarksoniana (Clarkson's bloodwood) +/- Erythrophleum chlorostachys (Cooktown ironwood). Both the very sparse to sparse sub-canopy and shrub layers can contain a range of species. There are a range of communities contributing to this regional ecosystem. Occurs extensively on low rises and erosional plains both east and west of the Great Dividing Range in southern and eastern Cape York Peninsula
3.11.7	Eucalyptus cullenii (Cullen's ironbark) and Corymbia dallachiana (Dallachy's gum) dominate the sparse to very sparse canopy (11-19m tall). Other Eucalyptus spp. may be present in the canopy and are occasionally subdominant. Dendrolobium umbellatum (horse bush) is the primary species in a very sparse sub-canopy layer (4-8m tall). The sparse shrub layer (0.2-1.5m tall) is characterised by the presence of Dolichandrone heterophylla (lemonwood), Flueggea virosa subsp. melanthesoides (white currant) and Grevillea mimosoides. The ground layer is sparse to mid-dense and dominated by the grasses, Heteropogon contortus (black speargrass), H. triticeus (giant speargrass) and Sarga plumosum, and the forb Chamaecrista absus var. absus. Occurs on low hills and rises on metamorphic rocks.
3.9.2	Eucalyptus chlorophylla (shiny-leaved box) dominates the very sparse to sparse canopy (8-25m tall). Other Eucalyptus spp. are occasionally present in the canopy. Scattered Hakea persiehana (bootlace oak), Melaleuca viridiflora (broad-leaved teatree) and Erythrophleum chlorostachys (Cooktown ironwood) are sometimes present as sub-canopy trees (4-12m tall). A shrub layer is rarely formed but scattered Dolichandrone heterophylla (dolichandrone), Grewia retusifolia (dog's balls) and Melaleuca viridiflora shrubs 0.5-2m tall may be present. The ground layer is sparse to dense and dominated by the grasses Heteropogon contortus (black speargrass), Sarga plumosum, Themeda arguens, T. triandra (kangaroo grass) and Dichanthium sericeum subsp. sericeum (Queensland bluegrass). Occurs on clay undulating plains.
3.12.10c	Eucalyptus cullenii (Cullen's ironbark) and Corymbia dallachiana (Dallachy's gum) dominate the sparse to very sparse canopy (11-19m tall). Other Eucalyptus spp. may be present in the canopy and are occasionally subdominant. Dendrolobium umbellatum (horse bush) is

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	the primary species in a very sparse sub-canopy layer (4-8m tall). The sparse shrub layer (0.2-1.5m tall) is characterised by the presence of <i>Dolichandrone heterophylla</i> (lemonwood), <i>Flueggea virosa</i> subsp. <i>melanthesoides</i> (white currant) and <i>Grevillea mimosoides</i> . The ground layer is sparse to mid-dense and dominated by the grasses, <i>Heteropogon contortus</i> (black speargrass), <i>H. triticeus</i> (giant speargrass) and <i>Sarga plumosum</i> , and the forb <i>Chamaecrista absus</i> var. <i>absus</i> . Occurs on low granite hills and rises.
3.12.14c	<i>Corymbia stockeri</i> (gum-topped bloodwood) and <i>Eucalyptus megasepala</i> usually dominate the sparse canopy (9-15m, occasionally 20m tall). <i>Melaleuca stenostachya</i> (fibre-barked teatree) usually dominates a very sparse sub-canopy tree layer (8-12m tall). <i>M. viridiflora</i> (broad-leaved teatree) is also frequently present. A sparse shrub layer (3-8m tall) is usually present. <i>Petalostigma banksii</i> (smooth-leaved quinine) and <i>Corymbia stockeri</i> frequently dominate this layer. The ground layer is sparse to mid-dense and dominated by the grasses, <i>Schizachyrium fragile</i> (fire grass), <i>Sarga plumosum</i> and <i>Heteropogon triticeus</i> (giant speargrass). Occurs on granite hills.

These regional ecosystems are well represented within Cape York and are all listed as Least Concern.

Note: No waterbodies, swales, lagoons or watercourse RE's are included along with Melaleuca-dominant RE's. These have been excluded for reasons of unsuitability and habitat.

Flora

There is no critically endangered, endangered, vulnerable or rare flora species under the EPBC Act or Nature Conservation Act within the area proposed to be cleared (see flora survey trigger map for the Nature Conservation Act – Appendix B).

Fauna

Both listed species Under *Nature Conservation Act 1992* and *Environment Protection and Biodiversity Conservation Act 1999* (the EPBC Act) were checked for any possible endangered, vulnerable, rare (EVR) or conservation dependent species.

Under the EPBC Act nine (9) species were shown on distribution maps as possibly being within the area and were further researched and investigated prior to inspection. These species are the Crimson Finch (white-bellied) - *Neochmia phaeton evangelinae*, Gouldian Finch (*Erythrura gouldiae*), Red Goshawk (*Erythrotriorchis radiatus*), masked owl (northern subspecies) *Tyto novaehollandiae kimberli*, Golden-shouldered Parrot (*Psephotus chrysopterygius*), Australian Painted Snipe (*Rostratula australis*), Spectacled Flying-fox (*Pteropus conspicillatus*), northern quoll (*Dasyurus hallucatus*) and Koala. Inappropriate fire regimes, pest plants and pest animals, particularly wild pigs (*Sus scrofa*), appear to pose the greatest threat to the native plant and animal species and regional ecosystems – not vegetation clearing with proposed uses with higher groundcover from crop or pasture.

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A search was done of the State's database for species listed under the *Nature Conservation Act 1992* on Kingvale Stations. The following species *Erythrotriorchis radiatus* (Red goshawk), masked owl (northern subspecies) *Tyto novaehollandiae kimberli*, *Erythrura gouldiae* (Gouldian finch), Golden-shouldered Parrot (*Psephotus chrysopterygius*), Crimson Finch (white-bellied) (*Neochmia phaeton evangelinae*), Australian Painted Snipe (*Rostratula australis*) and Koala (*Phascolarctos cinereus*) are listed under that Act.

NO RESULTS were indicated within Kingvale or within proximity to.

Essential habitat is required for assessment under the:

- State Development Assessment Provisions - Module 8: Native vegetation clearing which sets out the matters of interest to the state for development assessment under the Sustainable Planning Act 2009; and
- Self-assessable vegetation clearing codes made under the Vegetation Management Act 1999

Essential habitat for one or more of the following species is found on and within 1.1 km of the identified subject lot/s or on and within 2.2 km of an identified coordinate on the accompanying essential habitat map.

This report identifies essential habitat in Category A, B and Category C areas. The numeric labels on the essential habitat map can be cross referenced with the database below to determine which essential habitat factors might exist for a particular species.

Essential habitat is compiled from a combination of species habitat models and buffered species records. The Department of Natural Resources and Mines website (<http://www.dnrm.qld.gov.au>) has more information on how the layer is applied under the State Development Assessment Provisions - Module 8:

Regional ecosystem is a mandatory essential habitat factor, unless otherwise stated. Essential habitat, for protected wildlife, means a category A area, a category B area or category C area shown on the regulated vegetation management map-

- 1) (a) that has at least 3 essential habitat factors for the protected wildlife that must include any essential habitat factors that are stated as mandatory for the protected wildlife in the essential habitat database; or
- 2) (b) in which the protected wildlife, at any stage of its life cycle, is located.

Essential habitat identifies endangered or vulnerable native wildlife prescribed under the *Nature Conservation Act 1994*.

- Essential habitat in Category A and B (Remnant vegetation species record) areas: 1100m Species Information (no results)
- Essential habitat in Category A and B (Remnant vegetation species record) areas: 1100m Regional Ecosystems Information (no results)
- Essential habitat in Category A and B (Remnant vegetation) areas: 1100m Species Information (no results)

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- Essential habitat in Category A and B (Remnant vegetation) areas: 1100m Regional Ecosystems Information (no results)
- Essential habitat in Category C (High value regrowth vegetation) areas: 1100m Species Information (no results)
- Essential habitat in Category C (High value regrowth vegetation) areas: 1100m Regional Ecosystems Information (no results)

I assessed whether the proposed action is likely to have a significant impact on a critically endangered or endangered species or likely to have a significant impact on a vulnerable species. This meant whether clearing would lead to a long-term decrease in the size of a population, reduce the area of occupancy of the species, fragment an existing population into two or more populations, adversely affect habitat critical to the survival of a species, disrupt the breeding cycle of a population, modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline, result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat, introduce disease that may cause the species to decline, or interfere with the recovery of the species. These species are addressed below.

Gouldian Finch

The Gouldian finch is found east to Chillagoe and Coen and south to Hughenden. However, it has not been sighted at Kingvale Station. The current distribution of the Gouldian Finch does not include Kingvale (Appendix C). My experience has been that it is generally recorded west of the Great Dividing Range, to the west, i.e. in the Mitchell River catchment, Kowanyama etc. The total population size of the Gouldian Finch is estimated at 2500 or less adult birds (Dostine 1998; Garnett & Crowley 2000). It is possible that the actual population size could exceed this estimate. The habitat in which the finch occurs is grassy tropical open woodlands, often bordering watercourses, and occasionally open grassy plains and spinifex areas. This is not the area that is proposed to be cleared at Kingvale. The recommended method to survey for Gouldian Finches is to conduct targeted searches and watches at waterholes. The proponent, Mr Harris, have buffered all watercourses and waterbodies, such as vegetated swamps and lagoons (note Appendix A – additional shapefiles can be provided).

Known breeding habitat for Gouldian Finches is characterized by rocky hills with hollow-bearing smooth-barked gums within two to four kilometres of small waterholes or springs that persist throughout the dry season. Dry season feeding habitat is dominated by annual spear grasses or native sorghum (*Sarga* species), and in the wet season birds shift to feeding from scattered patches of cockatoo grass (*Alloteropsis semialata*), golden beard grass (*Chysopogon fallax*) or spinifex-dominated communities (*Triodia bitextura*; *T. acutispicula*; *T. bynoei*; *T. schinzii*). Gouldian finches appear to have a specialised diet, feeding exclusively on seed from a restricted range of grass species. The finch feeds on cockatoo grass and the critical

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components of suitable core habitat for the Gouldian Finch appear to be the presence of favoured annual and perennial grasses (esp. *Sorghum* i.e. *S. intrans* and *S. stipoides*), a nearby source of surface water and, in the breeding season, unburnt hollow-bearing *Eucalyptus* trees (especially *E. tintinnans*, *E. brevifolia* and *E. leucophloia*) (Higgins et al. 2006a; O'Malley 2006; Tidemann 1996; Tidemann et al. 1999). Its breeding habitat is usually confined to ridges and rocky foothills, but the tendency to nest in these upland areas is probably due to the presence of *Sorghum* grasses rather than to the actual topography of the landscape (Higgins et al. 2006a; O'Malley 2006; Tidemann 1996). It often forages in areas that have been burnt by fire (Dostine et al. 2001; Tidemann 1993a, 1996; Woinarski 1990), which might reflect the ability of dry season fires to eliminate dense ground cover vegetation and thus improve the access of the Gouldian Finch and other granivores to fallen seeds (Tidemann 1993a, 1996).

During the wet season it occurs in lowland open woodland comprised of *E. latifolia* with a low, open understory of *Petalostigma quadrioculare* and a ground cover of dense grasses including *Chrysopogon fallax*, *Alloteropsis semialata* and *Triodia bitextura* (Dostine et al. 2001; Lane & Goodfellow 1989 cited in O'Malley 2006a; Tidemann 1996; Tidemann et al. 1992d; Woinarski & Tidemann 1992). It has also been recorded in undescribed thickets of vegetation along streams and gorges, and at the margins of stands of mangroves (Campbell 1919; Keast 1958). It sometimes occurs around homesteads and townships (Goodfellow 2005; Higgins et al. 2006a; Thompson 1977). The Gouldian finch is thought to be migratory or at least nomadic during the wet season when they disperse southward and return to northern areas during the dry months.

The main grass species found at Kingvale within the proposed clearing areas included Blackspear grass (*Heteropogon contortus*), Giant speargrass (*Heteropogon triteceus*), *Sarga plumosum*, Wanderrie (*Eriachne* sp.), Lovegrasses (*Eragrostis* sp.) *Themeda triandra* (kangaroo grass), *Schizachyrium fragile* (fire grass), and Wiregrasses (*Aristida* spp.). These are not listed as preferred grass species for the Gouldian finch.

Similarly the tree species listed above are not the species listed in the references above, however the Gouldian can nest in Cooktown Ironwood which is found within proposed areas (but is not preferred species). The Regional Ecosystems and vegetation types are well represented within the Bioregion with over 96% remnant vegetation across the bioregion (and neighbouring bioregions). **This is an intact landscape. It is extremely unlikely that the Gouldian finch will be adversely affected by the clearing proposal within this area.** Vegetation change through inappropriate fire regimes and grazing impacts of stock and feral herbivores are the factors most likely to be contributing to ongoing declines, or absence of recovery, in Gouldian Finch populations. Fire is known to affect seed productivity in key wet season grasses that Gouldian Finches rely on to tide them over the period of food scarcity that occurs early in the year. Both cockatoo grass and curly spinifex seed production is reduced in areas burnt in successive years. Fires can also affect the availability of tree hollows for nesting, and Gouldian Finches tend to avoid hollows that have been burnt. There is some evidence supporting a link between Gouldian Finch population persistence and the maintenance of heterogeneous fire patterns in landscapes – either due to management intervention or due to topographic features that restrict the spread of wildfires (O'Malley 2006).

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Red Goshawk

The Red Goshawk occurs in coastal and sub-coastal areas in wooded and forested lands of tropical and warm-temperate Australia (Marchant & Higgins 1993). This species prefers forest and woodland with a mosaic of vegetation types, large prey populations (birds), and permanent water. The vegetation types include eucalypt woodland, open forest, tall open forest, gallery rainforest, swamp sclerophyll forest, and rainforest margins. Riverine forests are also used frequently (Debus 1991, 1993). Such habitats typically support high bird numbers and biodiversity, especially medium to large species which the goshawk requires for prey. The Red Goshawk nests in large trees, frequently the tallest and most massive in a tall stand, and nest trees are invariably within one km of permanent water (Aumann & Baker-Gabb 1991; Debus & Czechura 1988b).

The red goshawk has an enormous home range covering between 50 and 220 square kilometres. It prefers a mix of vegetation types with its habitat including tall open forest, woodland, lightly treed savannah and the edge of rainforest. In partly cleared parts of eastern Queensland, it is associated with gorge and escarpment country (not proposed Kingvale country to be cleared). It occurs over eastern Queensland and across northern Australia, and there are also confirmed sightings from central Australia. Adult red goshawks in northern Australia do not migrate, whereas some adults in south-east Australia migrate from the ranges to lowlands in winter (Czechura 1996). The red goshawk has an enormous home range covering between 50 and 220 square kilometres. It prefers a mix of vegetation types with its habitat including tall open forest, woodland, lightly treed savannah and the edge of rainforest. In partly cleared parts of eastern Queensland, it is associated with gorge and escarpment country.

The decline in sightings of Red Goshawk further from the coast especially in Queensland suggest that fewer areas are now being used for breeding (Debus & Czechura 1988b; NPWS 2002). There are no quantified predictions of future changes to area of occupancy. The distribution of the Red Goshawk is not severely fragmented. It is suspected that there is some fragmentation (BirdLife International 2004d), but there is no evidence that fragmentation in the Red Goshawk distribution is severe. However, some fragmentation may have occurred in the more heavily settled and cleared regions of the species' range, such as in the coastal lowlands of eastern Queensland. The degree of this fragmentation in the lowlands may be masked by the persistence of birds in the adjacent foothill and hinterland country which has not suffered the same degree of clearing.

There are an estimated 65-70 pairs in Cape York Peninsula bioregion, which has been surveyed, and none are recorded on Kingvale (Figure 1). The distribution map below shows that the Red goshawk has not been recorded at Kingvale. The landholder, however, will be leaving (no proposed development on) escarpment country.

Figure 1. Distribution of the Red Goshawk (data combined from Blakers et al. (1984), Barrett et al. (2003))



Habitat has to be open enough for fast attack and maneuvering in flight, but provide cover for ambushing of prey. Therefore, forests of intermediate density are favoured, or ecotones between habitats of differing densities, e.g. between rainforest and eucalypt forest, between gallery forest and woodland, or on edges of woodland and forest where they meet grassland, cleared land, roads or watercourses. They avoid very dense and very open habitats (Marchant & Higgins 1993). These habitats provide appropriate foraging conditions for the large Red Goshawk, and a diversity and abundance of the medium to large birds taken as food (Aumann & Baker-Gabb 1991). Observation suggests that Red Goshawks may use dense forests (rainforest or tall wet forest) as a drought refuge (Bravery 1970). Extensive, hot fires late in the dry season have caused nesting failures (Aumann and Baker-Gabb 1991, Baker-Gabb 2007), and fires may destroy nest trees. Dry season fires are an issue at Kingvale. **Kingvale is a dry tropical environment of woodlands and open woodlands, not typical habitat as described for the red goshawk.**

On Cape York Peninsula, none of the regional ecosystems used by red goshawks is regarded as being at risk (Czechura 2001, Department of Environment and Resource Management 2012). On Cape York Peninsula, red goshawks are mainly found in vegetation types dominated by northern stringybark (*Eucalyptus tetradonta*), bloodwoods, *Corymbia spp.* or paperbarks *Melaleuca spp.* (Czechura 2001, Department of Environment and Resource Management 2012). Nesting habitat is a subset of foraging habitat, with a tall stand of trees invariably selected as the nest location (Aumann and Baker-Gabb 1991). All identified nest trees have been within 1 km of permanent water, often adjacent to rivers or clearings, and usually the tallest (mean height = 31 m) and most massive trees (Department of Environment and Resource Management 2012).

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The red goshawk has not been sighted at Kingvale Station. However, the nests are in tall trees within one km of, and often beside, permanent water (river, swamp, pool), biologically rich forest or woodland. The average distance of the nest tree to water was 164 m (n=18). Nest trees were significantly taller, with larger crown diameters, greater girth at breast height, and the height of the lowest live branch was higher than the tallest trees found in the immediate vicinity of random locations along rivers. Nest trees had an average height of 31.4 m, and an average girth at breast height of 2.9 m. Trees in 0.2 ha plots around the nest tree also had significantly higher canopy height, fewer small trees (girth less than 0.5 m), and more large trees (girth greater than 1 m) than random plots (Aumann & Baker-Gabb 1991). Nests tend to be placed on a substantial horizontal limb often against a vertical branch arising from it. There is an open space below and to one side at least to enable the birds to easily access the nest and manoeuvre sticks during nest building (Czechura 2005, pers. comm.).

The Landholders of the proposed clearing at Kingvale will not be clearing along watercourses or around waterbodies. They are to be suitably buffered, wide corridors have been retained throughout the landscape (see Appendix A, D) and the escarpment country is to be left remnant and conserved. The proposed development will not have an adverse effect on the red goshawk.

Golden-shouldered Parrot

The decline of the Golden-shouldered Parrot (*Psephotus chrysopterygius*) is not due to habitat loss. It has been attributed to predation, disease, illegal collection for aviculture and inappropriate fire regimes and associated habitat change through fire. Over 94% of Kingvale will remain intact, particularly in *Melaleuca* shrubland areas (see Table 1 – no *Melaleuca* Regional Ecosystems listed) and Appendix D, where potential habitat has been mapped. These areas are generally unsuitable for cultivation and have been omitted from the final clearing plan. The preferred habitat is *Melaleuca* (tea-tree) shrubland with numerous termite mounds, Fire grass (*Schizachyrium fragile*), and Cockatoo grass (*Alloteropsis semialata*). This is not the typical ecosystem of the proposed clearing areas (clearing is proposed on more fertile country than what is the preferred habitat of the Golden-shouldered parrot). The Regional ecosystems of conservation concern (Neldner 1999) that will be managed as part of the golden-shouldered parrot recovery process are shown in Table 2. They are not mapped within the proposed clearing areas at Kingvale.

Table 2. Regional ecosystems of conservation concern (Neldner 1999) that will be managed as part of the golden-shouldered parrot recovery process.

Regional Ecosystem	Description	Status	Beneficial actions
3.3.59	<i>Sorghum plumosum</i> ± <i>Themeda arguens</i> grasslands	Of concern	A.1.1.1 A.1.2.1 A.1.3.1 A.1.4.1 A.6.2.1 A.6.2.2 A.7.1.1
3.5.17	<i>Melaleuca stenostachya</i> ± <i>Melaleuca viridiflora</i> low open-woodland	Of concern	A.1.1.1 A.1.2.1 A.1.3.1 A.1.4.1 A.6.2.1 A.6.2.2

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Distribution

The golden-shouldered parrot occurs in the headwaters of the Morehead River and adjacent westward flowing streams (Morehead population) and the upper tributaries of the Staaten River (Staaten population). The range of the Morehead population is currently about 1380 km². Until 1998, it was still contracting, at least along its eastern boundary for which detailed distributional data is available. The Staaten population is currently thought to be contained in an area of about 300 km² west of the Lynd River in the headwaters of Cockburn, Back and White Horse creeks. Recent reports of parrots in other parts of the species' former range are unconfirmed. Where searches have been made, additional populations were not found. If other populations do exist, they are likely to be threatened by the same processes that are affecting the known populations (Garnett and Crowley 2002). The distribution map, from the recovery plan, can be seen as Appendix E.

Although the parrots occupy a range of habitats, only a subset of these is thought to be irreplaceable within its life history. In the wet season the parrots appear to require the gravelly slopes of quartzite gravel that occur in association with metamorphic rocks and granites. These areas are refuges early in the wet season when most fallen seed has germinated and no storm-burnt seed is available on the flatter country. Seed on the gravels appears to germinate less readily because it is less vulnerable to early saturation. The other critical habitat is that used by the parrots for breeding. For nesting, the parrots require termite mounds, particularly those of *Amitermes scopulus* in the Morehead population and *A. vitiosus* in the Staaten population. They primarily occur along grassy drainage flats fringed by woodland, although they are also present on the gravel slopes. Where these habitats have an open structure, nesting appears to have a higher success rate than where the grass has been invaded by woodland. In the dry season, habitat choice appears to be based on the availability of annual grass seed. Seed is abundant in many different habitat types, so none can be considered critical (Garnett and Crowley 2002).

Golden-shouldered parrots occur on lands of two tenures: land managed by Queensland Parks and Wildlife Service (Staaten River National Park) and pastoral leases (Artemis, Bulimba, Dixie, Imooya, Kalinga, Killarney and Mary Valley). The parrot's distribution covers lands of traditional owners represented by the Kuku Thaypan, Ukele and Uwoykand. Recovery actions are ongoing on Artemis, Kalinga, Mary Valley, Killarney and Bulimba Stations and on Staaten River National Park. Planned recovery actions include the reintroduction of golden-shouldered parrots to traditional land of Kandju people on Mungkan Kandju National Park. **Kingvale is not included.**

Habitat restoration recommended for golden-shouldered parrot recovery entails the reversal of invasion by broad-leaved ti-tree (*Melaleuca viridiflora*) of grasslands on drainage depressions. Research findings arising from earlier golden-shouldered parrot recovery plans (Garnett and Crowley 1995a, 1999), particularly the role of, and threats to, cockatoo grass, have contributed to the understanding of processes affecting the endangered gouldian finch (*Erythrura gouldiae*) and the endangered

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northern bettong (*Bettongia tropica*). Planned actions during the current recovery plan include further assessing threats to cockatoo grass, notably grazing by pigs and cattle. These actions will be undertaken in cooperation with the recovery plan for the northern bettong, and information gained will contribute to the recovery of all three species (Garnett and Crowley 2002).

A change in the natural fire regime, with intentionally hot burns avoided by the managers of pastoral properties, limit the production of seeds by wet season grasses and, thus, reduce fuel loads (Crowley & Garnett 2000; Garnett & Crowley 2000, 2002). These conditions have allowed woody plants, and especially Broad-leaved Tea-tree, to invade the grasslands occupied by the Golden-shouldered Parrot (Crowley & Garnett 1998; Neldner et al. 1997; Stanton 1992). These processes have reduced vegetative cover and rendered the parrot more vulnerable to predation, especially when foraging on the ground and nesting. Additionally, the change in fire regime has altered the Golden-shouldered Parrots habitat. The change in fire regime has resulted in the development of a coarser mosaic of burning histories, which is believed to reduce the likelihood of dispersing parrots finding suitable habitat in the wet season (Garnett & Crowley 2002).

The disappearance of the Golden-shouldered Parrot from Lakefield National Park in the 1970s–1980s has been attributed to conversion of grassy woodland to woodland associated with changed fire regimes (Garnett & Crowley 1999). A similar loss of habitat has also occurred in Mungkan Kandju National Park (Neldner et al. 1997), where the species was last recorded in the 1920s (Garnett & Crowley 2002).

The Pied Butcherbird utilizes woody plants as cover to ambush its prey and is thought to be the most significant predator (Garnett & Crowley 2000). Reptiles also prey heavily upon eggs and chicks of the Golden-shouldered Parrot (Higgins 1999).

The Golden-shouldered Parrot derives some protection from predators in the early wet season through its tendency to forage near nesting Black-faced Woodswallows, whose vigilant behavior can warn the parrot of approaching danger. However, the protection provided by this association may be diminishing as woodswallow populations on Cape York Peninsula are also in decline (Garnett & Crowley 2000).

Feral Cats were suspected to be a source of predation (Garnett 1993), but are no longer considered to be significant threats to the species (Garnett & Crowley 2000).

The following recovery actions are recommended in the current [recovery plan](#) (Garnett & Crowley 2002):

- Manage critical habitat by providing and implementing management guidelines.
- Maintain bird numbers at the north-eastern limit of the distribution by providing feeding stations during the wet season.
- Determine population trends by monitoring selected sites regularly.
- Determine the impact of the Pied Butcherbird on breeding success by developing and implementing a research plan and implementing the management actions.
- Research the relationship between vegetation structure and fecundity of the Black-faced Woodswallow, determining the management implications of the

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research for the Golden-shouldered Parrot and incorporating recommendations into management guidelines for the Golden-shouldered Parrot.

- Assess and minimize the adverse impacts of cattle and Pigs (*Sus scrofa*) on Cockatoo Grass (*Alloteropsis semialata*) and termite mounds, developing and implementing management recommendations to reduce the impacts in parrot habitat (if deemed necessary), developing and implementing management strategies for the control of Pigs in parrot habitat (if deemed necessary) and advising national park managers on appropriate levels of pig control.
- Increase the number of wild populations of the Golden-shouldered Parrot by:
 - restoring and maintaining grassland structure at a trial reintroduction site
 - establishing and maintaining nursery stocks of Cockatoo Grass for re-establishment at the trial reintroduction site
 - establishing and maintaining Cockatoo Grass at the reintroduction site
 - preparing a justification for reintroduction
 - consulting with aviculturists about aviary design and breeding stock
 - negotiating funds for construction of aviaries at appropriate sites
 - capturing an appropriate number of wild birds for captive breeding
 - Initiating a captive breeding program.

Crimson Finch (white-bellied subspecies)

The Crimson Finch (white-bellied) - *Neochmia phaeton evangelinae* is found only on the Cape York Peninsula, where it occurs in four separate subpopulations. The four subpopulations are located near Aurukun, near Pormpuraaw, at Magnificent Creek (near Kowanyama), and in Lakefield National Park, where the Crimson Finch (white-bellied) has been recorded along the Normanby River and in surrounding areas to the north, and along the Laura River to the south. The extent of occurrence is estimated to be 55 000 km². This estimate, which is based on published maps, is considered to be of medium reliability (Garnett & Crowley 2000). The extent of occurrence has likely remained stable in recent years (Garnett & Crowley 2000). However, it appears that the extent of occurrence declined during the 20th century. On the west coast of Cape York Peninsula, the distribution of the Crimson Finch (white-bellied) formerly extended north of Aurukun, to the Watson River (Mathews 1925-1927). Recent sightings have only been from south of Aurukun, near the mouth of the Archer River (Barrett et al. 2003; Atlas of Australian Birds, unpublished data; Dorricott & Garnett 2004).

The crimson finch (white-bellied) inhabits rank grass and other vegetation close to fresh water, particularly in association with Pandanus or in dune swales. Crimson finches (white-bellied) feed primarily on immature and ripe seeds of grasses and herbaceous plants (Todd et al. 2003), including those of introduced species. Seed size is more important than the plant species (Todd et al. 2003). Crimson finches (white-bellied) also consume small invertebrates such as spiders and termite alates, mainly during the breeding season, supplementing energy intake at times of low seed availability and protein requirements while breeding. The early wet season when food resources are at their lowest, is the most critical time. Birds stay fairly close to

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sheltering shrubs (e.g. *Barringtonia acutangula*) or trees when foraging in grassland (Dorricott and Garnett 2007).

Crimson finches (white-bellied) build their nests in trees with a palm-like structure, principally *Pandanus* in Western Cape York or *Corypha* palms in the east (Todd 2002). Breeding coincides with the wet season. The birds fledge at three weeks (Immelman 1982) but remain nearby after leaving the nest. As crimson finches (white-bellied) are ill-adapted to fly long distances, they have limited dispersal ability.

The Crimson Finch (white-bellied) occurs in rank grasses and other vegetation that grows near bodies of fresh water such as rivers and swamps. The Crimson Finch (white-bellied) is a grassland specialist, and its distribution overlaps with golden-shouldered parrot. It is especially common in habitats that are associated with *Pandanus* or dune swales. Two key habitat types have been identified. The first, *Pandanus* type habitat, is usually located within 10 km of the coast, and consists of swampy grasslands with scattered *Pandanus spiralis*, or of dune woodlands with a dense understory of long grass, a mid-story dominated by *P. spiralis*, and a canopy comprised of varying species of trees. Availability of shelter is critical because the crimson finch (white-bellied) is ill-adapted to fly long distances due to its wedge-shaped tail and rounded wings (Todd, M, pers. comm., November 1999). Todd (unpub.) identified two key habitat components, pandanus and canegrass, which are crucial to the conservation of the crimson finch (white-bellied) on Cape York. Crimson Finch (white-bellied) sub-populations near Aurukun and Pormpuraaw inhabit this type of habitat (Dorricott & Garnett 2004).

The second key habitat, cane-grass type habitat, consists of open forest with a dense understory of grasses, and is usually located along watercourses. This is the type of habitat used by the Crimson Finch (white-bellied) sub-populations near Kowanyama and in the Lakefield region. The canopy in cane-grass habitat is usually dominated by *Corymbia tessellaris* on the east coast of the Cape York Peninsula, and by *C. tessellaris* var. *dallachyana* on the west coast. The mid-story includes deciduous shrubs and palms such as *Corypha elata* and species of *Livistona*. In the Lakefield region, the understory is mostly composed of *Chionachne cyathopoda*, although other grasses probably fulfil a similar role (Dorricott & Garnett 2004).

The Crimson Finch (white-bellied) has also been recorded around human settlement at Pormpuraaw (Garnett & Bredl 1985), where the habitat of the finch extends right to the edge of the town (Todd 2006, pers. comm.)

The preferred habitat of the Crimson Finch (white-bellied) is regularly burnt by wildfire and deliberate burning (Table 3). The finch is able to persist in burnt areas by occupying unburnt shrubs and other habitat remnants nearby. For example, near Pormpuraaw, the Crimson Finch (white-bellied) moved from its burnt preferred habitat into vegetation surrounding a lagoon in a crocodile farm, and into unburnt vine forest on nearby sand dunes (Garnett & Crowley 2000).

Neochmia phaeton has an unusual distribution with disjunct populations (Schodde & Mason 1999, Barrett et al. 2003). Four separate populations of the white-bellied subspecies occur on Cape York Peninsula, with one on the east coast and three along the west coast. This subspecies has declined in range since 1900, and has experienced

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local extinctions. Previously there were five populations known from Cape York, but the crimson finch (white-bellied) seems to have disappeared from the Iron Range area (Claudie River) on the north-east coast. The area of occupancy for the crimson finch (white-bellied) is estimated at 138.7 km² and is shown as Appendix F. This is slightly less than the 200 km² estimated by Garnett and Crowley (2000). The current area of occupancy was calculated by combining recent records provided by Birds Australia and unpublished records from M. Todd and S. Garnett into a GIS point layer. All points were buffered by 500 m, and those within a 10 km radius were combined to create polygons. In Lakefield National Park, eastern Cape York the subspecies has been recorded along the Normanby River and surrounding areas in the north and along the Laura River in the south. On the west coast there are substantial populations near Pormpuraaw and Magnificent Creek near Kowanyama. These appear to be separate sub-populations as there have been no records in between, despite searching (Todd, M, pers. comm., November 1999). Crimson finches (white-bellied) were recently rediscovered at Aurukun after a 90 year gap in records and there is a single record half-way between Aurukun and Pormpuraaw. The population size was estimated at 2000 by Garnett and Crowley (2000) but with a low level of reliability. On the basis of frequency of observation this is nominally divided between the populations as Lakefield 1000 individuals, Pormpuraaw 500, Kowanyama 500, and Aurukun 50.

These figures will vary seasonally and may never be measured accurately. There are no known populations on Kingvale, and this fits with the habitat – as the key habitat is not existent on Kingvale (Appendix G).

Table 3 Regional ecosystems of conservation concern (EPA 2003) that will be managed as part of the *Neochmia* species (Cape York) recovery process.
Table 1. Regional ecosystems of conservation concern (Environmental Protection Agency 2003) that will be managed as part of the *Neochmia* species (Cape York) recovery process.

Regional ecosystem	Description	Status (Vegetation Management Act 1999)	Beneficial actions
3.2.3	<i>Melaleuca dealbata</i> ± <i>Acacia crassicaarpa</i> open forest. Occurs in dune swales on the west coast	Of concern	A1.3
3.2.6	<i>Casuarina equisetifolia</i> woodland. Occurs on foredunes	Of concern	A1.3
3.3.59	<i>Sorghum plumosum</i> , <i>Themeda arguens</i> closed tussock grassland on erosional flood clay plains	Of concern	A1.2
3.3.62	Grassland/sedgeland with <i>Pandanus</i> spp.	Of concern	A1.2, A1.3

The Crimson Finch (white-bellied) is not known to occur in any of the threatened ecological communities listed under the *EPBC Act 1999*. The distribution of the Crimson Finch (white-bellied) also overlaps with that of the Golden-shouldered Parrot *Psephotus chrysopterygius*, which occur in grassland habitats (Dorricott & Garnett 2004), and which are listed as Endangered under the *EPBC Act 1999*. The Crimson Finch (white-bellied) builds its nests in *Pandanus* and *Corypha* palms, and occasionally in bushes (Garnett & Crowley 2000; Garnett & Dorricott 2004; MacGillivray 1918; Todd 2002).

The Crimson Finch (white-bellied) feeds mainly on immature and ripe seeds of grasses and herbaceous plants, including *Chrysopogon elongatus* and *Tridax procumbens*, and species of *Hibiscus*, *Panicum* and *Themeda* (Thompson 1935; Todd

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et al. 2003). It also takes some animal matter such as insects and their larvae, lerp (the sugary protective coating excreted by psyllid nymphs) and spiders (MacGillivray 1918; Todd et al. 2003). The composition of the diet varies throughout the year, but seeds are the main food in all months.

The habitat of the white-bellied Crimson finch is unsuitable for cultivation - open forest with a cane-grass (*Mnethia*) grass understory - dense understory of grasses, usually located along watercourses, dominated by Carbeen or Moreton Bay Ash (*Corymbia tessellaris*). The mid-story includes deciduous shrubs and palms such as *Corypha elata* and species of *Livistona*. In the Lakefield region, the understory is mostly composed of *Chionachne cyathopoda*, although other grasses probably fulfil a similar role (Dorricott & Garnett 2004).

There are no such regional ecosystems within the proposed clearing area (see Table 1, Appendix H). Clearing is not to occur in, or within 100 metres of, any natural wetland or wetland regional ecosystem. The proposed clearing is not to occur in any watercourse or within the relevant distance stipulated in the code of the defining bank of any watercourse i.e. Stream orders 1 & 2 have been buffered by at least 25m and stream orders 3 & 4 by at least 50m and stream order 5 or 6 by 100m.

Masked owl (northern subspecies)

The masked owl (northern subspecies) - *Tyto novaehollandiae kimberli* is very poorly known (Woinarski 2004), and three subpopulations have been suggested: Kimberley, Northern Territory (NT) and Cape York (Garnett et al. 2011). In Queensland, there are historical records from the Normanton region, and from Pascoe, Archer, Chester and Watson Rivers on Cape York Peninsula (Higgins 1999; Mees 1964; Storr 1984c). It occurs along the southern rim of the Gulf of Carpentaria, Cape York Peninsula and south to Atherton Tablelands and the Einasleigh-Burdekin divide (Garnett et al. 2011). In northern Australia, the Masked Owl has been recorded from riparian forest, rainforest, open forest, *Melaleuca* swamps and the edges of mangroves, as well as along the margins of sugar cane fields (Higgins 1999; Nielsen 1996; Storr 1977, 1980). The population size of the Masked Owl (northern) is suspected to be declining (Garnett & Crowley 2000). There have not been any recent records from Cape York Peninsula. Numbers are said to have 'plummeted' in an area consisting of a narrow band of rainforest between Cooktown and Townsville (Nielsen 1996).

For the masked owl, the main ecological features relevant to management are (i) a large home range (and hence low population density); (ii) requirements for large trees with large hollows for nesting; and (iii) diet largely comprising mammals. Over 94% of Kingvale will remain vegetated as large areas of intact forest are needed to support viable populations, although *T. n. kimberli* is known to hunt over cleared areas and sugar cane plantations (Garnett and Crowley 2000).

The Masked Owl (northern) usually nests in tree hollows, within patches of closed forest (Garnett & Crowley 2000). They usually lay two to three eggs (Higgins 1999). In northern Queensland, nests of the subspecies (n=5) were 7–8 km apart (Hollands 1991a). The subspecies probably breeds in March–October (DEWHA 2010). The Masked Owl (northern) is sedentary, territorial and usually seen singly but

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occasionally in pairs or family groups (DEWHA 2010). Radio-tracked females of the southern subspecies *T. n. novaehollandiae* stayed within a core area of approximately 155 ha and within a home-range of 1017–1178 ha in the non-breeding period (Higgins 1999; Kavanagh & Murray 1996).

The reason for the low population density of the Masked Owl (northern) is unknown (Garnett & Crowley 2000). The subspecies has undoubtedly been affected by broad-scale changes to the environment of northern Australia caused by altered fire regimes, grazing by livestock and feral animals, and the invasion of native woodlands by exotic plants, particularly introduced pasture grasses (Woinarski 2004). There is some evidence of a broad-scale decline in the numbers of small and medium-sized endemic mammals across northern Australia over the last century (Braithwaite & Griffiths 1994; Pardon et al. 2003; Sattler & Creighton 2002; Winter & Allison 1980; Woinarski et al. 2001, 2011) that may have reduced the availability of food for the Masked Owl (northern) (Garnett & Crowley 2000; Woinarski 2004). It has been suggested that competition with other large owls (Schodde & Mason 1980) or a limited availability of large trees with hollows suitable for nesting could be limiting population size. The latter seems unlikely given the broad extent of tree cover across northern Australia (Garnett & Crowley 2000). A study conducted in tall eucalypt forest and woodland near Darwin however reported that resident populations of the Common Brushtail Possum (*Trichosurus vulpecula*) and Black-footed Tree-rat (*Mesembriomys gouldii*) were approaching carrying capacity because of the availability of hollow-bearing trees (Pittman 2003). Furthermore, there has been a trend towards fires of increased frequency, intensity and scale in northern Australia in the past 50 years which, magnified by the invasion of native vegetation communities by exotic pasture grasses, has probably resulted in a decline in the number of large eucalypt trees, and especially of those with extensive hollows (Williams et al. 1999b, 2003).

The Masked Owl (northern) usually nests in tree hollows, within patches of closed forest (Garnett & Crowley 2000). There is no closed forest within areas of proposed clearing on Kingvale. Habitat destruction has not been a threatening process for the masked owl to date in the far northern region. The area of proposed clearing at Kingvale is woodland to tall woodland, not riparian forest, rainforest, open forest, Melaleuca swamps or the edges of mangroves.

Australian Painted Snipe

The habitat for the Australian Painted Snipe (*Rostratula australis*) is shallow freshwater (occasionally brackish) wetlands, both ephemeral and permanent, such as lakes, swamps, claypans, inundated or waterlogged grassland/saltmarsh, dams, rice crops, sewage farms and bore drains, generally with a good cover of grasses, rushes and reeds, low scrub, *Muehlenbeckia* spp. (lignum), open timber or samphire (Reader's Digest, 1997; Marchant and Higgins, 2003). It nests on the ground amongst tall reed-like vegetation near water, and feeds near the water's edge and on mudflats, taking invertebrates, such as insects and worms, and seeds. It has been recorded at wetlands in all states and territories (Barrett et al, 2003; Blakers et al., 1984) and is most common in eastern Australia.

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Wetlands, swamps and waterways are not proposed to be cleared as part of this application. The proposed clearing has met with the performance requirements of Queensland Government's code for clearing for High Value Agriculture. This means clearing is not to occur in, or within 100 metres of, any natural wetland or wetland regional ecosystem. The proposed clearing is not to occur in in any watercourse or within the relevant distance stipulated in the code of the defining bank of any watercourse i.e. Stream orders 1 & 2 have been buffered by at least 25m and stream orders 3 & 4 by at least 50m and stream order 5 or 6 by 100m.

This species has a scattered distribution throughout many parts of Australia.

Spectacled Flying Fox

The Spectacled Flying-fox (*Pteropus conspicillatus*) occurs in north-eastern Queensland, north of Cardwell with past records from Brisbane and Chillagoe (Hall & Richards 2000; Richards 1990). Whilst the spectacled flying fox was shown on the EPBC distribution map, it inhabits coastal Queensland from Tully to the tip of Cape York and islands in Torres Strait. Spectacled flying-foxes are generally found in or around rainforests and sometimes in mangroves. There is none of this habitat on, or near Kingvale.

The spectacled flying fox is restricted to tropical rainforest areas (Webb & Tidemann 1996), most specifically, the species occurs between Ingham and Cooktown, and between the McIlwraith and Iron Ranges of Cape York. The species also occurs on Torres Strait islands. The largest population in Australia is known from the Wet Tropics of Queensland World Heritage Area between Townsville and Cooktown (DEH 2003).

Roosting habitat - One study showed that the Spectacled Flying-fox roosts within 6.5km of rainforest (Richards 1990), although a roost 16 km from rainforest has also been observed (Shilton et al. 2008).

Smoke from bushfires seems to disorient flying-foxes causing them to fly aimlessly around their camp. Many flying-foxes are killed when a bushfire goes through their camp site, but it is not known if deaths occur from smoke inhalation or directly from the heat of the fire (Hall & Richards 2000). Kingvale is country that is regularly burnt from wildfires, which occur frequently throughout Cape York. High mortality may also occur when weather conditions are wet, windy and cold at the end of winter. During this period there is a lack of natural food and the available nectar is greatly diluted by rain and flying-foxes seem to be too weak to fly to areas where more food is available (Hall & Richards 2000).

Northern Quoll

The Northern Quoll (*Dasyurus hallucatus*) was historically common across northern Australia, occurring almost continuously from the Pilbara, Western Australia, to near Brisbane, Queensland (Braithwaite & Griffiths 1994). The Northern Quoll now occurs in five regional populations across Queensland, the Northern Territory and Western

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Australia both on the mainland and on offshore islands. The Northern Quoll is known to occur as far south as Gracemere and Mt Morgan, south of Rockhampton, as far north as Weipa in Queensland and extends as far west into central Queensland to the vicinity of Carnarvon Range National Park. There are occasionally records as far south in Queensland as Maleny on the sunshine coast hinterland (QLD DERM 2009). The species is highly fragmented in the state and surveys Woinarski and colleagues (2008) indicated severe reductions from the species' former distribution.

Local populations are still persisting in the central Queensland coast and in Northern Queensland despite the presence of Cane Toads (*Rhinella marina*) with recent Northern Quoll records coming from around Proserpine, Midge Point, Eungella and Cape Upstart (Woinarski et al 2008). In northern Queensland recent Northern Quoll records exist from Mareeba, Mount Carbine, Tolga and around Cooktown (Woinarski et al. 2008). At Weipa, 24 individuals were identified in an area of 3,500 ha, and further research is planned to better understand the species in the area (McGoldrick 2013).

There are no known northern Quoll populations at Kingvale (see recorded distribution map Appendix I). In Queensland, some populations of northern quolls have persisted following colonization by cane toads. These areas include, but are not restricted to, upland rocky areas (Cape Cleveland/Mt Elliott, Mareeba, Crediton, Eungella, Clarke Range) and several coastal sites (Cleveland, Cape Upstart, Cape Gloucester, Condor Range) in north and central Queensland (Hill and Ward 2010).

The Northern Quoll occupies a diversity of habitats across its range which includes rocky areas, eucalypt forest and woodlands, rainforests, sandy lowlands and beaches, shrubland, grasslands and desert (Threatened Species Scientific Committee 2005). The Northern Quoll is known to occupy non rocky lowland habitats such as beach-scrub communities in central Queensland. Northern Quoll habitat generally encompasses some form of rocky area for denning purposes with surrounding vegetated habitats used for foraging and dispersal. Rocky habitats are usually of high relief, often rugged and dissected but can also include fields or caves in low lying areas. Eucalypt forest or woodland habitats usually have a high structural diversity containing large diameter trees, termite mounds or hollow logs for denning purposes. Dens are made in rock crevices, tree holes or occasionally termite mounds (Threatened Species Scientific Committee 2005). Northern Quolls sometimes occur around human dwellings and campgrounds. Northern Quolls appear to be most abundant in habitats within 150 km of the coast.

Habitat critical to survival

Northern quolls do not have highly specific habitat requirements. They occur in a variety of habitats across their range. They are opportunistic foragers that feed on a broad range of items switching dietary resources according to season and availability. Daytime den sites provide important shelter and protection for northern quolls from predators and weather. However, shelter sites are also non-specific; rocky outcrops, tree hollows, hollow logs, termite mounds, goanna burrows and human dwellings have all been recorded. Therefore habitat critical to survival is that where northern quolls are least exposed to threats or least likely to be in the future. Given the threats outlined below, two particular broad habitat types fall into this category: rocky areas and offshore islands (Hill and Ward 2010).

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Rocky areas provide prime habitat for northern quolls and many other declining animal species. Recent modeling of island populations in the Northern Territory established that occurrence of northern quolls was related to ruggedness or topographic complexity (Woinarski et al. 2007). Analyses by Woinarski et al. (2008) show that northern quoll declines in Queensland have mainly been in lowland and flatter (less rugged) areas and a recent survey found the most abundant remnant populations on the Queensland coast were at sites with large boulders (Foster and Oakwood pers. comm. 2008). Rocky areas retain water and have a diversity of microhabitats, so support higher floristic diversity and productivity and thus greater prey density and/or diversity compared to non-rocky adjacent country (Burnett 1997). In addition, cats forage less effectively in rocky areas. Their topographic complexity may also serve to ameliorate fire impacts, and they are typically not used for livestock production. Whilst rocky habitats support denser populations of quolls, the diverse and dispersed nature of rocky areas makes them very difficult to define or map on a national scale (Hill and Ward 2010).

Recent surveys throughout Queensland have suggested Northern Quolls are more likely to be present in high relief areas that have shallower soils, greater cover of boulders, less fire impact and were closer to permanent water, for example the Laura sandstones may be such an area.

Habitat in the Top End and Kimberley comprises rocky areas and tall open coastal eucalypt forests. Prime habitat in these northern regions is sandstone escarpment (Braithwaite & Griffiths 1994). Northern Quoll habitat in Kakadu National Park includes open forest and woodlands on plains dominated by *Eucalyptus tetradonta*, *E. minata* and *E. tectifita*, open woodland on low rocky hills dominated by *E. setosa* and *E. bleeseri* and riparian areas with flowing water dominated by *Melaleuca viridiflora* and *Pandanus spiralis* (Oakwood 2000).

Rocky habitats support higher densities and/or longer lived individuals within the species range, due to more protection from predators, better nutrition and less exposure to agricultural practices. Rocky habitats also supported a higher density of Northern Quoll dens. Breeding success is higher in animals that have a den near a creek line (Braithwaite & Begg 1995).

There are no observable differences in the pattern or extent of movements between males and females. One long range movement has been recorded of a male moving 2.5 km in a day in July on the Mitchell Plateau, Western Australia (Schmitt et al. 1989). Radio tracking and live trapping in lowland savannah of Kakadu National Park indicated that female Northern Quolls occupied home ranges averaging 35 ha with intra-sexually exclusive denning areas (Oakwood 2002). There was some overlap in foraging ranges of females when the density was 3–4 females / km² but no overlap during periods of lower population density of 1–2 females / km² (Oakwood 2002). Male Northern Quolls appear to adopt a roving strategy, regularly visiting several widely spaced females in rapid succession, presumably to monitor the onset of oestrus (Oakwood 2002). Radio tracking results suggested the home ranges of male Northern Quolls were similar to female home ranges before the mating season, but expanded during the mating season to >100 ha to overlap extensively with several female home ranges and numerous other male home ranges (Oakwood 2002). Braithwaite and

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Griffiths (1994) suggested that Northern Quolls have a much smaller home range in rocky country.

Even though there is no recorded Quolls at Kingvale, Mr Harris will be conserving escarpment areas of sandstone, granite and some metamorphic rocky areas on Fairview which may be potential suitable habitat for the northern Quoll. These areas are shown in Appendix D. This is more than adequate feeding habitat for any colonies of northern Quoll which may exist. Large corridors of connectivity have been retained and watercourses and waterbodies have been suitably buffered. Clearing, in this region, has not been a threatening process to this species. The main threatening process to the Quoll would be the Cane Toad, and possibly wild dogs, pigs and cats.

Koala

I can only assume the Koala has been included in your letter because the listed koala's geographic range extends throughout eastern and south-eastern Australia, encompassing north-eastern, central and south-eastern Queensland, eastern New South Wales, Victoria and south-eastern South Australia. The Koala does not exist within the Laura area and certainly does not exist within the proposed clearing area. Fragmented sub-populations of the Koala occur throughout Queensland (Queensland EPA 2006). Densities of these sub-populations range from moderately high in south-east Queensland and some parts of central Queensland (1 - 3 Koalas/ha) to low in other parts of central Queensland (≥ 0.01 Koalas/ha) (Melzer et al. 2000). There are no published estimates of Koala population size or density in the far northern part of the Koala's range in the Wet Tropics and Einasleigh Uplands bioregions. There are none for the Cape. There are some anecdotal reports of Koala sightings, some 300Km further south on areas of higher altitude in the Einasleigh Uplands, but these are uncommon and suggestive of very low densities. The northern limit of the distribution of the Koala in Queensland has contracted to the south, from approximately Cooktown to inland of Cairns, since the late 1960s (Gordon et al. 2006; Phillips 1990).

Koala habitat can be broadly defined as any forest or woodland containing species that are known koala food trees, or shrubland with emergent food trees. The distribution of this habitat is largely influenced by land elevation, annual temperature and rainfall patterns, soil types and the resultant soil moisture availability and fertility. The Koala is highly unlikely to exist at Kingvale and certainly does not exist within the proposed clearing area. The most northerly extent I have heard of them existing is south of Mt Garnet, down the Gunnawarra road (a cooler environment on the Herbert River to the east) and I have been in the vegetation management discipline here in Far North Queensland since 2000. Koalas, in that area, are principally associated with creek lines and leaf moisture was probably a critical determinant of their occurrence. Kingvale is a much hotter, more humid and seasonally wetter environment. Even in the southern Einasleigh Uplands, the bioregion south of Cape York there has been an eastward contraction of the Koala's distribution. The Eucalypt tree species found within the proposed area are Darwin Stringybark (*E. tetradonta*) and some Molloy Red box (*E. leptophleba*). These dominate a generally sparse canopy within proposed areas. These are not the preferred species of the Koala. During the dry, wildfires are a large seasonal problem in Cape York – and largely, due to remoteness and resources, go unchecked. For this reason, the Koala does not survive. It is more likely to be found in areas where wildfires do not occur, and the climate is milder.

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Kingvale is not even within the reported indicative distribution range of the Koala (see Figure 2).

Figure 2. Koala Distribution (source: Planning guidelines for Koala conservation and recovery, McAlpine ET. Al. 2007)



(Source: Planning guidelines for koala conservation and recovery, McAlpine et al. 2007)

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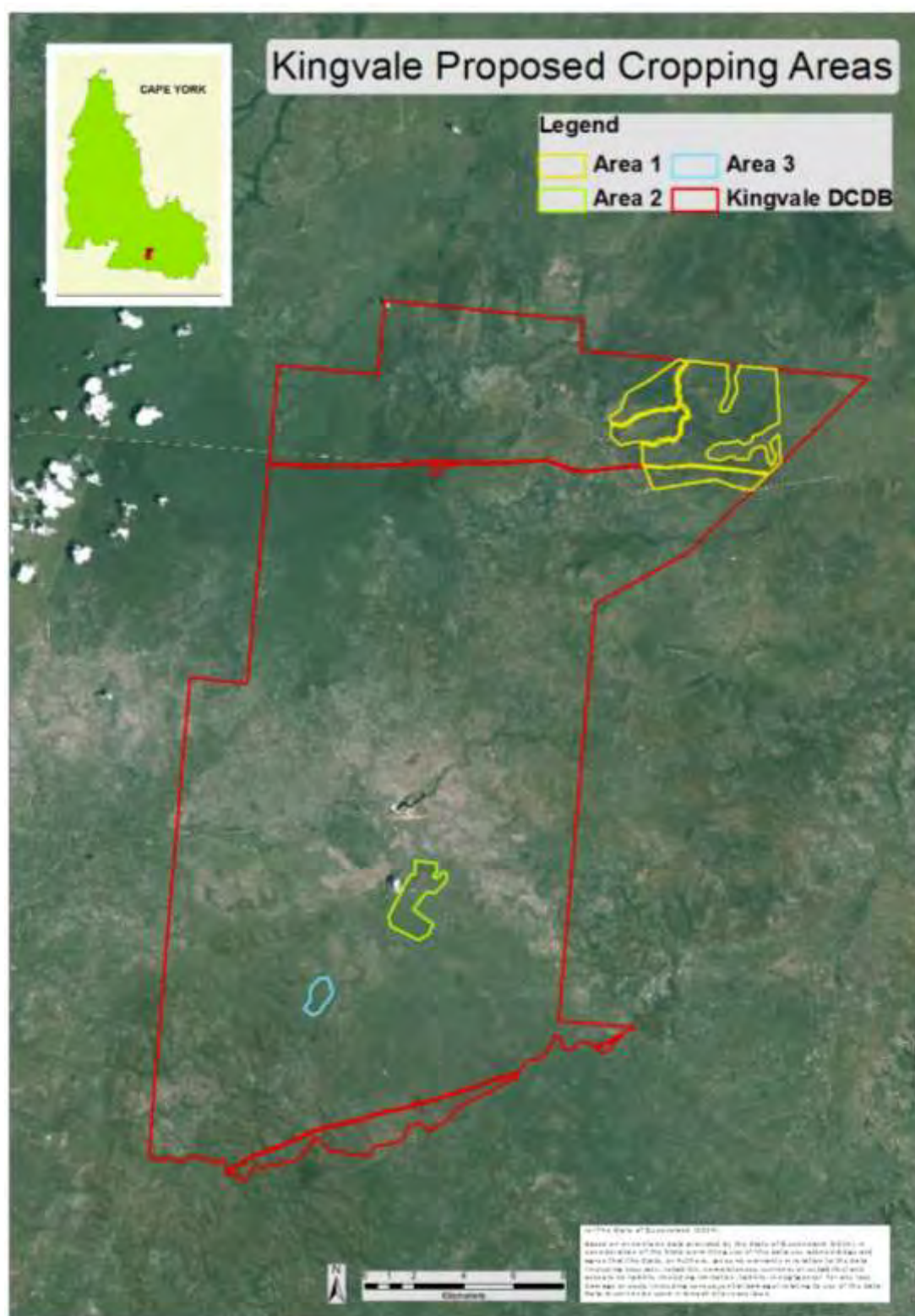
Section 47F



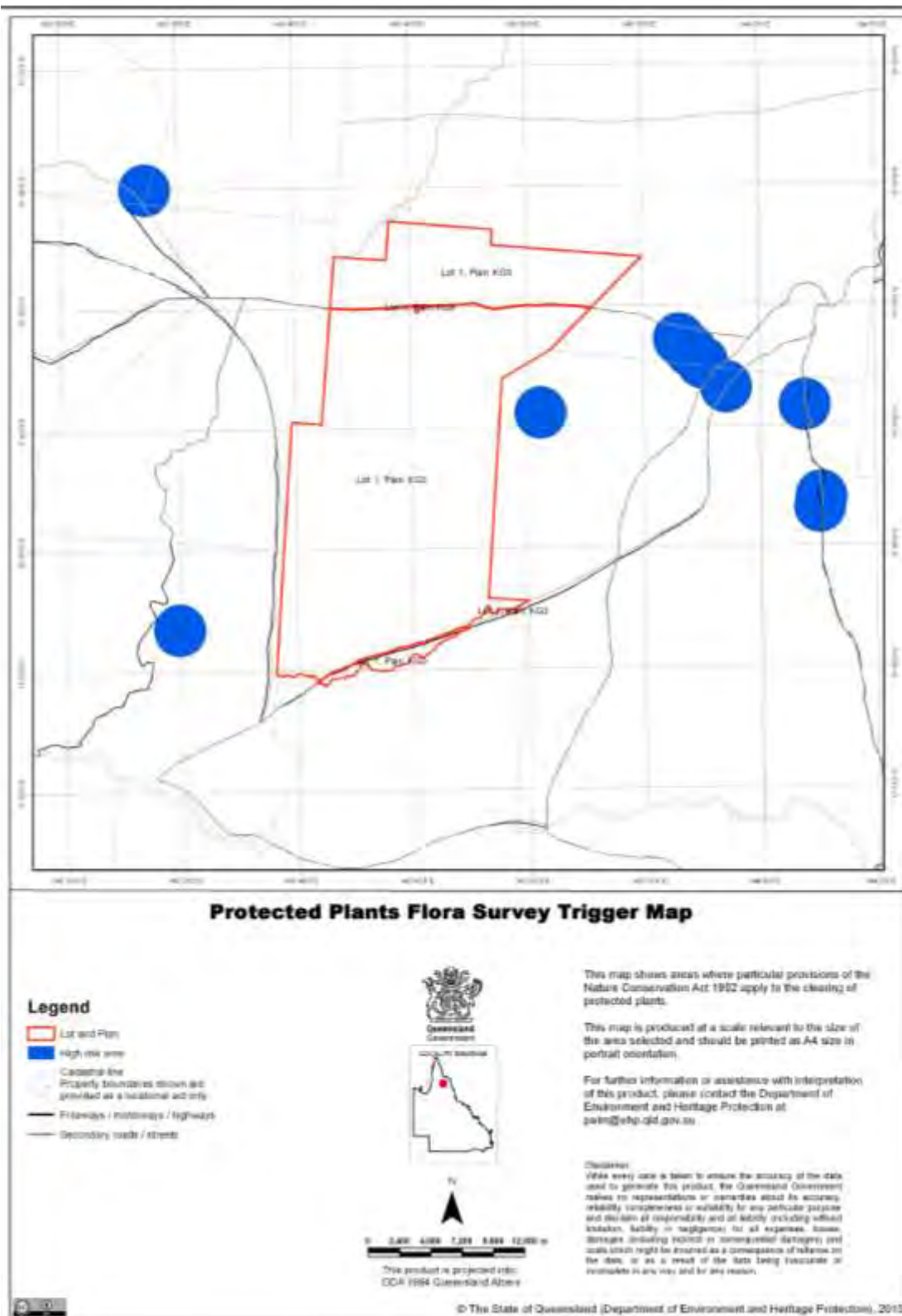
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APPENDIX A - OVERVIEW OF PROPOSED CLEARING

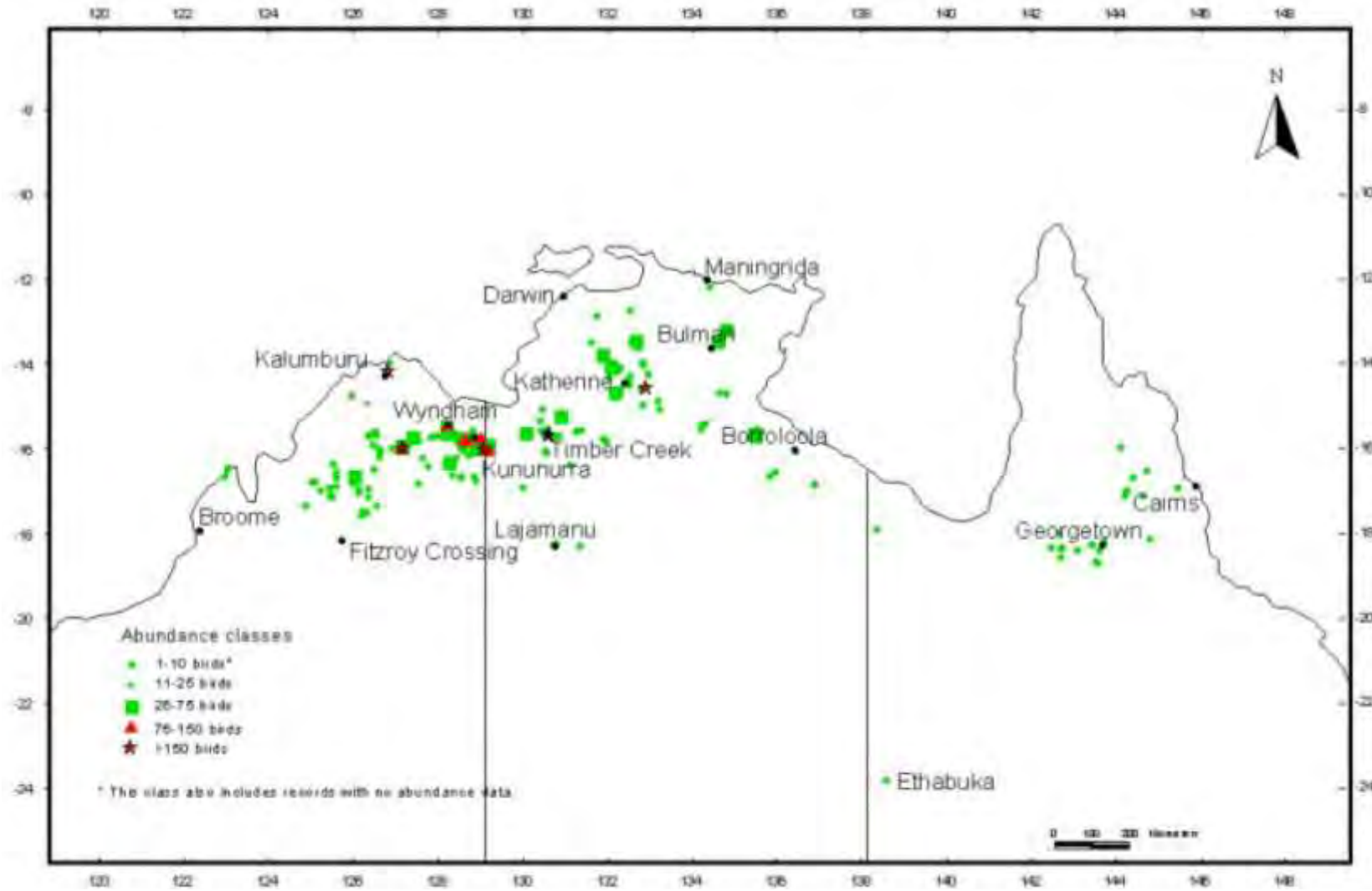


APPENDIX B – FLORA SURVEY TRIGGER MAP



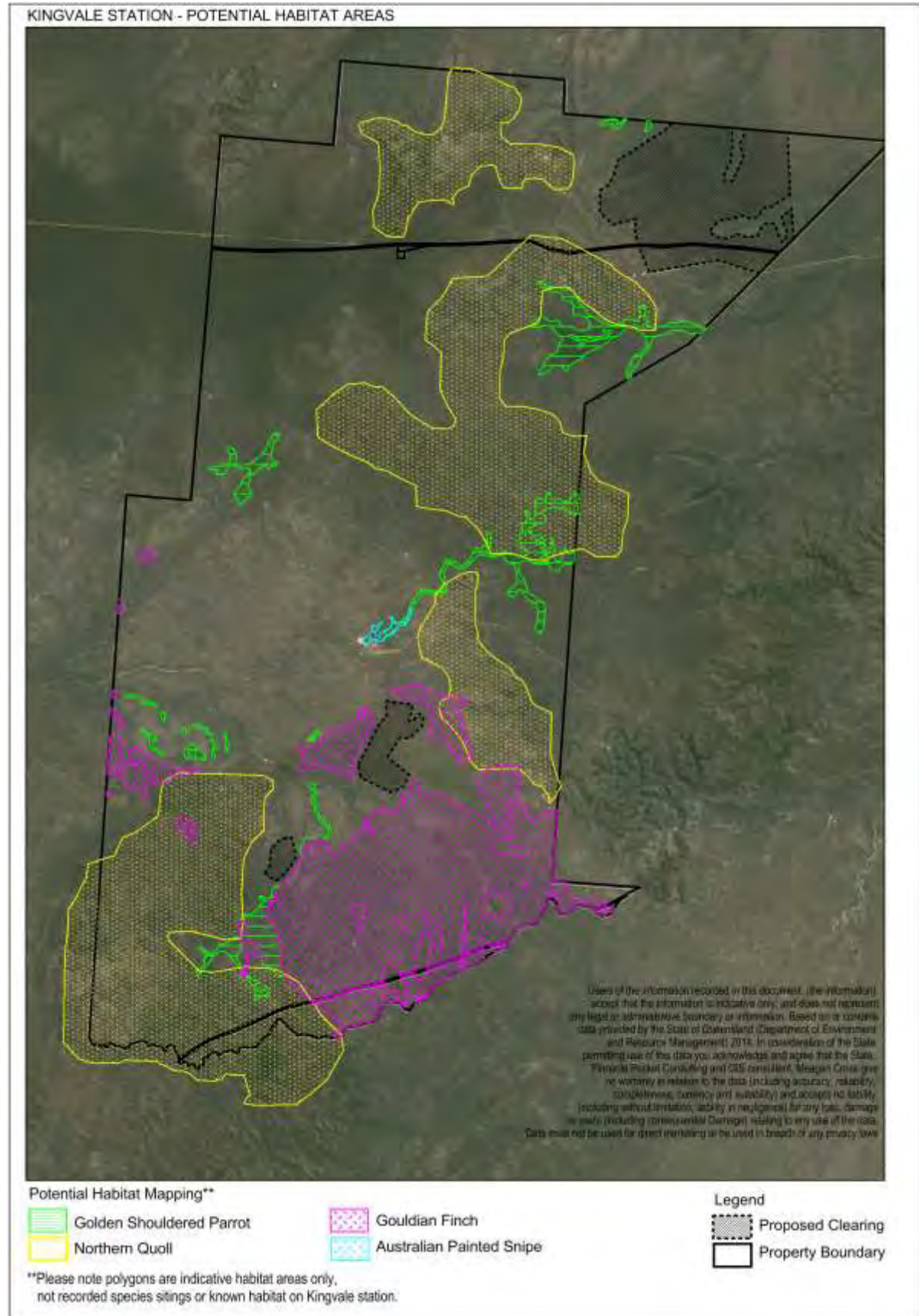
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APPENDIX C – Current distribution of Gouldian Finches (1993-2005) From National Recovery Plan for the Gouldian Finch



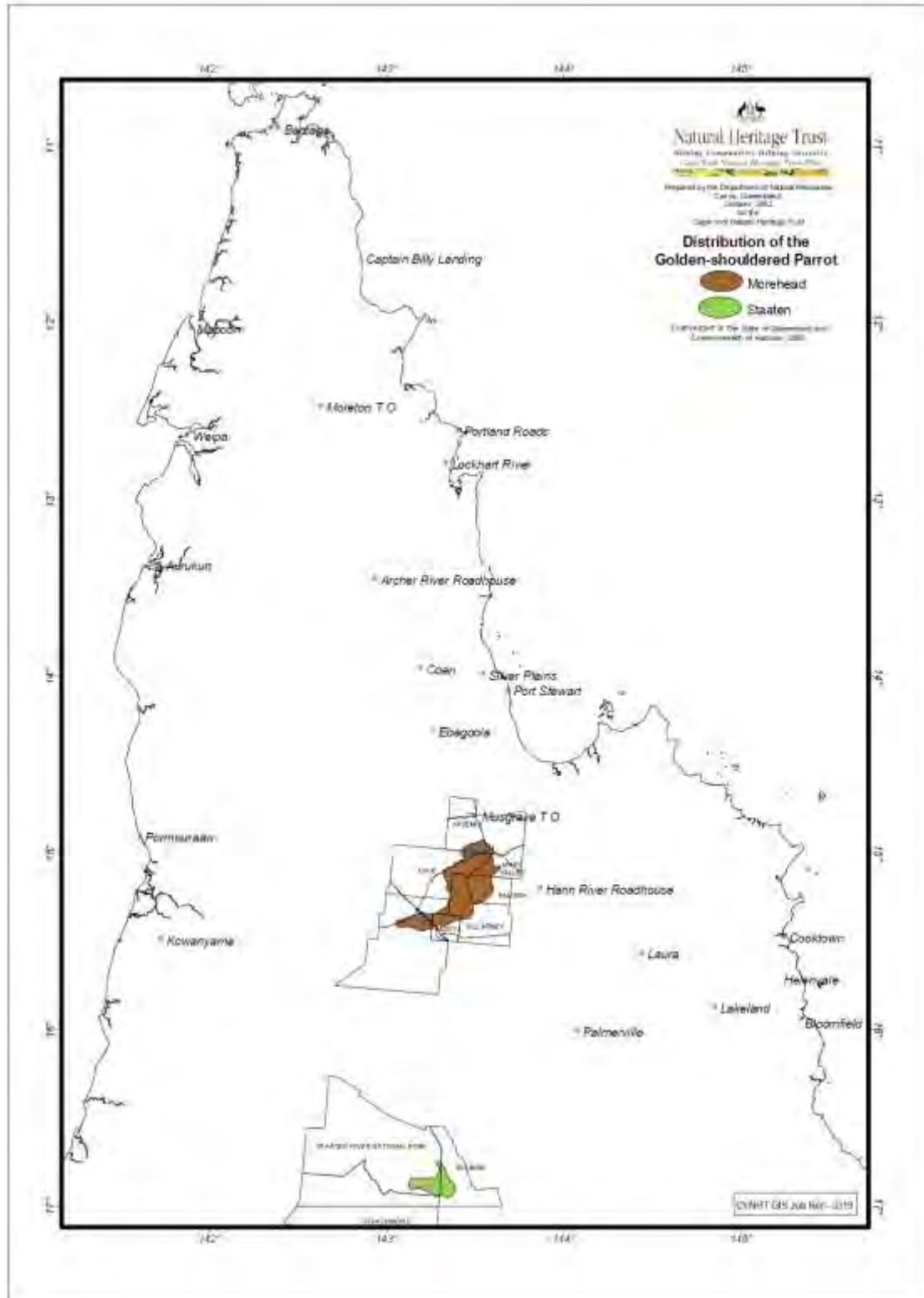
Pinnacle Pocket Consulting

APPENDIX D – POTENTIAL HABITAT



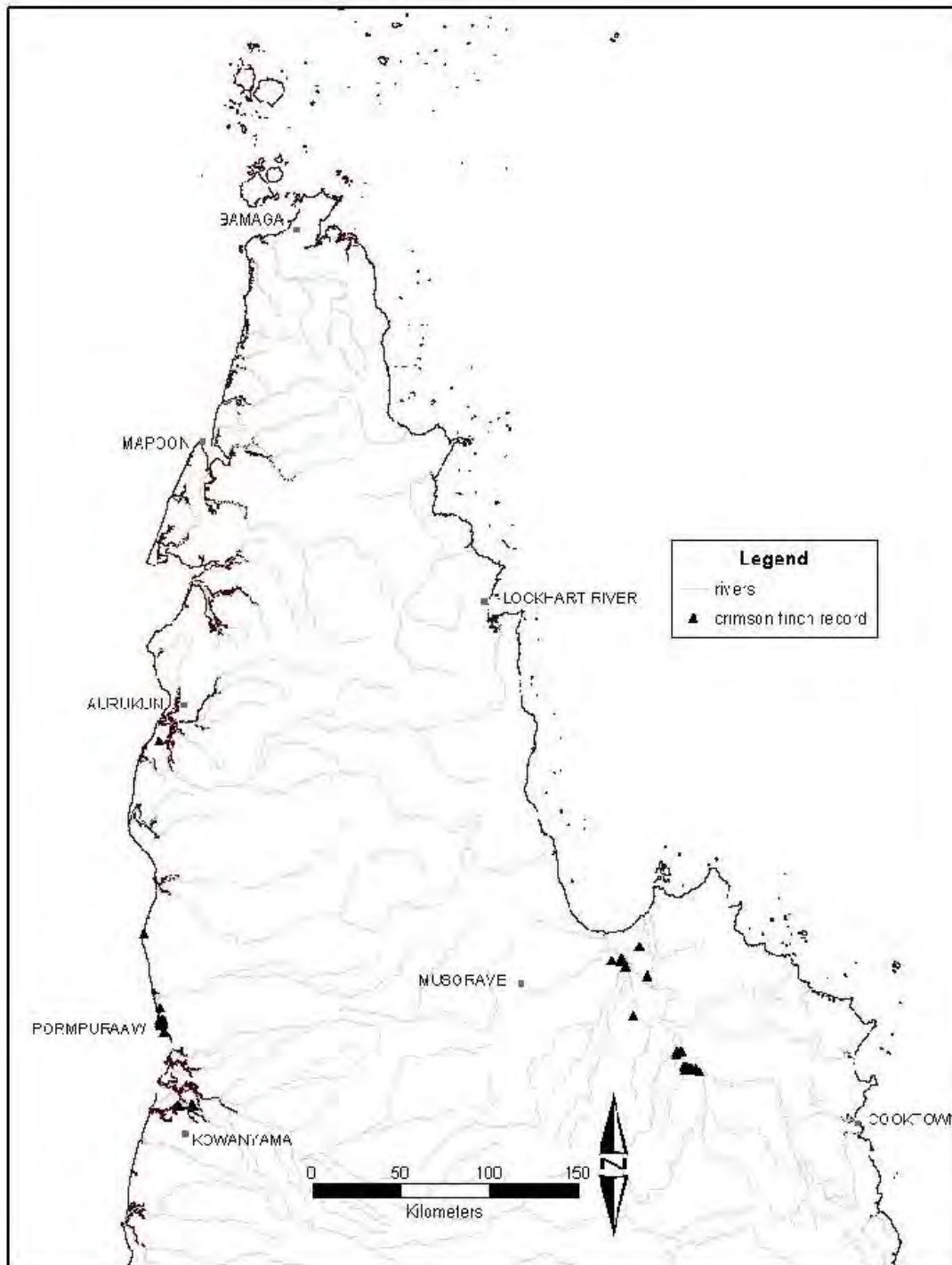
Pinnacle Pocket Consulting

APPENDIX E – DISTRIBUTION MAP OF THE GOLDEN-SHOULDERED PARROT FROM GARNETT AND CROWLEY, 2002.



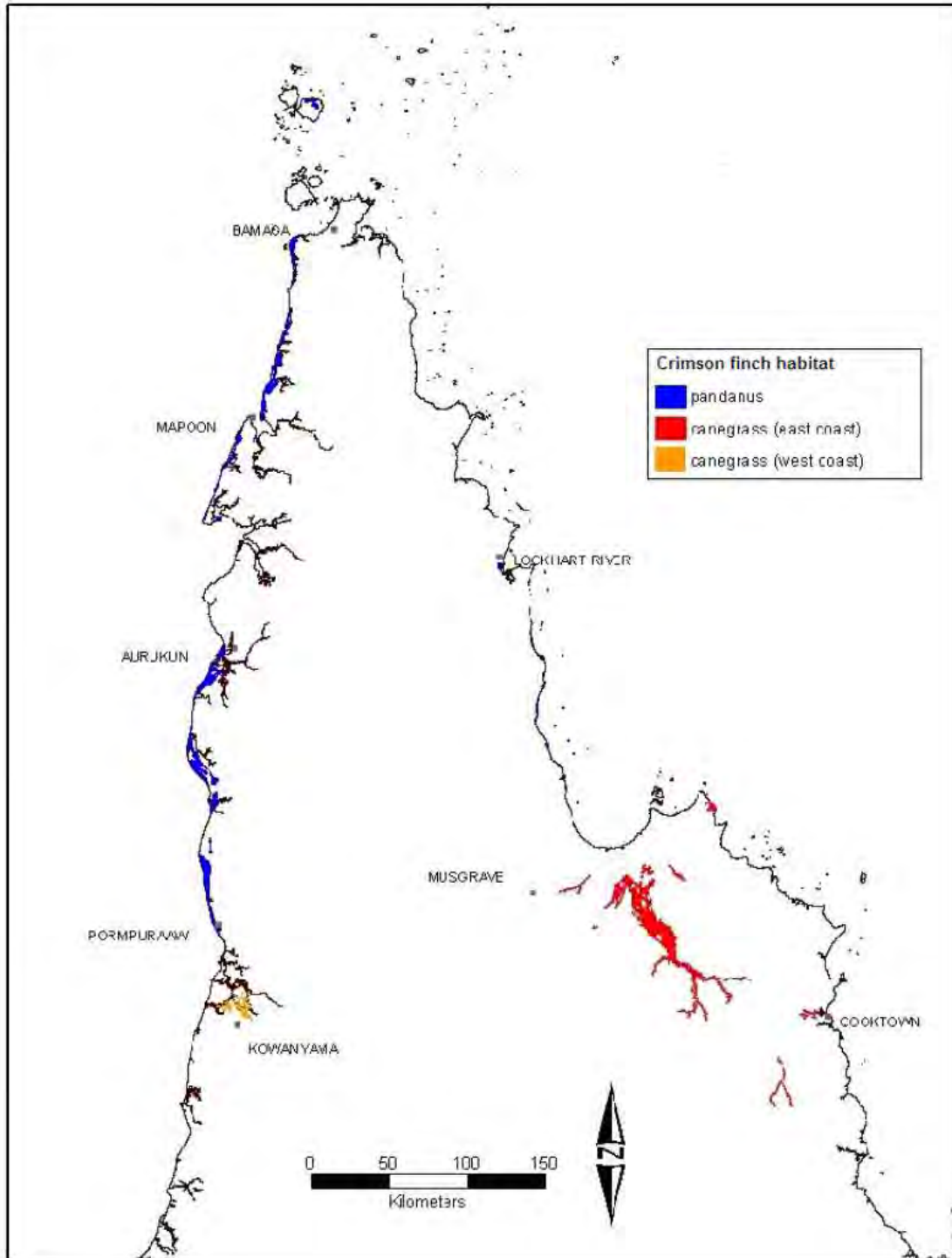
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APPENDIX F - Distribution of the white-bellied subspecies of the crimson finch on Cape York Peninsula.



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APPENDIX G – Distribution of essential habitat for the white-bellied subspecies of the crimson finch on Cape York Peninsula.



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APPENDIX H - Kingvale Sites

Waypoint 52 - Site A



Overstory – 1. Darwin Stringybark (*E. tetradonta*) to 25m (av. 20m) - Dominant, Cooktown Ironwood (*Erythrophleum chlorostachys*) to 20m. Occasional Clarkson's Bloodwood (*Corymbia clarksoniana*) to 20m. Understory – *Grevillea parallela* and emergent *E. chlorostachys* and *Eucalypt* spp. RE 3.5.7a

Slope – 0.8-1.0%

Soil – Very deep red massive soil (Red Kandosol). At 15cm red-brown Loamy sand to sandy loam. At 30cm deep – light sandy clay loam. At 45-60cm Red-brown sandy clay loam. Soil depth 1.2m+. (See soil tests A).

Wpt 53 - Site B



Overstory – 1. Cullen's Ironbark (*E. cullenii*) to 20m. 2. *C. clarksoniana* to 25m. 3. Cooktown Ironwood (*Erythrophleum chlorostachys*). Occasional *C. dallachiana* (Dallachy's or Ghost gum). Understory – *Planchonia careya*; Actual RE 3.5.7x1

Slope – 0.6 – 1.0%

Soil – Very deep red massive soil (Red Kandosol). At 15cm red sandy loam. At 30cm deep –light sandy clay loam. At 45-60cm Red clay loam sandy. Soil depth 1.2m+. (See soil tests B).

Wpt 54 - Site C

Overstory – 1. Cullen's Ironbark (*E. cullenii*) to 25m. Co-dominant with 2. *C. clarksoniana* to 25m. Sparse Cooktown Ironwood (*Erythrophleum chlorostachys*) and Darwin Stringybark (*E. tetradonta*) to 16m; Understory – some sparse *Melaleuca viridiflora* to 6m. Grass: *Sarga plumosum* (plume sorghum); Actual RE 3.5.7x1

Slope – 0.6%

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Soil – Very deep massive soil (Kandosol). At 15cm brown sandy loam. At 30cm deep –brown light sandy clay loam. At 45-60cm red-brown clay loam sandy. Soil depth 1.4m+. (See soil tests C).

Wpt 55 - Site D



Overstory – 1. Clarkson’s Bloodwood (*Corymbia clarksoniana*). 2. Cooktown Ironwood (*Erythrophleum chlorostachys*) 3. Molloy Red Box (*E. leptophleba*) to 15m. Understory - Matchwood (*Erythroxylum ellipticum*). Grass: *Sarga plumosum* (plume sorghum). Actual RE 3.5.7x2a Slope – 0.6%
Soil – Brown Sandy Clay Loam – Yellower at depth (Kandosol). A gradational yellow massive soil. At 15cm Brown loamy sand, massive. At 30-45cm Yellow-brown light sandy clay loam, massive. At 60cm Yellow-brown sandy clay loam, massive. Soil depth 1.5m+. (See soil tests D).

Wpt 56 - Site E



Overstory – 1. Clarkson’s Bloodwood (*Corymbia clarksoniana*). 2. Cooktown Ironwood (*Erythrophleum chlorostachys*) 3. Molloy Red Box (*E. leptophleba*).

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Understory - Terminalia sp. Milkwood (*Alstonia actinophylla*) Matchwood (*Erythroxylum ellipticum*), *Grewia retusifolia* (dog's balls). Grass: *Sarga plumosum* (plume sorghum), *Heteropogon triteceus*; Actual RE 3.5.7b Slope – 0.5%
Soil – Brown Sandy Clay Loam – Yellower at depth (Kandosol). A gradational yellow massive soil. At 15cm Brown loamy sand, massive. At 30-45cm Yellow-brown light sandy clay loam, massive. At 60cm Yellow-brown sandy clay loam, massive. Soil depth 2.0m+. (See soil tests E).

Wpt 57 Site F



Soil – Very deep red massive soil (Red Kandosol). At 15cm brown-red sandy loam. At 30cm deep –light sandy clay loam. At 45-60cm Red clay loam sandy. Soil depth 1.2m+. (See soil tests F).

Overstory – 1. Cullen’s Ironbark (*E. cullenii*) to 30m. Co dominant with *C. clarksoniana* to 28m. Sparse Cooktown Ironwood (*Erythrophleum chlorostachys*). T2 – same species to 10m Understory – emergent *Eucalyptus* spp. to 1.4m; Actual RE 3.5.7x1
Slope – 0.3%

On way to Wpt 58 pass through patches of *Melaleuca viridiflora* in understory

Wpt 58 Site G



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Melaleuca viridiflora woodland to 8m (av. 8m) Emergent *C. clarksoniana* to 22m some emergent Darwin Stringybark (*E. tetradonta*) to 15m Actual 3.5.7x2b; Slope – 0.3%

Soil – yellow earth (Clark). Soil – Grey Sandy Loam – Yellower at depth (Kandosol). A gradational yellow massive soil. At 15cm Grey loamy sand, massive. Firm. At 30-45cm Yellow-grey light sandy clay loam, massive. At 60cm Yellow-grey sandy clay loam, massive. Soil depth 1.0m+; See soil test G

Wpt 59 - No test as not going to clear. Very hard to auger (v. hard setting). Used as delineation point for mapping. Grey clay seasonally wet (Hydrosol) on edge of drainage line. Vegetation - *Melaleuca* spp. and sparse/occasional Blotchy Bloodwood (*E. stockeri*). Most likely RE: 3.3.48 Soil type Lydia or Hann (mapped as Lydia). RE: 3.3.49b

Wpt 60 Site H



Overstory – 1. Cullen’s Ironbark (*E. cullenii*) to 25m co dominant with *C. clarksoniana* to 20m. Sparse Cooktown Ironwood (*Erythrophleum chlorostachys*) to 13m. Understory – thick emergent *Eucalyptus* spp. to 4m Actual RE 3.5.7x1; Slope – <0.5%

Soil – Brown Sandy Clay Loam – Yellower at depth (Kandosol). A gradational yellow massive soil. At 15cm Brown loamy sand, massive. At 30-45cm Yellow-brown light sandy clay loam, massive. At 60cm Yellow-brown sandy clay loam, massive. Depth 1.0m+ (see soil tests H).

Wpt 61 - Site I



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Overstory – 1. *C. clarksoniana* to 18m. Darwin Stringybark (*E. tetradonta*) to 20m.

Sparse

C. dallachiana. Understory - *M. nervosa* (woodland paperbark), *Petalostigma pubescens* (quinine tree). Structure – Woodland Should be mapped as 3.5.7c. Slope – <0.2%

Soil – Brown Sandy Clay Loam – Yellower at depth (Kandosol). A gradational yellow massive soil. At 15cm Brown loamy sand, massive. At 30-45cm Yellow-brown light sandy clay loam, massive. At 60cm Yellow-brown sandy clay loam, massive. Depth 1.0m (see soil tests I).

Wpt 62 - Site J



Overstory – Co-dominant *C. clarksoniana*, *E. tetradonta*, Glossy-leaf Box (*E. chlorophylla*) to 16m. Open woodland with Eucalypt understory to 4m. *Petalostigma pubescens* (quinine tree) and *Terminalia* sp. Some *Melaleuca viridiflora* to 6m. Some sparse *Acacia* sp. (broadleaf)... emergent along graded road. Grass: *Sarga plumosum* (plume sorghum).

Open woodland with thick understory. RE. 3.9.2 Slope – <0.5%

Soil – Yellow-Brown Sandy Clay Loam – Yellower at depth (Kandosol). A gradational yellow massive soil. At 15cm Brown loamy sand, massive. At 30-45cm Yellow-brown light sandy clay loam, massive. At 60cm Yellow-brown sandy clay loam, massive. Depth 1.0m+ (see soil tests I).

Wpt 63 - Site K



Overstory – Woodland to Open woodland of *C. clarksoniana* to 25m, *E. leptophleba*, Cooktown Ironwood (*E. chlorostachys*), Occasional *C. dallachiana* (Dallachy's or Ghost gum). Understory – occasional Eucalypt to 6m, *Grevillea parallela*. Grass: *Sarga plumosum* (plume sorghum). Slope – 0.5%

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Soil – Very deep red massive soil (Red Kandosol). At 15cm red sandy loam. At 30cm deep –light sandy clay loam. At 45-60cm Red clay loam sandy. Soil depth 1.2m+. (See soil tests K).

Wpt 64 - Site L



Soil – Very deep red massive soil (Red Kandosol). At 15cm red sandy loam. At 30cm deep –light sandy clay loam. At 45-60cm Red clay loam sandy. Soil depth 1.2m+. (See soil tests B).

Overstory – 1. Darwin Stringybark (*E. tetradonta*) co dominant with *C. clarksoniana*.
3. Cullen's Ironbark (*E. cullenii*). All to 28m. Some Cooktown Ironwood (*Erythrophleum chlorostachys*) to 10m. Understory – *Grevillea parallela*. Grass: *Sarga plumosum* (plume sorghum) Slope – 0.5%

Wpt 65 - Site N



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Soil – Deep Gradational red Loamy Clay soil. Depth 1.2m+ ; 0-15cm – Sandy clay loam, massive, red colour; 30cm – Light clay, red-brown colour, Moderate 2-5mm sub-angular blocky. 60cm - Light clay. Red.

Slope – <0.3%

Overstory – 1. *E. cullenii* to 20m. *C. erythrophloia* to 18m (av. 12m). Understory Quinine (*Petalostigma* spp.). Some *Melaleuca viridiflora* in patches. Best fit is RE 3.12.10c;

Wpt 66 - Site O



Overstory – 1. *C. erythrophloia* to 15m. *E. cullenii* to 20m. “Horsebush” in understory. Best fit is RE 3.12.10c; Slope – 0.2-0.7% on edge of plateau area. Soil – Loamy Clay; Depth 2.0m+ deep gradational red clay soil. 0-15cm – Sandy clay loam, massive, red colour. 30cm – Light clay, red-brown colour, 60cm - Light clay. Red;

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Wpt 67 - Site P



Soil – Deep gradational red clay soil. 0-15cm – Sandy clay loam, massive, red colour.
30cm – Light clay, red-brown colour, Moderate 2-5mm sub-angular blocky. 60cm - Light clay. Red; Depth 1.5m+

Slope – 0.5%



Overstory – 1. *E. cullenii* co-dominant with *C. erythrophloia*. Sparse *C. dallachiana*. Some Cooktown ironwood (*E. chlorostachys*). Understorey emergent Eucalypts. RE 3.12.10c

Wpt 68 - Site Q



Soil – Deep gradational red clay soil. 0-15cm – red-brown loam, massive. 30cm – Loamy clay, red colour, Moderate 2-5mm sub-angular blocky. 60cm - Light clay. Red.

Slope – 0.5%

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Overstory – 1. *E. cullenii* to 16m 2. *C. erythrophloia* 3. *C. dallachiana*. Some *Acacia* spp. in understory to 2.5m Quinine (*Petalostigma* spp.) @ 4.5m Yellowwood (*Terminalia* spp.) and *Grevillea parallela*. Winged bender? RE 3.12.10c best fit.

Wpt 69 - Site R

Co-dominant canopy of *E. cullenii* and *C. erythrophloia* to 20m. *C. dallachiana* to 30m. *Terminalia* spp. and *Petalostigma* spp. in understory. Best fit is RE 3.12.10c

Soil – Deep gradational red clay soil. 0-15cm – Sandy clay loam, massive, red – brown colour. 30cm – Light clay, red colour, Moderate. 60cm - Light clay. Red.

Depth 1.3m+

Slope – 0.8 to 1.0%



Wpt 70 - Site S



C. erythrophloia to 12m Some *Terminalia* spp. in understory. Best fit is RE 3.12.10c

Soil – Deep gradational red clay soil. 0-15cm – Sandy clay loam, massive, red colour.

30cm – Light clay, red-brown colour, Moderate 2-5mm sub-angular blocky. 60cm -

Light clay. Red. Soil depth 1.2m+

Landform – gentle undulation plain. Slope – 1.6%; Geology PGyy.

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APPENDIX 1 - Capture records of northern quolls in Australia, before 1970, between 1970 and 1999 and after 1999. The records are plotted on a digital elevation model showing elevation above sea level

