s22

From: Lucas McKinnon <Lucas.McKinnon@ecoplanning.com.au>
Sent: Thursday, 2 August 2018 10:43 AM
To: s22
Cc: 'Jeff Bulfin'; s47F '; Ghazi Sangari; s22
Subject: RE: Berringer and Cunjurong Point Roads, Manyana, NSW (your ref: 171367) [SEC=UNCLASSIFIED] [SWA-AB.FID227727]
Attachments: Cunjurong Rd Manyana - additional information (Ecoplanning 2018).zip; Ecoplanning 2018 - Manyana - Response to EPBC letter 20180727.pdf

Hi s22 ,

I have been asked by s47F and the proponent to respond to the letter from s22 , regarding the proposal at Cunjurong Point Rd, Manyana. Please see attached a letter and supporting documents. Please note with regards to the Southern Brown Bandicoot records, we have made extensive enquiries as to the validity of this record, as outlined in the report, s22 has reviewed the report and provides a pers comm.. As discussed in previous correspondence, this species is highly unlikely in the area and it would appear this is most likely a mis-ID.

I would be happy to discuss any of the matters entailed in person or over the phone. Hopefully we will get a chance to discuss briefly at our meeting today.

Thanks and best regards, Lucas

Lucas McKinnon
Director | Principal Ecologist | Accredited Biobanking (#76) and BAM Assessor (#17012)
M: 0421 603 549

From: s22 @environment.gov.au]
Sent: Tuesday, 5 June 2018 9:34 AM
To: s47F @swaab.com.au>
Cc: Farrant, Kim <Kim.Farrant@environment.gov.au>; s22 @environment.gov.au>; s22 s22 @environment.gov.au>; s22 @environment.gov.au>; s22 @environment.gov.au>
Subject: RE: Berringer and Cunjurong Point Roads, Manyana, NSW (your ref: 171367) [SEC=UNCLASSIFIED]

Dear s47F

Please find attached s22 response regarding the proposed 182 lot residential subdivision at Berringer and Cunjurong Point Roads, Manyana, NSW (your ref: 171367).

Cheers
s22

s22
Southern NSW & ACT Assessments
(02) 6274 s22 | s22 @environment.gov.au

From: s22
Sent: Friday, 1 June 2018 5:16 PM
To: s47F @swaab.com.au>
Cc: Farrant, Kim <Kim.Farrant@environment.gov.au>; s22 @environment.gov.au>; s22 s22 @environment.gov.au>; s22 @environment.gov.au>; s22 @environment.gov.au>
Subject: Berringer and Cunjurong Point Roads, Manyana, NSW (your ref: 171367) [SEC=UNCLASSIFIED]

Dear s47F

I refer to my previous email of 18 May and our recent telephone discussion concerning the proposed 182 lot residential subdivision at Berringer and Cunjurong Point Roads, Manyana, NSW (your ref: 171367).

As advised, we are preparing a more thorough reply to your 14 May letter, and expect to provide you advice on Monday. I regret the delay in replying.

Yours sincerely,

s22
Director
Southern NSW and ACT Assessments Section
ESD
Department of the Environment and Energy

Office Phone s22
Mobile: s22

Mr Ghazi Sangari
Ozy Homes Pty Ltd
P.O Box 3163
Centro Bankstown NSW 2200

ecoplanning
ecology | planning | offsets

27 July 2018

Re: Response to the Department of the Environment and Energy requesting additional information regarding EPBC Act application to the 182 lot residential subdivision at Berringer and Cunjurong Point Roads, Manyana.

Dear Ghazi,

I have reviewed the request by the Department of the Environment and Energy (the Department) for additional information on matters of national environmental significance (MNES) as listed in the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act), with reference to the 182 lot residential subdivision (the proposal) at Berringer and Cunjurong Point Roads, Manyana (the study area).

Attached to this letter is a response to the five additional requests by the Department. I have discussed the previous reports which provide the information requested. To aid the review, I have provided a copy of these reports zipped into a package with this letter.

If you would like to discuss any of my advice, please contact me on the details provided below.

Yours sincerely,

Lucas McKinnon

Director and Principal Ecologist
BEnvSc (Hons), GradCert Ornith.
Accredited Biobanking (#76) and BAM Assessor (#17012)
M: 0421 603 549
E: Lucas.McKinnon@ecoplanning.com.au

Comment 1: No soil or vegetation plot data has been provided that confirms the vegetation community on site. It is understood that the vegetation may support diagnostic species of the critically endangered Illawarra and south coast lowland forest and woodland (ISCLFW) ecological community.	
Conservation advice (TSSC 2016)	**Response in relation to the study area**
This community is considered an MNES under the EPBC Act where it meets: - Key diagnostic characteristics - At least the minimum condition thresholds for moderate condition (Category C or D)	The three ecological communities in the study area are described by BES (2006) and were confirmed during a site visit in 2017 and discussed in Ecoplanning (2017). Descriptions include floristics and soil characteristics. They have been discussed below with relation to the key diagnostic characteristics and the 'other' diagnostic considerations as required in the conservation advice (TSSC 2016).
Key diagnostic characteristics (page 9)	
The ecological community occurs within the state of New South Wales in the Jervis, Ettrema and Illawarra subregions of the Sydney Basin Bioregion and the Bateman subregion of the South East Corner Bioregion.	The proposal meets this requirement. The proposal is within the Jervis IBRA subregion of the Sydney Basin Bioregion.
The ecological community occurs below approximately 350 m ASL, on the coastal plain or foothills between the immediate coastal strip and the escarpment.	The proposal meets this requirement. The proposal occurs at below 50 m elevation on the coastal plain (FSDF 2018), and approximately 500 m from the coastline.
The ecological community is a forest or woodland with at least 10% foliage cover	The proposal meets this requirement. The vegetation within the proposal area is forest with over 10% foliage cover.
Eucalyptus tereticornis (Forest Red Gum) or *E. longifolia* (Woollybutt) is typically present and often dominant in the mature tree canopy. One or more of the following canopy species may also be dominant, especially where there has been selective removal of trees (for example, *E. tereticornis*) from some patches of the ecological community: *Angophora floribunda* (Rough-barked Apple); *E.*	The proposal **does not** meet this requirement for any of the ecological communities in the study area. There are three vegetation communities mapped within the study area (BES 2006) and this mapping was confirmed during a site visit by Ecoplanning in 2017.

Comment 1: No soil or vegetation plot data has been provided that confirms the vegetation community on site. It is understood that the vegetation may support diagnostic species of the critically endangered Illawarra and south coast lowland forest and woodland (ISCLFW) ecological community.

Conservation advice (TSSC 2016)	Response in relation to the study area
bosistoana (Coast Grey Box); *E. eugenioides* (Thin-leaved Stringybark); *E. globoidea* (White Stringybark). Amongst the other tree species commonly found in the ecological community, but not typically dominant are: *Corymbia maculata* (Spotted Gum); *E. amplifolia* subsp. *amplifolia* (Cabbage Gum); *E. botryoides*; *E. paniculata* subsp. *paniculata* (Grey Ironbark); *E. pilularis* (Blackbutt); and *E. quadrangulata* (Coastal White Wox).	1. Bangalay Paperbark Woodland ('endangered' under the TSC Act but not listed under the EPBC Act) (p7, Ecoplanning 2017). Neither of the two typically dominant canopy species are present. Canopy dominated by *E. botryoides*. Sub-canopy of *E. robusta* (Ecoplanning 2017). ISCLFW does not typically have *E. botryoides* dominant (it is rarely present away from infertile sandflats of the coast as opposed to ISCLFW which occurs predominantly on more fertile soils of Quaternary alluvium and soils derived from Budgong Sandstone [of volcanic origin] in the Illawarra), contrary to TSSC (2016), and *E. robusta* is not listed in the approved conservation advice (TSSC 2016). 2. Northern Coastal Sands Shrub/Fern Forest. Neither of the two typically dominant canopy species are present. Canopy dominated by *E. piperita, E. pilularis* and *C. gummifera* (species associated with sandy substrates). Other canopy species which occur less frequently are *E. eugenioides, E. globoidea, E. paniculata* and *E. botryoides* (Ecoplanning 2017). ISCLFW can be dominated by *E. eugenioides* or *E. globoidea* if selected removal of *E. tereticornis* or *E. longifolia* has occurred in the past. Neither of these species are dominant in this community in the study area. 3. Bangalay Moist Woodland Open Forest. Neither of the two typically dominant canopy species are present. Canopy dominated by *Angophora floribunda, E. botryoides, E. eugenioides,* and *E. paniculata* (Ecoplanning 2017). ISCLFW can be dominated by

Comment 1: No soil or vegetation plot data has been provided that confirms the vegetation community on site. It is understood that the vegetation may support diagnostic species of the critically endangered Illawarra and south coast lowland forest and woodland (ISCLFW) ecological community.	
Conservation advice (TSSC 2016)	**Response in relation to the study area**
	both *A. floribunda* and *E. eugenioides* if selected removal of *E. tereticornis* or *E. longifolia* has occurred in the past. However, *E. botryoides* and *E. paniculata* subsp. p*aniculata* can occur but are rare and in ISCLFW are not typically dominant.
The ecological community is characterised by the plant species described in Appendix A – Species lists: Table 8. Not all species are present at each site.	The proposal **does not** meet this requirement for any of the ecological communities in the study area. The ecological communities present in the study area include species listed in Appendix A of the conservation advice (TSSC 2016, Ecoplanning 2017, BES 2006). However, as none of the ecological communities are characterised by the dominant canopy species prescribed for ISCLFW, the ecological communities are not characterised by the species in Appendix A. Many of the species listed in Appendix A are common in the south coast in a range of ecological communities in varying cover and abundance.
Other diagnostic considerations (page 10)	
The ecological community may include drainage lines and periodically inundated areas but typically occurs in locations less subject to regular or long term inundation than two nearby ecological communities 'River-flat eucalypt forest on coastal floodplains of the NSW North Coast, Sydney Basin and South East Corner Bioregions' (NSW Scientific Committee, 2004a) and 'Swamp sclerophyll forest on coastal floodplains of the NSW North Coast, Sydney Basin and South East Corner Bioregions' (NSW Scientific Committee, 2004b).	There are two existing ephemeral first order watercourses in the study area, one flowing through the Bangalay Paperbark Woodland (synonymous with Swamp sclerophyll forest on coastal floodplains) and the second flowing through the Northern Coastal Sands Shrub/Fern Forest.
A sub-canopy of *Melaleuca decora* (Paper Bark), *M. ericifolia* (Swamp	The proposal **does not** meet this consideration for any of the ecological

Comment 1: No soil or vegetation plot data has been provided that confirms the vegetation community on site. It is understood that the vegetation may support diagnostic species of the critically endangered Illawarra and south coast lowland forest and woodland (ISCLFW) ecological community.	
Conservation advice (TSSC 2016)	**Response in relation to the study area**
Paper Bark), *M. styphelioides* (Prickly-leaved Tea Tree), tree-sized *Acacias* and/or *Casuarina glauca* (Swamp Oak) may be present.	communities in the study area. The Bangalay Paperbark Woodland (synonymous with Swamp sclerophyll forest on coastal floodplains) has *M ericifolia* in the midstorey but not as a dominant species, which is typical of this community. None of the other ecological communities in the study area have this sub-canopy character.
The ecological community occurs on a variety of substrates, most commonly fine grained sedimentary or plutonic rocks, from which sandy loam, loam to clay loam soils with moderately high fertility are derived. It does not typically occur on infertile sandy soils or primary alluvium. It can occur on basic volcanic soils but in the northern part of the range these soils more typically support other ecological communities.	The study area is underlain by Tertiary undifferentiated sediments comprising gravel, sand, clay, quartzite, sandstone and conglomerate (Ulladulla 1:250000 Geological Series Sheet S1 56-13). These have weathered to form red loamy and sandy soils typical of the Manyana area. Soils throughout much of the study area are covered by a thick humus layer (BES 2006), and are predominantly infertile sandy soils.
The ecological community is less likely to be present where there is dominance by rainforest-associated plant species, particularly palms or tree ferns.	The rainforest elements present indicate the ecological communities are less likely to be ISCLFW. 1. Bangalay Paperbark Woodland have an abundance of rainforest elements in the sub-canopy (*Livistona australis* (Cabbage Palm) and *Cyathea australis* (Rough Tree Fern)) (BES 2006). 2. Bangalay Moist Woodland Open Forest has an abundance of rainforest elements in the understorey (BES 2006).

Comment 2: A number of threatened fauna species, including the Southern Brown Bandicoot, Swift Parrot, Greater Glider, Spotted-tailed Quoll and migratory species are known to occur on or in close proximity to the site. However, the information provided does not adequately discuss the type and extent of habitat usage on site by these species. The Department considers that their occurrence on site warrants further investigation.

Species	Response in relation to the study area
Southern Brown Bandicoot	Surveys undertaken: - Daytime searches for suitable habitat (BES 2006, Ecoplanning 2017) - Daytime searches for signs of activity (BES 2006, Ecoplanning 2017) - Baited camera traps in autumn (Ecoplanning 2018) - Liaison with specialists (Ecoplanning 2018) - Additional discussions with local ecologist who submitted record (20/06/2018) - Cage trapping (BES 2006) (acknowledging that Southern Brown Bandicoots are trap-shy and hence this is not a recommended survey technique for this species). Information provided: - Habitat description including observations of diggings (BES 2006, Ecoplanning 2017) - Remote camera images, sent to numerous OEH and external experts and Senior Ecologist, and all identified as Long-nosed Bandicoot (Ecoplanning 2018) - Discussions with OEH experts who have alluded to the record being questionable in the absence of other evidences, discussing the Southern Brown Bandicoot record on the Atlas database (Ecoplanning 2018, OEH 2018 [Andrew Claridge, Senior Conservation Officer, SOS Programs]) - Assessment of Significance in accordance with the MNES Significant Impact Guidelines (DoE 2013) Summary of findings: The record of the Southern Brown Bandicoot has been discussed with OEH and external experts, including OEH BioNET staff who contacted the local ecologist who submitted the record to the Atlas. The comment from local OEH expert is:

Comment 2: A number of threatened fauna species, including the Southern Brown Bandicoot, Swift Parrot, Greater Glider, Spotted-tailed Quoll and migratory species are known to occur on or in close proximity to the site. However, the information provided does not adequately discuss the type and extent of habitat usage on site by these species. The Department considers that their occurrence on site warrants further investigation.	
Species	**Response in relation to the study area**
	'I am not familiar with that particular record but would be highly dubious of it given the location. Outside of Booderee there are no known populations of the species between there and Ku-ring-gai Chase National Park to the north, and Eden to the south. The fact that it is a "O for Observation" makes me question it, given how common Long-nosed Bandicoots are in the local area. *Given this is tied in with development the record needs to be properly scrutinised. Put in a request to licensing for further information. Ideally, you would have further corroborating evidence before being accepting of the record itself.'* Critically, no photo evidence was provided with the record submission. During initial discussions with OEH ecologists, the validity of the record was questioned due to the general similarity of Long-nosed Bandicoot and Southern Brown Bandicoot and the type of conditions that often prevail in a field situation. An observation record without evidence is difficult to confirm as the observer requires sufficient skill and time to observe the differences for identification (Ecoplanning 2018). During later discussions with the observer who submitted the record, he acknowledged that Long-nosed Bandicoot are common in the area, but he is confident it was a Southern Brown Bandicoot. He subsequently discussed additional sightings of Southern Brown Bandicoot by local wildlife carers at Cunjurong Point and by himself at Monument Beach in previous years. These observations were not submitted to the Atlas, no photographic evidence of these records exists and otherwise cannot be verified beyond doubt. The targeted survey by Ecoplanning (2018) during optimal survey time (Autumn) using remote camera traps baited with oats, peanut butter, honey and truffle oil did not detect the species in the study area. Instead, the survey resulted in long-nosed bandicoot images being obtained. The precautionary principle was applied, and an Assessment of Significance was undertaken for Southern Brown Bandicoot, assuming the habitat in the study area is suitable for foraging and breeding. The habitat surveys identified potential foraging and breeding habitat for this species and so both habitat types were assessed. The reintroduction of the Southern Brown Bandicoot to Booderee National Park is discussed in Ecoplanning (2018) but it not likely to have resulted in individuals moving through the landscape to the study area.

Comment 2: A number of threatened fauna species, including the Southern Brown Bandicoot, Swift Parrot, Greater Glider, Spotted-tailed Quoll and migratory species are known to occur on or in close proximity to the site. However, the information provided does not adequately discuss the type and extent of habitat usage on site by these species. The Department considers that their occurrence on site warrants further investigation.

Species	Response in relation to the study area
Swift Parrot	Swift Parrots are known to move up the east coast to forage. Although the recent record in the Atlas is the only record over the last 20 years in the locality (OEH 2018), it is likely that this species moves through the locality through the autumn and winter, without being detected or added to the Atlas. Preferred habitat in the study area is discussed in the Assessment of Significance. Additional surveys would not provide any further information required to complete the Assessment of Significance as Swift Parrot doesn't breed in the mainland and the study area has already been considered potential foraging habitat. The Significance Assessment considered the impact not to be significant, due to ample similar habitat in the locality, most of it in National Park.
Greater Glider	This species is known to be relatively abundant in the locality and there are 14 records in the locality over the last 20 years. It is not listed as threatened in NSW, and has only recently been listed as 'vulnerable' under the EPBC Act (May 2016), which generally leads to an increase in sightings as the species is targeted for survey. It's habitat requirements are discussed in the Assessment of Significance. Habitat in the study area is described in detail in BES (2006) and Ecoplanning (2017). The Assessment of Significance has been undertaken with the assumption that this species is present in the study area and has potential to forage and breed in the habitat. Additional surveys would not provide any further information required to complete the Assessment of Significance. The Significance Assessment considered the impact not to be significant, due to ample similar habitat in the locality, most of it in National Park.
Spotted-tailed Quoll	Although the record in the Atlas just south of the study area is the only record over the last 20 years in the locality (OEH 2018), this species is known to move over large distances and is recorded along the coastal fringe and ranges surrounding the locality. It's habitat requirements are discussed in the Assessment of Significance. Habitat in the study area is described in detail in BES (2006) and Ecoplanning (2017). The Assessment of Significance has been undertaken with the assumption that this species is present in the study area and has potential to forage and breed in the habitat. Additional surveys would not provide any further information required to complete the Assessment of Significance. The Significance Assessment considered the impact not to be significant, due to limited records of the species in the locality and ample similar habitat in the locality, most of it in National Park.

Comment 2: A number of threatened fauna species, including the Southern Brown Bandicoot, Swift Parrot, Greater Glider, Spotted-tailed Quoll and migratory species are known to occur on or in close proximity to the site. However, the information provided does not adequately discuss the type and extent of habitat usage on site by these species. The Department considers that their occurrence on site warrants further investigation.	
Species	**Response in relation to the study area**
Migratory species	The two migratory species observed in the study area (Black-faced Monarch and Rufous Fantail) as well as an additional migratory species which is likely to occur in the locality (Satin Flycatcher) have been assessed in the Assessment of Significance. Their habitat preferences and use of habitat in the study area is discussed in the assessments. The study area has been considered an area of important habitat for all three migratory species and has been assessed on this basis. Additional surveys would not provide any further information required to complete the Assessment of Significance.

Comment 3: It does not appear that targeted surveys, particularly for threatened flora species, have been conducted in accordance with Commonwealth guidelines.	
Species	**Response in relation to the study area**
Threatened flora species	All threatened flora species which are listed in the Protected Matters Search Tool (DoEE 2018) or recorded in the Atlas (OEH 2018) were considered in Appendix B of Ecoplanning (2018). Only one threatened flora species has been recorded in the locality; Leafless Tongue Orchid (*Cryptostylis hunteriana*) with 11 records within 5km (records from 2000 and 2001). BES (2006) considered impacts to *C. hunteriana,* by undertaking grid transects in suitable habitat, comparing a reference population and undertaking an Assessment of Significance. This species has a low likelihood of occurring in the study area. No other threatened flora species were likely to occur in the study area based on the results of the habitat assessments and hence additional targeted surveys would not provide any additional information on MNES.

Comment 4: Surveys are not contemporaneous to be able to determine the extent that the site supports threatened species.	
Species	**Response in relation to the study area**
All species	Due to the timeframes of the original Development Application, the original field surveys were conducted over 2005 and 2006. Survey timing in BES (2006) is suitable for targeted flora surveys (during flowering season to increase detectability) and broad flora and fauna surveys (during warmer months when fauna are more likely to be active and flora are more likely to be flowering and identifiable to species level). These surveys involved detailed flora and fauna surveys which have provided a useful resource for understanding the ecological values in the study area. The recent request for further federal assessment has involved re-doing the database assessment including a Protected Matters Search Tool report (dated 29.01.2018) (DoEE 2018), and an Atlas search of records within 5km of the locality and within the South East Local Land Services region (dated 14 January 2018) (OEH 2018). Those records which have been entered into the Atlas in response to the proposal for Swift Parrot, Southern Brown Bandicoot and Greater Glider, have been assessed in Ecoplanning (2017 and 2018) to update the existing assessment in BES (2006). Surveys for the Flora and Fauna Management Plan (Ecoplanning 2017) included revising the vegetation and ecological community results from BES (2006). The results from BES (2006) are discussed with reference to their validity in the current timeframe. The vegetation mapping was found to be consistent with the flora species observed in recent surveys (Ecoplanning 2017). Targeted surveys for Southern Brown Bandicoot (Ecoplanning 2018) were undertaken in autumn which is the recommended season in the Commonwealth survey guidelines (DSEWPaC 2011). There were used to update the existing survey effort and to tailor the method to increase the likelihood of detecting the trap-shy species. An updated hollow-bearing tree survey was undertaken (Ecoplanning 2017) to provide more specific details on the proposed impacts to hollow-bearing trees. This has been used to assess impacts to breeding / potential breeding habitat for Greater Glider and Spotted-tailed Quoll. Additional surveys are not considered necessary as those species with potential to occur in the study area have been assessed based on an 'assumed presence' for either foraging and/or breeding habitat.

Comment 5: Avoidance, mitigation and management measures have not been discussed.	
Issue	**Response in relation to the study area**
Avoidance, mitigation and management	Impact mitigation is discussed in BES (2006). This includes modified planning and design to avoid impacts to threatened ecological community and long-term management to maintain the habitat potential and connectivity through the implementation of a Vegetation Management Plan (part of the Flora and Fauna Management Plan FFMP). Subsequently, the FFMP addresses details on threatened ecological community protection and monitoring, hydrology, fire, weed control, soil disturbance, pedestrian access, revegetation, topsoil management, and fauna habitat management, ensuring performance criteria are achieved.

References

BES (2006). Flora and Fauna Assessment – Proposed Subdivision, Lot 172 DP 755923 & Lot 823 DP 247285 Berringer Road and Cunjurong Point Road, Manyana, BES (Bushfire and Environmental Services), St Georges Basin.

Commonwealth Department of the Environment and Energy (DoEE) (2018). Protected Matters Search Tool. Report created on 29 January 2018. Accessed at: http://www.environment.gov.au/epbc/protected-matters-search-tool

Commonwealth Department of Sustainability, Environment, Water, Population and Communities (DSEWPaC) (2011). Survey guidelines for Australia's threatened mammals Guidelines for detecting mammals listed as threatened under the Environment Protection and Biodiversity Conservation Act 1999

Ecoplanning (2017). Flora and Fauna Management Plan, Lot 172 // DP 755923 & Lot 823 DP // 247285, Berringer Road, Cunjurong Point Road and Sunset Strip, Manyana. Prepared for Precise Planning.

Ecoplanning (2018) Response to letter from Department of the Environment and Energy, regarding 182 lot sub-division, Berringer and Cunjurong Roads, Manyana. Letter dated 17 April 2018.

NSW Office of Environment and Heritage (OEH) (2018). Atlas of NSW Wildlife

Threatened Species Scientific Committee (TSSC) (2016). Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) (s266B) Approved conservation advice (incorporating listing advice) for the Illawarra and south coast lowland forest and woodland ecological community. Conservation advice approved 26 August 2016

The Foundation Spatial Data Framework (FSDF) (2018) ELVIS – Elevation and Depth - Foundation Spatial Data. Accessed at: http://elevation.fsdf.org.au/

ecoplanning

ecology | planning | offsets

Flora and Fauna Management Plan

Lot 172 // DP 755923 & Lot 823 DP // 247285 Berringer Road, Cunjurong Point Road and Sunset Strip, Manyana, NSW

Residential subdivision

Prepared for Precise Planning

24 July 2018

PROJECT NUMBER	2017-044		
PROJECT NAME	Flora and Fauna Management Plan		
PROJECT ADDRESS	Lot 172 // DP 755923 & Lot 823 DP // 247285 Berringer Road, Cunjurong Point Road and Sunset Strip, Manyana, NSW		
PREPARED FOR	Precise Planning Pty Ltd		
AUTHOR/S	s47F		
REVIEW	s47F		
VERSION	**Version**	**Draft/Final**	**Date to client**
	1.0	Draft	24 November 2017
		Final	27 November 2017
	2.0	Draft	24 July 2018

This report should be cited as: '*Ecoplanning (2018). Flora and Fauna Management Plan, Lot 172 // DP 755923 & Lot 823 DP // 247285, Berringer Road, Cunjurong Point Road and Sunset Strip, Manyana (v. 2.0). Prepared for Precise Planning.*

ECOPLANNING PTY LTD
s47F
M: 0421 603 549
www.ecoplanning.com.au

Glossary and abbreviations

ABBR./TERM	DESCRIPTION
APZ	Asset Protection Zone
BC Act	NSW *Biodiversity Conservation Act 2017*
DA	Development Application
EEC	Endangered Ecological Community
EP&A Act	NSW *Environmental Planning and Assessment Act 1979*
EPBC Act	Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*
FFMP	Flora and Fauna Management Plan
ha	Hectares
HBT	Hollow-bearing Tree
LEP	Local Environmental Plan 2014
LGA	Local Government Area
Mm/cm/m/km	Millimetres/centimetres/metres/kilometres
PCT	Plant Community Type
PFC	Projected Foliage Cover
TEC	Threatened ecological community, listed as vulnerable, endangered or critically endangered under either the TSC Act (now repealed by BC Act) or EPBC Act
TSC Act	NSW *Threatened Species Conservation Act 1995*
WoNS	Weeds of National Significance
*	Denotes exotic species

Contents

Figures

Tables

1. Introduction

1.1 Description of project and purpose of Flora and Fauna Management Plan

Ecoplanning were commissioned by Precise Planning Pty Ltd to prepare a Flora and Fauna Management Plan (FFMP) relating to the residential subdivision of Lot 172 // DP 755923 & Lot 823 // DP 247285 Berringer Road, Cunjurong Point Road and Sunset Strip, Manyana, NSW, 2539 (hereafter referred to as the '**study area'**) (**Figure 1.1**). The lots are situated on land that is currently zoned R2 – Low Density Residential under the Shoalhaven Local Environmental Plan 2014 (LEP). At present, the two lots have approval to be sub-divided into one hundred and eighty-two (182) residential allotments. The subdivision will be implemented over 6 stages, with each stage including the addition of approximately 30 lots. An area of vegetation mapped as an Endangered Ecological Community (EEC) under the *Threatened Species Conservation Act 1995* (TSC Act), a buffer around the EEC and a bushland reserve that facilitates connectivity to the north are hereafter referred to as the '**subject site**'

This FFMP has been prepared in accordance with the Determination of Major Project No. 05-0059 (File No. 904674) (8 July 2008) and fulfils the following consent conditions:

- B8 – Vegetation Management Plan for each stage of the development,
- B9 – Vegetation Management Plan – EEC,
- D9 – Protocols for Trees with Hollows, and
- E16 – Dedication of Land

The primary objectives of this FFMP include:

- The identification of all hollow-bearing trees (HBTs) within the impact area, which will be offset within the retained vegetation in the subject site by the installation of nest boxes,
- The implementation of a monitoring program for the nest boxes, conducted every 6 months until all construction works are completed and in accordance with Condition E16,
- The protection of fauna both prior to, during and following the construction works,
- Management and monitoring activities to reduce the impacts on the EEC and all other ecological values of the subject site,
- Protective measures during the construction phase, consideration of the potential impacts of the adjoining residential development, means of weed control, revegetation, threatened species protection, habitat creation, propagation and translocation, and
- Maintaining and monitoring of the EEC for 3 years post the land being dedicated to Council.

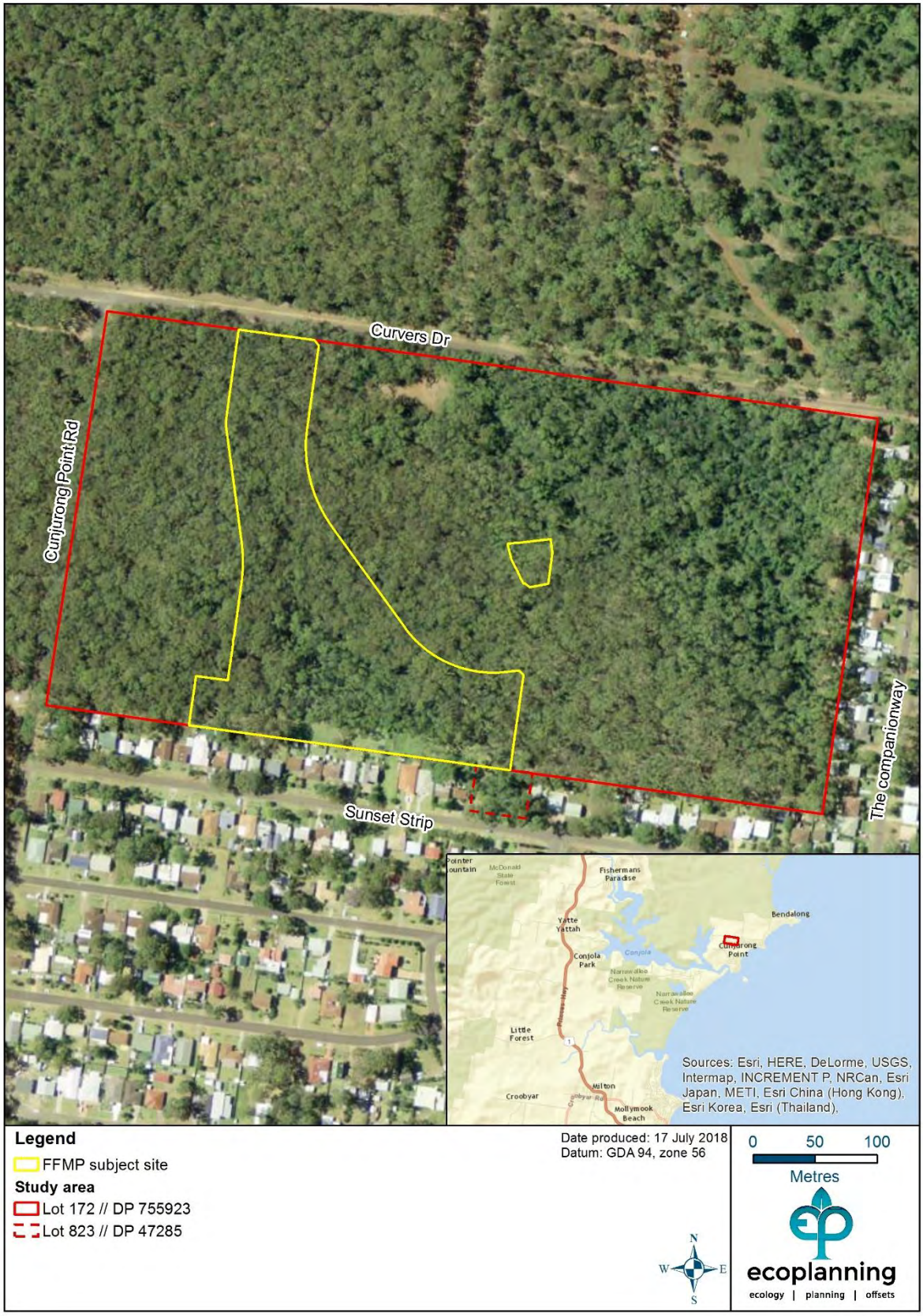


Figure 1.1: The study area and FFMP subject site.

1.2 Site description

The ***study area*** is situated in Shoalhaven Local Government Area (LGA) and includes all land contained within Lot // 172 DP 755923 & Lot 823 // DP 247285 Berringer Road and Cunjurong Point Road, Manyana, NSW, 2539. The surrounding lots are zoned RU2 – Rural Landscape, E2 – Environmental Conservation and R2 – Low Density Residential under the Shoalhaven LEP (2014). The suburb of Manyana is surrounded by a large intact expanse of bushland, which includes Conjola National Park to the north. The nearest major town is Ulladulla, which is located to the south, approximately 35 km by road. Lake Conjola is situated approximately 500 m from the western boundary of the study area and Inyada Point is located approximately 1.2 km to the east.

The ***subject site*** is situated in the central/western portion of the study area and includes all of the vegetation mapped as Bangalay Paperbark Woodland (Thomas et al. 2000). This includes a canopy of *Eucalyptus botryoides* (Bangalay) and a midstorey of small trees and shrubs, including *Callicoma serratifolia* (Black Wattle), *Leptospermum polygalifolium* subsp. *polygalifolium* (Tantoon), *Melaleuca ericifolia* (Swamp Paperbark), *Melaleuca linariifolia* (Flax-leaved Paperbark) and *Myrsine variabilis*. The groundlayer consists of sedges, ferns, forbs and grasses including *Blechnum nudum* (Fishbone Water Fern), *Gahnia radula, Imperata cylindrica* (Blady Grass), *Oplismenus aemulus* (Australian Basket Grass) and *Pteridium esculentum* (Common Bracken). Bangalay Paperbark Woodland is consistent with the EEC *Swamp sclerophyll forest on the coastal floodplains of the NSW North Coast, Sydney Basin and South East Corner Bioregions*. The remaining vegetation in the subject site has been mapped as Northern Coastal Sands Shrub/Fern Forest (Thomas et al. 2000).

The subject site also incorporates a 25 m buffer around the EEC. A relatively small area of this buffer will be directly impacted by the proposed basin batters in the east of the subject site (**Figure 1.2**). The subject site currently retains good connectivity with the large expanse of bushland to the north, south and west of the site (**Figure 1.3**). The inclusion of a bushland reserve in the subject site will facilitate connectivity between the EEC and Lots 6 and 108 // DP755923 to the north. These lots are currently vegetated and are well connected to surrounding vegetation, including Conjola National Park.

Northern Coastal Sands Shrub/Fern Forest also occurs over most of the study area. This community consists of an established open forest dominated by *Eucalyptus pilularis* (Blackbutt), *Eucalyptus piperita* (Sydney Peppermint), *Corymbia gummifera* (Red Bloodwood) and *Eucalyptus eugenioides* (Thin-leaved Stringybark). The north-eastern corner of the study area has been mapped as Bangalay Moist Woodland Open Forest. Further information regarding the vegetation communities in the study area is provided in **Section 2.2.1**.

Figure 1.2: EEC area, 25 m buffer, Bushland Reserve, basins and the proposed development.

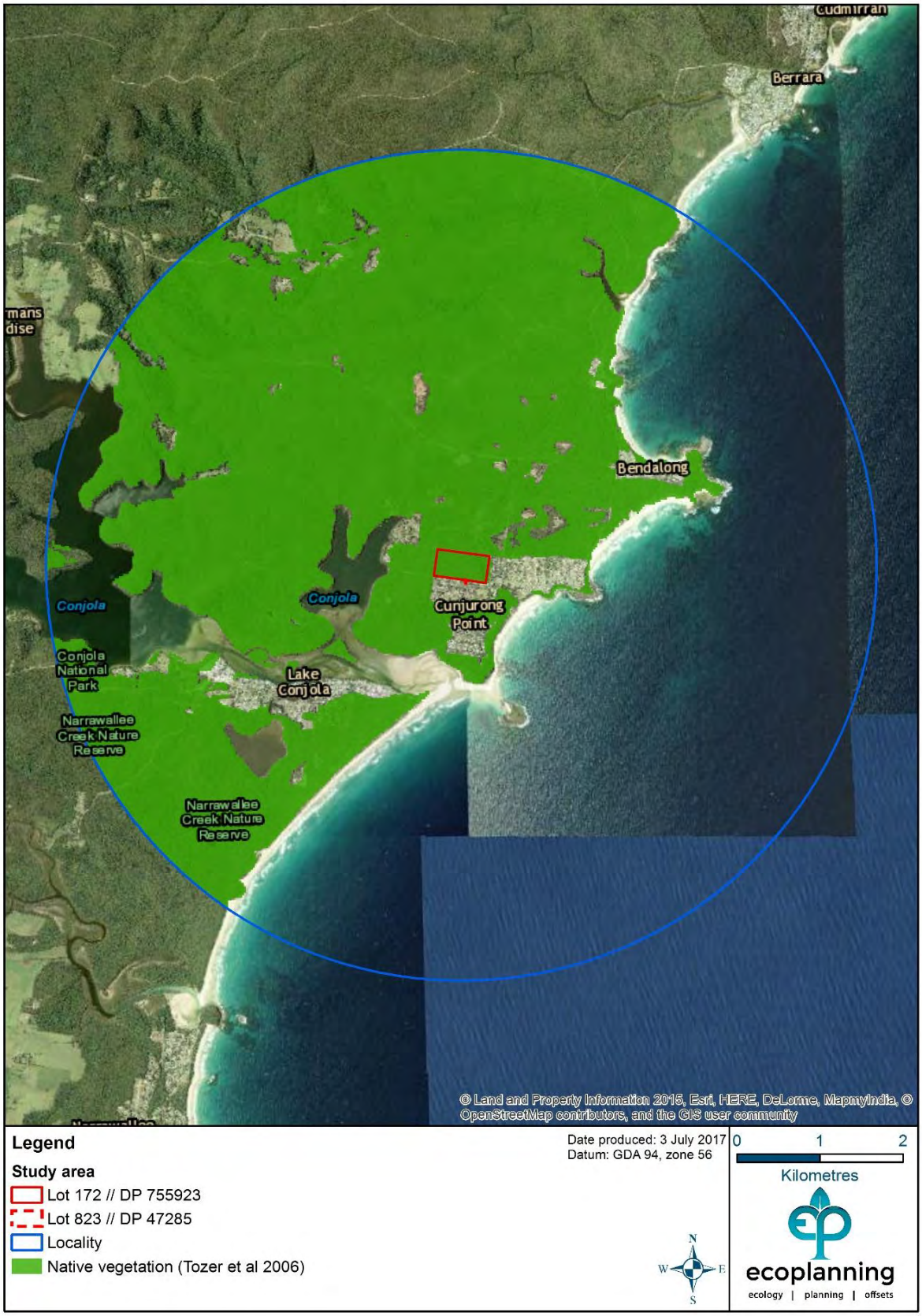


Figure 1.3: Locality of the FFMP subject site and connectivity to surrounding native vegetation (Tozer et al. 2006).

2. Site assessment

2.1 Methods

A field survey was undertaken on 14 June 2017 by Thomas Hickman (Ecologist, Ecoplanning) and Kieren Northam (Graduate Ecologist, Ecoplanning) to identify vegetation condition and management requirements and identify HBTs in the study area. The study area and subject site were traversed by foot and the weather conditions on the day were cool to warm with clear skies (**Table 2.1**).

Table 2.1. Daily weather observation at Ulladulla (AWS) – station 069138 (14 km south west of the development site)

Date	Temp (°C)		Rainfall (mm)[1]	Max wind	
	Min	Max		Direction	Speed (km/h)
26/05	10.4°C	18.8°C	0mm[1]	N	30

The current health of the vegetation in the subject site was inspected. This included assessment of the resilience of the subject site, thus its capacity to respond to the potential impacts of the proposed residential development. The site was surveyed to identify any problematic exotic species, particularly all priority weeds and Weeds of National Significance (WoNS). Notes regarding appropriate site-specific weed control techniques for the dominant exotic species were taken during the site inspection.

2.1.1 Hollow bearing tree assessment

The field assessment aimed to locate all HBTs within the study area. This was undertaken by traversing the study area on foot whilst actively looking for trees containing hollows. The location of each of the HBTs was marked using a hand-held GPS and trees were tagged with the letter H to indicate the presence of hollows. Additional information was taken for each HBT, including the number of hollows, the dimension of the hollows, their height from the ground and recent signs of use (i.e. observed presence of fauna, scratch marks around the hollows entrance and any other signs of use). Trees containing nests were also mapped and observed for any signs of recent activity.

2.2 Results

2.2.1 Plant communities

Regional vegetation mapping of Tozer et al. (2006) has mapped the vegetation in the study area as Coastal Sand Forest (DSF p.64) (**Figure 2.1**). Tozer et al. (2010) describes this community as a eucalypt forest with a mixed understorey of sclerophyll shrubs, ferns, grasses and forbs. Field assessment of the study area by BES (2006) was conducted prior to the wider scale regional vegetation mapping by Tozer et al. (2006) and related the vegetation to mapping undertaken Thomas et al. (2000).

Field assessment determined the vegetation mapping conducted by BES (2006) to be consistent with the composition of flora species within the study area (**Figure 2.2**). The

vegetation communities identified in the study area (including comparisons to the equivalent TEC) is provided in **Table 2.2**.

Table 2.2: Vegetation community nomenclature

Vegetation communities (Thomas et al. 2000)	Threatened Ecological Communities	TSC Act	EPBC Act
Bangalay Paperbark Woodland	Swamp sclerophyll forest on the coastal floodplains of the NSW North Coast, Sydney Basin and South East Corner Bioregions	E	-
Northern Coastal Sands Shrub/Fern Forest	-	-	-
Bangalay Moist Woodland Open Forest	-	-	-

E = Endangered

It is noted that the vegetation community Bangalay Paperbark Woodland is a component of the EEC *Swamp sclerophyll forest on the coastal floodplains of the NSW North Coast, Sydney Basin and South East Corner Bioregions* listed under the TSC Act. Northern Coastal Sands Shrub/Fern Forest and Bangalay-Moist Woodland Open Forest are not consistent with any TECs listed under the TSC Act or EPBC Act.

2.2.2 Bangalay Paperbark Woodland

This vegetation community has been mapped along and in proximity to the drainage line that runs through the centre of the subject site. The canopy is dominated by *E. botryoides*, with a height of 22 m and a projected foliage cover (PFC) of approximately 25%. *Eucalyptus robusta* (Swamp Mahogany), which is usually a component of similar vegetation communities described by Mills (1993) and Thomas et al. (2000), was not recorded in the canopy within this vegetation community. A sub-canopy is present and is dominated by *E. robusta* to a height of 12 m with a PFC of 20-30%. The sub-canopy includes other species such as *Callicoma serratifolia, Melaleuca linariifolia, Myrsine variabilis* and occasionally *Allocasuarina littoralis* (Black She-Oak). The groundlayer consists of sedges, ferns, forbs and grasses, including *Blechnum nudum*, *Oplismenus aemulus, Gahnia radula*, *Imperata cylindrica* and *Pteridium esculentum*.

2.2.3 Northern Coastal Sands Shrub/Fern Forest

Northern Coastal Sands Shrub/Fern Forest is described by Thomas et al. (2000) and has been mapped in the north-eastern corner of the study area (**Figure 2.3**). This vegetation community has been mapped across a majority of the study area and is also located within the subject site. The community consists of an open forest dominated by *E. piperita*, *E. pilularis* and *C. gummifera*, however also includes additional canopy species that occur less frequently, such as *E. eugenioides, Eucalyptus globoidea* (White Stringybark), *Eucalyptus paniculata* (Grey Ironbark) and *E. botryoides. Syncarpia glomulifera* (Turpentine) occurs through the vegetation zone, as a canopy – sub canopy species, and in some places occurs as the dominant canopy species. The understorey is comprised of shrubs, including *Acacia terminalis* (Sunshine Wattle), *Acacia ulicifolia* (Prickly Mosses) *Dodonaea triquetra* (Large-leaf Hop-Bush), *Platylobium formosum* (Handsome Flat Pea) and *Persoonia linearis* (Narrow-leaved Geebung).

2.2.4 Bangalay Moist Woodland Open Forest

This vegetation community occurs in the north eastern/eastern portion of the study area and has been separated from the Northern Coastal Sands Shrub/Fern Forest based on a higher abundance and cover of mesic shrubs and increased incidence of *E. botryoides* (**Figure 2.4**). It is likely that the rainforest elements in this community are the result of a reduced frequency of fires. The dominant canopy species in this vegetation community include, *Angophora floribunda* (Rough-barked Apple), *E. botryoides, E. eugenioides,* and *E. paniculata*. The midstorey consists of mesic shrub species, including *Acmena smithii* (Lilly Pilly), *Clerodendrum tomentosum* (Hairy Clerodendrum), *Elaeocarpus reticulatus* (Blueberry Ash)*, Pittosporum undulatum* (Sweet Pittosporum) and *Synoum glandulosum* (Scentless Rosewood). In the far eastern corner this community comprises a small patch of vegetation with a closed sub-canopy dominated by *Acmena smithii*. The understorey and groundlayer is sparse in this area and consists of *Lomandra longifolia* (Spiny-headed Mat-rush), *Notelaea* spp., *Psychotria loniceroides* (Hairy Psychotria), *S. glandulosum* and *Stenocarpus salignus* (Scrub Beefwood).

2.2.5 Site resilience

Field assessment determined that the majority of the vegetation in the subject site and in the study area has high resilience. This was gauged by the general lack of exotic species, which only occur sporadically through the study area (<1% cover). Of the 184 flora species identified during field survey only 20 of these species were exotic. The low cover of exotic species suggests that the study area has been exposed to minimal disturbances, such as soil modification and nutrient enrichment. Native vegetation in the subject site is present in all stratums, with large *Eucalyptus* spp. occurring through most of the study area. Whilst the study area is relatively undisturbed and intact, it is likely that it may have been subject to selective logging, wildfire and/or prescribed burns.

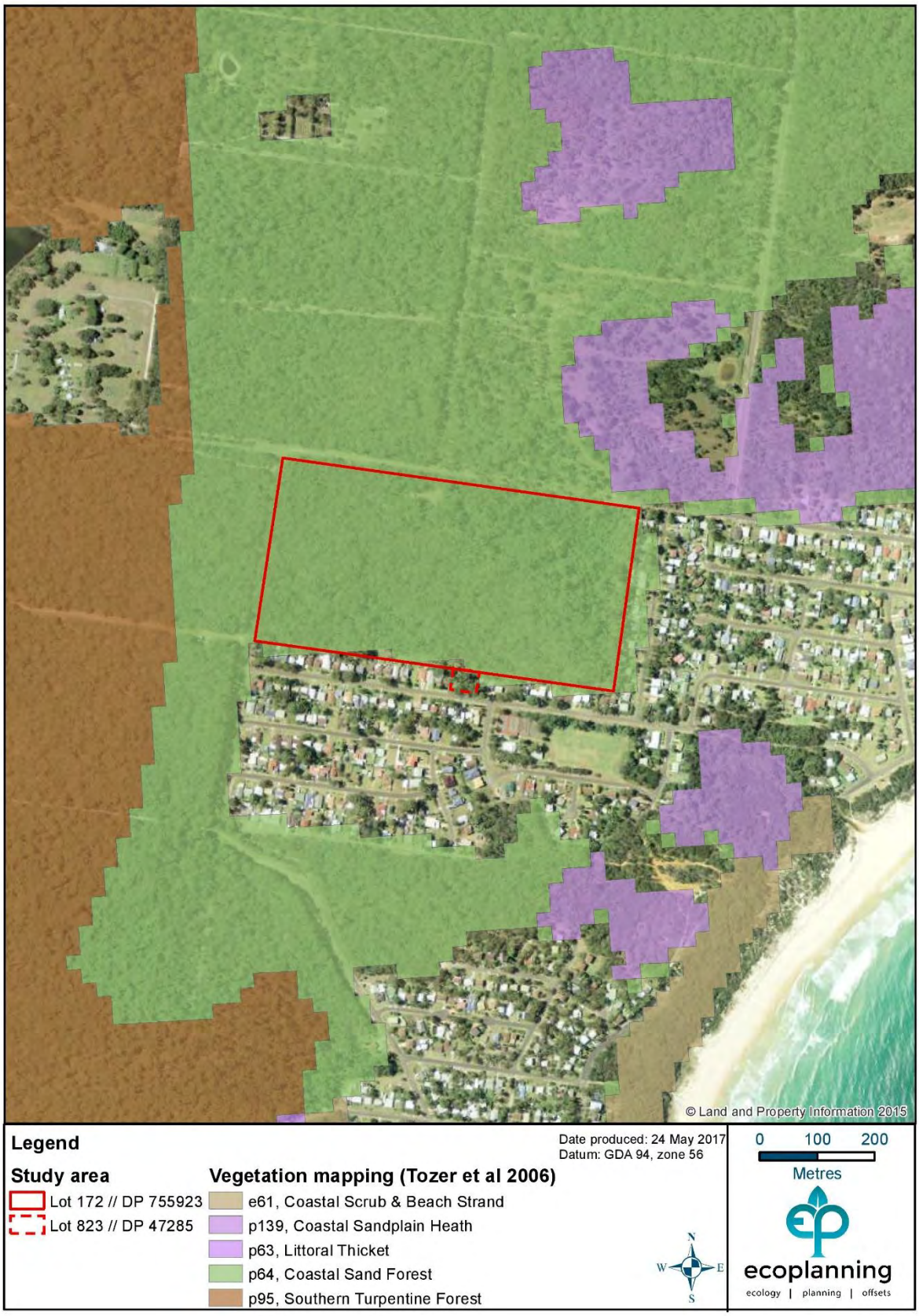


Figure 2.1: Regional vegetation mapping of the study area (Tozer et al. 2006).

Figure 2.2: Vegetation within the study area BES (2006).

Figure 2.3: Northern Coastal Sands Shrub/Fern Forest.

Figure 2.4: Bangalay-Moist Woodland Open Forest.

2.2.6 Flora species

A total of 184 flora species were identified within the study area, of which 20 are exotic and 164 are native (**Appendix A**). Two species listed under the NSW *Biosecurity Act 2015* in accordance with the Shoalhaven LGA are known within the study area (**Table 2.3**). Both of these species are Weeds of National Significance WoNS.

Table 2.3. Priority weeds and Weeds of National Significance (WoNS).

Common name	Scientific name	WoNS	Duty
Bridal creeper	*Asparagus asparagoides*	Y	**Mandatory Measure** *Must not be imported into the State or sold* **Regional Recommended Measure** Exclusion zone: whole region except the core infestation area of Wingecarribee, Wollongong, Kiama, Shellharbour, Shoalhaven, Eurobodalla and Bega *Whole region: Land managers should mitigate the risk of new weeds being introduced to their land. Exclusion zone: The plant should be eradicated from the land and the land kept free of the plant.*
Ground Asparagus	*Asparagus aethiopicus*	Y	

No threatened flora species listed under the TSC Act or EPBC Act were recorded in the study area or subject site during field survey for this report, or during previous assessment of the study area (BES 2006).

2.2.7 Fauna habitat

A total of 51 HBTs were identified within the study area, of which 36 are proposed for removal and 15 are proposed for retention, five of which are situated in the subject site (**Table 2.4** and **Figure 2.5**). An additional 3 habitat trees containing nests ranging from 0.8 – 1 m in diameter will require removal. The nests were constructed from twigs and sticks of small - moderate lengths and positioned in the crown of large *Eucalyptus* spp. The size of the nests suggests that they have been constructed by a moderate – large raptor species. The Square-tailed Kite has been recorded in the study area (BES 2006 and OEH 2017), although this species was not recorded during field survey.

Table 2.4: Number of trees impacted by the proposal

Tree	Impact	Number of trees
Hollow Bearing Tree	Removed	36
	Retained	15
	Total	51
Nest Tree	Removed	3
	Total	54

Square-tailed Kites construct large stick platforms in living trees, in open forest or woodland, often along or close to watercourses (OEH 2016). The habitat in the study area is consistent with this description, as is the construction of the nest. However, it is unclear whether the nests are currently in use by Square-tailed Kite, another raptor or are currently unoccupied. It is noted

that no fauna activity was observed in proximity of the nests during field assessment. All trees containing nest will be subject to the same pre-clearance protocols as the hollowing bearing trees (see **Section 5.1.1**).

2.2.8 *Glossopsitta pusilla* (Little Lorikeet)

A mixed flock of Little Lorikeet and *Glossopsitta concinna* (Musk Lorikeet) was observed in the north east of the study area during field assessment on the 26 May 2017. The flock was observed for approximately 20 minutes, and was mostly seen foraging on flowering *Eucalyptus* spp. Four observations of the Little Lorikeet have been recorded in the locality over the past 8 years. This includes a record on the 1 March 2016, which was reported in the north eastern boundary of the study area at 1 The Companion Way, Manyana (OEH 2017).

Little Lorikeet were not observed utilising the HBTs in the study area. However, appropriate measures will be implemented to avoid impact on this species from being impacted during vegetation clearing.

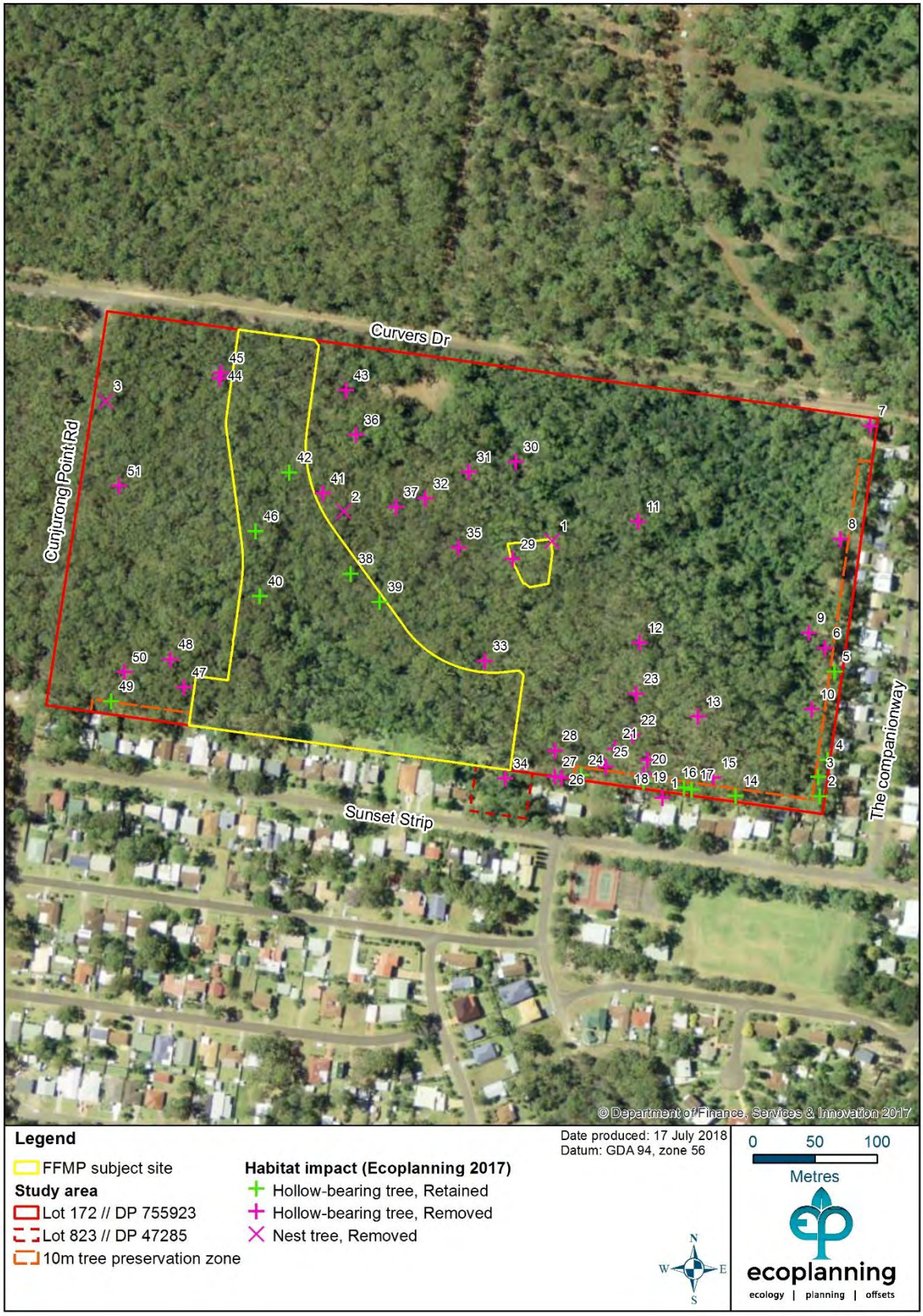


Figure 2.5: Hollow bearing trees and nest trees within the subject site and study area.

3. Impacts to EEC, protective measures and monitoring

This section outlines potential impacts of the development and the measures for the protection and long-term monitoring of the EEC during the construction and post-construction phases as required under Consent Condition B9 – Vegetation Management Plan – EEC.

A number of factors have the potential to impact on the resilience and health of the vegetation within the EEC, buffer zones and habitat corridor within the subject site. The following section outlines these factors, with particular focus on the potential impacts on the TSC Act listed EEC *Swamp Sclerophyll Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions*.

3.1.1 Hydrology

Potential impacts posed by alterations to the hydrology in the study area where considered during field assessment and reviewed in the report prepared by Storm Consulting Pty Ltd (2007). The potential impacts to the EEC and the buffer habitat corridor, include:

- An increase in the annual volume of runoff,
- The potential for the flow from the water quality facility to contain nutrients, such as nitrogen or phosphorus, which may reduce the fitness of the EEC in the subject site, or promote the establishment of exotic species, and
- The potential for flow containing increased nutrients or weed propagules to enter the EEC along the western and eastern boundaries.

The development will include the installation of three water quality facilities within the subject site, which will consist of open wetlands with the following key features:

1. Open water inlet area to collect sediment,
2. Maintenance access to allow for collection of accumulated sediment,
3. Shallow water reed bed area to provide surface area for pollutant filtration, and
4. Water level control at the outlet.

The facilities are situated in the south western and south eastern corner of the subject site, with the third facilitiy situated in the south of the park (**Figure 3.1**). The positioning of the western basin requires discharge to enter the Bangalay Paperbark Woodland, which will then flow in an easterly direction into the larger water quality facility in the south eastern corner of the subject site.

3.1.2 Fire regime

This section outlines criteria for monitoring changes to the fire regime and impacts on the EEC to inform necessary changes to the FFMP over time in order to better managed these impacts. Appropriate fire regimes can play an important role in the long-term management of the EEC, buffers and habitat corridor.

Bangalay Paperbark Woodland

Minimal research has been conducted on the impacts of fire on swamp sclerophyll forest. However, the domain of acceptable fire intervals is known to be from 7 to 35 years, with some intervals greater than 20 years desirable (Kenny et al 2004). Fires applied more frequently than

7 years are likely to lead to a decline of species within the EEC that do not tolerate regular burning. Some vegetation in the study area exhibits evidence of frequent fire (BES 2006), particularly portions of the Northern Coastal Sands Shrub/Fern Forest. However, the date of the most recent fire in the EEC is not known.

Northern Coastal Sands Shrub/Fern Forest

The vegetation mapped as Northern Coastal Sands Shrub/Fern Forest falls into the vegetation formation dry sclerophyll shrub forest (Kenny et al. 2004). The domain of acceptable fire intervals for this vegetation formation is 7 to 30 years, with some intervals greater than 25 years desirable. Portions of this vegetation community show signs of past burning (>15 – 20 years ago).

Monitoring criteria

The recommended fire interval for Swamp Sclerophyll Forest is between 7 to 35 years and for Northern Coastal Sands Shrub/Fern Forest it is 7 to 30 years. The number of fires that occur in the subject site should be monitored. As a precaution, it is assumed that the most recent fire was at least 5 years ago (but it is unlikely to be more than 30 years ago) as the structural formation of the forest appears to be mature, with well-developed understorey layers.

Therefore, the site should be protected from fire for at least the next two years and residents should be educated about the risk of fire as per the *Bush Fire Risk Management Plan* (Shoalhaven City Council 2010). Any fires (controlled burn or wildfires) should conform to the inter-fire intervals of between 7 and 30-35 years.

Should a fire occur within the next two years then the FFMP should be reviewed to include additional measures to protect the EEC from inappropriate fire regimes. Such measures should be in accordance with the Bush Fire Risk Management Plan (Shoalhaven City Council 2010) and could include the following:

- No fires to be lit within the EEC, buffers and corridor other than for the purposes of ecological burning,
- A record should be kept of all fires within the EEC, buffers and corridor, including:
  - the year the last fire went through, the type of fire and the extent of the fire and location, where known
  - response of the EEC to ecological burns

3.1.3 Exotic species

This section outlines protective measures and monitoring criteria with regards to impacts from weeds and weed control and removal.

The subject site currently contains few exotic species and has a low cover of exotic species (<1%). Dumping of garden refuse is the most likely means by which weed seed and vegetative material would be introduced into the subject site. Additional factors that may facilitate the growth of exotic species is an increase in edge effects, which will change the microclimatic conditions of the vegetation on its edges and provide suitable conditions for exotic species. Disturbances associated with edge effects, such as increased soil moisture and nutrients, will be mitigated and have been considered in the hydrological report by Storm Consulting Pty Ltd (2007). Appropriate signage (see **Section 4.1**) and regular monitoring of illegal dumping of garden materials will reduce the likelihood of exotic species from becoming established in the subject site.

The implementation of batters around basin A, B and C will require soil modification to achieve a batter slope that facilitates the construction of the basins. If sourced offsite (see **Section 3.1.4**) the soil material has the potential to contain weed propagules, which if left unmanaged, weeds will become established and could spread into the remainder of the subject site. A maintenance regime will include regular sweeps of the basin batters for establishing herbaceous weeds and grasses, which will be treated prior to establishment and seeding (see **Section 4.3** and **Appendix C**).

Monitoring of exotic species will be addressed in monthly and annual reports conducted by the bush regeneration contractors and will measured quantitatively both spatially and temporarily across the two BioMetric plots (see **Section 3.1.6**, **Section 6.2** and **Table 6.2**).

3.1.4 Soil disturbance

The project will result in the alteration of the soil profiles around basin A, B and C where batters will be constructed to facilitate drainage. All existing midstorey and canopy vegetation will require removal to achieve the desired basin batter width. As such, it is recommended that the topsoil within the proposed batter zone is removed and translocated on top of the batter fill. This approach will be beneficial for multiple reasons, including:

- The utilisation of the soil stored native seedbank in the subject site, thus ensuring seed of local provenance,
- Reduced ongoing weed management costs, and
- Reduced cost of revegetation, which may still be necessary depending on the success of the translocation.

Appropriate sedimentation controls will be necessary, which will remain in place and maintained until the basin batters are vegetated, curb and guttering is sufficiently channelling stormwater containing sediments into the wetlands, and all construction works are complete. Ample time should be allowed to determine the capacity for the batters to regenerate naturally following the translocation of topsoil. Revegetation should be conducted approximately 2 years following each topsoil translocation stage, with densities based on infill planting, as opposed to complete revegetation of the basin batters (see **Section 4.4**). If the topsoil translocation is successful, then revegetation will not be necessary along the basin batter. In this scenario, the proposed cost of revegetation can be used for other management activities, such as weeding, or revegetation in other areas of the site.

3.1.5 Pedestrians access

Given the substantial size of the proposed development (182 lots), there is potential for impacts to inadvertently occur to the EEC as a result of pedestrian access. Therefore, the perimeter of the subject site should be fenced with post and cable fencing to prevent vehicular access and discourage access by the general public. Fencing will direct foot traffic to dedicated pedestrian walkways. This will prevent disturbances associated with increased pedestrian traffic, such as soil compaction, soil erosion and transportation of weed seed propagules into the subject site. Fencing should be in accordance with the recommendations in **Section 4.1.2**.

3.1.6 Boardwalk

A boardwalk is proposed to traverse through the Bushland Reserve in the north of the subject site (**Figure 3.2**). The boardwalk will be 2 m wide to allow for pedestrian and cyclist access. The platform of the boardwalk will be constructed from fibreglass reinforced plastic, with a steel frame and foundation posts. The boardwalk from Garrads Reserve, Narrawallee (**Figure 3.3**) should be used as an example for the boardwalk in the subject site.

The boardwalk will require the removal of five canopy trees and modification to the native midstorey and groundlayer. The trees proposed for removal are in either poor or declining health or are structurally dangerous. Impacts from installation of the proposed boardwalk will be restricted to the 2 m footprint of the boardwalk, and only minimal impacts would occur to surrounding vegetation during construction. This will be achieved by implementing the following mitigation measures:

- A 2 m wide access trail will be established by brushcutting native midstorey and groundlayer species to approximately 5 cm above ground level (conducted by the bush regeneration contractors).
- The five canopy trees proposed for removal will be clearly marked and felled with a chainsaw (conducted by the bush regeneration contractors).
- Where possible, the trees proposed for removal will be felled at an angle so that they fall within the 2 m wide boardwalk footprint area. This will prevent surrounding vegetation from being crushed and damaged during the tree removal process.
- The canopy trees should be gradually lowered to the ground to reduce impacts to surrounding vegetation, cut into manageable lengths and removed from site.
- Access to the area will be limited to the 2 m footprint for the boardwalk and no additional trails or tracks to access the area will be established.
- The construction of the boardwalk will be done systematically in an east-west, or west-east direction, which will avoid the trampling of surrounding native vegetation.
- Soil disturbance will be limited to the digging required to install the steel foundation posts.
- Excess soil generated from the construction of the boardwalk will be removed from the site and not stored within the Bushland Reserve.
- No heavy machinery will be utilised for the clearing of the vegetation and installation of the boardwalk.

The implementation of the above mitigation measures will minimise impacts to areas of vegetation surrounding the proposed boardwalk. As such, it will not be necessary for revegetation works to be conducted in the area. Assisted natural regeneration will be the primary method of restoring any areas adjacent to the boardwalk if necessary, following installation and the stabilisation of the area.

3.1.7 Headwall

A headwall is proposed for installation which will direct flow under Curvers Drive and into the established drainage line in the north of the subject site. Additional works are required, including the installation of a concrete kerb and batter along the northern perimeter of the site. Reconstruction of the area will be achieved using translocated topsoil (see **Section 4.5**). Revegetation of the area may be necessary, depending on the success of the soil translocation and the recruitment of native species. It is recommended that the success of topsoil translocation is assessed after two years, and is deemed unsuccessful, then revegetation should be used to augment the area to achieve desired covers.

3.1.8 Monitoring

Annual monitoring of the vegetation in the subject site should be conducted to quantitatively measure:

- potential impacts as a result of the project, including changes to hydrology and nutrient loads, which may result in exotic species abundance/cover,
- The success of the translocated soil on the basin batters, and
- the success of ongoing management actions in accordance with this FFMP.

A total of two plots will be established through the subject site, which will correspond to the site management zones 1 and 2 (see **Section 4.3**), comprising one in the EEC and one in the 25 m buffer zone/habitat corridor (

Figure 3.4). GPS coordinates of floristic plots will be recorded and included in monitoring reports to facilitate consistent monitoring. Plot and transect surveys will be conducted in accordance with the BioBanking Assessment Methodology (BBAM 2014). This will include 20 x 20m floristic plots, which can be modified where necessary to reflect a total area of 0.4 ha.

It will be necessary to gather baseline data prior to the initiation of the proposal to capture natural variability of the vegetation over time. Ideally, baseline data will be collected over two – three years prior to development. However, the collection of only one year of baseline data is considered feasible, as the timing of Stage 1 of the development may not allow for multiple years of baseline data collection. Control plots should be established in vegetation proximal to the study area within the same Plant Community Type (PCT). This will include a control plot in vegetation consistent with *Swamp Sclerophyll Forest on Coastal Floodplains* and Northern Coastal Sands Shrub/Fern Forest. Annual monitoring will continue for 3 years after dedication of the land to Council.

The vegetation in the subject site is currently in an intact condition, with minimal disturbance and weed occurrence. The primary aim of conducting management and monitoring works in accordance with this FFMP is to ensure that the retained vegetation stays largely intact and unmodified. Should the vegetation remain in an unchanged state it will be a reasonable indication that either the management actions outlined in this report are successful, or the surrounding development has not altered the vegetation in the subject site substantially. Statistical analysis of parameters collected using the BBAM (2014) will be used to determine the success of restoration works and the potential impacts of the project. Criteria which could change as a result of the development include:

- Weed cover, abundance and species richness (EPC)
- Native plant species richness (NPS)
- Native mid-storey cover (NMS)
- Native over-storey cover (NOS)

Monitoring will also include the collection of water samples, which will be tested for the presence of nutrients, including phosphorus and nitrogen. Water samples will be compared to plot data to determine if changes in nutrient levels are comparable to an increase in exotic species cover/abundance, reduced NPS etc. These factors are of most relevance to the EEC, given its proximity to the watercourse and its susceptibility to increased nutrient levels. Samples will be taken at four separate locations within the subject site (**Figure 3.1**), including:

1. Where the watercourse enters the subject site northern boundary,
2. The discharge exciting the wetland in the west of the subject site,
3. The confluence where the existing watercourse and the discharge from the western wetland coincide, and
4. The discharge from the large wetland in the south east of the subject site.

3.1.9 Criteria to trigger adaptive management

The collection of baseline data prior to the initiation of Stage 1 will provide a benchmark for the condition of the vegetation in the EEC and the buffer zone/habitat corridor. As previously mentioned, statistical analysis of parameters collected using the BBAM (2014) will be conducted. A negative change to one, or several of these parameters would trigger a review by an ecologist to determine the need for adaptive management and a review of the management actions in this FFMP. However, the vegetation in the subject site is resilient and has been subject to minimal disturbances in the past. As such, disturbance effects are likely to be gradual and may require several years of annual monitoring before a negative change in vegetation quality is detected.

The most likely disturbances to the vegetation would be a result of changes in the hydrological regime, or an increase in nutrients, which would favour the growth of exotic species and reduce the health of native shrub and canopy species. However, these disturbance factors are likely to lead to a slow and gradual reduction in the quality and resilience of the vegetation in the subject site, as opposed to an immediate impact that could be ameliorated. Readily detectable impacts, such as a rapid influx of sediments, for example due to poor sedimentation controls, would require immediate attention and would also trigger adaptive management to ensure that additional resources are allocated to prevent further degradation in these areas.

Figure 3.1: Watercourses in the study area and proposed water sampling locations.

Figure 3.2: The six development stages and a proposed boardwalk.

Figure 3.3: An example of a boardwalk at Garrads Reserve, Narrawallee

Figure 3.4: Transect start and end points and photo monitoring points.

4. Weed management and revegetation

This section outlines weed management and revegetation measures in accordance with Section B9 of the consent conditions.

Vegetation management works outlined below will be implemented for the subject site. Weed management will begin upon the initiation of works proposed under the Development Application (DA). A suitably qualified and experienced bush regeneration contractor as per **Section 6.3** must be engaged to carry out vegetation management works. It will be necessary for the bush regenerator to be engaged before the commencement of the proposed works to enable establishment of baseline data, photo points and other identified baselines.

4.1 Preliminary works

4.1.1 Seed collection

Seed collection will be required to ensure indigenous species are available for revegetation works; species identified for revegetation are outlined in **Appendix C**. All plantings should be of local provenance, collected from adjacent patches of vegetation. However, nurseries that supply indigenous seedling stock, (not horticultural varieties), may also be used to supplement the plantings.

Seed collection zones can extend within a radius of 3 km for groundcover, shrubs and trees and up to 10 km for grasses. The collection site should reflect the natural conditions that exist for the area being regenerated.

Record keeping of seed collection and planting locations is to be as per the Flora Bank guidelines (Mortlock 2000), the bush regeneration contractor is responsible for recording this information. A Section 132C licence under the NSW *National Parks and Wildlife Act 1974* will be required to undertake seed collection works.

4.1.2 Fencing

Exclusion fencing will be erected prior to commencement of any clearing work and will protect the Bushland Reserve throughout the entire construction process. The exclusion fencing will be regularly monitored and maintained to ensure that it is effectively preventing access to the Bushland Reserve. Following the completion of the construction works the full perimeter of the FFMP subject site will be fenced in accordance with the fencing masterplan provided in the landscaping designs. This will include post and cable fencing, which will prevent car access, and discourage pedestrian access.

Sedimentation fencing will be installed at the interface between the basin batters and the EEC buffer zone and Bushland Reserve. The purpose of the fencing will be to prevent the translocated soil on the basin batters from washing off into the EEC, buffer zone and Bushland Reserve. The translocated soil will retain a substantial O horizon (topsoil layer containing a high proportion of organic material) with an accumulation of leaf litter, which will reduce the potential of the material to erode. However, it is possible that the material will remain slightly unstable for several years following the topsoil translocation. The sediment fence should be regularly monitored for damaged sections, which will be replaced promptly. The sedimentation fencing can be removed when the translocated topsoil is sufficiently stabilised.

4.1.3 Signage

Appropriate interpretative signage will be installed along the perimeter of the subject site to help reduce impacts. The signs will inform residents of the environmental value of the subject site and ways they can reduce impacts to vegetation. "No dumping" signs should be installed along the perimeter of the subject site to deter residents from dumping grass clippings, cuttings and various other garden wastes. Signage around the perimeter of the subject site should also inform residents and other pedestrians that disturbance to the area, including collection of firewood, is prohibited.

4.2 Weed management techniques

Weed management will mostly consistent of maintenance works and a small amount of primary and secondary weed control. Weed control will include mechanical removal techniques and herbicide application. Disturbance of the soil during the weed management process should be minimised at all times (Buchanan 1989, Bradley 2002). Any herbicide use is to be undertaken in accordance with the relevant herbicide label and/or Australian Pesticides and Veterinary Medicines Authority (APVMA) off-label permits. No herbicide spraying is to be undertaken over or immediately adjacent to water-bodies, or sensitive vegetation. Weed control objectives and treatment techniques are outlined below (**Appendix B**) in accordance with weed type.

4.2.1 Primary Weed Control

Primary weed control is the initial removal of weed species. Mechanical removal techniques relevant to the weed being removed (Buchanan 1989; Bradley 2002; DPI 2015) should be used for all woody weeds and herbaceous plants. Herbicide application, such as backpack spraying, should be avoided where loss of native species is likely to occur, which is the majority of the subject site.

4.2.2 Secondary Weed Control

Secondary weed control involves follow-up weed control to remove seedlings that have emerged after primary control and treatment of any existing plants that reshoot. Any new weed infestation areas identified will also be treated.

4.2.3 Maintenance

Maintenance is the long-term management of a site to prevent weeds from becoming re-established after primary and secondary work. Substantial effort will be focussed on reducing the weed seed bank, eradicating problematic weeds and supporting the growth of native vegetation. Maintenance works will include regular sweeps through the site to remove all exotic species prior to seeding and to prevent the establishment of any exotic species not previously identified in the site.

4.2.4 Weed Disposal

All seeding herbaceous/grass material and tubers will be bagged and removed from site. Woody weeds will be de-seeded, neatly piled, removed from site and disposed of at a licenced green waste facility.

4.3 Vegetation Management Zones

The subject site has been classified into five management zones (MZs) (**Figure 4.1** and **Appendix B**). The management actions are generally consistent between zones, particularly

for MZ1 and MZ2. However, MZ3 will require slightly different management to MZ1 and MZ2, as this zone relates to an area of translocated topsoil, which may require supplementary planting, increased weed maintenance and sedimentation controls. MZ5 is specific to a strip of lawn grass in the south of the subject site, which requires revegetation. MZ4 includes the area within the basin, which will require revegetation and ongoing maintenance work to prevent the establishment of exotic species.

4.3.1 Management Zone 1 and 2 – Weed maintenance

The management of MZ1 is synonymous with MZ2. These two MZs have been separated for reporting purposes to determine when managements actions are conducted within the EEC.

MZ1 encompasses all areas within the subject site that have been mapped as the EEC Bangalay Swamp Woodland. MZ1 is mostly confined to the southern portion of the subject site, particularly in poorly drained sections. Exotic species occur in a low abundance and cover (<1%), as past disturbance of the vegetation has been minimal. Given MZ1's close proximity to the watercourse, aquatic weeds have the potential to become an issue. As such, regular sweeps will be conducted to prevent the establishment of all exotic species prior to establishment and seeding. Given that the study area is part of a contiguous expanse of intact native vegetation, it is unlikely that woody weeds, such as *Ligustrum lucidum** (Large-leaved Privet) and *Ligustrum sinense** (Small-leafed Privet) will become established in MZ1 and MZ2, particularly as they occur in low cover within the surrounding locality. Woody weeds, such as *Senna pendula* var. *glabrata** and *Senna septemtrionalis** (Arsenic Bush) were recorded within the study area, although they were observed infrequently in the subject site.

Weed treatment within MZ1 will consist of hand weeding for herbaceous weeds and exotic grasses. Spraying is not permitted in the either of the MZs, given the high resilience of the vegetation and the potential damage that could occur to native species. The removal of herbaceous weeds will be conducted prior to seeding where possible, and all weed material will be bagged and removed from site. Sweeps will be regularly conducted for aquatic species, such as *Ageratina adenophora* (Crofton Weed) and *Ageratina riparia** (Mist Flower), which have potential to spread in the altered conditions, such as increased nutrients and water influxes. *Lonicera japonica** (Japanese Honeysuckle) was recorded in low abundance and cover in the study area, and is another species which will be regularly targeted in these zones.

4.3.2 Management Zone 3 – Soil translocation and supplementary revegetation

This MZ applies to the batters surrounding basins A, B and C (see **Figure 4.1**). The batters will consist of a sloped embankment and will be constructed utilising soil available onsite where possible. A topsoil profile of approximately 10 cm will be gathered from a 'donor site' within the subject site where direct impacts will occur, and subsequently applied to the top of the basin batters (see **Section 4.5**). Mixing of the soil profile should be avoided where possible, as this may reduce the capacity for the native seed bank to germinate. The soil utilised for translocation should be directly applied to the batter.

It is anticipated that the topsoil used for translocation is unlikely to contain a large weed seed bank, particularly as few exotic species are currently established throughout the study area. As such, maintenance work in this MZ is likely to be minimal and will mostly consist of sweeps conducted every several months. However, restoration efforts should be increased in spring and summer months, when the rate of growth and establishment of herbaceous weeds and exotic grasses is likely to be greater. This will ensure that exotic species are treated prior to seeding and becoming established in this zone. Where possible, maintenance work can be

achieved through visual inspections for establishing weed species from outside the zone. This will prevent germinating native species within the zone from being trampled and will avoid unnecessary compaction of the translocated topsoil.

4.3.3 Management Zone 4 – Revegetation and maintenance

This MZ includes the area within basins A, B and C. Following the construction of the basins the MZ will be revegetated with a native sedges, rush and grass species. Regular maintenance work will be conducted in the MZ to prevent the establishment of exotic species, particularly herbaceous weeds and exotic grasses. It will be necessary to remove any shrub and canopy species that become established in the basins, as they have the potential to shade out aquatic species and increase the amount of detritus within the basins. Shrub and canopy species will be treated by hand removal prior to establishment.

4.3.4 Management Zone 5 – Revegetation and maintenance

This MZ corresponds to a strip of lawn grass in the south of the subject site. The area within 10 m of the rear of the properties along Sunset Strip will managed as an Asset Protection Zone (APZ). As such, this area will remain in its current condition and will continue to be mown to keep lawn grasses at low levels. A pedestrian path will be situated along the northern perimeter of the APZ. All exotic grasses and herbaceous weeds will be treated to the north of the pedestrian path, mulched and subsequently revegetated with native groundlayer species.

Primary and secondary treatment of exotic grasses and herbaceous weeds will be achieved in the first 6 months of the contract period. Exotic species in the MZ will be blanket sprayed using 1% Roundup Biactive®, or a higher solution if necessary to successfully treat the target species. This area should be treated an additional 2 – 3 times prior to mulching and revegetating. This will ensure that all difficult to treat grass species are eradicated and the weed seed bank will have been sufficiently suppressed in preparation for mulching. Secondary and maintenance work in this zone will consist of regular hand weeding and careful spot spraying around planted vegetation with 1% Roundup Biactive®.

Note: Boundaries of MZ2 - MZ5 are indicative only. Refer to Landscape Plan for precise locations of revegetation categories.

Figure 4.1: Management zones within the FFMP subject site.

4.4 Revegetation

The restoration of MZ3 will primarily be achieved using topsoil translocation. Should this have mixed success, it will be necessary to install additional grasses and groundcovers to achieve a density of 4 plants per m^2 across the zone. Revegetation costings for MZ3 are based on the low germination rate of native grasses and groundcovers within the translocated topsoil, therefore, their installation at a density of 4 plants per m^2. However, it may not be necessary to revegetate MZ3, depending on the success of the soil translocation and the recruitment of native grasses. In this instance, the allocated revegetation costs should be amalgamated into other management activities onsite, such as bush regeneration maintenance works.

Revegetation will be necessary in the northern portion of MZ5, which currently consists of mown lawn grass. This zone will be mulched and revegetated with low lying groundcover species. The natural recruitment of native midstorey and canopy tubestock will be regulated, although should be limited to the removal of species required for maintaining sight-lines along roads, and the maintenance of fence lines, pedestrian paths and access easements. Revegetation will not be necessary in MZ1 and MZ2, as they are resilient areas of well vegetated bushland.

Revegetation will be necessary in MZ4 within basins A, B and C to provide stability to the basins and assist in the removal and assimilation of excess nutrients. Native sedges, rush and grass species that are indigenous to the area and suitable for installation will be planted at a density of 4 plants per m^2. Planting will be conducted as soon as the basins are constructed and will utilise the species listed in **Appendix C**.

Staging and logic

Sufficient time will be allowed following the translocation of topsoil onto the basin batters. If succession of native species is successful at densities of 4 plants per m^2, then supplementary revegetation will not be necessary. Revegetation of MZ5 will be conducted within the first 6 months of contract, following primary weed control and mulching of the land to the north of the pedestrian footpath. Revegetation of MZ4 will be conducted following the construction of basins A, B and C, which corresponds with Stages 6, 4 and 1 of the development. Replacement and maintenance is to be undertaken to ensure a survival rate of at least 90 % after 12 months of installation and each subsequent reporting period.

Planting densities and species

Species representative of the vegetation community Northern Coastal Sands Shrub/Fern Forest will be used for MZ3, whereas MZ5 will be consistent with Bangalay Paperbark Woodland (see **Appendix C**). The main difference being the addition of rushes, sedges and ferns in MZ5 to make the revegetation more consistent with Bangalay Paperbark Woodland. A species list has been provided with suitable species, including sedges, rushes and grasses for installation within basins A, B and C. It is noted that the species list is not exhaustive, and thus could be supplemented with indigenous species that are adapted to damp environments and will assist in the filtration and nutrient removal process in the basins. The planting densities for MZ3, MZ4 and MZ5 are as follows:

- 4 groundcover species per m^2 (grass, forb, sedge or rush)

The exact number of plantings required in MZ3 and MZ4 have not been calculated, as the boundaries between these two zones are subject to change. Furthermore, MZ3 is likely to contain large areas of turf grass, which will not require revegetation with native species. As such, the calculation of plants required for installation in these areas would be incorrect. Similarly, the areas required for revegetation in MZ5 are dependent on how the pedestrian path

traverses through the zone. The Landscape Masterplan will specify the total number of plants required in MZ3, MZ4 and MZ5 once the boundaries and total areas of these zones area confirmed.

Minimum planting diversity

A diverse range of species will be selected for the revegetation of MZ4 and MZ5 to avoid the over-use of readily available species. A total of 36 species have been recommended for installation into MZ4 in accordance with the vegetation community Bangalay Paperbark Woodland (**Appendix C**). It is advised that at least 15 of the 36 species should be selected for revegetation and the proportion of each of these species should be no less than 5% and no greater than 10% of the total number of plants proposed for installation.

A total of 22 species have been recommended for installation into MZ5 within basins A, B and C. Species diversity is less integral in the basins, as the main role of the vegetation is to filtrate sediments and assimilate excess nutrients. Nevertheless, it is recommended that at least ten of the 22 species should be selected for the revegetation of MZ5 and the proportion of each species should represent no less than 5% and no greater than 15% of the total number of plants proposed for installation.

MZ3 will be reconstructed using translocated topsoil, which will have an intact diverse native soil seedbank. As such, establishing a minimum diversity for revegetation in this MZ is not necessary. The main aim of revegetation in this zone will be to augment areas of the reconstructed batters to fill in gaps were plants did not establish, or where additional soil stability is required. In this instance, easily accessible, plants in accordance with Northern Coastal Sands Shrub Forest (**Appendix C)** that can establish quickly is favourable.

Equipment, installation and timing

Plantings will be planned for late winter leading up to spring when regular rainfall is naturally occurring, and growth conditions are ideal. Planting of tube-stock (tree and shrub species) and Hiko or Viro cells (grasses and other groundcover species) is favoured over broad scale seed application, such as direct seeding or brush matting.

A water-retaining and fertilising product (e.g. Terraform™) should be applied to each tube-stock hole, to assist in the establishment of the plants. Each plant should be sufficiently watered on the same day as installation and regular (fortnightly) watering should continue *in lieu* of rainfall for a period of 6 weeks, or until plantings have taken.

4.5 Topsoil Translocation

Topsoil translocation will be utilised for the reconstruction of the basin batters. The benefits of using this method as opposed to revegetation include:

- Reduced, or eliminated need to revegetate the basin batters,
- The utilisation of seed of known provenance, which would otherwise be disposed of,
- Reduced likelihood of imported fill containing potential weed seed from entering and becoming established in the subject site,
- The retention of the topsoil's abiotic and biotic components, and
- Reduced ongoing weed maintenance costs, given that the extant soil profile contains minimal weed seed.

Protocols

Topsoil will be sourced from any area of the study area mapped as Northern Coastal Sands Shrub/Fern Forest (the 'donor site'). However, for time and cost efficiency it is recommended that the topsoil is sourced from the area being directly impacted by the batters within the subject site. The topsoil will be removed, retained and reapplied to the surface of the batters (the 'recipient site'). The topsoil will be obtained by removing the top 10 cm of the soil profile. Removal of more than 10 cm of soil has the potential to reduce the success of seedling recruitment and prevent some species from germinating altogether (Rokich et al. 2000). Care should be taken to avoid the mixing of topsoil and subsoil substrates, as this will dilute the native seedbank and reduce germination rates.

The topsoil will be removed in slabs that are as large as possible and that are practical to transport. The topsoil will be removed from the donor site and immediately applied to the recipient site. It is necessary that the slabs are only removed when the soil is moist, to maximise the likelihood of the slabs staying intact during transport and laying. The stockpiling of topsoil will not occur, as this is known to lead to a reduction in species richness and diversity (Tacey and Glossop 1980)

The vegetation to be used in the rehabilitation should be slashed on multiple occasions several months prior to the slabs being removed. This will remove taller shrubs and other vegetation that may otherwise make the transportation more difficult. Slashing may also help to encourage grasses and groundcovers to thicken up and develop more extensive root systems, which will help bind the soil slabs. Soil compaction and damage by heavy machinery will be avoided in the donor site. The weather should be closely monitored for up to three months following the topsoil translocation, during which time if no rain occurs, then the recipient site should be regularly (fortnightly) watered to maximise successful establishment of the translocated vegetation.

The topsoil translocation will be conducted by a professional revegetation expert with proven experience in soil translocation, or an understanding of how the process should be conducted. The reconstruction of the batters will correspond with the six stages of the proposed development (**Figure 3.2**). Stages one, five and six specifically include development at the interface of the habitat corridor and the 25 m EEC buffer zone. An approximate cost of soil translocation has been factored into the costings for these three stages.

4.6 Concurrent Works

Vegetation management works will be initiated upon the start of stage 1 of the proposed works and will continue concurrently with civil construction works. Therefore, planning between the bush regeneration contractor and civil works supervisor will be undertaken in particular with reference to the construction of the basin batters and the translocation of the topsoil.

The civil works team will install environmental management controls across the site including exclusion zone fencing and erosion and sediment control. It is the responsibility of the bush regeneration contractor not to damage these controls and if any damage is observed or inadvertently caused it must be notified to the civil works supervisor immediately. It is essential that appropriate sedimentation controls are implemented around the perimeter of the subject, to ensure that sediment does not enter the EEC or buffer areas.

4.7 Maintenance

Due to the minimal amount of exotic species in the study area, the majority of the restoration work in the subject site consists of maintenance works, with no defined primary or secondary work stages. The maintenance phase must continue for a period of 3 years following the dedication of the EEC to Council. Informal inspections of site condition will be conducted by the contracted bush regenerators, including general site monitoring for potential new infestation areas and subsequent weed control of any identified weed species.

Weed maintenance works will include:

- Removal of all exotic species prior to establishment and seeding, and
- Regular sweeps to monitor for new weed infestation, particularly species that were not previously identified in the subject site.

Revegetation maintenance works will include:

- Replacement of poorly growing or diseased individuals consistent with prescribed planting,
- Management of insect damage, if necessary,
- Watering during dry periods, and
- Augmenting past planting areas where attenuation has occurred.

4.8 Cost of implementation

The costing for the FFMP has been calculated over a six-year period and is estimated at a total of $65,040 (**Table 4.1**). The contract period has been based on each of the six development stages taking approximately 6 months to be completed, with an additional three years of funding once dedicated to Council. The costs have been calculated based on the employment of trained bush regenerators at a rate of $480 pp/day ($60 pp/hr for an 8-hour working day), which covers crew and supervisor wages, equipment, herbicides, and all other associated business costs.

The costing indicates how many crew members are required to attend monthly visits over the six-year contract, based on the size of the site, extent of weed infestation and anticipated weed issues that may become apparent following disturbance to the broader study area. The costs are indicative of commercial bush regeneration charge out rates, and some variation is excepted depending on the bush regeneration company used and their associated charge out rates.

The costings below have taken into consideration the cost of monthly and annual reports by the bush regeneration contractors and the costs of annual vegetation monitoring. Additional costs associated with the project, including sediment fencing, soil translocation, revegetation and infill plantings have not been calculated. These calculations are subject to change and can be calculated once boundaries and areas are confirmed for those areas requiring revegetation and topsoil translocation. The cost of ecological burns and fencing installation have not been included.

Table 4.1: Indicative cost of weed control and monitoring over a 6-year period.

Task	Timing									Total
	Year 1		Year 2		Year 3		Year 4	Year 5	Year 6	
	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Stage 6				
Weed control										
Maintenance (@ $60 pp/hour)	$11,520		$11,520		$11,520		$5,760	$5,760	$5,760	$51,840
Assosciated costs										
Monthly reporting	$1,200		$1,200		$1,200		$1,200	$1,200	$1,200	$7,200
Annual reporting	$1,000		$1,000		$1,000		$1,000	$1,000	$1,000	$6,000
BioMetric plot monitoring	$1,920		$1,920		$1,920		$1,920	$1,920	$1,920	$11,520
Total	$15,640		$15,640		$15,640		$7,960	$7,960	$7,960	$65,040

5. Fauna habitat management

5.1.1 Nest box installation

Nest boxes will be installed within the subject site approximately three months prior to the initiation of the Stage 1 subdivision. The number of nest boxes has been determined based on the number of all HBTs proposed for removal in the study area. A total of 51 HBTs were identified within the study area, of which 36 require removal (**Figure 2.5**). HBTs are recommended for replacement at a ratio of 1:3 nest boxes for every hollow-bearing tree proposed for removal (Consent condition B9(h)). Therefore, the installation of up 108 nest boxes will include a variety of sizes to cater for various arboreal species, avifauna and microbats, based on the dimensions of the hollows being removed. The nest boxes should be distributed relatively evenly across the selected area.

Three main nest box design types that will be included are:

- Microchiropteran Bat Box: These boxes are designed specifically for microchiropteran bats, but other arboreal marsupials have been known to use them. They have a small opening slit at the bottom of the box and parallel internal compartments. These boxes should be mounted 4 m from the base of the tree and positioned on the trees north-eastern aspect.
- Small to Medium Sized Arboreal Mammal Box: These boxes have been designed to accommodate small to medium sized arboreal mammals such as possums and gliders. These boxes should have entrance diameters of approximately 3 cm and be positioned 2-6 m from the base of the tree (Beyer and Goldingay 2006). It is also recommended that these boxes have rear-entries as studies have shown that native birds are less likely to take up residency when the entries are positioned as such (Beyer 2003).
- Small - Large Avifauna Box: These boxes are designed specifically for the use of birds. Nest boxes that are suitable for use by large forest owls (i.e. Powerful Owl) should be installed to offset the removal of large hollows within the subject site.

Table 5.1: Number of nest boxes required and costings of each box.818

Hollow Size	HBT removed	Nest Boxes	Type	Cost per box[1]	Total Cost
S (<0.2m)	28	84	Double chamber microbat, tree/bridge mount	$165.00	$13,860.00
M (0.2 < 0.4m)	6	18	Brushtail/ringtail possum, greater glider rear entry	$213.84	$3,849.12
L (>0.5 m)	2	6	Large Owl	$462.00	$2,772.00
Total	**36**	**108**	**-**	**-**	**$20,481.12**

1. price based upon Hollow Log Homes – CYPLAS Range, website. https://www.hollowloghomes.com/cyplas-range. Prices correct as of June 2018.

Measures should also be taken to reduce the likelihood of feral competitors moving into the nest boxes. For feral bees, carpet can be attached to the underside of the box lid to prevent them forming a hive. Conditions should also be imposed on future residents in regard to owning a cat, either prohibiting the action or requiring responsible ownership measures.

5.1.2 Monitoring

The nest boxes will be monitored every 6 months and will include inspections of the nest boxes for their functionality (i.e. presence of pests such as bees/wasps and vertebrate pests) and examination for evidence of use or habitation by native fauna. Monitoring will be conducted during construction works until all works are completed and in accordance with Condition E16. Additional monitoring will continue for three years following the dedication of the land to Council and will include the replacement of nest boxes, where damage or substantial deterioration has occurred. Nest boxes should be kept free of vertebrate and invertebrate pest species at all times.

5.1.3 Pre-clearance Protocols

To protect the significant environmental features on the site, prior to the issuing of a construction certificate the applicant shall provide written evidence to Shoalhaven City Council that a suitably qualified environmental consultant has been engaged to supervise the clearing works and that an appropriate release location for any rescued fauna has been identified. Pre-clearance for trees with hollows will be conducted in accordance with consent condition, which is replicated here below. In addition to prescribed protocols, the engaged ecologist / fauna specialist must undertake inspection of previously identified large nest trees (potentially Square-tailed Kite) to ensure they are not currently in use and determine the appropriate timing for felling these trees. Trees with hollows to be felled during the construction phase will be felled in accordance with the following procedures:

- Felling will be supervised by a fauna specialist appropriately licensed under the NSW National Parks and Wildlife Act 1074, for the purpose of rescuing displaced fauna;
- The fauna specialist will be suitably attired with protective clothing and have suitable equipment to undertake the work. A "Green Card" from an Occupational Health and Safety Induction Training Course for Construction Work will also be held by the fauna specialist, who may also need to be suitably vaccinated (especially if there is potential for handling bats);
- An appropriately skilled local wildlife carer must be notified at least 24 hours prior to the tree felling, that animals may be captured and that these animals may need care;
- Any non-hollow bearing trees around those with tree hollows to be felled will be removed first. At least 1 day will be left between clearing of the non-hollow-bearing trees and the hollow bearing trees to allow fauna time to vacate the trees;
- Prior to felling of the identified and marked hollow-bearing trees, the trees will be shaken or nudged by tree felling equipment to encourage any fauna to vacate the trees;
- If no animals emerge from the hollows after shaking or nudging, then the tree will be felled and lowered to the ground if possible;
- If an animal emerges from a hollow following shaking or nudging of the tree, then at least 30 minutes will be allowed for the animal to leave the tree. If the animal comes to the ground, or when it is on the lower trunk, attempts will be made to capture the animal using a net. Captured animals will be immediately transferred to a suitably sized cotton bag and checked for obvious injury during the transfer process;
- Captured animals will be placed in individual bags unless they are a family group to which separation would risk the survival of the young (i.e. lactating female with young);
- Once the tree has been felled, a search will be made of the branches around the tree for any fleeing fauna and hollows should be inspected with a torch for the

presence of any animals. Attempts will be made to capture any fleeing fauna with a net, and animals inside hollows should be extracted by hand. Captured animals will be immediately transferred to a suitably sized cotton bag and checked for obvious injury during the transfer process;

- Injured, shocked or immature captured animals will be placed in a cotton bag secured at the top. Bags will be wrapped in appropriate insulating material such as blankets and placed in a quiet, warm and preferably dark place until the wildlife carer can collect them. Details on the location of the capture and proposed release areas will be provided to the wildlife carer; and,
- Uninjured animals will be released in appropriate habitat as soon as practicable (at night for nocturnal species).
- The environmental consultant must provide a written report to Shoalhaven City Council (email to Council's Threatened Species Officer acceptable) detailing any fauna detected as a result of the clearing works.

Note: Any clearing to be undertaken as part of this approval in Stages 2, 3 or 4 or affecting the Bangalay Moist Woodland/Open Forest will not be undertaken between the beginning of October and end of February to minimise potential impacts on breeding by the migratory species Black-faced Monarch and Rufous Fantail.

6. Performance criteria and weed monitoring

6.1 Performance criteria

The progress and compliance with the FFMP will be monitored and reviewed annually. This process will involve the bush regeneration contractor and land manager. The performance criteria listed in **Table 6.1** below are considered to be best practice and are not linked with any specific legislation. The bush regeneration contractor, in consultation with Shoalhaven City Council can adapt these criteria as required in response to the success of restoration works. Based on the success of the management works, further performance criteria may need to be developed for the maintenance phase.

Table 6.1. Performance monitoring criteria.

Management measure	Management Actions	Timing and Responsibility	Key Performance Indicator (KPI)
Engagement of bush regeneration contractors	Establishment of baseline vegetation monitoring data in accordance with **Section 3.1.8**, including: • Two BAM plot/transects in the subject site • Two control plots in an adjoining area of similar vegetation	**Bush Regenerator, Ecologist and Hydrologist** One year prior to initiation of Stage 1 of the development	A suitably qualified and experienced bush regeneration company will have been engaged to conduct the works under this FFMP (see **Section 4**). Baseline data collected for monitoring of the vegetation in the subject site in accordance with **Section 3.1.8**. One vegetation plot/transect will have been established in MZ1 and another in MZ2 in the locations indicated in **Figure 3.4**. Start and end point of the transect will be marked with hardwood stakes and GPS coordinates will be recorded. Control plots will have been established in vegetation near to the study area in the vegetation communities *Swamp Sclerophyll Forest on Coastal Floodplains* and Northern Coastal Sands Shrub/Fern Forest.
	Establishment of water monitoring locations.		Water samples will have been successful collected at the locations indicated in **Figure 3.1** and analysed in accordance with the recommendations in **Section 3.1.8**. The location of each water monitoring point will be marked with a hardwood stake and GPS coordinates will be recorded.
	Establishment of photo monitoring points in accordance with **Figure 3.4**.		Photo monitoring point will have been established at the start and end point of the two transects and the additional points indicated in **Figure 3.4**. The location of the photo monitoring points will be numbered, marked with a hardwood stake and GPS coordinates will be recorded.
Vegetation monitoring	Ongoing plot and transect surveys	**Ecologist**	Annual collection of plot and transect data in accordance in accordance with **Section 3.1.8** in the locations indicated in **Figure 3.4**.

Management measure	Management Actions	Timing and Responsibility	Key Performance Indicator (KPI)
		Yearly following the initiation of Stage 1 of the development.	Statistical analysis of parameters collected using the BBAM (OEH 2014) will be performed annually in accordance with **Section 3.1.8**. and detailed in a short report. Annual vegetation monitoring will continue for three years after dedication of the land to Council.
Nest Box installation and monitoring	Installation of nest boxes into the subject site, or other selected areas (to be confirmed by Shoalhaven Council)	**Ecologist** Three months prior to the initiation of Stage 1 subdivision	The installation of 108 nest boxes to offset the loss of 36 hollow bearing trees (replaced at a ratio of 1:3).
	Nest box monitoring	**Ecologist** Every six months following the installation of the nest boxes	Monitoring will include inspections of the nest boxes for the habitation of native fauna, which will be documented in a brief letter report. Monitoring will continue until all construction works are completed in accordance with Condition E16. Additional monitoring will continue three years following the dedication of the land to Council. Any damaged nest boxes will be replaced. The boxes will be kept free of invertebrate pests at all times. Nest box monitoring should also be conducted simultaneously with fauna survey designed to monitor diversity and population sizes of fauna residents within the subject site.
Installation of fencing	-	**Civil Works Supervisor** Exclusion fencing to be erected prior to the	Fencing is to be in accordance with the fencing masterplan provided in the landscaping designs and the recommendations made in Section **4.1.2**

Management measure	Management Actions	Timing and Responsibility	Key Performance Indicator (KPI)
		commencement of any clearing works Post and cable fencing to be installed following the completion of construction works.	The exclusion fencing, and the post and cable fencing will surround the full perimeter of the subject site. The fencing will be regularly monitored (monthly) and maintained to ensure that it is effectively preventing access to the Bushland Reserve. Post and cable fencing will be prevent car access and discourage pedestrian access.
Installation of signage	Interpretative signage will be installed around the perimeter of the subject site.	**Civil Works Supervisor** In association with each of the six stages.	Interpretative signage is successfully deterring residents from dumping garden refuse in the subject site and collecting firewood. Interpretative signage is effective at informing the residents of the sensitivity of the subject site and reducing pedestrian disturbance in the area.
Weed control	Primary and secondary weed management	**Bush Regenerator** First six months of the contract	Primary and secondary treatment of exotic grasses and herbaceous weeds in MZ5 is successfully completed.
	Maintenance weed management	**Bush Regenerator** Years one - six	Exotic grasses and herbaceous weeds maintained at low cover (<1%) throughout the contract in all management zones. *Lonicera japonica* maintained at low cover (<1%) throughout the contract in all management zones. Woody weeds maintained at low cover (<1%) throughout the contract in all management zones. Eradication of all introduced woody weed species prior to establishment (no individuals >5 cm high) in all management zones.

Management measure	Management Actions	Timing and Responsibility	Key Performance Indicator (KPI)
			Frequency of maintenance works is to have been conducted in accordance with the costings and spread throughout the year. Years 1-3 should consist of monthly visits of a team of two bush regenerators, and years 4-6 will consists of visits every two months with a team of two bush regenerators. Maintenance work will have successfully prevented the establishment of new weed populations in the subject site.
Water quality monitoring	-	**Hydrologist** Yearly following the initiation of Stage 1 of the development.	Annual collection of water samples from the locations indicated in **Figure 3.1**. Comparisons will be made between the condition of the vegetation based on the plots and transect data and water quality. Comparison between water quality and vegetation condition will be detailed in a short annual report in combination with the results of the plot/transect data.
Soil Translocation	Topsoil translocation onto the batters of basin C	**Civil Works Supervisor and Bush Regenerator** Stage 1	Topsoil translocation will be conducted in accordance with **Section 4.5**. The basin batters will be constructed and immediately applied with topsoil sourced from any area of the study area mapped as Northern Coastal Sands Shrub/Fern Forest (the 'donor site'). The success of the translocated topsoil will be assessed and included in the annual bush regeneration reports. The translocated topsoil will be monitored for two years, and should the translocation be unsuccessful (or partially successful) then revegetation should be conducted following the advice below.
	Topsoil translocation onto the batters of basin B	**Civil Works Supervisor and Bush Regenerator** Stage 4	
	Topsoil translocation onto the batters of basin A	**Civil Works Supervisor and Bush Regenerator** Stage 5	

Management measure	Management Actions	Timing and Responsibility	Key Performance Indicator (KPI)
Revegetation	Mulching and revegetation of MZ5 with low lying groundcover species.	**Bush Regenerator** First six months of the contract	MZ5 will be mulched and revegetated following the successful primary treatment of exotic grasses and herbaceous weeds in the zone. Grasses and groundcovers will be installed at a density of 4 plants per m^2 across MZ4. Replacement and maintenance is to be undertaken to ensure a survival rate of at least 90% after 12 months of installation.
	Revegetation of basin C in the event that the translocated topsoil does not achieve desired covers on the basin.	**Bush Regenerator** Start of year three (Approximately two years following the translocation of topsoil during Stage 1)	Revegetation of the basin batters after two years of each topsoil translocation event. The batters will be revegetated to achieve a density of 4 grasses or groundcovers per m^2 across the zones. Replacement and maintenance is to be undertaken to ensure a survival rate of at least 90% after 12 months of installation.
	Revegetation of basin B in the event that the translocated topsoil does not achieve desired covers on the basin.	**Bush Regenerator** Mid-way through year four (Approximately two years following the translocation of topsoil during Stage 4)	
	Revegetation of basin A in the event that the translocated topsoil does not achieve desired covers on the basin.	**Bush Regenerator** Start of year five (Approximately two years following the translocation of topsoil during Stage 4)	
Seed collection and propagation	Collection and propagation of native seed in preparation for revegetation of MZ5 and MZ4	**Bush Regenerator** Evidence of planning 8 months – one year prior to revegetation	Seed collection to be in accordance with **Section 4.1.1**. A Section 132C licence under the NSW *National Parks and Wildlife Act 1974* will be required to undertake seed collection works.

Management measure	Management Actions	Timing and Responsibility	Key Performance Indicator (KPI)
Bush regenerator reporting	Monthly reports will be documented and compiled into an annual report	**Bush Regenerator** Years one - six	Monthly reports will be produced in accordance with **Section 6.2** and should take into consideration the example report provided in **Table 6.2**. Monthly reports will be compiled into an annual report. which will compare the management activities conducted onsite to the relevant management actions and their associated KPI for the given year of the contract. Management measures should be adapted in response to findings of floristic monitoring and the addition of new management issues onsite.

6.2 Monitoring reports

The bush regeneration contractor and the land manager will monitor the vegetation for changes over time. The objective of the monitoring and reporting program is to record changes to the vegetation as a result of vegetation management works. Monitoring works will require liaison with the land manager, the bush regeneration contractor and Shoalhaven Council.

Monthly monitoring and reporting must be documented and compiled into an annual report to determine the effectiveness of the works undertaken. Site conditions should be recorded on the work plan template at the beginning and end of on-ground works. This data should be included in the annual report. The required monitoring period following the dedication of the land to council is three years.

Monitoring photo points will be established at five permanent reference points in the subject site. The photo monitoring points will be additional to the photo monitoring points established at the start and end points of the two vegetation transects (see **Figure 3.4**). Photo monitoring points will be positioned at basins A, B and C, along the boardwalk and adjacent to the proposed headwall in the north of the subject site where disturbances are likely to be centralised. Photo points must be marked (e.g. with hardwood stakes) and GPS coordinates recorded for consistency of pictures and taken in a westerly (270°) direction.

An example report is detailed in **Table 6.2**, the report should include:

- Works carried out, including weed species targeted and their location
- An approximation of the time spent on each task
- Any observations, such as the occurrence of new weed species
- Rates of regeneration of native species
- A description of any problems encountered and how they were overcome
- A summary of how the site-specific objectives have been met (or not)
- Herbicide and other chemicals used, including quantity, dilution rate and other relevant information
- Weed control mechanisms used during the period
- Climatic conditions which may have influenced weed germination and growth
- Performance criteria and success; and
- If required, maps of weed distribution and density.

6.3 Bush regeneration contractors

Suitably qualified and experienced bush regeneration contractors that are members of the Australian Association of Bush Regenerators or fulfil the membership criteria must undertake all vegetation management works. In addition to this, team leaders should hold a Certificate III in Conservation & Land Management or possess equivalent field experience and certification. The contractor should carry out best practice bush regeneration techniques as described by Buchanan (1989). Engagement of the bush regeneration contractor must be at or before commencement of project to enable establishment of baseline data, photo points, etc.

Table 6.2. Monitoring report template example.

Date			
Name of Contractor:			
Hours worked on site since last monitoring report:			
Site Condition:	Zone		
	Weed cover %		
	Seedling survival %		
	Planting numbers		
	Herbicide used (in Litres)		
	Other		
Describe relevant weed management techniques:			
Describe problems; e.g. weed invasions, damage to planted material, etc.:			
Photographic evidence:			
Planned work before next monitoring report:			

7. References

Bradley, J. (2002) *Bringing back the bush. The Bradley Method of Bush Regeneration*. New Holland Publishers, Sydney.

Buchanan R.A (1989) Bush regeneration: recovering Australian landscapes. 2nd edn, TAFE NSW, Sydney.

Flora and Fauna Assessment Report Proposed Residential Subdivision – Lot 172 DP 755923 and Lot 823 DP 247285 Berringer Road and Cunjurong Point Road and Sunset Strip, Manyana (Ref: 04383) prepared by BES Bushfire + Environmental Services, September 2006.

Kenny, B, Sutherland, E, Tasker, E and Bradstock, R (2004) Guidelines for Ecologically Sustainable Fire Management NSW Biodiversity Strategy. NSW National Parks and Wildlife Service, Hurstville.

Mills, K. 1993, The Natural Vegetation of the Jervis Bay Region of New South Wales. The National Estates Grant Scheme 1990/91, The NSW Heritage Assistance Program. The University of Wollongong, January. Includes maps at a scale of 1:25,000 for the whole region.

NSW Office of Environment and Heritage (OEH) (2016). Square Tailed Kite – profile. Accessed at: http://www.environment.nsw.gov.au/threatenedSpeciesApp/profile.aspx?id=10495

Mortlock, W. (2000) The Hawkesbury-Nepean Catchment Management Authority (2000) Florabank Guideline 10: Seed collection ranges for revegetation. http://www.florabank.org.au/ Florabank, Yarralumla, ACT [20 August 2001].

NSW Dept. of Planning and Environment (DPE) (2017) NSW Planning Viewer Beta. NSW Government. Accessed at: https://maps.planningportal.nsw.gov.au/Terms.

Rokich, D.P., Dixon, K.W., Sivasithamparam, K. and Meney, K.A. (2000). Topsoil Handling and Storage Effects on Woodland Restoration in Western Australia. *Restoration Ecology* 8(2): 196-208.

Tacey, W.H., Glossop, B.L. (1980). Assessment of topsoil handline techniques for rehabilitation of sites mined for Bauxite within the Jarrah Forest of Western Australia. *Journal of Applied Ecology* 17: 195-201.

Thomas, V., Gellie, N. and Harrison, T (2000) Forest Ecosystem Classification and Mapping for the Southern CRA Region. Volume II Appendices. NSW National Parks and Wildlife Service Southern Directorate.

Tozer, M.G., Turner, K., Simpson, C., Keith, D.A., Beukers, P., MacKenzie, B., Tindall, D. & Pennay, C. (2006). Native vegetation of southeast NSW: a revised classification and map for the coast and eastern tablelands. NSW Department of Environment and Conservation & NSW Department of Natural Resources.

Tozer, M.G., Turner, K., Keith, D.A., Tindall, D., Pennay, C., Simpson, C., MacKenzie, B., Beukers, P. and Cox, S. (2010). Native vegetation of southeast NSW: a revised classification and map for the coast and eastern tablelands. *Cunninghamia* 11(3): 359–406 [plus Appendices

Water Cycle Management Report for Proposed Subdivision Lot 172 DP 755923 and Lot 823 DP 247285 at Berringer Road and Cunjurong Point Road Manyana (Project No. 555) prepared by Storm Consulting, October 2007.

Appendix A: Flora inventory

Family	Genus	Species	Common name	Native/Exotic
Adoxaceae	*Sambucus*	*nigra*	Elderberry	Exotic
Asparagaceae	*Asparagus*	*asparagoides*	Bridal Creeper	Exotic
Asparagaceae	*Asparagus*	*aethiopicus*	Asparagus Fern	Exotic
Asteraceae	*Bidens*	*pilosa*	Cobblers Pegs	Exotic
Asteraceae	*Hypochaeris*	*radicata*	Catsear	Exotic
Asteraceae	*Sonchus*	*oleraceus*	Sowthistle	Exotic
Asteraceae	*Taraxacum*	*officinale*	Dandelion	Exotic
Balsaminaceae	*Impatiens*	*balsamina*		Exotic
Caprifoliaceae	*Lonicera*	*japonica*	Japanese Honeysuckle	Exotic
Crassulaceae	*Crassula*	*multicava*		Exotic
Fabaceae - Caesalpinioideae	*Senna*	*septemtrionalis*	Arsenic Bush	Exotic
Fabaceae - Caesalpinioideae	*Senna*	*pendula* var. *glabrata*		Exotic
Iridaceae	*Watsonia*	*meriana*		Exotic
Liliaceae	*Lilium*	*formosanum*	Formosan Lily	Exotic
Lomariopsidaceae	*Nephrolepis*	*cordifolia*	Fishbone Fern	Exotic
Poaceae	*Cenchrus*	*clandestinus*	Kikuyu	Exotic
Poaceae	*Holcus*	*lanatus*	Yorkshire Fog	Exotic
Poaceae	*Stenotaphrum*	*secundatum*	Buffalo Grass	Exotic
Rosaceae	*Rubus*	*ulmifolius*	Blackberry	Exotic
Zingiberaceae	*Hedychium*	*gardnerianum*	Ginger Lily	Exotic
Acanthaceae	*Brunoniella*	*pumilio*	Dwarf Blue Trumpet	Native
Acanthaceae	*Pseuderanthemum*	*variabile*	Pastel Flower	Native
Anthericaceae	*Arthropodium*	*milleflorum*	Pale Vanilla Lily	Native
Anthericaceae	*Thysanotus*	*tuberosus*	Common Fringe Lily	Native
Apiaceae	*Centella*	*asiatica*	Indian Pennywort	Native
Apocynaceae	*Marsdenia*	*rostrata*	Milk Vine	Native
Apocynaceae	*Marsdenia*	*suaveolens*	Scented Marsdenia	Native
Apocynaceae	*Parsonsia*	*straminea*	Common Silkpod	Native
Apocynaceae	*Tylophora*	*barbata*	Bearded Tylophora	Native
Araliaceae	*Hydrocotyle*	*sibthorpioides*		Native

Family	Genus	Species	Common name	Native/Exotic
Areaceae	*Livistona*	*australis*	Cabbage Palm	Native
Asteraceae	*Cassinia*	*aculeata*	Dolly Bush	Native
Asteraceae	*Lagenifera*	*gracilis*	Slender Lagenophora	Native
Asteraceae	*Olearia*	*viscidula*	Wallaby Weed	Native
Asteraceae	*Ozothamnus*	*diosmifolius*	Rice Flower	Native
Asteraceae	*Senecio*	*hispidulus*	Hill Fireweed	Native
Asteraceae	*Vernonia*	*cinerea* var. *cinerea*		Native
Bignoniaceae	*Pandorea*	*pandorana*	Wonga Wonga Vine	Native
Blechnaceae	*Blechnum*	*camfieldii*	Eared Swamp Fern	Native
Blechnaceae	*Blechnum*	*cartilagineum*	Gristle Fern	Native
Blechnaceae	*Blechnum*	*nudum*	Fishbone Water Fern	Native
Blechnaceae	*Doodia*	*aspera*	Prickly Rasp Fern	Native
Casuarinaceae	*Allocasuarina*	*littoralis*	Black She-oak	Native
Convolvulaceae	*Dichondra*	*repens*	Kidney Weed	Native
Convolvulaceae	*Polymeria*	*calycina*	Polymeria	Native
Cunoniaceae	*Callicoma*	*serratifolia*	Black Wattle	Native
Cyatheaceae	*Cyathea*	*australis*	Rough Tree-fern	Native
Cyperaceae	*Carex*	*longebrachiata*		Native
Cyperaceae	*Gahnia*	*clarkei*	Tall Saw-sedge	Native
Cyperaceae	*Gahnia*	*melanocarpa*	Black-fruit Saw-sedge	Native
Cyperaceae	*Gahnia*	*radula*		Native
Cyperaceae	*Gahnia*	*sieberana*	Red-fruit Saw-sedge	Native
Cyperaceae	*Lepidosperma*	*laterale*		Native
Cyperaceae	*Lepidosperma*	*neesii*		Native
Cyperaceae	*Schoenus*	*melanostachys*	Black Bog-rush	Native
Dennstaedtiaceae	*Pteridium*	*esculentum*	Common Bracken	Native
Dicksoniaceae	*Calochlaena*	*dubia*	Rainbow Fern	Native
Dilleniaceae	*Hibbertia*	*scandens*	Climbing Guinea Flower	Native
Dilleniaceae	*Hibbertia*	*aspera*	Rough Guinea Flower	Native
Dilleniaceae	*Hibbertia*	*linearis*		Native
Elaeocarpaceae	*Elaeocarpus*	*reticulatus*	Blueberry Ash	Native
Elaeocarpaceae	*Tetratheca*	*thymifolia*	Black-eyed Susan	Native
Epacridaceae	*Epacris*	*pulchella*	Wallum Heath	Native
Epacridaceae	*Leucopogon*	*juniperinus*	Prickly Beard-heath	Native

Family	Genus	Species	Common name	Native/Exotic
Epacridaceae	*Leucopogon*	*lanceolatus* var. *lanceolatus*	Lance Beard-heath	Native
Ericaceae - Epacridoideae	*Monotoca*	*elliptica*	Tree Broom-heath	Native
Euphorbiaceae	*Amperea*	*xiphoclada* var. *xiphoclada*		Native
Euphorbiaceae	*Breynia*	*oblongifolia*	Coffee Bush	Native
Fabaceae - Faboideae	*Desmodium*	*rhytidophyllum*		Native
Fabaceae - Faboideae	*Desmodium*	*varians*	Slender Tick-trefoil	Native
Fabaceae - Faboideae	*Glycine*	*clandestina*		Native
Fabaceae - Faboideae	*Gompholobium*	*latifolium*	Golden Glory Pea	Native
Fabaceae - Faboideae	*Hardenbergia*	*violacea*	Purple Coral Pea	Native
Fabaceae - Faboideae	*Indigofera*	*australis*	Australian Indigo	Native
Fabaceae - Faboideae	*Kennedia*	*rubicunda*	Dusky Coral Pea	Native
Fabaceae - Faboideae	*Platylobium*	*formosum*	Handsome Flat Pea	Native
Fabaceae - Faboideae	*Podolobium*	*ilicifolium*	Prickly Shaggy Pea	Native
Fabaceae - Faboideae	*Pultenaea*	*daphnoides*	Large-leaf Bush-pea	Native
Fabaceae - Faboideae	*Pultenaea*	*linophylla*		Native
Fabaceae - Faboideae	*Pultenaea*	*retusa*	Notched Bush-pea	Native
Fabaceae - Mimosoideae	*Acacia*	*binervata*	Two-veined Hickory	Native
Fabaceae - Mimosoideae	*Acacia*	*elata*	Mountain Cedar Wattle	Native
Fabaceae - Mimosoideae	*Acacia*	*implexa*	Hickory Wattle	Native
Fabaceae - Mimosoideae	*Acacia*	*longifolia* subsp. *longifolia*	Sydney Golden Wattle	Native
Fabaceae - Mimosoideae	*Acacia*	*mearnsii*	Black Wattle	Native
Fabaceae - Mimosoideae	*Acacia*	*parramattensis*	Parramatta Wattle	Native
Fabaceae - Mimosoideae	*Acacia*	*longifolia* subsp. *sophorae*	Coastal Wattle	Native
Fabaceae - Mimosoideae	*Acacia*	*suaveolens*	Sweet Wattle	Native
Fabaceae - Mimosoideae	*Acacia*	*terminalis*	Sunshine Wattle	Native
Fabaceae - Mimosoideae	*Acacia*	*ulicifolia*	Prickly Moses	Native
Gleicheniaceae	*Gleichenia*	*dicarpa*	Pouched Coral-fern	Native
Goodeniaceae	*Goodenia*	*bellidifolia* subsp. *bellidifolia*	Daisy-leaved Goodenia	Native
Goodeniaceae	*Scaevola*	*ramosissima*	Purple Fan-flower	Native
Haloragaceae	*Gonocarpus*	*teucrioides*	Raspwort	Native
Hypericaceae	*Hypericum*	*gramineum*	Small St John's Wort	Native
Hypoxidaceae	*Hypoxis*	*hygrometrica*	Golden Weather-grass	Native
Iridaceae	*Patersonia*	*glabrata*	Leafy Purple-flag	Native
Lamiaceae	*Clerodendrum*	*tomentosum*	Hairy Clerodendrum	Native

Family	Genus	Species	Common name	Native/Exotic
Lazuriagaceae	*Eustrephus*	*latifolius*	Wombat Berry	Native
Lobeliaceae	*Lobelia*	*anceps*		Native
Lobeliaceae	*Pratia*	*purpurascens*	Whiteroot	Native
Lomandraceae	*Lomandra*	*longifolia*	Spiny-headed Mat-rush	Native
Luzuriagaceae	*Geitonoplesium*	*cymosum*	Scrambling Lily	Native
Meliaceae	*Synoum*	*glandulosum* subsp. *glandulosum*	Scentless Rosewood	Native
Menispermaceae	*Stephania*	*japonica*	Snake Vine	Native
Myrtaceae	*Acmena*	*smithii*	Lilly Pilly	Native
Myrtaceae	*Angophora*	*floribunda*	Rough-barked Apple	Native
Myrtaceae	*Corymbia*	*gummifera*	Red Bloodwood	Native
Myrtaceae	*Eucalyptus*	*botryoides*	Bangalay	Native
Myrtaceae	*Eucalyptus*	*eugenioides*	Thin-leaved Stringybark	Native
Myrtaceae	*Eucalyptus*	*globoidea*	White Stringybark	Native
Myrtaceae	*Eucalyptus*	*paniculata*	Grey Ironbark	Native
Myrtaceae	*Eucalyptus*	*pilularis*	Blackbutt	Native
Myrtaceae	*Eucalyptus*	*piperita*	Sydney Peppermint	Native
Myrtaceae	*Eucalyptus*	*sclerophylla*	Hard-leaved Scribbly Gum	Native
Myrtaceae	*Kunzea*	*ambigua*	Tick Bush	Native
Myrtaceae	*Leptospermum*	*polygalifolium* subsp. *polygalifolium*	Tantoon	Native
Myrtaceae	*Melaleuca*	*ericifolia*	Swamp Paperbark	Native
Myrtaceae	*Melaleuca*	*linariifolia*	Flax-leaved Paperbark	Native
Myrtaceae	*Rhodamnia*	*rubescens*	Scrub Turpentine	Native
Myrtaceae	*Syncarpia*	*glomulifera* subsp. *glomulifera*	Turpentine	Native
Oleaceae	*Notelaea*	*longifolia*	Large Mock-olive	Native
Oleaceae	*Notelaea*	*venosa*	Veined Mock-olive	Native
Orchidaceae	*Calanthe*	*triplicata*	Christmas Orchid	Native
Orchidaceae	*Cryptostylis*	*erecta*	Bonnet Orchid	Native
Orchidaceae	*Cryptostylis*	*subulata*	Large Tongue Orchid	Native
Orchidaceae	*Cymbidium*	*suave*	Snake Flower	Native
Orchidaceae	*Dipodium*	*variegatum*		Native
Orchidaceae	*Microtis*	*parviflora*	Slender Onion Orchid	Native
Orchidaceae	*Thelymitra*	sp.		Native
Oxalidaceae	*Oxalis*	*exilis*		Native
Phormiaceae	*Dianella*	*caerulea* var. *caerulea*	Blue Flax-lily	Native

Family	Genus	Species	Common name	Native/Exotic
Phormiaceae	*Dianella*	*caerulea* var. *producta*		Native
Phyllanthaceae	*Glochidion*	*ferdinandi*	Cheese Tree	Native
Pittosporaceae	*Billardiera*	*scandens*	Hairy Apple Berry	Native
Pittosporaceae	*Pittosporum*	*revolutum*	Wild Yellow Jasmine	Native
Pittosporaceae	*Pittosporum*	*undulatum*	Sweet Pittosporum	Native
Poaceae	*Austrostipa*	*pubescens*		Native
Poaceae	*Dichanthium*	*sericeum*	Queensland Bluegrass	Native
Poaceae	*Echinopogon*	*caespitosus* var. *caespitosus*	Tufted Hedgehog Grass	Native
Poaceae	*Entolasia*	*marginata*	Bordered Panic	Native
Poaceae	*Entolasia*	*stricta*	Wiry Panic	Native
Poaceae	*Imperata*	*cylindrica*	Blady Grass	Native
Poaceae	*Microlaena*	*stipoides*	Weeping Grass	Native
Poaceae	*Oplismenus*	*aemulus*	Australian Basket Grass	Native
Poaceae	*Oplismenus*	*imbecillis*	Creeping Beard Grass	Native
Poaceae	*Panicum*	*simile*	Two-colour Panic	Native
Poaceae	*Poa*	*labillardieri* var. *labillardieri*	Tussock	Native
Poaceae	*Rytidosperma*	*fulvum*	Wallaby Grass	Native
Poaceae	*Themeda*	*triandra*	Kangaroo Grass	Native
Polygalaceae	*Comesperma*	*ericinum*	Pyramid Flower	Native
Primulaceae	*Rapanea*	*variabilis*	Mutton Wood	Native
Proteaceae	*Banksia*	*integrifolia* subsp. *integrifolia*	Coast Banksia	Native
Proteaceae	*Banksia*	*serrata*	Saw Banksia	Native
Proteaceae	*Banksia*	*spinulosa* var. *spinulosa*	Hair-pin Banksia	Native
Proteaceae	*Hakea*	*salicifolia*	Willow-leaved Hakea	Native
Proteaceae	*Lomatia*	*ilicifolia*	Holly Lomatia	Native
Proteaceae	*Persoonia*	*linearis*	Narrow-leaved Geebung	Native
Proteaceae	*Persoonia*	*mollis* subsp. *caleyi*		Native
Proteaceae	*Petrophile*	*pedunculata*	Conesticks	Native
Proteaceae	*Stenocarpus*	*salignus*	Scrub Beefwood	Native
Pteridaceae	*Adiantum*	*aethiopicum*	Common Maidenhair	Native
Pyllanthaceae	*Phyllanthus*	*hirtellus*	Thyme Spurge	Native
Ranunculaceae	*Clematis*	*aristata*	Old Man's Beard	Native
Restionaceae	*Leptocarpus*	*tenax*		Native
Rhamnaceae	*Alphitonia*	*excelsa*	Red Ash	Native

Family	Genus	Species	Common name	Native/Exotic
Rosaceae	*Rubus*	*moluccanus* var. *trilobus*	Molucca Bramble	Native
Rosaceae	*Rubus*	*parvifolius*	Native Raspberry	Native
Rubiaceae	*Gynochthodes*	*jasminoides*	Sweet Morinda	Native
Rubiaceae	*Opercularia*	*aspera*	Coarse Stinkweed	Native
Rubiaceae	*Opercularia*	*varia*	Variable Stinkweed	Native
Rubiaceae	*Psychotria*	*loniceroides*	Hairy Psychotria	Native
Rutaceae	*Boronia*	*polygalifolia*	Dwarf Boronia	Native
Santalaceae	*Exocarpos*	*cupressiformis*	Cherry Ballart	Native
Santalaceae	*Leptomeria*	*acida*	Native Currant	Native
Santalaceae	*Santalum*	*obtusifolium*	Blunt Sandalwood	Native
Sapindaceae	*Dodonaea*	*triquetra*	Large-leaf Hop-Bush	Native
Smilacaceae	*Smilax*	*glyciphylla*	Sweet Sarsaparilla	Native
Thymelaeacea	*Pimelea*	*linifolia subsp. linifolia*	Slender Rice Flower	Native
Ulmaceae	*Trema*	*aspera*	Native Peach	Native
Uvulariaceae	*Schelhammera*	*undulata*		Native
Violaceae	*Viola*	*hederacea*	Ivy-leaved Violet	Native
Vitaceae	*Cissus*	*hypoglauca*	Water Vine	Native
Xanthorrhoeaceae	*Xanthorrhoea*	sp.		Native

Appendix B: Weed treatment methods

Zone	Objective	Main Weeds	Method	Key Performance Indicators (KPI)
All	Eradicate all exotic grasses and herbaceous weeds.	*Asparagus aethiopicus, Asparagus asparagoides, Bidens pilosa, Sonchus oleraceus, Lilium formosanum* and *Hedychium gardnerianum*	• Regular sweeps will be conducted to prevent the establishment of herbaceous weeds. At present herbaceous weeds constitute a very low cover (<1%). • Herbaceous weeds will be hand pulled prior to establishment and seeding. • Spraying of herbaceous weeds should be avoided in all MZs, with the exception for the of revegetation in MZ4. • *Asparagus aethiopicus* will be crowned to ensure removal of woody rhizome. All underground tubers of *Asparagus asparagoides* will be removed.	• Exotic grasses and herbaceous weeds maintained at low cover (<1%) throughout the contract.
	Prevent the establishment of exotic vine species.	*Lonicera japonica*	• Regular sweeps will be conducted to prevent the establishment of *Lonicera japonica*. • *Lonicera japonica* will be treated by hand removal, however large bases should be scrapped and painted with neat Roundup Biactive® where too large to remove by hand.	• *Lonicera japonica* maintained at low cover (<1%) throughout the contract.
	Treatment of all woody weeds.	*Sambucus nigra, Senna pendula var. glabrata* and *Senna septemtrionalis*.	• Regular sweeps will be conducted to prevent the establishment of woody weeds. At present woody weeds constitute a very low cover (<1%). Woody weeds will be hand pulled prior to establishment, and cut/scraped and painted with neat Roundup Biactive® where too large to remove by hand. • Woody weeds will be removed prior to establishment (i.e. no individuals >5 cm high) and prior to seeding. All woody weed material will be bagged, or stockpiled, removed from site and disposed of at a licenced green waste facility.	• Woody weeds maintained at low cover (<1%) throughout the contract. • Eradication of all introduced woody weed species prior to establishment

Zone	Objective	Main Weeds	Method	Key Performance Indicators (KPI)
			• As few woody weed species occur onsite particular focus should be payed to the introduction and establishment of woody weeds that were not recorded in the study area, or the immediate surrounds prior to initiation of construction works. Preventing the establishment of additional woody weed species is a high priority.	(no individuals >5 cm high).

Appendix C: Planting palettes

Northern Coastal Sands Shrub/Fern Forest

Planting palette for the vegetation community Northern Coastal Sands Shrub/Fern Forest, as described by Thomas et al. (2000).

Scientific Name	Common Name
Grasses	
Austrostipa pubescens	
Echinopogon caespitosus var. *caespitosus*	Tufted Hedgehog Grass
Entolasia marginata	Bordered Panic
Entolasia stricta	Wiry Panic
Imperata cylindrica	Blady Grass
Microlaena stipoides	Weeping Grass
Oplismenus aemulus	Australian Basket Grass
Oplismenus imbecillis	Creeping Beard Grass
Panicum simile	Two-colour Panic
Poa labillardieri var. *labillardieri*	Tussock
Rytidosperma fulvum	Wallaby Grass
Themeda triandra	Kangaroo Grass
Groundcovers, forbs and scramblers	
Centella asiatica	Indian Pennywort
Tylophora barbata	Bearded Tylophora
Hydrocotyle sibthorpioides	
Lagenifera gracilis	Slender Lagenophora
Vernonia cinerea var. *cinerea*	
Dichondra repens	Kidney Weed
Hibbertia scandens	Climbing Guinea Flower
Hibbertia aspera	Rough Guinea Flower
Desmodium varians	Slender Tick-trefoil
Glycine clandestina	
Hardenbergia violacea	Purple Coral Pea
Goodenia bellidifolia subsp. *bellidifolia*	Daisy-leaved Goodenia
Scaevola ramosissima	Purple Fan-flower
Gonocarpus teucrioides	Raspwort
Hypericum gramineum	Small St John's Wort
Hypoxis hygrometrica	Golden Weather-grass
Lobelia anceps	
Pratia purpurascens	Whiteroot

Scientific Name	Common Name
Lomandra longifolia	Spiny-headed Mat-rush
Dianella caerulea var. *caerulea*	Blue Flax-lily
Dianella caerulea var. *producta*	
Billardiera scandens	Hairy Apple Berry
Adiantum aethiopicum	Common Maidenhair
Phyllanthus hirtellus	Thyme Spurge
Schelhammera undulata	
Viola hederacea	Ivy-leaved Violet
Brunoniella pumilio	Dwarf Blue Trumpet
Pseuderanthemum variabile	Pastel Flower
Arthropodium milleflorum	Pale Vanilla Lily

Bangalay Paperbark Woodland

Planting palette for the vegetation community Bangalay Paperbark Woodland, as described by Thomas et al. (2000).

Scientific Name	Common Name
Grasses	
Echinopogon caespitosus var. caespitosus	Tufted Hedgehog Grass
Entolasia marginata	Bordered Panic
Entolasia stricta	Wiry Panic
Imperata cylindrica	Blady Grass
Microlaena stipoides	Weeping Grass
Oplismenus aemulus	Australian Basket Grass
Oplismenus imbecillis	Creeping Beard Grass
Panicum simile	Two-colour Panic
Themeda triandra	Kangaroo Grass
Groundcovers, forbs and scramblers	
Centella asiatica	Indian Pennywort
Tylophora barbata	Bearded Tylophora
Hydrocotyle sibthorpioides	
Dichondra repens	Kidney Weed
Goodenia bellidifolia subsp. *bellidifolia*	Daisy-leaved Goodenia
Pratia purpurascens	Whiteroot
Lomandra longifolia	Spiny-headed Mat-rush
Dianella caerulea var. *caerulea*	Blue Flax-lily
Dianella caerulea var. *producta*	
Adiantum aethiopicum	Common Maidenhair
Schelhammera undulata	

Scientific Name	Common Name
Viola hederacea	Ivy-leaved Violet
Brunoniella pumilio	Dwarf Blue Trumpet
Pseuderanthemum variabile	Pastel Flower
Sedges, rushes and ferns	
Blechnum camfieldii	Eared Swamp Fern
Blechnum cartilagineum	Gristle Fern
Blechnum nudum	Fishbone Water Fern
Calochlaena dubia	Rainbow Fern
Doodia aspera	Prickly Rasp Fern
Gahnia clarkei	Tall Saw-sedge
Gahnia melanocarpa	Black-fruit Saw-sedge
Gahnia radula	
Gahnia sieberana	Red-fruit Saw-sedge
Lepidosperma laterale	
Lepidosperma neesii	
Pteridium esculentum	Common Bracken
Schoenus melanostachys	Black Bog-rush

Sediment Basin Revegetation

A majority of the species below have been identified within the study area and are suitable for installation in the basins. Additional species have been added to the list that have not been recorded onsite but are indigenous to the area.

Scientific Name	Common Name
Grasses	
Dicanthium sericeum	Queensland Bluegrass
Echinopogon caespitosus var. *caespitosus*	Tufted-Hedgehog Grass
Imperata cylindrica	Blady Grass
Isachne globosa	Swamp Millet
Poa labillardieri var. *labillardieri*	Tussock
Rytidosperma fulvum	Wallaby Grass
Themeda triandra	Kangaroo Grass
Groundcovers, forbs and scramblers	
Centella asiatica	Indian Pennywort
Dichondra repens	Kidney Weed
Lomandra longifolia	Spiny-headed Mat-rush
Sedges, rushes and ferns	
Baumea articulata	Jointed Twig-rush
Baumea juncea	
Carex appressa	Tall Sedge

Scientific Name	Common Name
Carex longebrachiata	
Facinia nodosa	Knobbly Club-rush
Gahnia clarkei	Tall Saw-sedge
Gahnia melanocarpa	Black-fruit Saw-sedge
Gahnia radula	
Gahnia sieberana	Red-fruit Saw-sedge
Lepidosperma neesii	
Leptocarpus tenax	
Schoenus melanostachys	Black Bog-rush

Jeffrey Bulfin
Principal Planner
Precise Planning
M: 0415 225 732
E: jeff@deepriver.com.au

17 April 2018

Re: Response to letter from Department of the Environment and Energy, regarding 182 lot sub-division, Berringer and Cunjurong Roads, Manyana

Dear Jeff,

I am writing to provide you with further analysis of the potential for Matters of National Environmental Significance (MNES) as listed in the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), occurring at the site of a proposed 182 lot residential sub-division at Berringer and Cunjurong Roads, Manyana (hereafter the 'study area', **Figure 1**).

Background and purpose of report

The proposed residential sub-division is situated on land that is currently zoned R2 – Low Density Residential under the Shoalhaven Local Environmental Plan 2014 (LEP). At present, the two lots have approval to be sub-divided into one hundred and eighty-two (182) residential allotments. The subdivision will be implemented over 6 stages, with each stage including the addition of approximately 30 lots. The sub-division received approval under Part 3A of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act), 8 July 2008.

It is understood that the proponent for the proposed sub-division was contacted in writing by the Commonwealth Department of Environment and Energy (DoEE), 22 December 2017 (DoEE 2017), to advise that a number of relevant MNES may occur at the study area. Specifically, the letter from DoEE refers to the following MNES:

- Illawarra and south coast lowland forest and woodland – critically endangered ecological community,
- Greater Glider,
- Southern Brown Bandicoot,
- Grey-headed Flying Fox, and
- Large-eared Pied Bat.

This report has been prepared to address whether these MNES and other MNES identified in the literature review or field survey that have the potential to occur on the study area may be impacted by the proposal, and whether adequate consideration was given to MNES during the assessment process for the Part 3A approval.

Methods

The ecological values and constraints within the site were assessed during the preparation of a Flora and Fauna Management Plan (FFMP) (Ecoplanning 2017), through a site specific literature review and site inspection, undertaken on 14 June 2017 by Thomas Hickman (Ecologist, Ecoplanning) and Kieren Northam (Graduate Ecologist, Ecoplanning). The site visit was undertaken to validate vegetation condition, management requirements and locate HBTs at the study area.

A site-specific literature and database review was undertaken prior to undertaking field survey and the preparation of the FFMP (Ecoplanning 2017) and updated for this report. This included desktop analysis of aerial photography and regional scale information from the following sources:

- Native vegetation of southeast NSW: a revised classification and map for the coast and eastern tablelands (Tozer et al. 2010)
- BioNet Atlas of NSW Wildlife (NSW Office of Environment and Heritage 2018)
- Protected Matters Search Tool (Commonwealth Department of Environment and Energy 2018)

Previous reports of relevance to the subject land reviewed include:

- BES (2006). Flora and Fauna Assessment – Proposed Subdivision, Lot 172 DP 755923 & Lot 823 DP 247285 Berringer Road and Cunjurong Point Road, Manyana, BES (Bushfire and Environmental Services), St Georges Basin.

Threatened species, populations and migratory species recorded within 5 km of the study area (the locality) in a search of the Atlas of NSW Wildlife (OEH 2018b) and the EPBC Protected Matters Search Tool were consolidated and their likelihood of occurrence was assessed by:

- review of location and date of recent (<5 years) and historical (>5-20 years) records
- review of available habitat within the study area and surrounding areas
- review of the scientific literature pertaining to each species and population
- applying expert knowledge of each species

The potential for each threatened species, population and/or migratory species to occur was then considered following review of available habitat within the study area. The potential for species to utilise the site and to be affected directly or indirectly by the proposed action were considered as either:

- “Recent record” = species has been recorded in the study area a within the past 5 years
- “High” = species has previously been recorded in the study area (>5 years ago) or in close proximity (for mobile species), and/or habitat is present that is likely to utilised by a local population
- “Moderate” = suitable habitat for a species is present onsite but no evidence of a species detected and relatively high number of recent records (5-20 years) in the locality or species is highly mobile

- "Low" = suitable habitat for a species is present onsite but limited or highly degraded, no evidence of a species detected and relatively low number of recent records in the locality
- "Not present" – suitable habitat for the species is not present onsite or adequate survey has determined species does not occur in the study area

The updated Atlas of NSW Wildlife (OEH 2018b) search identified a recent record of an observation of Southern Brown Bandicoot (eastern) (*Isoodon obesulus obesulus*) adjacent to the study area (**Figure 5**). The record was discussed with Threatened Species Officers at the NSW Office of Environment and Heritage and an additional targeted remote camera survey was undertaken by Ecoplanning in March 2018.

The targeted remote camera survey involved installing nine remote cameras over 14 days from 11/3/2018 until 29/3/2018. The cameras were placed in low shrubby areas and facing universal bait lures (made using oats, peanut butter and truffle oil) (**Figure 5**). All remote camera images of bandicoots were collated and identification confirmed with OEH Threatened Species Officers and experienced fauna ecologists.

Results

No threatened flora or fauna species or ecological communities listed under the EPBC Act were recorded during the site inspection (Ecoplanning 2017). Searches of relevant databases (OEH 2018; EPBC 2018) identified three recent fauna records (from 2017) listed under the EPBC Act in the study area; Greater Glider (*Petauroides volans*), Southern Brown Bandicoot (eastern) and Swift Parrot (*Lathamus discolour*). Additionally, Spotted-tailed Quoll (*Dasyurus maculatus*) has previously been recorded just south of the study area.

Specifically, Southern Brown Bandicoots were not recorded in the remote camera survey. Images of the more common Long-nosed Bandicoot (*Perameles nasuta*) were recorded on three different nights during the survey (**Figure 6**). The identification was confirmed due to the large upright ears, pale tops to feet, elongated nose and the illusion of barring in the flanks which are distinctive features of the Long-nosed Bandicoot (Andrew Claridge, pers. comm. 16 April 2018).

Fourteen (14) threatened species listed under the EPBC Act have been previously recorded within a 5 km radius of the study area, comprising one amphibian, eight birds, four mammals, and one flora species (**Figure 3**). Additionally, one bird and two mammals which are marine species are recorded in the locality but were not included in this assessment.

BES (2006) considered the impacts to the following MNES and found no significant impacts were considered likely:

- Vulnerable Species: Leafless Tongue Orchid (*Cryptostylis hunteriana*) and Giant Burrowing Frog (*Heleioporus australiacus*);
- Migratory Species: Black-faced Monarch (*Monarcha melanopsis*), Rufous Fantail (*Rhipidura rufifrons*) and Satin Flycatcher (*Myiagra cyanoleuca*).

The MNES referred to in the DoEE (2017) letter are discussed with reference to the BES (2006) assessment below:

- Illawarra and south coast lowland forest and woodland – critically endangered ecological community
    - not listed at the time of the BES (2006) assessment; does not occur at the study area (Ecoplanning 2017)
- Greater Glider (*Petauroides volans*) – vulnerable
    - observed at the study area but not listed at the time of the BES (2006) assessment (listed in 2016); considered relatively abundant in the locality by BES (2006; Section 5.5)
- Southern Brown Bandicoot (eastern) (*Isoodon obesulus obesulus*) – endangered
    - Listed at the time of the BES (2006) assessment (listed in 2001), considered unlikely following targeted survey (cage trapping) and habitat assessment (BES 2006; Section 4.2, Table 7)
- Grey-headed Flying Fox (*Pteropus poliocephalus*) – vulnerable
    - Listed at the time of the BES (2006) assessment (listed in 2001); not observed during survey but considered likely to utilise the study area from time to time (BES 2006; Section 5.2)
- Large-eared Pied Bat (*Chalinolobus dwyeri*) – vulnerable
    - Listed at the time of the BES (2006) assessment (listed in 2001), but not detected during targeted survey (Anabat ultrasonic sound recording; Section 2.3, Table 4)

The impact to vegetation was assessed by BES (2006) and was assessed to impact a total of 18.22 ha of vegetation comprising approximately 12.90 ha of Northern Coastal Sands Shrub/Fern Forest and 5.32 ha of Bangalay Moist Woodland/Open-forest. Since this assessment, the boundaries for the proposal has been modified and calculations for water retention basins and road batters have been refined. Additionally, the vegetation mapping had to be redrawn by digitising vegetation mapping provided in the report (BES 2006).

A total impact of 17.18 ha of vegetation has been used for this assessment, comprising 5.39 ha of Bangalay Moist Woodland Open Forest and 10.79 ha of Northern Coastal Sands Shrub/Fern Forest with 1 ha of disturbed/cleared area.

Impact assessment and conclusions

Following the literature and database review and field assessment, impact assessment in accordance with the MNES Significant Impact Guidelines (DoE 2013) has been undertaken for Greater Glider, Grey-headed Flying Fox, Southern Brown Bandicoot (eastern), Spotted-tailed Quoll, Swift Parrot and the three migratory birds, Black-faced Monarch, Rufous Fantail, and Satin Flycatcher. Impacts of the proposal are not considered significant and hence a referral is not recommended for these MNES.

An impact assessment was not undertaken for Large-eared Pied Bat due to the low likelihood of occurrence. The species is associated with areas of extensive cliffs and caves (OEH 2018a) and areas of low to mid-elevation dry open forest nearby these features. There are no records of this species in the locality with the closest records in the ranges that contain these key habitat features south and west of the study area.

If you would like to discuss any of the above comments and recommendations further, please contact me on the below details.

Sincerely,

Lucas McKinnon

Director and Principal Ecologist
Accredited Biobanking Assessor (Acc# 76)
BEnvSc (Hons), GCert. Ornith. | M: 0421 603 549 | E: lucas.mckinnon@ecoplanning.com.au

References

Atlas of Living Australia (ALA) (2018). Atlas of Living Australia website. Accessed at: https://www.ala.org.au/

BES (2006). Flora and Fauna Assessment – Proposed Subdivision, Lot 172 DP 755923 & Lot 823 DP 247285 Berringer Road and Cunjurong Point Road, Manyana, BES (Bushfire and Environmental Services), St Georges Basin.

Commonwealth Department of the Environment (DoE) (2013). Matters of National Environmental Significance Significant impact guidelines 1.1. *Environment Protection and Biodiversity Conservation Act 1999.*

Commonwealth Department of the Environment (DoE) (2015). National Flying-fox monitoring viewer. Accessed at: http://www.environment.gov.au/webgis-framework/apps/ffc-wide/ffc-wide.jsf

Commonwealth Department of the Environment and Energy (DoEE) (2017). Letter to Ghazi Sangari of Ozy Homes Pty Ltd, titled, '*Environment Protection and Biodiversity Conservation Act 1999,* 182 lot residential subdivision, Berringer and Cunjurong Roads, Manyana, NSW. Signed by Mike Smith, Director NSW Assessment (South) and ACT), dated 22 December 2017.

Commonwealth Department of the Environment and Energy (DoEE) (2018a). Protected Matters Search Tool. Report created on 29 January 2018. Accessed at: http://www.environment.gov.au/epbc/protected-matters-search-tool

Commonwealth Department of the Environment and Energy (DoEE) (2018b). Species Profile and Threats Database. Available at: http://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl

Ecoplanning (2017). Flora and Fauna Management Plan, Lot 172 // DP 755923 & Lot 823 DP // 247285, Berringer Road, Cunjurong Point Road and Sunset Strip, Manyana. Prepared for Precise Planning.

National Parks and Wildlife Service (NPWS) (2001) *Southern Brown Bandicoot (Isoodon obesulus). Environmental Impact Assessment Guildelines.* Available at: http://www.environment.nsw.gov.au/resources/nature/SBbandicootEia0601.pdf

NSW Department of Environment and Conservation (DEC) (2006) *Southern Brown Bandicoot (Isoodon obesulus) Recovery Plan.* NSW DEC, Hurstville NSW.

NSW Minister for Planning (2008). Determination of Major Proeject No. 05-0059 (File No. 9040674). 182 Lot residential subdivision of the Lot 172 // DP 755923 and Lot 823 // DP 247285 Berringer Road, Cunjurong Point Road and Sunset Strip, Manyana.

NSW Office of Environment and Heritage (OEH) (2018a). Threatened Species Profiles. Accessed at: http://www.environment.nsw.gov.au/threatenedspecies/

NSW Office of Environment and Heritage (OEH) (2018b). Atlas of NSW Wildlife

NSW Threatened Species Scientific Committee (TSSC) (2016). Conservation Advice, *Petauroides volans* Greater Glider. Accessed at:

http://www.environment.gov.au/biodiversity/threatened/species/pubs/254-conservation-advice-20160525.pdf

Threatened Species Recovery Hub (TSRH) (2017) Threatened species returning to Booderee National Park. Accessed at: http://www.nespthreatenedspecies.edu.au/news/threatened-species-returning-to-booderee-national-park

Tozer, M.G., Turner, K., D.A. Keith, D.A., Tindall, D., Pennay, C. , Simpson, C., MacKenzie, B., P. Beukers, P. and Cox, S. (2010) Native vegetation of southeast NSW: a revised classification and map for the coast and eastern tablelands. *Cunninghamia* **11(3):** 359–406

Figure 1:Study area.

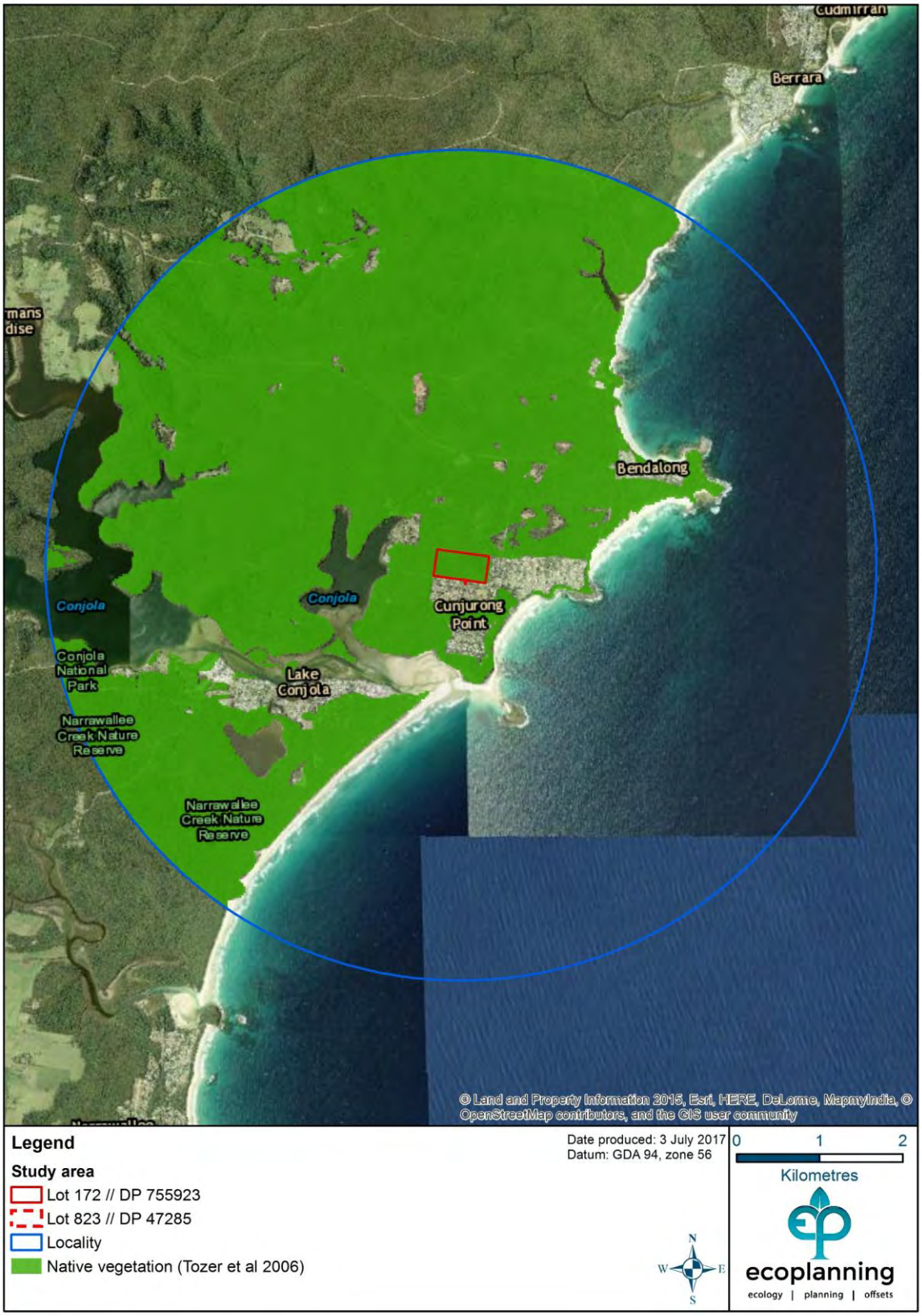


Figure 2: Native vegetation in the locality (Tozer et al. 2006).

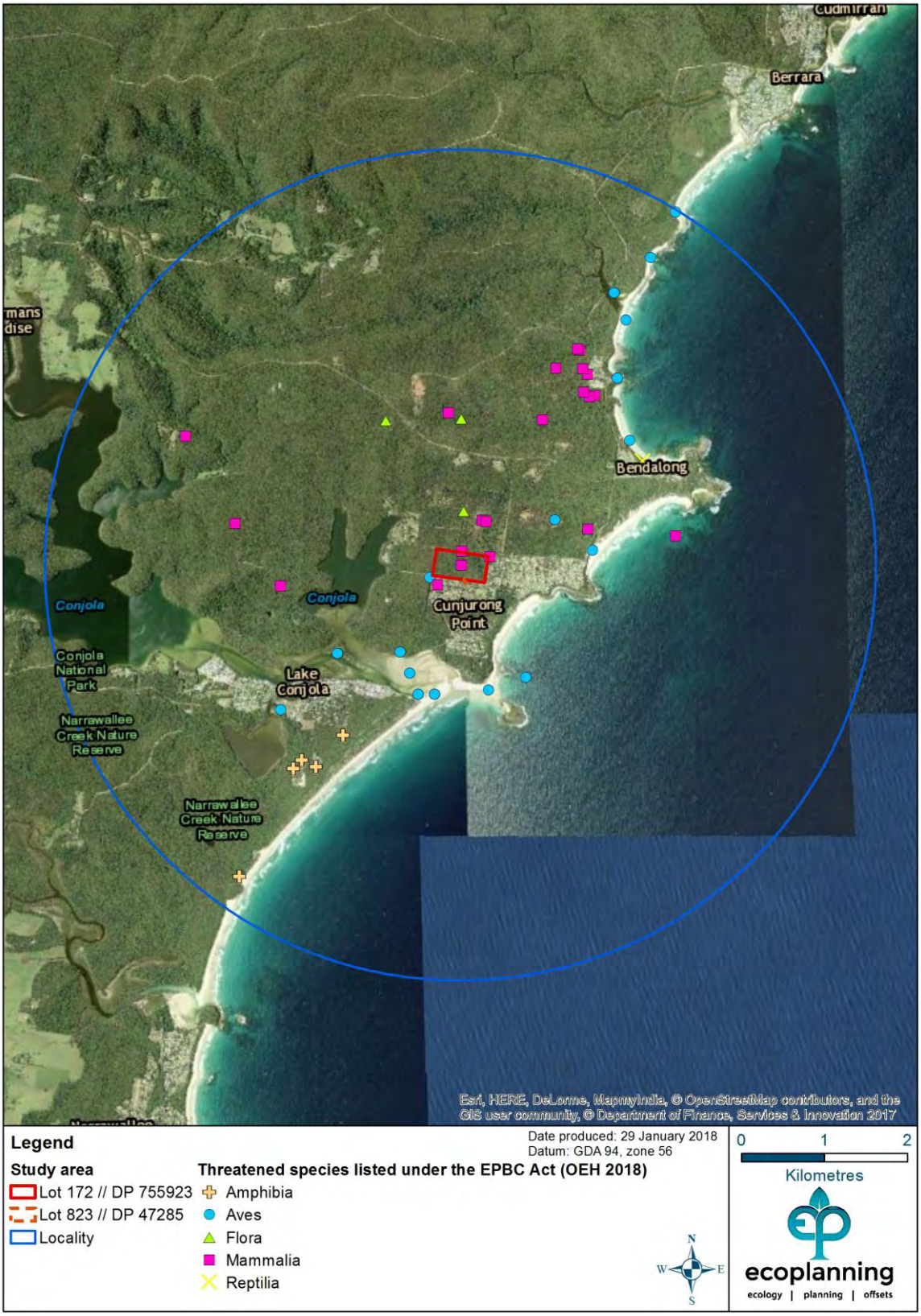


Figure 3: Threatened species listed under the EPBC Act in the locality (OEH 2018).

Figure 4: Vegetation mapping (BES 2006).

Figure 5: Targeted Southern Brown Bandicoot survey (Ecoplanning 2018).


2018-03-15 1:45:00 AM M 1/3 21°C
HC500 HYPERFIRE
RECONYX


2018-03-15 1:45:03 AM M 1/3 21°C
HC500 HYPERFIRE
RECONYX

Figure 6: Remote camera images of Long-nosed Bandicoot (Perameles nasuta).

Appendix B – Likelihood of occurrence assessment for MNES

Scientific Name Common Name	Legal Status	Number of records	Closest record and date	Most recent and proximity	Likelihood of occurrence	
					BES (2006)	This assessment
KINGDOM: Animalia; CLASS: Amphibia						
Heleioporus australiacus Giant Burrowing Frog	BC Act: V EPBC Act: V	0	No records in locality	No records in locality	Unlikely	Not present
Litoria aurea Green and Golden Bell Frog	BC Act: E1 EPBC Act: V	5	2.49 km (6/3/2008)	26/11/2009 (2.98 km)	Unlikely	Not present
Litoria littlejohni Littlejohn's Tree Frog	BC Act: V EPBC Act: V	0	No records in locality	No records in locality	-	Not present
KINGDOM: Animalia; CLASS: Aves						
Anthochaera phrygia Regent Honeyeater	BC Act: CE EPBC Act: CE	0	No records in locality	No records in locality	Potential	Low
Actitis hypoleucos Common Sandpiper	EPBC Act: C,J,K	1	1.58km (27/03/2001)	One record in locality only	-	Not present
Charadruis mongolus Lesser Sand-plover	BC Act: V EPBC Act: E,C,J,K	1	1.57km (2/02/2001)	One record in locality only	-	Not present
Cuculus optatus Oriental Cuckoo	EPBC Act: C,J,R	0	No records in locality	No records in locality	-	Not present
Dasyornis brachypterus Eastern Bristlebird	BC Act: E EPBC Act: E	0	No records in locality	No records in locality	-	Not present
Haliaeetus leucogaster White-bellied Sea-Eagle	BC Act: V EPBC Act: C	5	1.27km (7/09/2012)	Same as proximal record	Unlikely	Low
Hirundapus caudactus White-throated Needletail	EPBC Act: C,J,K	1	2.64km (12/04/2013)	One record in locality only	Unlikely	Low

Scientific Name Common Name	Legal Status	Number of records	Closest record and date	Most recent and proximity	Likelihood of occurrence	
					BES (2006)	This assessment
Hydroprogne caspia Caspian Tern	EPBC Act: C,J	1	1.54km (1/01/2005)	One record in locality only	-	Not present
Lathamus discolor Swift Parrot	BC Act: E1 EPBC Act: CE	1	394m (25/03/2017)	One record in locality only	-	Recent record
Limosa lapponica Bar-tailed Godwit	EPBC Act: C,J,K	1	1.44km (20/10/1999)	One record in locality only	-	Not present
Monarcha melanopsis Black-faced Monarch	EPBC Act: B	0	No records in locality	No records in locality	Recorded	High
Monarcha trivirgatus Speckled Monarch	EPBC Act: B	0	No records in locality	No records in locality	-	Low
Myiagra cyanoleuca Satin Flycatcher	EPBC Act: B	0	No records in locality	No records in locality	Likely	Moderate
Neophema chrysogaster Orange-bellied Parrot	BC Act: CE EPBC Act: CE	0	No records in locality	No records in locality	-	Not present
Rhipidura rufifrons Rufous Fantail	EPBC Act: B	0	No records in locality	No records in locality	Recorded	High
Sternula albifrons Little Tern	BC Act: E1 EPBC Act: C,J,K	43	1.27km (3/09/2012)	Same as proximal record	-	Not present
Thinornis rubricollis Hooded Plover	BC Act: E4A EPBC Act: V	9	1.27km (3/09/2012)	Same as proximal record	-	Not present
KINGDOM: Animalia; CLASS: Mammalia						
Chalinolobus dwyeri Large-eared Pied Bat	BC Act: V EPBC Act: V	0	15.5km (20/02/2004)	No records in locality	-	Low
Dasyurus maculatus Spotted-tailed Quoll	BC Act: V EPBC Act: E	1	360m (30/06/2006)	One record in locality only	-	Moderate

Scientific Name Common Name	Legal Status	Number of records	Closest record and date	Most recent and proximity	Likelihood of occurrence	
					BES (2006)	This assessment
Isoodon obesulus obesulus Southern Brown Bandicoot (eastern)	BC Act: E1 EPBC Act: E	1	370m (24/03/2017)	One record in locality only	Unlikely	Unlikely following survey to confirm potential recent record
Petauroides volans Greater Glider	EPBC Act: V	18	In study area (2/08/2005)	15/04/2017 (In study area)	-	Recent record
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT) Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory)	BC Act: V EPBC Act: V	1	2.21km (01/10/1980 - 30/06/2006)*	One record in locality only	Unlikely	Low
Potorous tridactylus tridactylus Long-nosed Potoroo (SE mainland)	BC Act: V EPBC Act: V	0	No records in locality	No records in locality	-	Not present
Pseudomys novaehollandiae New Holland Mouse	EPBC Act: V	0	No records in locality	No records in locality	-	Low
Pteropus poliocephalus Grey-headed Flying-fox	BC Act: V EPBC Act: V	3	2.64km (12/04/2013)	Same as proximal record	-	High
KINGDOM: Animalia; CLASS: Reptilia						
Hoplocephalus bungaroides Broad-headed Snake	BC Act: E EPBC Act: V	0	No records in locality	No records in locality	-	Not present
KINGDOM: Plantae						
Caladenia tessellata Thick-lipped Spider-orchid	BC Act: E EPBC Act: V	0	No records in locality	No records in locality	-	Not present
Cryptostylis hunteriana Leafless Tongue Orchid	BC Act: V EPBC Act: V	1	649m (29/12/2000)	26/11/2001 (1.95km)	Unlikely	Low

Scientific Name Common Name	Legal Status	Number of records	Closest record and date	Most recent and proximity	Likelihood of occurrence	
					BES (2006)	This assessment
Genoplesium baueri Yellow Gnat-orchid	BC Act: E EPBC Act: E	0	No records in locality	No records in locality	-	Not present
Genoplesium vernale East Lynne Midge-orchid	BC Act: V EPBC Act: V	0	No records in locality	No records in locality	-	Not present
Melaleuca biconvexa Biconvex Paperbark	BC Act: V EPBC Act: V	0	No records in locality	No records in locality	-	Not present
Pterostylis gibbosa Illawarra Greenhood	BC Act: E EPBC Act: E	0	No records in locality	No records in locality	-	Not present
Syzygium paniculatum Magenta Lilly Pilly	BC Act: E EPBC Act: V	0	No records in locality	No records in locality	-	Not present
Thesium australe Austral Toadflax	BC Act: V EPBC Act: V	0	No records in locality	No records in locality	-	Not present

Unless other stated, text is taken from the OEH Threatened Species (http://www.environment.nsw.gov.au/threatenedspecies/); Legal Status codes from the Atlas of NSW Wildlife: V = Vulnerable, E1 = Endangered, E2 = Endangered Population, E4A = Critically Endangered, C = China and Australia Migratory Bird Agreement (CAMBA), J = Japan and Australia Migratory Bird Agreement (JAMBA); B = Bonn Convention; BC Act = Biodiversity Conservation Act 2016, EPBC Act = Commonwealth *Environment Protection and Biodiversity Conservation Act 1999.*

Species list is obtained from the OEH BioNet Atlas, EPBC PMST (DoEE 2018a) and BES (2006)

Records are measured from the centre point of the study area. Hence records within 400 m are likely to be within or adjacent to the study area.

* Note: data record defined date of record between these dates.

Appendix C – Updated EPBC Act Protected Matters Report

Australian Government
Department of the Environment and Energy

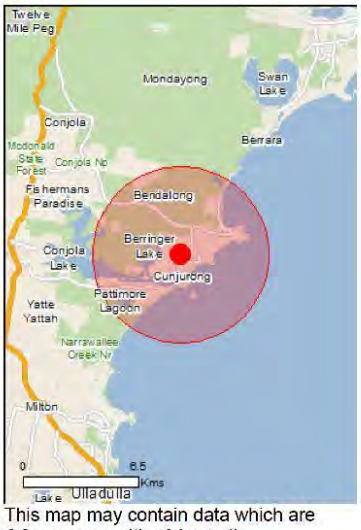
EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected.

Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

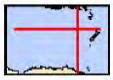
Information is available about Environment Assessments and the EPBC Act including significance guidelines, forms and application process details.

Report created: 29/01/18 10:48:57



This map may contain data which are ©Commonwealth of Australia (Geoscience Australia), ©PSMA 2010

Coordinates
Buffer: 5.0Km



Summary

Matters of National Environmental Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance:	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	2
Listed Threatened Species:	65
Listed Migratory Species:	45

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at http://www.environment.gov.au/heritage

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Land:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	77
Whales and Other Cetaceans:	12
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Commonwealth Reserves Marine:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have nominated.

State and Territory Reserves:	2
Regional Forest Agreements:	1
Invasive Species:	39
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

Listed Threatened Ecological Communities [Resource Information]

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Name	Status	Type of Presence
Illawarra and south coast lowland forest and woodland ecological community	Critically Endangered	Community may occur within area
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	Community likely to occur within area

Listed Threatened Species [Resource Information]

Name	Status	Type of Presence
Birds		
Anthochaera phrygia Regent Honeyeater [82338]	Critically Endangered	Species or species habitat known to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat likely to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Dasyornis brachypterus Eastern Bristlebird [533]	Endangered	Species or species habitat likely to occur within area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea antipodensis gibsoni Gibson's Albatross [82270]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Fregetta grallaria grallaria White-bellied Storm-Petrel (Tasman Sea), White-bellied Storm-Petrel (Australasian) [64438]	Vulnerable	Species or species habitat likely to occur within area

Name	Status	Type of Presence
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area
Limosa lapponica baueri Bar-tailed Godwit (baueri), Western Alaskan Bar-tailed Godwit [86380]	Vulnerable	Species or species habitat likely to occur within area
Limosa lapponica menzbieri Northern Siberian Bar-tailed Godwit, Bar-tailed Godwit (menzbieri) [86432]	Critically Endangered	Species or species habitat may occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Neophema chrysogaster Orange-bellied Parrot [747]	Critically Endangered	Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Pachyptila turtur subantarctica Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat known to occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area
Pterodroma leucoptera leucoptera Gould's Petrel, Australian Gould's Petrel [26033]	Endangered	Species or species habitat may occur within area
Pterodroma neglecta neglecta Kermadec Petrel (western) [64450]	Vulnerable	Foraging, feeding or related behaviour may occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Breeding likely to occur within area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area
Thalassarche bulleri platei Northern Buller's Albatross, Pacific Albatross [82273]	Vulnerable	Species or species habitat may occur within area
Thalassarche cauta cauta Shy Albatross, Tasmanian Shy Albatross [82345]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche cauta steadi White-capped Albatross [82344]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche eremita Chatham Albatross [64457]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed	Vulnerable	Species or species

Name	Status	Type of Presence
Albatross [64459]		habitat may occur within area
Thalassarche melanophris		
Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Thalassarche salvini		
Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thinornis rubricollis rubricollis		
Hooded Plover (eastern) [66726]	Vulnerable	Species or species habitat known to occur within area
Fish		
Epinephelus daemelii		
Black Rockcod, Black Cod, Saddled Rockcod [68449]	Vulnerable	Species or species habitat likely to occur within area
Prototroctes maraena		
Australian Grayling [26179]	Vulnerable	Species or species habitat likely to occur within area
Frogs		
Heleioporus australiacus		
Giant Burrowing Frog [1973]	Vulnerable	Species or species habitat may occur within area
Litoria aurea		
Green and Golden Bell Frog [1870]	Vulnerable	Species or species habitat known to occur within area
Litoria littlejohni		
Littlejohn's Tree Frog, Heath Frog [64733]	Vulnerable	Species or species habitat likely to occur within area
Mammals		
Balaenoptera musculus		
Blue Whale [36]	Endangered	Species or species habitat may occur within area
Chalinolobus dwyeri		
Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat likely to occur within area
Dasyurus maculatus maculatus (SE mainland population)		
Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat likely to occur within area
Eubalaena australis		
Southern Right Whale [40]	Endangered	Species or species habitat known to occur within area
Isoodon obesulus obesulus		
Southern Brown Bandicoot (eastern), Southern Brown Bandicoot (south-eastern) [68050]	Endangered	Species or species habitat known to occur within area
Megaptera novaeangliae		
Humpback Whale [38]	Vulnerable	Species or species habitat known to occur within area
Petauroides volans		
Greater Glider [254]	Vulnerable	Species or species habitat known to occur within area
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)		
Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Vulnerable	Species or species habitat known to occur within area
Potorous tridactylus tridactylus		
Long-nosed Potoroo (SE mainland) [66645]	Vulnerable	Species or species habitat known to occur within area

Name	Status	Type of Presence
Pseudomys novaehollandiae New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat may occur within area
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Plants		
Caladenia tessellata Thick-lipped Spider-orchid, Daddy Long-legs [2119]	Vulnerable	Species or species habitat likely to occur within area
Cryptostylis hunteriana Leafless Tongue-orchid [19533]	Vulnerable	Species or species habitat known to occur within area
Genoplesium baueri Yellow Gnat-orchid [7528]	Endangered	Species or species habitat may occur within area
Genoplesium vernale East Lynne Midge-orchid [68379]	Vulnerable	Species or species habitat may occur within area
Melaleuca biconvexa Biconvex Paperbark [5583]	Vulnerable	Species or species habitat may occur within area
Pterostylis gibbosa Illawarra Greenhood, Rufa Greenhood, Pouched Greenhood [4562]	Endangered	Species or species habitat may occur within area
Syzygium paniculatum Magenta Lilly Pilly, Magenta Cherry, Daguba, Scrub Cherry, Creek Lilly Pilly, Brush Cherry [20307]	Vulnerable	Species or species habitat known to occur within area
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat may occur within area
Reptiles		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area
Hoplocephalus bungaroides Broad-headed Snake [1182]	Vulnerable	Species or species habitat likely to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Sharks		
Carcharias taurus (east coast population) Grey Nurse Shark (east coast population) [68751]	Critically Endangered	Species or species habitat likely to occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur

Name	Status	Type of Presence within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area

Listed Migratory Species		[Resource Information]
* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.		
Name	Threatened	Type of Presence
Migratory Marine Birds		
Anous stolidus Common Noddy [825]		Species or species habitat may occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardenna carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat may occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area
Sternula albifrons Little Tern [82849]		Breeding likely to occur within area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area
Thalassarche cauta Tasmanian Shy Albatross [89224]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Migratory Marine Species		
Balaena glacialis australis Southern Right Whale [75529]	Endangered*	Species or species habitat known to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species

Name	Threatened	Type of Presence
		habitat may occur within area
Caperea marginata Pygmy Right Whale [39]		Foraging, feeding or related behaviour likely to occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat may occur within area
Lamna nasus Porbeagle, Mackerel Shark [83288]		Species or species habitat likely to occur within area
Manta birostris Giant Manta Ray, Chevron Manta Ray, Pacific Manta Ray, Pelagic Manta Ray, Oceanic Manta Ray [84995]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Species or species habitat known to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat likely to occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Migratory Terrestrial Species		
Cuculus optatus Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area
Hirundapus caudacutus White-throated Needletail [682]		Species or species habitat known to occur within area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area
Monarcha trivirgatus Spectacled Monarch [610]		Species or species habitat may occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur

Name	Threatened	Type of Presence within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat likely to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat likely to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat likely to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area

Other Matters Protected by the EPBC Act

Listed Marine Species [Resource Information]

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Birds		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
Anous stolidus Common Noddy [825]		Species or species habitat may occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea alba Great Egret, White Egret [59541]		Species or species habitat known to occur

Name	Threatened	Type of Presence within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat likely to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat likely to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat likely to occur within area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat may occur within area
Catharacta skua Great Skua [59472]		Species or species habitat may occur within area
Cuculus saturatus Oriental Cuckoo, Himalayan Cuckoo [710]		Species or species habitat may occur within area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea gibsoni Gibson's Albatross [64466]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area
Hirundapus caudacutus White-throated Needletail [682]		Species or species habitat known to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area

Name	Threatened	Type of Presence
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area
Monarcha trivirgatus Spectacled Monarch [610]		Species or species habitat may occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area
Neophema chrysogaster Orange-bellied Parrot [747]	Critically Endangered	Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Pachyptila turtur Fairy Prion [1066]		Species or species habitat known to occur within area
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area
Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [1043]		Foraging, feeding or related behaviour likely to occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Endangered*	Species or species habitat may occur within area
Sterna albifrons Little Tern [813]		Breeding likely to occur within area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area
Thalassarche cauta Tasmanian Shy Albatross [89224]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Thalassarche eremita Chatham Albatross [64457]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed	Vulnerable	Species or species

Name	Threatened	Type of Presence
Albatross [64459]		habitat may occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche sp. nov. Pacific Albatross [66511]	Vulnerable*	Species or species habitat may occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Thinornis rubricollis Hooded Plover [59510]		Species or species habitat known to occur within area
Thinornis rubricollis rubricollis Hooded Plover (eastern) [66726]	Vulnerable	Species or species habitat known to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area
Fish		
Acentronura tentaculata Shortpouch Pygmy Pipehorse [66187]		Species or species habitat may occur within area
Cosmocampus howensis Lord Howe Pipefish [66208]		Species or species habitat may occur within area
Heraldia nocturna Upside-down Pipefish, Eastern Upside-down Pipefish, Eastern Upside-down Pipefish [66227]		Species or species habitat may occur within area
Hippocampus abdominalis Big-belly Seahorse, Eastern Potbelly Seahorse, New Zealand Potbelly Seahorse [66233]		Species or species habitat may occur within area
Hippocampus breviceps Short-head Seahorse, Short-snouted Seahorse [66235]		Species or species habitat may occur within area
Hippocampus whitei White's Seahorse, Crowned Seahorse, Sydney Seahorse [66240]		Species or species habitat may occur within area
Histiogamphelus briggsii Crested Pipefish, Briggs' Crested Pipefish, Briggs' Pipefish [66242]		Species or species habitat may occur within area
Kimblaeus bassensis Trawl Pipefish, Bass Strait Pipefish [66247]		Species or species habitat may occur within area
Lissocampus runa Javelin Pipefish [66251]		Species or species habitat may occur within area
Maroubra perserrata Sawtooth Pipefish [66252]		Species or species habitat may occur within area
Notiocampus ruber Red Pipefish [66265]		Species or species

Name	Threatened	Type of Presence
		habitat may occur within area
Phyllopteryx taeniolatus Common Seadragon, Weedy Seadragon [66268]		Species or species habitat may occur within area
Solegnathus spinosissimus Spiny Pipehorse, Australian Spiny Pipehorse [66275]		Species or species habitat may occur within area
Solenostomus cyanopterus Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]		Species or species habitat may occur within area
Solenostomus paegnius Rough-snout Ghost Pipefish [68425]		Species or species habitat may occur within area
Stigmatopora argus Spotted Pipefish, Gulf Pipefish, Peacock Pipefish [66276]		Species or species habitat may occur within area
Stigmatopora nigra Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish [66277]		Species or species habitat may occur within area
Stigmatopora olivacea a pipefish [74966]		Species or species habitat may occur within area
Syngnathoides biaculeatus Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area
Urocampus carinirostris Hairy Pipefish [66282]		Species or species habitat may occur within area
Vanacampus margaritifer Mother-of-pearl Pipefish [66283]		Species or species habitat may occur within area
Vanacampus phillipi Port Phillip Pipefish [66284]		Species or species habitat may occur within area
Mammals		
Arctocephalus forsteri Long-nosed Fur-seal, New Zealand Fur-seal [20]		Species or species habitat may occur within area
Arctocephalus pusillus Australian Fur-seal, Australo-African Fur-seal [21]		Species or species habitat may occur within area
Reptiles		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or

Name	Threatened	Type of Presence
		related behaviour known to occur within area

Whales and other Cetaceans		[Resource Information]
Name	Status	Type of Presence
Mammals		
Balaenoptera acutorostrata Minke Whale [33]		Species or species habitat may occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area
Caperea marginata Pygmy Right Whale [39]		Foraging, feeding or related behaviour likely to occur within area
Delphinus delphis Common Dophin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat known to occur within area
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Species or species habitat known to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat likely to occur within area
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area

Extra Information

State and Territory Reserves	[Resource Information]
Name	State
Conjola	NSW
Narrawallee Creek	NSW

Regional Forest Agreements	[Resource Information]
Note that all areas with completed RFAs have been included.	
Name	State

Name	State
Southern RFA	New South Wales

Invasive Species [Resource Information]

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resouces Audit, 2001.

Name	Status	Type of Presence
Birds		
Acridotheres tristis Common Myna, Indian Myna [387]		Species or species habitat likely to occur within area
Alauda arvensis Skylark [656]		Species or species habitat likely to occur within area
Anas platyrhynchos Mallard [974]		Species or species habitat likely to occur within area
Carduelis carduelis European Goldfinch [403]		Species or species habitat likely to occur within area
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Passer domesticus House Sparrow [405]		Species or species habitat likely to occur within area
Streptopelia chinensis Spotted Turtle-Dove [780]		Species or species habitat likely to occur within area
Sturnus vulgaris Common Starling [389]		Species or species habitat likely to occur within area
Turdus merula Common Blackbird, Eurasian Blackbird [596]		Species or species habitat likely to occur within area
Mammals		
Bos taurus Domestic Cattle [16]		Species or species habitat likely to occur within area
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Capra hircus Goat [2]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Feral deer Feral deer species in Australia [85733]		Species or species habitat likely to occur within area
Lepus capensis Brown Hare [127]		Species or species habitat likely to occur within area

Name	Status	Type of Presence
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Rattus norvegicus Brown Rat, Norway Rat [83]		Species or species habitat likely to occur within area
Rattus rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
Sus scrofa Pig [6]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
Anredera cordifolia Madeira Vine, Jalap, Lamb's-tail, Mignonette Vine, Anredera, Gulf Madeiravine, Heartleaf Madeiravine, Potato Vine [2643]		Species or species habitat likely to occur within area
Asparagus aethiopicus Asparagus Fern, Ground Asparagus, Basket Fern, Sprengi's Fern, Bushy Asparagus, Emerald Asparagus [62425]		Species or species habitat likely to occur within area
Asparagus asparagoides Bridal Creeper, Bridal Veil Creeper, Smilax, Florist's Smilax, Smilax Asparagus [22473]		Species or species habitat likely to occur within area
Chrysanthemoides monilifera Bitou Bush, Boneseed [18983]		Species or species habitat may occur within area
Chrysanthemoides monilifera subsp. monilifera Boneseed [16905]		Species or species habitat likely to occur within area
Chrysanthemoides monilifera subsp. rotundata Bitou Bush [16332]		Species or species habitat likely to occur within area
Eichhornia crassipes Water Hyacinth, Water Orchid, Nile Lily [13466]		Species or species habitat likely to occur within area
Genista sp. X Genista monspessulana Broom [67538]		Species or species habitat may occur within area
Lantana camara Lantana, Common Lantana, Kamara Lantana, Large-leaf Lantana, Pink Flowered Lantana, Red Flowered Lantana, Red-Flowered Sage, White Sage, Wild Sage [10892]		Species or species habitat likely to occur within area
Nassella neesiana Chilean Needle grass [67699]		Species or species habitat may occur within area
Nassella trichotoma Serrated Tussock, Yass River Tussock, Yass Tussock, Nassella Tussock (NZ) [18884]		Species or species habitat likely to occur within area
Pinus radiata Radiata Pine Monterey Pine, Insignis Pine, Wilding Pine [20780]		Species or species habitat may occur within

Name	Status	Type of Presence
		area
Protasparagus densiflorus Asparagus Fern, Plume Asparagus [5015]		Species or species habitat likely to occur within area
Rubus fruticosus aggregate Blackberry, European Blackberry [68406]		Species or species habitat likely to occur within area
Salix spp. except S.babylonica, S.x calodendron & S.x reichardtii Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow [68497]		Species or species habitat likely to occur within area
Salvinia molesta Salvinia, Giant Salvinia, Aquarium Watermoss, Kariba Weed [13665]		Species or species habitat likely to occur within area
Senecio madagascariensis Fireweed, Madagascar Ragwort, Madagascar Groundsel [2624]		Species or species habitat likely to occur within area
Ulex europaeus Gorse, Furze [7693]		Species or species habitat likely to occur within area

Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World and National Heritage properties, Wetlands of International and National Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species distributions have been derived through a variety of methods. Where distributions are well known and if time permits, maps are derived using either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc) together with point locations and described habitat; or environmental modelling (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where very little information is available for species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc). In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More reliable distribution mapping methods are used to update these distributions as time permits.

Only selected species covered by the following provisions of the EPBC Act have been mapped:

- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers

The following groups have been mapped, but may not cover the complete distribution of the species:

- non-threatened seabirds which have only been mapped for recorded breeding sites
- seals which have only been mapped for breeding sites near the Australian continent

Such breeding sites may be important for the protection of the Commonwealth Marine environment.

Coordinates

-35.25556 150.50972

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact Us page.

Appendix D – Assessments of Significance in accordance with the MNES Significant Impact Guidelines (DoE 2013)

The EPBC Act Matters of National Environmental Significance (EPBC Act Significant Impact Guidelines) (DoE 2013) provides 'Significant Impact Criteria' that are to be used to assist in determining whether a proposed action is likely to have a significant impact on a MNES and subsequently the need for referral. The following MNES identified within the study area or considered to have a moderate or greater likelihood of occurring in the study area have been addressed below:

- Black-faced Monarch (*Monarcha melanopsis*) – migratory
- Greater Glider (*Petauroides volans*) – vulnerable
- Grey-headed Flying-fox (*Pteropus poliocephalus*) – vulnerable
- Rufous Fantail (*Rhipidura rufifrons*) – migratory
- Satin Flycatcher (*Myiagra cyanoleuca*) – migratory
- Southern Brown Bandicoot (eastern) (*Isoodon obesulus obesulus*) – endangered
- Spotted-tailed Quoll (*Dasyurus maculatus*) – vulnerable
- Swift Parrot (*Lathamus discolor*) – critically endangered

The MNES Significant Impact Guidelines (DoE 2013) outline definitions of the terms used in the assessments below. The definitions have been used to identify if an important populations or habitat critical to the survival of each species is present in the study area.

The MNES Significant Impact Guidelines (DoE 2013) define an important population as:

> *'…a population that is necessary for a species' long-term survival and recovery. This may include populations identified as such in recovery plans, and/or that are:*

- *key source populations either for breeding or dispersal*
- *populations that are necessary for maintaining genetic diversity, and/or*
- *populations that are near the limit of the species range.'*

The MNES Significant Impact Guidelines (DoE 2013) define habitat critical to the survival of a species as:

> *'…areas that are necessary:*

- *for activities such as foraging, breeding, roosting, or dispersal*
- *for the long-term maintenance of the species or ecological community (including the maintenance of species essential to the survival of the species or ecological community, such as pollinators)*
- *to maintain genetic diversity and long term evolutionary development, or*
- *for the reintroduction of populations or recovery of the species or ecological community.*

> *Such habitat may be, but is not limited to: habitat identified in a recovery plan for the species or ecological community as habitat critical for that species or ecological community; and/or habitat listed on the Register of Critical Habitat maintained by the minister under the EPBC Act'…*

Migratory Birds

Black-faced Monarch (Monarcha melanopsis),

Black-faced Monarch (*Monarcha melanopsis*) is widespread in eastern Australia, occurring in NSW along the eastern coast and tablelands. They are predominantly associated with rainforest ecosystems but are sometimes found in nearby open eucalypt forests (mainly wet sclerophyll forests) especially in gullies with a dense, shrubby understorey as well as in dry sclerophyll forests and woodlands, often with a patchy understorey (DoEE 2018b).

Black-faced Monarch was observed during surveys by BES (2006) with evidence of a breeding pair in the north-eastern part of the study area. They migrate from this south-eastern region to winter north in Australia and New Guinea.

The study area is within a region that supports an ecologically significant proportion of the population as the species is known to widely use the region (ALA 2018). and evidence of breeding activities have been observed in the study area and locality. Hence the study area is considered an area of important habitat for this migratory species.

Rufous Fantail (Rhipidura rufifrons)

Rufous Fantail (*Rhipidura rufifrons*) occurs in coastal and near-coastal regions of eastern Australia. In NSW it is distributed on and east of the Great Dividing Range. In east and south-east Australia, the Rufous Fantail mainly inhabits wet sclerophyll forests, often in gullies dominated by eucalypts. They occasionally occur in secondary regrowth, following logging or disturbance in forests or rainforests. When on passage, they are sometimes recorded in drier sclerophyll forests and woodlands (DoEE 2018b).

Rufous Fantail was observed during surveys by BES (2006) in the north-eastern part of the study area. They migrate from this south-eastern region to winter north in Australia and New Guinea.

The study area is within a region that supports an ecologically significant proportion of the population as the species is known to widely use the region and evidence of breeding activities have been observed in the region. Hence the study area is considered an area of important habitat for this migratory species.

Satin Flycatcher (Myiagra cyanoleuca)

Satin Flycatcher (Myiagra cyanoleuca) is widespread in eastern Australia and in NSW they are most common on and east of the Great Dividing Range. Satin Flycatchers inhabit heavily vegetated gullies in eucalypt-dominated forests and taller woodlands, and on migration, occur in coastal forests, woodlands, mangroves and drier woodlands and open forests (DoEE 2018b).

Satin Flycatcher hasn't been recorded in the study area but has been recorded substantially in the south-eastern region (ALA 2018). The species migrates north over winter to Northern Australia and New Guinea (DoEE 2018b).

The study area is within a region that supports an ecologically significant proportion of the population as the species is known to widely use the region and evidence of breeding activities have been observed in the region. Hence the study area is considered an area of important habitat for this migratory species.

An action is likely to have a significant impact on a migratory species if there is a real chance or possibility that it will:

- *substantially modify (including by fragmenting, altering fire regimes, altering nutrient cycles or altering hydrological cycles), destroy or isolate an area of important habitat for a migratory species*

The proposal is unlikely to substantially modify an area of important habitat for a migratory species. The existing drainage line and vegetative buffer will be maintained and will provide vegetative connectivity through the study area. It will be managed by a Flora and Fauna Management Plan to ensure vegetation condition and hydrology is not significantly impacted during and post construction. This vegetative corridor will link to extensive habitat north of the study area. Additionally, two water quality facilities will be integrated into the water management which will control sediment and pollutant filtration and water levels. This will ensure the habitat for these migratory bird species is maintained at a high level of resilience.

- *result in an invasive species that is harmful to the migratory species becoming established in an area of important habitat for the migratory species, or*

The Flora and Fauna Management Plan has identified problematic exotic species and has stipulated site-specific weed control techniques. The study area was noted to have a high resilience with a low dominance of exotic species. This will be maintained through monitoring and management of exotic species to ensure important habitat for these migratory bird species is maintained.

- *seriously disrupt the lifecycle (breeding, feeding, migration or resting behaviour) of an ecologically significant proportion of the population of a migratory species.*

The study area covers a small area of habitat that provides breeding and foraging potential for these migratory species. Due to its size, the study area cannot support a significant proportion of the population of any of these migratory species. The retention and management of the vegetative corridor through the study area will ensure that the species' can continue to use the study area for foraging and breeding activities.

Greater Glider (Petauroides volans) – vulnerable

Greater Gliders occur in eastern Australia, from the Windsor Tableland in north Queensland through to central Victoria. Its distribution is thought to be stable, but its area of occupancy within its distribution is thought to have substantially decreased, mostly due to land clearing. The decrease in occupancy is thought to continue to decrease due to further clearing, fragmentation, fire and forestry activities.

Greater Gliders utilise eucalypt forests and woodlands. It is typically found in taller, montane, moist eucalypt forests with relatively old trees and abundant hollows and favours a diversity of eucalypt species (TSSC 2016).

Greater Glider has been observed twice recently in the study area (2006 by BES (2006) and 2017 (OEH 2018a)) and are considered relatively abundant in the locality BES (2006). The locality is not considered to support an important population. It is not at the edge of the species range and it is well connected and hence spread of genetic diversity is not highly restricted. Populations that require conservation assistance have been identified as

Endangered Populations in NSW at Seven Mile Beach National Park area, Mount Gibraltar Reserve area and Eurobodalla local government area (OEH 2018a).

An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:

- *lead to a long-term decrease in the size of an important population of a species*

The population in the study area is not considered an important population.

- *reduce the area of occupancy of an important population*

The population in the study area is not considered an important population.

- *fragment an existing important population into two or more populations*

The population in the study area is not considered an important population.

- *adversely affect habitat critical to the survival of a species*

Whilst the study area may be utilised for '*foraging, breeding, … or dispersal'* of Greater Glider, given extensive tracts of intact vegetation in the Reserve Estate adjacent to this site (see **Figure 2**), it is not considered to be habitat critical to the survival of the Greater Glider. Further, it has not been identified in a Recovery Plan or on a Critical habitat register.

The study area contains a number of hollows suitable for Greater Glider. Additionally, the Greater Glider has a small home range (1 ha – 4 ha) and hence the study area could provide foraging and breeding habitat for multiple breeding individuals. However, the removal of 16.18 ha of habitat is not considered an adverse impact due to the extensive distribution of habitat in the locality and the ability of the species to continue to utilise habitat in the retained habitat in and adjacent to the study area. Hence, long-term maintenance of the species, genetic diversity will not be inhibited by the proposal.

- *disrupt the breeding cycle of an important population*

The population in the study area is not considered an important population.

- *modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline*

The proposal will result in the removal of up to 17.18 ha of foraging and breeding habitat for this species. This is unlikely to lead to the decline of the species given the extensive habitat available in the locality (see **Figure 2**).

- *result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat*

The proposal is unlikely to result in establishment of invasive species in potential foraging and breeding habitat of Greater Glider. Historical land use in the locality has led to the establishment of invasive species that are potentially harmful to this species' habitat. However, it is unlikely that additional invasive species would become established in the study area.

The Flora and Fauna Management Plan developed for the study area would manage and monitor feral animal, pest and weed species in the study area with the aim of reducing pressures from invasive species in the study area.

- *introduce disease that may cause the species to decline, or*

The proposal is unlikely to result in the introduction of disease that may cause decline of Greater Glider. There is potential for disease caused by the soil-borne plant pathogen *Phytophthora cinnamomi* to occur in the study area as a result of the proposal. This pathogen could impact on the vegetation communities that could support foraging and breeding habitat for this species. Control of transportation of the pathogen would occur by controlling soil transportation into the study area.

- *interfere substantially with the recovery of the species.*

It is unlikely that the proposal would substantially interfere with the recovery of the Greater Glider. The study area has not been assessed to adversely impact habitat critical to the survival of the species. The vegetation proposed for removal is unlikely to result in a long-term reduction in genetic fitness by creating a barrier to movement between areas of habitat critical to the species. Furthermore, the proposal would result in the removal of a small amount of available habitat.

Conclusion of EPBC Act Significant Impact Guidelines (DoE 2013) for Greater Glider.

A referral is not recommended for the Greater Glider, as:

- the proposal would not adversely affect critical habitat
- the proposal is unlikely to cause the species to decline
- the proposal is unlikely to substantially interfere with the recovery of the species

Grey-headed Flying-fox (Pteropus poliocephalus) – vulnerable

Grey-headed Flying-foxes occurs within 200 km of the eastern coastline of Australia, from Rockhampton in Queensland to Adelaide in South Australia. They have a preference for subtropical and temperate rainforest, tall sclerophyll forests and woodlands, as well as heaths and swamps. Roosting areas are often selected upon their proximity to a regular food source (within 20 km), often in gullies, close to water, or in vegetation with a dense canopy. This species roosts communally in large, established camps which can support several thousand individuals. The Grey-headed Flying-fox can travel up to 50 km from camp to forage (typically <20 km), where they feed on nectar and pollen from *Eucalyptus, Banksia* and *Melaleuca* spp., as well as the fruits of native and exotic species.

There have been three recorded observations of the Grey-headed Flying-fox in the locality (OEH 2018b). The closest and most recent record is from the 12/04/2013, approximately 2.64km from the study area (OEH 2018a). No observations were made of this species during field assessment, and no suitable roosting habitat that could support a large camp of Grey-headed Flying-foxes was identified in the study area. It is likely that Grey-headed Flying-fox use the study area for foraging. The closest known occupied Grey-headed Flying-fox camps are situated in Yatteyattah (approximately 5km west of the study area) and Wandandian, Bewong Creek (approximately 25 km north of the study area (DoE 2015)

Due to the great movement and constant genetic exchange of individual Grey-headed Flying-foxes through the species' entire geographic range, all individuals are considered part of one population. Instead they are separated into spatially structured colonies (DoEE 2018b). Therefore, the individuals that may use the study area are part of an important population.

Threats to this species include:

- Loss of roosting and foraging site
- Heat stress
- Electrocution on powerlines and entanglement in netting.

An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:

- *lead to a long-term decrease in the size of an important population of a species*

The proposal is unlikely to lead to a long-term decrease to an important population of the Grey-headed Flying-fox, as the site does not contain a camp of Grey-headed Flying-fox. The proposed development will not lead to a decrease in the population of the Grey-headed Flying-fox, as the species is not being directly impacted by the proposal. The species may use the study area for foraging. Suitable foraging habitat is found within the locality, including the habitat surrounding the north and west of the study area.

- *reduce the area of occupancy of an important population*

This proposal will not reduce the area of occupancy of an important population of the Grey-headed Flying-fox, as no resident population occurs within the study area or immediate surrounds. Furthermore, the species could continue to occur in the study area as a fly over, or potentially forage on fruit or pollen bearing vegetation that is maintained along the drainage line or planted in the urban development.

- *fragment an existing important population into two or more populations*

This proposal will not lead to the fragmentation of a Grey-headed Flying-fox population. The ability for Grey-headed Flying-fox to travel large distances makes them less susceptible to the impacts of fragmentation of foraging habitat. Fragmentation is specifically threatening if individuals have to travel further from camps to forage (DoEE 2018b). The study area is sufficiently far enough away from the closest Grey-headed Flying-fox roosting site, as to not substantially impact on the species access to foraging recourses. Additionally, the proposal will not isolate patches of habitat which would require more energy consumption for individuals to access.

- *adversely affect habitat critical to the survival of a species*

This proposal is unlikely to adversely affect habitat critical to the survival of the Grey-headed Flying-fox. The Grey-headed Flying-fox is unlikely to utilise the study area for roosting as no signs of roosting have been observed and the site has never been identified as a permanent or temporary camp site (DoE 2015). According to the Draft National Recovery Plan for the Grey-headed Flying-fox, foraging habitat that meets at least one of the following criteria can be explicitly identified as habitat critical to survival, or essential habitat (DECCW 2009), including:

- productive during winter and spring, when food bottlenecks have been identified
- known to support populations of >30 000 individuals within an area of 50 km radius (the maximum foraging distance of an adult)

There are several large camps within 50 km that support over 30,000 individuals including the nationally important flying-fox camp at Kioloa and Nowra (DoE 2015). The study area is close to the maximum flying distance from each of these large camps and is not likely to support individuals from these populations with any regularity. The study area supports winter/spring flowering resource (*Eucalyptus botryoides* [Bangalay]), however, the vast majority of the Grey-headed Flying-fox population migrates north during the winter/spring period. Therefore, the study area is not considered to support habitat critical to the survival of this species.

- *disrupt the breeding cycle of an important population*

This proposal is unlikely to disrupt the breeding cycle of Grey-headed Flying-fox. No breeding occurs in or near the study area and the study area does not provide a reliable source of foraging habitat to support a camp.

- *modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline*

The proposal will result in the removal of up to 17.18 ha of potential foraging habitat for this species. This is unlikely to lead to the decline of the species given the small amount of vegetation removal.

- *result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat*

The proposal is unlikely to result in establishment of invasive species in potential foraging and breeding habitat of Grey-headed Flying-fox. Historical land use in the locality has led to the establishment of invasive species that are potentially harmful to this species' habitat. However, it is unlikely that additional invasive species would become established in the study area.

The Flora and Fauna Management Plan developed for the study area would manage and monitor feral animal, pest and weed species in the study area with the aim of reducing pressures from invasive species in the study area.

- *introduce disease that may cause the species to decline, or*

The proposal is unlikely to result in the introduction of disease that may cause decline of Grey-headed Flying-fox. There is potential for disease caused by the soil-borne plant pathogen *Phytophthora cinnamomi* to occur in the study area as a result of the proposal. This pathogen could impact on the vegetation communities that could support foraging habitat for this species. Control of transportation of the pathogen would occur by controlling soil transportation into the study area.

- *interfere substantially with the recovery of the species.*

It is unlikely that the proposal would substantially interfere with the recovery of the Grey-headed Flying-fox. The study area has not been assessed to adversely impact habitat critical to the survival of the species. The vegetation proposed for removal is unlikely to result in a long-term reduction in genetic fitness by creating a barrier to movement between

areas of habitat critical to the species. Furthermore, the proposal would result in the removal of a small amount of potential foraging habitat. The study area does not contain a breeding camp and no indication of the species was observed during database review or field surveys.

Conclusion of EPBC Act Significant Impact Guidelines (DoE 2013) for Grey-headed Flying-fox.

A referral is not recommended for the Grey-headed Flying-fox, as:

- no breeding or roosting habitat would be removed
- the vegetation proposed for removal does not support a camp of Grey-headed Flying-fox
- the proposal is unlikely to impact on the breeding cycle of nearby populations
- the proposal would not affect critical habitat (e.g. further fragment the surrounding bushland or remove essential habitat)

Southern Brown Bandicoot (eastern) (Isoodon obesulus obesulus) – endangered

The Southern Brown Bandicoot (eastern) subspecies is currently restricted in NSW to the coastal fringe, south from the Hawkesbury River. It primarily occurs in two areas: Ku-ring-gai Chase and Garigal National Parks just north of Sydney and the far south-east corner of the state including Ben Boyd National Park, East Boyd State Forest, Nadgee Nature Reserve, Nadgee State Forest, South East Forest National Park, and Yambulla State Forest. Apart from these main locations, scattered records are reported within its range (DoEE 2018b).

Southern Brown Bandicoots (eastern) are known to inhabit a variety of habitats including heathland, shrubland, sedgeland, heathy open forest and woodland and are usually associated with infertile, sandy and well drained soils, but can be found in a range of soil types. Within these vegetation communities they typically inhabit areas of dense ground cover. Vegetation structure appears to be more influential than floristics in determining Southern Brown Bandicoot (eastern) abundance. In particular, the density of ground layer vegetation appears to be important - sites with greater vegetation density in the ground layer are generally preferred (DoEE 2018b).

Southern Brown Bandicoot (eastern) was recently observed on the edge of the study area (2017) although no information is provided with the record to confirm how the sighting was made (OEH 2018b). Prior to this record, the closest records are from 4 km (1993), 22 km (1991) and 28 km (1991). The closest recent record is from 2014 and is from the Upper Kangaroo Valley approximately 67 km north of the study area. Bandicoot diggings were observed in the study area by BES (2006) but the species was not detected despite targeted cage trapping. The digging signs observed were attributable to the Long-nosed Bandicoot (*Perameles nasuta*) which is common in the locality.

Southern Brown Bandicoot (eastern) has been reintroduced into Booderee National Park, approximately 20 km north of the study area. They have been found to be successfully breeding at this site (TSRH 2017), however it is unlikely that these individuals have moved through to the study area (DoEE 2018b).

The scale and rapidity of decline mean that all extant populations are considered important for the survival of the subspecies (DoEE 2018b). Following the confirmation of Long-nosed

Bandicoot in the study area, the observation of a Southern Brown Bandicoot is considered an unlikely sighting. The precautionary principle has been applied to assess impact to potential habitat for Southern Brown Bandicoot in and north of the study area.

An action is likely to have a significant impact on an endangered species if there is a real chance or possibility that it will:

- *lead to a long-term decrease in the size of a population*

The proposal is unlikely to lead to a long-term decrease in the size of a population. It is unlikely that a population of Southern Brown Bandicoot utilises habitat in the study area. The study area provides potential habitat for the species and this habitat would be maintained and would continue to connect the VMP subject site with habitat north of the study area.

- *reduce the area of occupancy of the species*

The study area is unlikely to be occupied by the species and hence the proposal is unlikely to reduce the area of occupancy of the species.

- *fragment an existing population into two or more populations*

The proposal is unlikely to fragment an existing population into two or more populations. The species is known to occur in fragmented populations along the eastern coast. The habitat in the study area would not be fragmented as a habitat corridor would be maintained through the study area and adjoin habitat north of the study area.

- *adversely affect habitat critical to the survival of a species*

The proposal is unlikely to affect habitat critical to the survival of the species. Critical habitat was not declared for this species under the *Threatened Species Conservation Act 1995* (DEC 2006). Any area where the species is detected is likely to represent a significant area of habitat (NPWS 2001). The Saving Our Species supports the site-based significance of this species by identifying three areas which are significant to the survival of this species. The study area is not within any of the three areas and it is unlikely that the species was detected in or adjacent to the study area.

- *disrupt the breeding cycle of a population*

It is unlikely that the proposal would disrupt the breeding cycle of a population. It is unlikely that the study area supports a breeding population. The habitat in the study area is potential habitat for the species which could be used for breeding. The retention of the habitat corridor which links to extensive habitat north of the study area would maintain potential breeding habitat in the study area and locality.

- *modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline*

The proposal is unlikely to modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline. The study area is not within known areas of importance for this species. The potential habitat in the study area would be maintained in the VMP subject site and this habitat corridor would link to extensive habitat north of the study area.

- *result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat*

The proposal would not result in additional invasive species becoming established in the study area. The European Fox (*Vulpes vulpes*) and feral cat (*Felis catus*) are known key threats to this species (NPWS 2001, DEC 2006). These species are already established in the study area and European Foxes were recorded frequently during the remote camera survey.

- *introduce disease that may cause the species to decline, or*

It is unlikely that the proposal would introduce a disease that may cause the species to decline. The infection of native plants by *Phytophthora cinnamomi* is a known threat to this species (DEC 2006) as it reduces habitat complexity and has potential to destroy habitat (DEC 2006). There is potential for this soil-borne plant pathogen to occur in the study area as a result of the proposal. Control of transportation of the pathogen would occur by controlling soil transportation into the study area.

- *interfere with the recovery of the species.*

It is unlikely that the proposal would substantially interfere with the recovery of the species. The study area is not located within any of the areas of significance for this species (OEH 2018a). It is unlikely that a population of the species is established in the study area. Furthermore, habitat would be available in the VMP subject site and would be connected to extensive habitat north of the study area.

Conclusion of EPBC Act Significant Impact Guidelines (DoE 2013) for Southern Brown Bandicoot (eastern).

A referral is not recommended for the Southern Brown Bandicoot (eastern), as:

- the proposal would not adversely affect critical habitat
- the proposal is unlikely to cause the species to decline
- the proposal is unlikely to substantially interfere with the recovery of the species

Spotted-tailed Quoll (Dasyurus maculatus) – vulnerable

The range of the Spotted-tailed Quoll has contracted considerably since European settlement. It is now found in eastern NSW, eastern Victoria, south-east and north-eastern Queensland, and Tasmania (OEH 2018a).

The Spotted-tailed Quoll has been recorded across a range of habitat types, including rainforest, open forest, woodland, coastal heath and inland riparian forest, from the sub-alpine zone to the coastline. Individual animals use hollow-bearing trees, fallen logs, small caves, rock outcrops and rocky-cliff faces as den sites.

A Spotted-tailed Quoll has been recorded in habitat south of the study area in 2006 (OEH 2018b). This is the only record from the locality over the past 20 years. The study area supports potential habitat for this species including den sites and foraging resources.

The study area is not within a key management area for this species and hence the potential population in the locality is not considered an important population (OEH 2018a).

An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:

- *lead to a long-term decrease in the size of an important population of a species*

The population in the study area is not considered an important population (see DoEE 2013).

- *reduce the area of occupancy of an important population*

The population in the study area is not considered an important population.

- *fragment an existing important population into two or more populations*

The population in the study area is not considered an important population.

- *adversely affect habitat critical to the survival of a species*

The study area is not considered to be habitat critical to the survival of the Spotted-tailed Quoll. Whilst the study area may be utilised for '*foraging, breeding, … or dispersal'* of Spotted-tailed Quoll, given extensive tracts of intact vegetation in the Reserve Estate adjacent to this site (see **Figure 2**), it is not considered to be habitat critical to the survival of the Spotted-tailed Quoll. Further, it has not been identified in a Recovery Plan or on a Critical habitat register.

The study area contains a selection of hollow logs and tree hollows which are key habitat features for Spotted-tailed Quoll. Additionally, the study area provides prey which creates important links between prey and den sites which supports female territories (DoEE 2018b). However, the removal of 16.18 ha of habitat is not considered an adverse impact due to the extensive distribution of habitat in the locality and the ability of the species to continue to utilise habitat in the retained habitat in and adjacent to the study area. Hence, long-term maintenance of the species will not be inhibited by the proposal.

- *disrupt the breeding cycle of an important population*

The population in the study area is not considered an important population.

- *modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline*

The proposal will result in the removal of up to 17.18 ha of foraging and breeding habitat for this species. This is unlikely to lead to the decline of the species given the small amount of vegetation removal and the extensive habitat available in the locality.

- *result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat*

The proposal is unlikely to result in establishment of invasive species in potential foraging and breeding habitat of Spotted-tailed Quoll. Historical land use in the locality has led to the establishment of invasive species that are potentially harmful to this species' habitat. However, it is unlikely that additional invasive species would become established in the study area.

The Flora and Fauna Management Plan developed for the study area would manage and monitor feral animal, pest and weed species in the study area with the aim of reducing pressures from invasive species in the study area.

- *introduce disease that may cause the species to decline, or*

The proposal is unlikely to result in the introduction of disease that may cause decline of Spotted-tailed Quoll. There is potential for disease caused by the soil-borne plant pathogen *Phytophthora cinnamomi* to occur in the study area as a result of the proposal. This pathogen could impact on the vegetation communities that could support foraging and breeding habitat for this species. Control of transportation of the pathogen would occur by controlling soil transportation into the study area.

- *interfere substantially with the recovery of the species.*

It is unlikely that the proposal would substantially interfere with the recovery of the Spotted-tailed Quoll. The study area has not been assessed to adversely impact habitat critical to the survival of the species. The vegetation proposed for removal is unlikely to result in a long-term reduction in genetic fitness by creating a barrier to movement between areas of habitat critical to the species. Furthermore, the proposal would result in the removal of a small amount of available habitat.

Conclusion of EPBC Act Significant Impact Guidelines (DoE 2013) for Spotted-tailed Quoll.

A referral is not recommended for the Spotted-tailed Quoll, as:

- the proposal would not adversely affect critical habitat
- the proposal is unlikely to cause the species to decline
- the proposal is unlikely to substantially interfere with the recovery of the species

Swift Parrot (Lathamus discolor) – critically endangered

Swift Parrots migrate to the mainland of Australia in the autumn and winter months to south-eastern Australia from Victoria and the eastern parts of South Australia to south-east Queensland. In NSW, they mostly occur on the coast and south west slopes.

On the mainland they occur in areas where eucalypts are flowering profusely or where there are abundant lerp (from sap-sucking bugs) infestations. *Corymbia gummifera* (Red Bloodwood) is in the study area and is a favoured winter feed tree.

There is one recent record in the locality from the edge of the study area on 25/03/2017. This is considered a very early record in the season as the birds are known to migrate from Tasmania to the mainland and back between March and October. There is a continual stream of records along the east coast fringe (OEH 2018b).

An action is likely to have a significant impact on a critically endangered species if there is a real chance or possibility that it will:

- *lead to a long-term decrease in the size of a population*

The proposal is unlikely to lead to a long-term decrease in the size of a population. The population moving through the south coast is likely to utilise areas dominated by favoured feed trees including Swamp Mahogany (*Eucalyptus robusta)*, Spotted Gum (*Corymbia maculata)*, and Red Bloodwood (*C. gummifera).* The proposal would remove some *C. gummifera* but the small number of trees to be removed would not impact foraging such that it would lead to a long-term decrease in the size of a population.

- *reduce the area of occupancy of the species*

The proposal is unlikely to reduce the area of occupancy of the Swift Parrot. It would not impact any breeding habitat or any key wintering sites. Any foraging in the study area would be sporadic.

- *fragment an existing population into two or more populations*

The proposal would not fragment an existing population into two or more populations. The Swift Parrot moves over a large distance and would be able to continue migration through the plentiful habitat available in the locality.

- *adversely affect habitat critical to the survival of a species*

The study area is not considered habitat critical to the survival of the Swift Parrot. No breeding would occur in the study area. Additionally, the foraging resources in the study area are not abundant as the study area doesn't support a diversity of favoured feed trees.

- *disrupt the breeding cycle of a population*

The study area does not provide breeding habitat for the Swift Parrot.

- *modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline*

The proposal would not impact habitat to the extent that the species is likely to decline. No breeding habitat would be impacted. Additionally, the foraging habitat in the study area is not critical to the survival of the species and only provides scattered favoured feed trees. The species would be able to forage and migrate through the locality using the abundant habitat available.

- *result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat*

The proposal is unlikely to result in establishment of invasive species in potential foraging and breeding habitat of Swift Parrot. Historical land use in the locality has led to the establishment of invasive species that are potentially harmful to this species' habitat. However, it is unlikely that additional invasive species would become established in the study area.

The Flora and Fauna Management Plan developed for the study area would manage and monitor feral animal, pest and weed species in the study area with the aim of reducing pressures from invasive species in the study area.

- *introduce disease that may cause the species to decline, or*

The proposal is unlikely to result in the introduction of disease that may cause decline of Swift Parrot. There is potential for disease caused by the soil-borne plant pathogen *Phytophthora cinnamomi* to occur in the study area as a result of the proposal. This pathogen could impact on the vegetation communities that could support foraging habitat for this species. Control of transportation of the pathogen would occur by controlling soil transportation into the study area.

- *interfere with the recovery of the species.*

It is unlikely that the proposal would substantially interfere with the recovery of the Swift Parrot. The study area has not been assessed to adversely impact habitat critical to the survival of the species. The vegetation proposed for removal is unlikely to result in a long-term reduction in genetic fitness by creating a barrier to movement between areas of habitat critical to the species. Furthermore, the proposal would result in the removal of a small amount of available habitat.

Conclusion of EPBC Act Significant Impact Guidelines (DoE 2013) for Swift Parrot.

A referral is not recommended for the Swift Parrot, as:

- the proposal would not adversely affect critical habitat (e.g. further fragment the surrounding bushland or remove essential habitat)
- the proposal is unlikely to cause the species to decline
- the proposal is unlikely to substantially interfere with the recovery of the species
- the proposal would not impact breeding habitat or areas of abundant favoured feed trees.

s22

From: s22
Sent: Tuesday, 8 May 2018 5:19 PM
To: 'Ghazi Sangari'
Cc: s22
Subject: RE: 182 lot residential subdivision, Berringer and Cunjurong Roads, Manyana, NSW

Good afternoon Mr Sangari

I am writing to advise you that the Department has reviewed the information provided on 3 May 2018 for the proposed residential subdivision at Berringer and Cunjurong Point roads, Manyana. We have some concerns about the ecological assessment and conclusions drawn by your consultants regarding impacts to matters of national environmental significance, and would like to discuss these with you and/or your consultant in person.

Could we organise for a site visit for next week? We would prefer Thursday 10th or Friday 11th May. Happy to discuss.

Cheers
s22

s22
Southern NSW & ACT Assessments
(02) 6274 s22 | s22 @environment.gov.au

From: Ghazi Sangari [mailto:ghazi@ozyhomes.com.au]
Sent: Thursday, 3 May 2018 9:07 AM
To: s22
Subject: RE: 182 lot residential subdivision, Berringer and Cunjurong Roads, Manyana, NSW [SEC=UNCLASSIFIED]

HELLO s22

Following your letter we have looked further into the literature, database review and carried out further field assessments,
And attached is response from our consultant.

The conclusion is not to refer. Please read attached.

For further information please feel free to contract us.

Ghazi Sangari
0414357112
Ozy Homes Pty Ltd
s47F
Ph: 02 9709 4222
s47F

From: s22 [mailto:s22 @environment.gov.au]
Sent: 02 May, 2018 4:14 PM
To: 'Ozy Homes'
Subject: RE: 182 lot residential subdivision, Berringer and Cunjurong Roads, Manyana, NSW [SEC=UNCLASSIFIED]

Dear Mr Sangari,

I'm following up on the below email to s22 , as you indicated the Department would receive a response by mid-April. Could you please call me tomorrow to discuss?

Cheers
s22

s22
Southern NSW & ACT Assessments
(02) 6274 s22 | s22 @environment.gov.au

From: Ozy Homes [mailto:ghazi@ozyhomes.com.au]
Sent: Thursday, 29 March 2018 10:42 AM
To: s22 @environment.gov.au>
Cc: s22 @environment.gov.au>
Subject: Re: 182 lot residential subdivision, Berringer and Cunjurong Roads, Manyana, NSW [SEC=UNCLASSIFIED]

Hello s22
We had recieved your letter just before Christmas and consultants were not back till mid to end of January.

Based on their recommendation we have carried out a detailed site investigation to ensure we do the best we can towards our environment and community. This involves some site work and monitoring which took some time.

We hope to have the final response to you in the next week or two the latest.

Regards

Ghazi Sangari
Ozy Homes Pty Ltd
s47F
Ph: 9790 s47F

On 29 Mar 2018, at 9:50 am, s22 @environment.gov.au> wrote:

Dear Mr Sangari,

I am advised by s22 , the contact officer identified in my letter attached, that she has not received any response as to whether or not you intend to refer your proposal. I would appreciate it if you would respond to the Department, using my contact details below.

Regards,

s22
Director
Southern NSW and ACT Assessments Section
ESD
Department of the Environment and Energy

Office Phone (02) 6274 s22
Mobile: s22

From: s22
Sent: Friday, 22 December 2017 2:52 PM
To: 'ghazi@ozyhomes.com.au' <ghazi@ozyhomes.com.au>
Cc: s22 @environment.gov.au>; s22
s22 @environment.gov.au>; s22 @environment.gov.au>
Subject: 182 lot residential subdivision, Berringer and Cunjurong Roads, Manyana, NSW [SEC=UNCLASSIFIED]

Dear Mr Sangari

Please find attached a letter providing information about how the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) could apply to the above proposal.

I will be providing a hard copy of the letter and attachment via regular mail.

Regards and best wishes for the festive season.

s22
Director
Southern NSW and ACT Assessments Section
ESD
Department of the Environment and Energy

Office Phone (02) 6274 s22
Mobile: s22

s22

From: s47F @swaab.com.au>
Sent: Monday, 14 May 2018 3:13 PM
To: s22 ; s22 ; s22
Cc: Ghazi Sangari; Lucas McKinnon
Subject: 182 lot subdivision at Berringer Road, Cunjurong Point Road and Sunset Strip, Manyana [SWA-AB.FID227727]
Attachments: Letter to Dept of Environment.pdf

Categories: Copied to SharePoint

Dear Sir / Madam,

Please find attached our letter in relation to the approved 182 lot subdivision at Berringer Road, Cunjurong Point Road and Sunset Strip, Manyana.

Kind regards

s47F

Swaab Attorneys
D s47F | T +61 2 9233 5544 | F +61 2 9233 5400
E s47F @swaab.com.au | www.swaab.com.au
Level 1, 20 Hunter Street SYDNEY NSW 2000 | DX 522 SYDNEY

14 May 2018

SWAAB

SWAAB Attorneys

ABN 71 028 846 652

Level 1, 20 Hunter Street
SYDNEY NSW 2000

DX 522 SYDNEY NSW

T +61 2 9233 5544
F +61 2 9233 5400

www.swaab.com.au

Department of the Environment and Energy
GPO Box 787
Canberra ACT 2601

Attention: s22 , s22 and s22

Dear Sir / Madam

Major Project Application No. 05-059 for a 182 lot subdivision at Berringer Road, Cunjurong Point Road and Sunset Strip, Manyana

1 We act for Ozy Homes Pty Ltd, the developer for the abovementioned subdivision.

2 We understand that:

2.1 The Department issued an advisory letter to our client on 22 December 2017 detailing processes under the *Environment Protection and Biodiversity Conservation Act 1999* **(the Act)** and making reference to nationally protected matters of potential relevance to the subdivision.

2.2 In response to the Department's letter, our client exercised due care and diligence by commissioning Ecoplanning to further investigate and analyse potential matters of national environmental significance **(MNES)**. In a letter dated 17 April 2018, Ecoplanning considered MNES raised by the Department in addition to other MNES identified in a literature review or field survey that have the potential to occur on the development site and may be impacted by the approved subdivision. Amongst Ecoplanning's findings were that a spotted-tailed quoll (*Dasyurus maculatus*) had previously been recorded south of the study area in June 2006 but that impacts were not considered significant and that a referral was not recommended on the basis that:

- the proposal would not adversely affect critical habitat for the quoll;
- the proposal is unlikely to cause the species to decline; and
- the proposal is unlikely to substantially interfere with the recovery of the species.

2.3 A departmental officer has expressed reservation in respect of Ecoplanning's findings regarding the spotted-tailed quoll.

3 Based upon the evidence to hand and expert findings within Ecoplanning's letter dated 17 April 2018, our client remains of the view

Partner
s47F

Contact
s47F
s47F
s47F@swaab.com.au

Our ref
171367

By email
s22 @environment.gov.au;
s22 @environment.gov.au;
s22 @environment.gov.au

that impacts for the quoll are not significant and that a referral to the Department under the Act is not required.

4 If the Department maintains an alternate view from that of our client, we ask that it nominate by close of business on Friday 18 May 2018 the precise rationale or reasoning behind its alternate view. Failing the receipt of such information, our client will proceed to progress its subdivision having formed the view that a referral to the Department under the Act is not required.

Yours faithfully

s47F

s47F

s22

From: s22
Sent: Tuesday, 5 June 2018 9:34 AM
To: s47F @swaab.com.au'
Cc: Farrant, Kim; s22 ; s22 ; s22 ; s22
Subject: RE: Berringer and Cunjurong Point Roads, Manyana, NSW (your ref: 171367) [SEC=UNCLASSIFIED]
Attachments: Manyana-Dept response to SWAAB-SIGNED.pdf

Dear s47F

Please find attached s22 response regarding the proposed 182 lot residential subdivision at Berringer and Cunjurong Point Roads, Manyana, NSW (your ref: 171367).

Cheers
s22

s22
Southern NSW & ACT Assessments
(02) 6274 s22 | s22 @environment.gov.au

From: s22
Sent: Friday, 1 June 2018 5:16 PM
To: s47F @swaab.com.au'
Cc: Farrant, Kim ; s22 ; s22 ; s22 ; s22
Subject: Berringer and Cunjurong Point Roads, Manyana, NSW (your ref: 171367) [SEC=UNCLASSIFIED]

Dear s47F

I refer to my previous email of 18 May and our recent telephone discussion concerning the proposed 182 lot residential subdivision at Berringer and Cunjurong Point Roads, Manyana, NSW (your ref: 171367).

As advised, we are preparing a more thorough reply to your 14 May letter, and expect to provide you advice on Monday. I regret the delay in replying.

Yours sincerely,

s22
Director
Southern NSW and ACT Assessments Section
ESD
Department of the Environment and Energy

Office Phone (02) 6274 s22
Mobile: s22

s47F

SWAAB Attorneys
Level 1, 20 Hunter Street
SYDNEY NSW 2000

Dear s47F

I am writing to you about the application of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) to the 182 lot residential subdivision at Berringer and Cunjurong Point Roads, Manyana, NSW (your ref: 171367) proposed by Ozy Homes.

The Department of the Environment and Energy (the Department) has considered both your letter of 14 May 2018, and Ecoplanning's letter of 17 April 2018, in relation to the above development, in particular that referral of the proposal for a decision under the EPBC Act is not warranted.

I note your decision not to refer this development is based on a belief that no significant impacts are likely on matters of national environmental significance protected under the EPBC Act. The Department considers that the information provided to support this conclusion is insufficient, in particular noting that:

- No soil or vegetation plot data has been provided that confirms the vegetation community on site. It is understood that the vegetation may support diagnostic species of the critically endangered Illawarra and south coast lowland forest and woodland ecological community.
- A number of threatened fauna species, including the Southern Brown Bandicoot, Swift Parrot, Greater Glider, Spotted-tailed Quoll and migratory species are known to occur on or in close proximity to the site. However, the information provided does not adequately discuss the type and extent of habitat usage on site by these species. The Department considers that their occurrence on site warrants further investigation.
- It does not appear that targeted surveys, particularly for threatened flora species, have been conducted in accordance with Commonwealth guidelines.
- Surveys are not contemporaneous to be able to determine the extent that the site supports threatened species.
- Avoidance, mitigation and management measures have not been discussed.

Based on information currently available to the Department, I am unable to establish that the development would be unlikely to require further assessment and approval under the EPBC Act.

Your client, Ozy Homes, should be aware that in progressing with this development without a decision under the EPBC Act, they carry all associated risks. As I have previously

indicated, substantial penalties may apply to a person who takes such an action without approval. For your information, I have forwarded a copy of this letter to the Department's Office of Compliance.

If you have any further questions about the application of the EPBC Act to the proposed action, please contact me at s22 or 6274 s22

Yours sincerely

s22

Director
Southern NSW & ACT Assessments
4 June 2018

s47F

SWAAB Attorneys
Level 1, 20 Hunter Street
SYDNEY NSW 2000

Dear s47F

I am writing to you about the application of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) to the 182 lot residential subdivision at Berringer and Cunjurong Point Roads, Manyana, NSW (your ref: 171367) proposed by Ozy Homes.

The Department of the Environment and Energy (the Department) has considered both your letter of 14 May 2018, and Ecoplanning's letter of 17 April 2018, in relation to the above development, in particular that referral of the proposal for a decision under the EPBC Act is not warranted.

I note your decision not to refer this development is based on a belief that no significant impacts are likely on matters of national environmental significance protected under the EPBC Act. The Department considers that the information provided to support this conclusion is insufficient, in particular noting that:

- No soil or vegetation plot data has been provided that confirms the vegetation community on site. It is understood that the vegetation may support diagnostic species of the critically endangered Illawarra and south coast lowland forest and woodland ecological community.
- A number of threatened fauna species, including the Southern Brown Bandicoot, Swift Parrot, Greater Glider, Spotted-tailed Quoll and migratory species are known to occur on or in close proximity to the site. However, the information provided does not adequately discuss the type and extent of habitat usage on site by these species. The Department considers that their occurrence on site warrants further investigation.
- It does not appear that targeted surveys, particularly for threatened flora species, have been conducted in accordance with Commonwealth guidelines.
- Surveys are not contemporaneous to be able to determine the extent that the site supports threatened species.
- Avoidance, mitigation and management measures have not been discussed.

Based on information currently available to the Department, I am unable to establish that the development would be unlikely to require further assessment and approval under the EPBC Act.

Your client, Ozy Homes, should be aware that in progressing with this development without a decision under the EPBC Act, they carry all associated risks. As I have previously

indicated, substantial penalties may apply to a person who takes such an action without approval. For your information, I have forwarded a copy of this letter to the Department's Office of Compliance.

If you have any further questions about the application of the EPBC Act to the proposed action, please contact me at s22 or 6274 s22

Yours sincerely

s22
Director
Southern NSW & ACT Assessments
June 2018

s22

From: s22
Sent: Tuesday, 14 August 2018 3:57 PM
To: 'Lucas McKinnon'
Cc: s22 ; ghazi@ozyhomes.com.au; jeff@deepriver.com.au; s47F @swaab.com.au
Subject: RE: Berringer and Cunjurong Point Roads, Manyana, NSW (your ref: 171367) [SWA-AB.FID227727] [SEC=UNCLASSIFIED]
Attachments: Manyana-Dept response to ELA SIGNED.pdf

Hi Lucas

Please see attached letter in response to the additional information provided to the Department for the proposed Manyana development.

Happy to discuss

Cheers
s22

s22
Southern NSW & ACT Assessments
Department of the Environment and Energy
(02) 6274 s22 | s22 @environment.gov.au

From: Lucas McKinnon [mailto:Lucas.McKinnon@ecoplanning.com.au]
Sent: Friday, 10 August 2018 12:12 PM
To: s22
Cc: s22 ; ghazi@ozyhomes.com.au; jeff@deepriver.com.au; s47F @swaab.com.au
Subject: RE: Berringer and Cunjurong Point Roads, Manyana, NSW (your ref: 171367) [SWA-AB.FID227727] [SEC=UNCLASSIFIED]

Thanks s22 , much appreciated.

Have a good weekend.

Cheers, Lucas
Email sent from phone
On 10 Aug. 2018, at 09:11, s22 @environment.gov.au> wrote:

> Hi Lucas
>
> I'll be able to give you a response next week.
>
> Cheers
> s22

From: Lucas McKinnon [mailto:Lucas.McKinnon@ecoplanning.com.au]
Sent: Wednesday, 8 August 2018 11:33 PM
To: s22 @environment.gov.au>
Cc: s22 @environment.gov.au>
Subject: RE: Berringer and Cunjurong Point Roads, Manyana, NSW (your ref: 171367) [SWA-AB.FID227727] [SEC=UNCLASSIFIED]

Thanks s22 . Any chance you've had a look at our response? Happy to chat if you have some time for a phone chat?

Cheers, Luke

Lucas McKinnon
Director | Principal Ecologist | Accredited Biobanking (#76) and BAM Assessor (#17012)
M: 0421 603 549

From: s22
Sent: Friday, 3 August 2018 11:41 AM
To: Lucas McKinnon <Lucas.McKinnon@ecoplanning.com.au>
Cc: 'Jeff Bulfin' <jeff@deepriver.com.au>; s47F @swaab.com.au>; Ghazi Sangari <ghazi@ozyhomes.com.au>; s22 @environment.gov.au>
Subject: RE: Berringer and Cunjurong Point Roads, Manyana, NSW (your ref: 171367) [SWA-AB.FID227727] [SEC=UNCLASSIFIED]

Thanks Lucas, we'll review the response and get back to you.

Have a good weekend,
s22

From: Lucas McKinnon [mailto:Lucas.McKinnon@ecoplanning.com.au]
Sent: Thursday, 2 August 2018 10:43 AM
To: s22 @environment.gov.au>
Cc: 'Jeff Bulfin' <jeff@deepriver.com.au>; s47F @swaab.com.au>; Ghazi Sangari <ghazi@ozyhomes.com.au>; s22 @environment.gov.au>
Subject: RE: Berringer and Cunjurong Point Roads, Manyana, NSW (your ref: 171367) [SEC=UNCLASSIFIED] [SWA-AB.FID227727]

Hi s22 ,

I have been asked by s47F and the proponent to respond to the letter from s22 , regarding the proposal at Cunjurong Point Rd, Manyana. Please see attached a letter and supporting documents. Please note with regards to the Southern Brown Bandicoot records, we have made extensive enquiries as to the validity of this record, as outlined in the report, s47F has reviewed the report and provides a pers comm.. As discussed in previous correspondence, this species is highly unlikely in the area and it would appear this is most likely a mis-ID.

I would be happy to discuss any of the matters entailed in person or over the phone. Hopefully we will get a chance to discuss briefly at our meeting today.

Thanks and best regards, Lucas

Lucas McKinnon
Director | Principal Ecologist | Accredited Biobanking (#76) and BAM Assessor (#17012)
M: 0421 603 549

From: s22 @environment.gov.au]
Sent: Tuesday, 5 June 2018 9:34 AM
To: s47F @swaab.com.au>
Cc: Farrant, Kim <Kim.Farrant@environment.gov.au>; s22 @environment.gov.au>; s22 s22 @environment.gov.au>; s22 @environment.gov.au>; s22 @environment.gov.au>
Subject: RE: Berringer and Cunjurong Point Roads, Manyana, NSW (your ref: 171367) [SEC=UNCLASSIFIED]

Dear s47F

Please find attached s22 response regarding the proposed 182 lot residential subdivision at Berringer and Cunjurong Point Roads, Manyana, NSW (your ref: 171367).

Cheers
s22

s22
Southern NSW & ACT Assessments
(02) 6274 s22 | s22 @environment.gov.au

From: s22
Sent: Friday, 1 June 2018 5:16 PM
To: s47F @swaab.com.au>
Cc: Farrant, Kim <Kim.Farrant@environment.gov.au>; s22 @environment.gov.au>; s22 s22 @environment.gov.au>; s22 @environment.gov.au>; s22 s22 @environment.gov.au>
Subject: Berringer and Cunjurong Point Roads, Manyana, NSW (your ref: 171367) [SEC=UNCLASSIFIED]

Dear s47F

I refer to my previous email of 18 May and our recent telephone discussion concerning the proposed 182 lot residential subdivision at Berringer and Cunjurong Point Roads, Manyana, NSW (your ref: 171367).

As advised, we are preparing a more thorough reply to your 14 May letter, and expect to provide you advice on Monday. I regret the delay in replying.

Yours sincerely,

s22
Director
Southern NSW and ACT Assessments Section
ESD
Department of the Environment and Energy

Office Phone (02) 6274 s22
Mobile: s22

Level 1, 20 Hunter Street SYDNEY NSW 2000 | DX 522 SYDNEY

Australian Government
Department of the Environment and Energy

Lucas McKinnon
Director & Principal Ecologist
Ecoplanning Pty Ltd
s47F

Dear Mr McKinnon,

Thank you for providing a copy of your letter, dated 27 July 2018, regarding Ozy Homes' proposal for a 182 lot residential subdivision at Berringer and Cunjurong Point Roads, Manyana, NSW.

I note from your letter that Ozy Homes has undertaken a substantial amount of work in considering its obligations under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and assessing the proposal's potential impacts on matters of national environmental significance (MNES).

Based on the information that you have made available to the Department so far, I do not consider a referral is warranted for potential impacts on MNES. Please note that this does not constitute legal or other professional advice, or any approval or decision by the Department under the EPBC Act, and the proponent of the proposal remains responsible at all times for compliance with the law.

If you have any further questions about this matter, please contact s22, Southern NSW & ACT Assessments Section by email to s22 @environment.gov.au or phone, 02 6274 s22

Yours sincerely

s22

Director
Southern NSW & ACT Assessments
14 August 2018

Australian Government
Department of the Environment and Energy

Lucas McKinnon
Director & Principal Ecologist
Ecoplanning Pty Ltd
s47F

Dear Mr McKinnon,

Thank you for providing a copy of your letter, dated 27 July 2018, regarding Ozy Homes' proposal for a 182 lot residential subdivision at Berringer and Cunjurong Point Roads, Manyana, NSW.

I note from your letter that Ozy Homes has undertaken a substantial amount of work in considering its obligations under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and assessing the proposal's potential impacts on matters of national environmental significance (MNES).

Based on the information that you have made available to the Department so far, I do not consider a referral is warranted for potential impacts on MNES. Please note that this does not constitute legal or other professional advice, or any approval or decision by the Department under the EPBC Act, and the proponent of the proposal remains responsible at all times for compliance with the law.

If you have any further questions about this matter, please contact s22 Southern NSW & ACT Assessments Section by email to s22 @environment.gov.au or phone, 02 6274 s22

Yours sincerely

s22
Director
Southern NSW & ACT Assessments
August 2018

s22

From: s22
Sent: Friday, 18 May 2018 4:51 PM
To: s47F @swaab.com.au'
Cc: s22 ; Farrant, Kim; s22 ; s22
Subject: Manyana , NSW - ref 171367 [SEC=UNCLASSIFIED]

Dear s47F

The Department of the Environment and Energy is considering your letter of 14 May 2018, and Ecoplanning's letter of 17 April 2018, regarding the proposed 182 lot residential subdivision at Berringer and Cunjurong Point Roads, Manyana, NSW (your ref: 171367).

We note that your client has undertaken a self-assessment for impacts to matters of national environmental significance, setting out their belief that a referral is not required under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

Whilst we are preparing a more thorough reply to your 14 May letter, the Department is yet to form a view whether the proposed subdivision requires referral under the Act. Please note that it is an offence under the EPBC Act to take an action which is likely to have a significant impact on a protected matter without approval.

Yours sincerely,

s22
Director
Southern NSW and ACT Assessments Section
ESD
Department of the Environment and Energy

Office Phone (02) 6274 s22
Mobile: s22

s22

From: s22
Sent: Wednesday, 2 May 2018 4:14 PM
To: 'Ozy Homes'
Subject: RE: 182 lot residential subdivision, Berringer and Cunjurong Roads, Manyana, NSW [SEC=UNCLASSIFIED]

Dear Mr Sangari,

I'm following up on the below email to s22, as you indicated the Department would receive a response by mid-April. Could you please call me tomorrow to discuss?

Cheers
s22

s22
Southern NSW & ACT Assessments
(02) 6274 s22 | s22 @environment.gov.au

From: Ozy Homes [mailto:ghazi@ozyhomes.com.au]
Sent: Thursday, 29 March 2018 10:42 AM
To: s22
Cc: s22
Subject: Re: 182 lot residential subdivision, Berringer and Cunjurong Roads, Manyana, NSW [SEC=UNCLASSIFIED]

Hello s22
We had recieved your letter just before Christmas and consultants were not back till mid to end of January.

Based on their recommendation we have carried out a detailed site investigation to ensure we do the best we can towards our environment and community. This involves some site work and monitoring which took some time.

We hope to have the final response to you in the next week or two the latest.

Regards

Ghazi Sangari
Ozy Homes Pty Ltd
s47F

On 29 Mar 2018, at 9:50 am, s22 @environment.gov.au> wrote:

Dear Mr Sangari,

I am advised by s22, the contact officer identified in my letter attached, that she has not received any response as to whether or not you intend to refer your proposal. I would appreciate it if you would respond to the Department, using my contact details below.

Regards,

s22
Director
Southern NSW and ACT Assessments Section
ESD
Department of the Environment and Energy

Office Phone (02) 6274 s22
Mobile: s22

From: s22
Sent: Friday, 22 December 2017 2:52 PM
To: 'ghazi@ozyhomes.com.au' <ghazi@ozyhomes.com.au>
Cc: s22 @environment.gov.au>; s22
s22 @environment.gov.au>; s22 @environment.gov.au>
Subject: 182 lot residential subdivision, Berringer and Cunjurong Roads, Manyana, NSW [SEC=UNCLASSIFIED]

Dear Mr Sangari

Please find attached a letter providing information about how the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) could apply to the above proposal.

I will be providing a hard copy of the letter and attachment via regular mail.

Regards and best wishes for the festive season.

s22
Director
Southern NSW and ACT Assessments Section
ESD
Department of the Environment and Energy

Office Phone (02) 6274 s22
Mobile: s22

Contact Officer: s22
Telephone: 6274 s22
Email: s22 @environment.gov.au

Mr Ghazi Sangari
Ozyhomes Pty/Ltd
s47F

Dear Mr Sangari

Environment Protection and Biodiversity Conservation Act 1999
182 lot residential subdivision, Berringer and Cunjurong Roads, Manyana, NSW

I am writing to provide you with information about the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). I understand that Allen, Price and Associates are considering a 182 lot subdivision at Manyana, NSW. I am writing to explain how the EPBC Act could apply to this proposal.

The EPBC Act is the Australian Government's central piece of environmental legislation. It provides a legal framework to protect and manage the environment, in particular nationally and internationally important flora, fauna, ecological communities and heritage places. Under the EPBC Act, actions that have, or are likely to have, a significant impact on nationally protected matters require approval from the Australian Government Minister for Environment. Based on the available information regarding the location and nature of the proposed action, nationally protected matters considered relevant to the proposed action are as follows: critically endangered Illawarra and south coast lowland forest and woodland ecological community, Greater Glider, Southern Brown Bandicoot, Grey-headed Flying Fox and Large-eared Pied Bat. There are a number of other plant and animal species protected under the EPBC Act that may also be occurring on the site including species of frogs and orchids.

For your convenience, I have enclosed a Protected Matters Report for the proposal site. The report lists a number of protected matters that may occur in the area for your consideration. Please note that the enclosed report is based on the limited information available to the Department at this time and may not reflect the true extent of protected matters that may be impacted by the proposed action. You may wish to run your own Protected Matters Report on the Department's website at http://www.environment.gov.au/epbc/protected-matters-search-tool.

A person proposing to take an action that is likely to have a significant impact on a matter of national environmental significance must refer their proposal for assessment and approval under the EPBC Act. Substantial penalties apply to a person who takes such an action without approval.

Not all actions affecting matters protected by the EPBC Act will have a significant impact and require approval. Guidelines for determining whether the impact of an action is likely to be significant are available from the Department's website at http://www.environment.gov.au/epbc/policy-statements. These Guidelines are designed to

help you decide whether you need to refer your proposal to the Department. If the question of significance is unclear, you can refer your proposal and the Department will advise whether or not approval is needed within 20 business days.

Instructions for submitting a referral through the Department's online services, together with further information on the EPBC Act, is available on the Department's website at http://www.environment.gov.au/protection/environment-assessments/assessment-and-approval-process.

Please call or email the contact officer, s22 on 6274 s22 within 28 days of the date of this letter to advise whether or not you intend to refer your proposal. You may also wish to arrange a pre-referral meeting to discuss whether the action should be referred. Further information is available at http://www.environment.gov.au/epbc/publications/pre-referral-meeting-guidance.

Should you have any queries about the matters raised in this letter please call the contact officer as above. Alternatively, if you would like further information about the referral process, you may contact the Referrals Gateway on 02 6274 2496.

Yours sincerely

s22

Director
NSW Assessments (South) and ACT

22 December 2017

COLIN BIGGERS & PAISLEY LAWYERS

Our Ref: TAN.NZW.2003084

20 May 2020

The Hon. Sussan Ley MP
Minister for the Environment
PO Box 6022
House of Representatives
Parliament House
Canberra ACT 2600

By online submission

Dear Minister Ley

Major Project MP05_0059
Lot 823 in DP 247285 and Lot 172 in DP 755923 at Manyana

1. We act for Ozy Homes Pty Limited (**Ozy Homes**) in relation to the above Major Project at Manyana, on the NSW South Coast.

2. We understand the Environmental Defenders Office (**EDO**) has written to you on behalf of its client, Manyana Matters, requesting that you exercise your powers under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (**EPBC Act**) to procure a referral.

3. The purpose of this letter is to notify you of the steps our client is currently taking to inform itself as to whether referral is required under the EPBC Act.

4. Our client is aware of its obligations under the EPBC Act and that these obligations exist in addition to compliance with NSW planning and environmental laws, which would otherwise enable the commencement works for stage 1 of the project.

5. You may or may not also be aware that our client has already corresponded with the Commonwealth in relation to this project. The Commonwealth noted in August 2018 that Ozy Homes has undertaken a substantial amount of work in considering its obligations under the EPBC Act and assessing the proposal's potential impacts on matters of national environmental significance (**MNES**). The relevant Director at the Department of Environment and Energy stated "*I do not consider a referral is warranted for potential impacts on MNES*".

6. The recent bushfires of December 2019 - January 2020 have obviously occurred since then, and our client is supplementing the work carried out to date with new ecological advice.

COLIN BIGGERS & PAISLEY PTY LTD
ABN 28 166 080 682
T +61 2 8281 4555
F +61 2 8281 4567

Level 42
2 Park Street
Sydney NSW 2000
Australia

GPO Box 214
Sydney NSW 2001
Australia

BRISBANE MELBOURNE SYDNEY

7. Whilst our client does not currently hold the requisite opinion that would trigger an obligation to refer the matter to the Commonwealth under the EPBC Act, for abundant caution, our client has had a team of ecologists on site over the last few weeks looking at the cumulative impacts of the recent bushfire. These are the same ecologists who liaised with the Commonwealth in August 2018.

8. Our client's opinion as to whether the action will have, or is likely to have, a significant impact on a MNES will be informed by the results of their conclusions. An opinion will be formed in the coming week taking into account the most up to date advice from our client's ecologist based on the latest field data.

9. Our client understands its obligations under the EPBC Act, has engaged the necessary experts required, and if those experts' most recent investigations result in the formation of an opinion that referral is required, then that is what will occur.

10. In these circumstances, we see no need to procure a referral which is what the EDO sought from you. Nevertheless, if your office or the Department would like any further information from us on the above matters, then please do not hesitate to contact us.

Yours faithfully

s47F

Partner
Email: s47F @cbp.com.au
Direct Line: 02 8281 s47F

Contact: s47F
Senior Associate
Email: s47F @cbp.com.au
Direct Line: 02 8281 s47F

s22

From: s22
Sent: Friday, 18 May 2018 4:35 PM
To: s22 ; s22
Cc: s22 ; Farrant, Kim
Subject: RE: Manyana email response [SEC=UNCLASSIFIED]

Hi s22

As discussed – changes below for consideration.

s22

From: s22
Sent: Friday, 18 May 2018 4:11 PM
To: s22 ; s22
Cc: s22 ; Farrant, Kim
Subject: FW: Manyana email response [SEC=UNCLASSIFIED]
Importance: High

Hi s22 and s22 ,

Can we come down and discuss the draft email below please? I would like to send off shortly.

Cheers, s22

From: s22
Sent: Friday, 18 May 2018 3:01 PM
To: s22 @environment.gov.au>
Subject: Manyana email response [SEC=UNCLASSIFIED]

Hi s22

Can you please have a look?

Ta

Dear s47F

s47C

s47C

Cheers, s22

s22
Director
Southern NSW and ACT Assessments Section
ESD
Department of the Environment and Energy

Office Phone (02) 6274 s22
Mobile: s22

s22

From: s22
Sent: Thursday, 31 May 2018 1:08 PM
To: s22
Subject: RE: Manyana , NSW - ref 171367 [SEC=UNCLASSIFIED]

s22 That looks good

s22 | **Assistant Director** |
Compliance Section
Office of Compliance
Department of Environment and Energy
GPO Box 787 Canberra ACT 2601
T: **02 6274** s22 | M: s22
s22 @environment.gov.au

From: s22
Sent: Wednesday, 30 May 2018 4:20 PM
To: s22
Subject: FW: Manyana , NSW - ref 171367 [SEC=UNCLASSIFIED]

Hi s22 , do you think the below response is ok? Or do we have to elaborate?

Cheers, s22

s22 - out of scope - irrelevant material

Dear s47F

I am writing to advise that the Department has reviewed the information provided by Ecoplanning, on behalf of Ozy Homes, for the proposed 182 lot subdivision at Berringer and Cunjurong Roads, Manyana.

s47C

Yours sincerely

From: s22
Sent: Friday, 18 May 2018 4:51 PM
To: s47F @swaab.com.au>
Cc: s22 @environment.gov.au>; Farrant, Kim <Kim.Farrant@environment.gov.au>; s22 @environment.gov.au>; s22 s22 @environment.gov.au>
Subject: Manyana , NSW - ref 171367 [SEC=UNCLASSIFIED]

Dear s47F

The Department of the Environment and Energy is considering your letter of 14 May 2018, and Ecoplanning's letter of 17 April 2018, regarding the proposed 182 lot residential subdivision at Berringer and Cunjurong Point Roads, Manyana, NSW (your ref: 171367).

We note that your client has undertaken a self-assessment for impacts to matters of national environmental significance, setting out their belief that a referral is not required under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

Whilst we are preparing a more thorough reply to your 14 May letter, the Department is yet to form a view whether the proposed subdivision requires referral under the Act. Please note that it is an offence under the EPBC Act to take an action which is likely to have a significant impact on a protected matter without approval.

Yours sincerely,

s22
Director
Southern NSW and ACT Assessments Section
ESD
Department of the Environment and Energy

Office Phone (02) 6274 s22
Mobile: s22

s22

From: s22
Sent: Tuesday, 5 June 2018 3:24 PM
To: s22
Subject: manyana - weekly report [SEC=UNCLASSIFIED]

Residential subdivision, Berringer & Cunjurong Rds, Manyana, NSW

- The proposal is for a 182 lot residential subdivision in Manyana, which will impact on habitat known to be utilised by threatened species.
- The proposal was brought to the Department's attention through a third party report. The Department has written to the proponent a number of times, advising of their obligations under the EPBC Act.
- Our responses have been discussed with the Office of Compliance.
- We wrote most recently to the legal representatives of the proponent on 5 June 2018, advising that we have outstanding concerns on potential impacts to MNES, and that the proponent carries legal risk in regards to their responsibilities under the EPBC Act.

Recent Brief: N/A
Electorate: Gilmore – Ann Sudmalis MP
SES Contact: Kim Farrant s22); Officer Contact: s22

s22

From: s22
Sent: Tuesday, 12 May 2020 11:01 AM
To: s22
Subject: RE: Manyana Beach Estate - Impacts on MNES [SEC=OFFICIAL]

Yep it won't be any one we normally talk to. It will be the regional planning guys and I'm not sure who I would start with. Lets chat.
s22

From: s22
Sent: Tuesday, 12 May 2020 10:57 AM
To: s22
Cc: s22 ; s22 ; s22
Subject: RE: Manyana Beach Estate - Impacts on MNES [SEC=OFFICIAL]

No it didn't get resolved. I'm waiting to hear back from s47B(a)

s22, do you know who in DPIE would be best to talk to about this? When we did the third party report back in 2018 I spoke to someone in compliance, but given the potential halt to clearing it might be another area of planning?

From: s22 @environment.gov.au>
Sent: Tuesday, 12 May 2020 9:06 AM
To: s22 @environment.gov.au>; s22 @environment.gov.au>; s22 s22 @environment.gov.au>
Cc: s22 @environment.gov.au>
Subject: FW: Manyana Beach Estate - Impacts on MNES [SEC=OFFICIAL]

Good morning all,

Does this require further discussion at 11:00 or was it fully resolved last week in my absence?

Cheers, s22

From: EPBC Referrals <EPBC.Referrals@environment.gov.au>
Sent: Tuesday, 12 May 2020 8:45 AM
To: Compliance <Compliance@environment.gov.au>
Cc: s22 @environment.gov.au>; EPBC Referrals <EPBC.Referrals@environment.gov.au>
Subject: FW: Manyana Beach Estate - Impacts on MNES [SEC=OFFICIAL]

Hi s22 and Compliance Team

For appropriate action:

Please see the email trail below regarding a development known as the Manyana Beach Estate on the NSW south coast.

The complainant indicated that development is imminent and was to have commenced on 6 May 2020 but has been held up for a fortnight. Depending on the commencement of action, this could sit with either of your sections as a Third Party Report or as a potential breach of compliance with the EPBC Act.

Kind regards

Referrals Gateway | Environment Approvals Division
Department of Agriculture, Water and the Environment
GPO Box 787, CANBERRA ACT 2601
Email: EPBC.Referrals@environment.gov.au | Web: www.awe.gov.au | Phone: 02 6274 2496

From: s47F
Sent: Thursday, 7 May 2020 11:21 AM
To: EPBC Referrals <EPBC.Referrals@awe.gov.au>
Cc: EPBC Referrals <EPBC.Referrals@environment.gov.au>
Subject: Re: Manyana Beach Estate - Impacts on MNES [SEC=OFFICIAL]

Thank you for your response.

This action was due to commence yesterday and has been postponed for 2 weeks for negotiations between the developer and the community.

Sent from my iPhone

On 7 May 2020, at 10:11 am, EPBC Referrals <EPBC.Referrals@awe.gov.au> wrote:

> Good morning s47F
>
> Thank you for your email. The Referrals Gateway does not have visibility of this action and will need to direct your email to the appropriate area within the Department for their consideration.
>
> Could you please indicate whether this action is proposed or has commenced? We need this information to best direct your query.
>
> Kind regards
>
> Referrals Gateway | Assessments and Governance Branch
> Department of Agriculture, Water and the Environment
> : GPO Box 787, CANBERRA ACT 2601
> : EPBC.Referrals@environment.gov.au | : www.environment.gov.au | ☎: 02 6274 2496

From: s47F
Sent: Wednesday, 6 May 2020 5:38 PM
To: EPBC Referrals <EPBC.Referrals@environment.gov.au>
Subject: Manyana Beach Estate - Impacts on MNES

I am writing to you to express my concern about the Manyana Beach Estate (you may have heard of this issue already). I'll be brief. There is a small patch of high quality remnant bush land approved to be cleared. This area is suitable for many threatened species (under the EPBC and BE Acts) with numerous historically and recent records. Following the bushfires that ravaged the area, this bush is even more critical to all species, threatened or protected.

Threatened species known to occur on the site listed under the **EPBC Act** and/or BC Act are as follows:

- Greater Glider
- Southern Brown Bandicoot
- Grey-headed Flying-fox
- Large-eared Pied Bat; and
- Swift Parrot.

Additional species known to occur in the locality, but not recorded on the site (yet!) including Giant Burrowing Frog, Stuttering Frog, Little John's Tree Frog, Eastern Bristlebird, Regent Honeyeater, Long-nosed Potoroo, Spotted-tail Quoll, New Holland Mouse and Smoky Mouse. Along with flora species: Biconvex Paperbark, Magenta Lilly Pilly, Dense Cordrush and Chef's Cap Correa, Pterostylis vernalis, Genoplesium baueri, Rhizanthella slateri, Caladenia tessellata, Cryptostylis hunteriana; and Genoplesium vernale.

It is imperative that this area be saved and the DA approval be re-assessed. The original environmental assessment was disgustingly vague and did not provide accurate assessment. **There will be serious and irreversible impacts on MNES** if this goes ahead! Please find attached, for you reference, another senior ecologist's summarized points on the matter.

Can you please stop or pause this work and have this land reassessed. This clearing and loss of incredibly important bushland will have irreversible impacts!! Please confirm your receipt of this email and a reply with your proposed actions.

Kind regards
s47F

s22

From: s22
Sent: Wednesday, 13 May 2020 9:33 AM
To: s22
Subject: FW: Manyana Beach Estate - Impacts on MNES [SEC=OFFICIAL]

FYI response from s22 /s22 . I just spoke to the enviro manager at Shoalhaven Council (nothing they can do as it's a NSW Govt approved development s47B(a) s47B(a) and she'll get me a contact at DPIE to see where the negotiations are at.

From: s22 @environment.gov.au>
Sent: Wednesday, 13 May 2020 8:41 AM
To: s22 @environment.gov.au>
Cc: s22 @environment.gov.au>
Subject: RE: Manyana Beach Estate - Impacts on MNES [SEC=OFFICIAL]

H s22

Just to add to s22 advice, the priority plants for emergency intervention following the 2019/20 bushfires have been published here: http://www.environment.gov.au/biodiversity/bushfire-recovery/priority-plants

Regards, s22 .

s22
Director, Species Information and Policy Section, Protected Species and Communities Branch
s22
Working from home as a COVID-19 precaution

From: s22 @environment.gov.au>
Sent: Tuesday, 12 May 2020 7:37 PM
To: s22 @environment.gov.au>
Cc: s22 @environment.gov.au>
Subject: RE: Manyana Beach Estate - Impacts on MNES [SEC=OFFICIAL]

Hi s22

Yes I remember this one. Very different context now.

My advice would be to frame your approach /response as follows:

Of the species formerly of interest and declared not be significantly impacted (mainly due to ample adjacent habitat in national parks which is now not there) many have now been identified by the Bushfire Response Expert Panel as species requiring urgent management intervention (greater glider, grey-headed flying-fox, spot tailed quoll, koala). Plant priorities are yet to but publicly announced but currently in process of being identified.

Although yet to be outlined in detail, the Panels report outlines 2 key actions for these species as follows:

'Two priority actions should be carried out for all high priority species: 1) Rapid on-ground surveys to establish extent of population loss and provide a baseline for ongoing monitoring. 2) Protecting unburnt areas within or adjacent to recently burnt ground that provide refuge, as well as unburnt areas that are not adjacent to burnt areas, especially from extensive, intense fire.

s47C

All this is available here : https://www.environment.gov.au/biodiversity/bushfire-recovery/priority-animals

Hope this helps.

s22
Threatened Species Officer
Department of Agriculture, Water and the Environment
02 6275 s22
s22 @awe.gov.au

From: s22 @environment.gov.au>
Sent: Tuesday, 12 May 2020 6:07 PM
To: s22 @environment.gov.au>
Subject: FW: Manyana Beach Estate - Impacts on MNES [SEC=OFFICIAL]

Hi s22

Hope you're well 😊

Can I please get your advice on the potential impacts of a residential subdivision at Manyana on threatened species – you may recall providing advice on this a couple of years ago when we responded to a third party report form the public. We have recently received further corro, including the below, about the development. I understand the site is the only patch of vegetation left after the fires in the region, so we need to determine whether the patch is now important refugia for MNES and the action should be referred. I've attached the original ecological report, and our responses for your info.

In summary:

- DA was approved by NSW in 2008, but they're only starting to develop now
- Council has agreed to a moratorium on clearing in the area
- NSW Government (Planning Minister) may negotiate with the developer to move to another site outside of Manyana: https://www.newcastleherald.com.au/story/6752877/stokes-to-discuss-nsw-land-clearing-halt/
- I'm waiting to hear back from Council/ NSW about where the project is at; it might not proceed in the current location, but we'll still need to respond to the corro

Thanks and happy to discuss
s22

From: EPBC Referrals <EPBC.Referrals@environment.gov.au>
Sent: Tuesday, 12 May 2020 8:45 AM
To: Compliance <Compliance@environment.gov.au>
Cc: s22 @environment.gov.au>; EPBC Referrals <EPBC.Referrals@environment.gov.au>
Subject: FW: Manyana Beach Estate - Impacts on MNES [SEC=OFFICIAL]

Hi s22 and Compliance Team

For appropriate action:

Please see the email trail below regarding a development known as the Manyana Beach Estate on the NSW south coast.

The complainant indicated that development is imminent and was to have commenced on 6 May 2020 but has been held up for a fortnight. Depending on the commencement of action, this could sit with either of your sections as a Third Party Report or as a potential breach of compliance with the EPBC Act.

Kind regards

Referrals Gateway | Environment Approvals Division
Department of Agriculture, Water and the Environment
GPO Box 787, CANBERRA ACT 2601
Email: EPBC.Referrals@environment.gov.au | Web: www.awe.gov.au | Phone: 02 6274 2496

From: s47F
Sent: Thursday, 7 May 2020 11:21 AM
To: EPBC Referrals <EPBC.Referrals@awe.gov.au>
Cc: EPBC Referrals <EPBC.Referrals@environment.gov.au>
Subject: Re: Manyana Beach Estate - Impacts on MNES [SEC=OFFICIAL]

Thank you for your response.

This action was due to commence yesterday and has been postponed for 2 weeks for negotiations between the developer and the community.

Sent from my iPhone

On 7 May 2020, at 10:11 am, EPBC Referrals <EPBC.Referrals@awe.gov.au> wrote:

> Good morning s47F
>
> Thank you for your email. The Referrals Gateway does not have visibility of this action and will need to direct your email to the appropriate area within the Department for their consideration.
>
> Could you please indicate whether this action is proposed or has commenced? We need this information to best direct your query.
>
> Kind regards
>
> Referrals Gateway | Assessments and Governance Branch
> Department of Agriculture, Water and the Environment
> : GPO Box 787, CANBERRA ACT 2601
> : EPBC.Referrals@environment.gov.au | : www.environment.gov.au | : 02 6274 2496
>
> <image001.jpg>

From: s47F
Sent: Wednesday, 6 May 2020 5:38 PM
To: EPBC Referrals <EPBC.Referrals@environment.gov.au>
Subject: Manyana Beach Estate - Impacts on MNES

I am writing to you to express my concern about the Manyana Beach Estate (you may have heard of this issue already). I'll be brief. There is a small patch of high quality remnant bush land approved to be cleared. This area is suitable for many threatened species (under the EPBC and BE Acts) with numerous historically and recent records. Following the bushfires that ravaged the area, this bush is even more critical to all species, threatened or protected.

Threatened species known to occur on the site listed under the **EPBC Act** and/or BC Act are as follows:

- Greater Glider
- Southern Brown Bandicoot
- Grey-headed Flying-fox
- Large-eared Pied Bat; and
- Swift Parrot.

Additional species known to occur in the locality, but not recorded on the site (yet!) including Giant Burrowing Frog, Stuttering Frog, Little John's Tree Frog, Eastern Bristlebird, Regent Honeyeater, Long-nosed Potoroo, Spotted-tail Quoll, New Holland Mouse and Smoky Mouse. Along with flora species: Biconvex Paperbark, Magenta Lilly Pilly, Dense Cordrush and Chef's Cap Correa, Pterostylis vernalis, Genoplesium baueri, Rhizanthella slateri, Caladenia tessellata, Cryptostylis hunteriana; and Genoplesium vernale.

It is imperative that this area be saved and the DA approval be re-assessed. The original environmental assessment was disgustingly vague and did not provide accurate assessment. **There will be serious and irreversible impacts on MNES** if this goes ahead! Please find attached, for you reference, another senior ecologist's summarized points on the matter.

Can you please stop or pause this work and have this land reassessed. This clearing and loss of incredibly important bushland will have irreversible impacts!! Please confirm your receipt of this email and a reply with your proposed actions.

Kind regards
s47F
.

s22

From: s22
Sent: Friday, 4 May 2018 12:42 PM
To: s22
Subject: Call from s22 (Shoalhaven City Council) [SEC=UNCLASSIFIED]

Categories: Copied to SharePoint

Hey s22 ,

s22 called for you in regards to Manyana, s22 contact number is s22

Thanks ☺

s22

FOI 200510
Document 15

s22

From: s22
Sent: Monday, 4 June 2018 4:46 PM
To: s22
Cc: s22
Subject: Manyana-Dept response to SWAAB [SEC=UNCLASSIFIED]
Attachments: Manyana-Dept response to SWAAB.docx

s22
A suggested minor change (tracked), otherwise I think its good.

s22 | **Assistant Director** |
Compliance Section
Office of Compliance
Department of Environment and Energy
GPO Box 787 Canberra ACT 2601
T: **02 6274** s22 | M: s22
s22 @environment.gov.au

s22

From: noreply@pws.gov.au
Sent: Thursday, 10 May 2018 11:35 AM
To: s22
Cc: s22 ; s22
Subject: MC18-002951 : PDMS Notification - Record Assigned [SEC=UNCLASSIFIED]

SEC=UNCLASSIFIED

s22 has assigned MC18-002951 Manyana development, to FARRANT, Kim. Clearance 9/03/2018 5:00:00 PM.
Requests can be actioned via the PDMS Inbox.

Thank you

PDMS Notification Service

Note: Please do not reply to this message.

SEC=UNCLASSIFIED

s22

From: s22
Sent: Thursday, 7 May 2020 8:27 AM
To: s22 ; s22
Cc: s22 ; s22
Subject: RE: MC20-006218 : PDMS Notification - Record Assigned [SEC=UNCLASSIFIED]

s22

From: s22
Sent: Thursday, 7 May 2020 8:25 AM
To: s22 ; s22
Cc: s22 ; s22
Subject: RE: MC20-006218 : PDMS Notification - Record Assigned [SEC=UNCLASSIFIED]

FYI https://www.theguardian.com/australia-news/2020/may/07/nsw-south-coast-bushland-that-survived-fires-given-reprieve-from-bulldozers

From: s22 @environment.gov.au>
Sent: Wednesday, 6 May 2020 6:11 PM
To: s22 @environment.gov.au>
Cc: s22 @environment.gov.au>; s22 @environment.gov.au>; s22 s22 @environment.gov.au>
Subject: Fwd: MC20-006218 : PDMS Notification - Record Assigned [SEC=UNCLASSIFIED]

Hi s22
Can you please speak to s22 in the first instance. Cheers, s22

Sent from my iPhone

Begin forwarded message:

> **From:** <noreply@pws.gov.au>
> **Date:** 6 May 2020 at 9:48:00 am AEST
> **To:** s22 @environment.gov.au>
> **Subject: MC20-006218 : PDMS Notification - Record Assigned [SEC=UNCLASSIFIED]**
>
> **SEC=UNCLASSIFIED**
>
> s22 has assigned MC20-006218 to s22 This record can be accessed from the following link:
> MC20-006218
>
> | **Record details** *please note if any of the below fields are empty, the associated field is not populated on the record.* | |
> |---|---|
> | **PDR Subject** | INCOMING REFERRAL - Manyana destruction- bushfire and kangaroos |
> | **Processing Instructions** | |

Milestones	Due for: Clearance 18/05/2020 5:00:00 PM Due to **Parliamentary**: 20/05/2020 5:00:00 PM Critical Date: Critical Reason:
Status	Created

For assistance please contact the Parliamentary Helpdesk at s22 or on (02) 6274 s22

Thank you

PDMS Notification Service

Note: Please do not reply to this message.

SEC=UNCLASSIFIED

s22

From: s22
Sent: Wednesday, 20 May 2020 5:36 PM
To: s22
Subject: RE: MEDIA ENQUIRY due 10.30am - Manyana assessment referral [SEC=OFFICIAL]

Thanks

From: s22
Sent: Wednesday, 20 May 2020 5:22 PM
To: s22
Subject: RE: MEDIA ENQUIRY due 10.30am - Manyana assessment referral [SEC=OFFICIAL]

Yep looks good

From: s22 @environment.gov.au>
Sent: Wednesday, 20 May 2020 5:17 PM
To: s22 @environment.gov.au>
Cc: s22 @environment.gov.au>; s22 @environment.gov.au>; s22 s22 @environment.gov.au>; s22 @environment.gov.au>
Subject: FW: MEDIA ENQUIRY due 10.30am - Manyana assessment referral [SEC=OFFICIAL]

Hi all,

My response to the questions (yellow highlight) is in Green highlight and I have altered the 2nd dot point for accuracy. Need to get to Louise by 6pm if possible can you guys check quickly please.

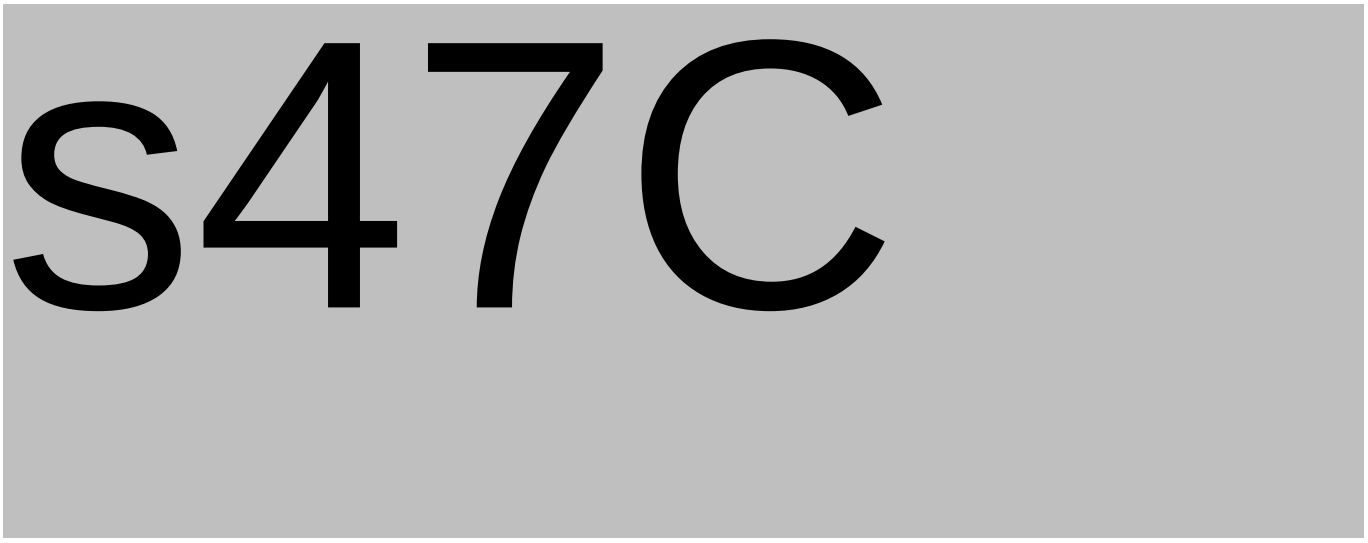
Cheers, s22

From: Media <media@environment.gov.au>
Sent: Wednesday, 20 May 2020 4:40 PM
To: Louise Vickery <Louise.Vickery@environment.gov.au>; s22 @environment.gov.au>
Cc: Geoff Richardson <Geoff.Richardson@environment.gov.au>; s22 s22 @environment.gov.au>; s22 @environment.gov.au>; s22 s22 @environment.gov.au>; s22 @environment.gov.au>; Michelle Croker <Michelle.Croker@environment.gov.au>; s22 @environment.gov.au>; Monica Collins <Monica.Collins@environment.gov.au>; s22 @environment.gov.au>
Subject: RE: MEDIA ENQUIRY due 10.30am - Manyana assessment referral [SEC=OFFICIAL]
Importance: High

Hi Louise and s22

Apologies for sending this through now, we have only just received it back from the MO. s22 has asked for a fact check and for the highlighted questions below to be answered as best as possible.

Could we please have by **6:30pm tonight** – apologies for this deadline, if there is any issues with this please let me know.



- *The Morrison Government is investing $200 million in wildlife and habitat recovery following the bushfires.*
- *This has included detailed assessments of species impacts*

Background:

- *On 14 May 2020, Minister Ley was contacted by the Environmental Defenders Office (EDO) on behalf of Manyana Matters, a local community group based in the Shoalhaven region concerned about impacts to federally listed species as a result of the Manyana residential subdivision.*
- *The EDO requested that the Minister require the proponent of the Manyana proposal to refer it for assessment under the Environment Protection and Biodiversity Conservation Act (EPBC Act). The EDO provided additional information relating to potential impacts of the Manyana proposal on EPBC Act listed threatened species.*
- *The Minister is currently considering this request and has asked the Department for advice on options in response to the additional information provided, especially in light of the recommendations of the Bushfire Response Expert Panel on the impacts of the 2019/2020 bushfires on listed threatened species.*
- *The Minister understands that the NSW government is also considering its response as the planning consent authority.*

Thanks,

s22
Communications Officer
Communications and Engagement Branch
Department of Agriculture, Water and the Environment
GPO Box 787, CANBERRA ACT 2601
T: 02 6274 s22
Media line: 6275 9880
Unless otherwise instructed, this email is background information and not for attribution.

From: Media <media@environment.gov.au>
Sent: Friday, 15 May 2020 12:45 PM
To: Louise Vickery <Louise.Vickery@environment.gov.au>; s22 @environment.gov.au>; s22 s22 @environment.gov.au>
Cc: Geoff Richardson <Geoff.Richardson@environment.gov.au>; s22 @environment.gov.au>; s22 @environment.gov.au>; s22 @environment.gov.au>; Michelle Croker <Michelle.Croker@environment.gov.au>; s22 ; Monica Collins

<Monica.Collins@environment.gov.au>; s22 @environment.gov.au>; Media <media@environment.gov.au>
Subject: RE: MEDIA ENQUIRY due 10.30am - Manyana assessment referral [SEC=OFFICIAL]

Thanks Louise, s22, s22 and team for this response, much appreciated.

Kind regards
s22

From: Louise Vickery s22
Sent: Friday, 15 May 2020 11:13 AM
To: s22 @environment.gov.au>; s22 @environment.gov.au>; Media <media@environment.gov.au>
Cc: Geoff Richardson <Geoff.Richardson@environment.gov.au>; s22 @environment.gov.au>; s22 @environment.gov.au>; s22 @environment.gov.au>; Michelle Croker <Michelle.Croker@environment.gov.au>; s22 @environment.gov.au>; Monica Collins <Monica.Collins@environment.gov.au>; s22 @environment.gov.au>
Subject: FW: MEDIA ENQUIRY due 10.30am - Manyana assessment referral [SEC=OFFICIAL]

Good response thank you all for your input / quick turnaround.

FYI on below.

s47B(a)

Regards Louise

From: Louise Vickery <Louise.Vickery@environment.gov.au>
Sent: Friday, 15 May 2020 11:02 AM
To: Media <media@environment.gov.au>
Cc: Michelle Croker <Michelle.Croker@environment.gov.au>; s22 @environment.gov.au>
Subject: Fwd: MEDIA ENQUIRY due 10.30am - Manyana assessment referral [SEC=OFFICIAL]

Dear Media

Please find cleared response below.

Apologies I am sending by phone as just lost connection to outlook on computer.

Louise Vickery

Louise Vickery
Assistant Secretary |Environment Approvals and Wildlife Trade Branch
Environment Approvals Division
Department of Agriculture, Water and Environment
t +61 2 6274 s22 |m s22 | e louise.vickery@environment.gov.au

Sent from my iPhone

Begin forwarded message:

> **From:** s22
> **Date:** 15 May 2020 at 10:56:48 am AEST
> **To:** Louise Vickery <Louise.Vickery@environment.gov.au>

Cc: Geoff Richardson <Geoff.Richardson@environment.gov.au>, s22 s22 @environment.gov.au>, s22 @environment.gov.au>, Media <Media@environment.gov.au>, s22 @environment.gov.au>, s22 s22 @environment.gov.au>
Subject: FW: MEDIA ENQUIRY due 10.30am - Manyana assessment referral [SEC=OFFICIAL]

Hi Louise,

As discussed, here is a draft media response for your clearance to the media team to the Manyana query from AAP (I have cc'd s22 in the media team to keep her in the loop). I have cc'd BCD colleagues as well.

Cheers, s22 .

s22
Director NSW (South) and ACT Assessments Section | (02) 6274 s22 | Mobile: s22
Department of Agriculture, Water and the Environment
Environment Approvals and Wildlife Trade Branch |Environment Approvals Division
John Gorton Building, King Edward Terrace, Parkes ACT 2600
PO Box 787, CANBERRA ACT 2601

The Department acknowledges the traditional owners of country throughout Australia and their continuing connection to land, sea and community. We pay our respects to them and their cultures and to their elders both past and present.

From: s22 @environment.gov.au>
Sent: Friday, 15 May 2020 10:30 AM
To: s22 @environment.gov.au>
Subject: FW: MEDIA ENQUIRY due 10.30am - Manyana assessment referral [SEC=OFFICIAL]

Hi s22
See below as requested
Cheers
s22

I'm just reaching out regarding a parcel of land in Manyana, on the NSW South Coast.
Locals in the area are concerned over plans by developer Ozy Homes to raze 20 hectares of unburnt mature growth forest to make way for nearly 180 housing lots, given so much local bushland has recently been burnt.
Community group Manyana Matters has engaged the Environmental Defenders Office over the matter.
I understand the organisation has written to Ms Ley, calling for an assessment referral for the project under the Environment Protection and Biodiversity Conservation Act over concerns it could impact a number of threatened species listed under the legislation.
I was hoping to get a response from Ms Ley about the matter, and have listed a number of questions below.
AAP will be publishing a story on the matter within the hour, and I am keen to include comment from the minister.

1. Has Ms Ley received a letter from the Environmental Defenders Office regarding plans by Ozy Homes for a parcel of land in Manyana, calling for an assessment referral for the project under the Environment Protection and Biodiversity Conservation Act over concerns it could impact a number of threatened species listed under the legislation?
2. Will Ms Ley make such a referral?

3. Will Ms Ley call for work on the project to halt until a referral/assessment can be made?

- On 14 May 2020, Minister Ley was contacted by the Environmental Defenders Office (EDO) on behalf of Manyana Matters, a local community group based in the Shoalhaven region concerned about impacts to federally listed species as a result of the Manyana residential subdivision.
- The EDO requested that the Minister require the proponent of the Manyana proposal to refer it for assessment under the Environment Protection and Biodiversity Conservation Act (EPBC Act). The EDO provided additional information relating to potential impacts of the Manyana proposal on EPBC Act listed threatened species.
- The Minister is currently considering this request and has asked the Department for advice on options in response to the additional information provided, especially in light of the recommendations of the Bushfire Response Expert Panel on the impacts of the 2019/2020 bushfires on listed threatened species.
- The Minister understands that the NSW government is also considering its response as the planning consent authority.

s22

From: s22
Sent: Tuesday, 14 August 2018 9:36 AM
To: s22
Subject: Manyana corro [SEC=UNCLASSIFIED]

Hi s22

As discussed, here are the previous letters we've sent for Manyana:

Obligations letter - http://170715.spire.environment.gov.au/123/Pre-referral Manyana residential subdivision/Third party report-EPBC Act obligations letter to proponent.pdf

Response to proponent's lawyers - http://170715.spire.environment.gov.au/123/Pre-referral Manyana residential subdivision/Manyana-Dept response to SWAAB-SIGNED.pdf

Current response - http://170715.spire.environment.gov.au/123/Pre-referral Manyana residential subdivision/Manyana-Dept response to ELA.docx

s22

From: s22
Sent: Friday, 15 May 2020 2:11 PM
To: Louise Vickery
Cc: s22 ; s22 ; s22 s22 ; s22
Subject: Manyana [SEC=OFFICIAL]

Importance: High

Hi Louise,

I note that the letter to the Minister (cc Michelle), dated yesterday contains the following request, can we discuss next steps please, including any notification or maybe a cc to Ozy Homes (the developer).

Cheers, s22

15. Ozy Homes Pty Ltd (Ozy Homes) had originally announced that clearing would take place in the week commencing 4 May 2020, but has since agreed to suspend clearing operations until 18 May 2020. As such, our client seeks urgent action from the Minister to facilitate EPBC Act assessment of the Development. We are instructed to request that you take the following action:
a. Exercise your power under s 70(1) of the EPBC Act to request that Ozy Homes refer the Development to the Minister for the purpose of a controlled action decision. We note that the Minister's power to request a referral arises where the Minister thinks the proposed action may be or is a controlled action.
b. Failing Ozy Homes referring the Project, exercise your power under s 70(3) of the EPBC Act to 'deem' that the Project has been referred to you for the purpose of a controlled action decision.

16. Given that Ozy Homes proposes to re-commence clearing on Monday, 18 May 2020, we respectfully request a response to this letter by 12 noon on Friday, 15 May 2020.

2. If you wish to discuss this matter, please contact the writer by email at elaine.johnson@edonsw.org.au.

s22
Director NSW (South) and ACT Assessments Section | (02) 6274 s22 | Mobile: s22
Department of Agriculture, Water and the Environment
Environment Approvals and Wildlife Trade Branch |Environment Approvals Division
John Gorton Building, King Edward Terrace, Parkes ACT 2600
PO Box 787, CANBERRA ACT 2601

The Department acknowledges the traditional owners of country throughout Australia and their continuing connection to land, sea and community. We pay our respects to them and their cultures and to their elders both past and present.

s22

From: Louise Vickery
Sent: Monday, 18 May 2020 1:04 PM
To: s22 ; s22
Cc: s22 ; s22 ; s22
Subject: RE: Manyana Development [SEC=OFFICIAL]

Thanks s22 .

Regards Louise

From: s22 @environment.gov.au>
Sent: Monday, 18 May 2020 8:44 AM
To: s22 @environment.gov.au>
Cc: s22 @environment.gov.au>; Geoff Richardson <Geoff.Richardson@environment.gov.au>; Louise Vickery <Louise.Vickery@environment.gov.au>; s22 s22 @environment.gov.au>
Subject: RE: Manyana Development [SEC=OFFICIAL]

Hi all

The correspondence with the TSSC Chair on this matter is attached, for information.

Regards, s22 .

s22
Director, Species Information and Policy Section, Protected Species and Communities Branch
M: s22
Working from home as a COVID-19 precaution

From: s22
Sent: Friday, 15 May 2020 10:27 AM
To: s22 @environment.gov.au>; Geoff Richardson <Geoff.Richardson@environment.gov.au>
Cc: s22 @environment.gov.au>; Louise Vickery <Louise.Vickery@environment.gov.au>; s22 @environment.gov.au>
Subject: RE: Manyana Development [SEC=OFFICIAL]

Hi all

FYI, the Chair of the Threatened Species Scientific Committee, Emeritus Professor Helene Marsh, has been approached by a NSW resident today about this development.
After discussion with me, Prof Marsh has advised the person who contacted her that 'the Department was aware of the issue and is in the process of briefing the Minister'.

Regards, s22 .

s22
Director, Species Information and Policy Section, Protected Species and Communities Branch
M: s22
Working from home as a COVID-19 precaution

From: s22 @environment.gov.au>
Sent: Friday, 15 May 2020 10:08 AM
To: Geoff Richardson <Geoff.Richardson@environment.gov.au>

Cc: s22 @environment.gov.au>; s22 @environment.gov.au>; Louise Vickery <Louise.Vickery@environment.gov.au>; s22 @environment.gov.au>
Subject: Manyana Development [SEC=OFFICIAL]

G'day Geoff,

Further to our conversation and my email yesterday, I was advised that s22 from Minister Ley's office spoke to NSW Planning Minister Stokes' Office late yesterday on a range of issues including Manyana. Previous media reports indicated that Minister Stokes was prepared to intervene to avoid further impact on what is now more important remaining bushland habitat in the area, post fires. s47B(a) apparently there is now a reduced risk of clearing commencing Monday as suggested in the corro the Minister/Department received from the EDO. I have been asked to prepare some background material for the MO, and s47E(d) s47E(d) . I will keep you/s22 /s22 in the loop and seek your input/clearance of background if that's ok.

There has also been a media request on this issue this morning and we are preparing a response now which we might run by you too as we may use some of s22 previous advice.

Very grateful for your assistance.

Cheers, s22

s22
Director NSW (South) and ACT Assessments Section | (02) 6274 s22 | Mobile: s22
Department of Agriculture, Water and the Environment
Environment Approvals and Wildlife Trade Branch |Environment Approvals Division
John Gorton Building, King Edward Terrace, Parkes ACT 2600
PO Box 787, CANBERRA ACT 2601

The Department acknowledges the traditional owners of country throughout Australia and their continuing connection to land, sea and community. We pay our respects to them and their cultures and to their elders both past and present.

s22

From: Marsh, Helene s47F
Sent: Friday, 15 May 2020 6:33 PM
To: s22
Subject: FW: Urgent call in requested for threatened species in Manyana NSW

FTI
Helene

-----Original Message-----
From: Marsh, Helene
Sent: Friday, 15 May 2020 6:32 PM
To: s47F
Subject: RE: Urgent call in requested for threatened species in Manyana NSW

Hi s47F

I appreciate your concerns. Arks of unburned country are invaluable for recovery. Under the EPBC Act, the TSSC has a scientific role and members have emphasised the importance of unburned areas in the Minister's forums.

TSSC cannot act in an advocacy role, however. I have checked with the Department of AWE and I have been assured that Manyana is currently receiving a great deal of attention.

I am sorry not to be able to be of more help. Have you sent your submission to key NGOs on the Threatened Species matters such as the Humane Society International?

regards
Helene

-----Original Message-----
From: s47F
Sent: Friday, 15 May 2020 8:34 AM
To: Marsh, Helene s47F
Subject: Urgent call in requested for threatened species in Manyana NSW

Dear Helene,

s47F

s47F . The Shoalhaven was severely affected by fires in the summer season. The Conjola National Park was decimated. Due to the valiant efforts of fire fighters a 20 hectare area of mature bushland next to the village of Manyana was saved from burning. Ironically this land is owned by a developer who has decided to go in now to clear the forest for a 180 lot subdivision. The land in question is now home for a huge number of animals who are seeking refuge including several threatened and endangered species. Volunteers are bringing in feed to help sustain the animal population until the surrounding bush regenerates allowing the surviving animals to repopulated the Conjola National Park.

Yesterday the Environmental Defenders Office (EDO) representing the Manyana community sent Minister Susan Ley very well documented request that this development be called in before the remnant unburnt forest is cleared. Substantial documentation of federally listed species including the swift parrot and the Greater Glider and others was attached.

Can I have a copy of that email with the scientific support documents sent directly to you?

Feel free to call me about this should you wish to discuss.

Regards,

s47F

s22

From: s22
Sent: Thursday, 14 May 2020 1:45 PM
To: Louise Vickery; s22 ; s22 ; s22
Cc: s22
Subject: RE: Urgent: request to call in Manyana Development under EPBC Act [SEC=OFFICIAL]

Follow Up Flag: Follow up
Flag Status: Flagged

I've put in calls to two people in Planning who may be able to give us some intel on what State is doing. Will keep you posted if they get back to me,
s22

From: Louise Vickery <Louise.Vickery@environment.gov.au>
Sent: Thursday, 14 May 2020 1:11 PM
To: s22 @environment.gov.au>; s22 @environment.gov.au>; s22 s22 @environment.gov.au>
Subject: FW: Urgent: request to call in Manyana Development under EPBC Act [SEC=OFFICIAL]
Importance: High

Hi

Are you available to talk with Michelle re how the MO should respond to this. In the next half an hour.

Louise

From: Michelle Croker <Michelle.Croker@environment.gov.au>
Sent: Thursday, 14 May 2020 12:48 PM
To: Louise Vickery <Louise.Vickery@environment.gov.au>
Subject: FW: Urgent: request to call in Manyana Development under EPBC Act [SEC=OFFICIAL]
Importance: High

Can we discuss pls.

Michelle Croker
A/g First Assistant Secretary
Environment Approvals Division

Department of Agriculture, Water and the Environment
John Gorton Building, Parkes, Canberra ACT 2601
T: 02 6275 s22 | E: michelle.croker@awe.gov.au

From: s22 @environment.gov.au>
Sent: Thursday, 14 May 2020 12:27 PM
To: Michelle Croker <Michelle.Croker@environment.gov.au>
Subject: FW: Urgent: request to call in Manyana Development under EPBC Act [SEC=OFFICIAL]

Hi Michelle,

This says it was copied to you. Can your team have a look into and then we can discuss?

Thanks

s22

From: s22 @environment.gov.au>
Sent: Thursday, 14 May 2020 12:22 PM
To: DLO Ley <DLOLey@environment.gov.au>; s22 @environment.gov.au>
Subject: FW: Urgent: request to call in Manyana Development under EPBC Act [SEC=OFFICIAL]

FYI – for registration

s22
Policy Director

Office of the Hon Sussan Ley MP
Minister for the Environment
M s22 I **E** s22 @environment.gov.au

From: Elaine Johnson <elaine.johnson@edonsw.org.au>
Sent: Thursday, 14 May 2020 12:19 PM
To: Minister Ley <Minister.Ley@environment.gov.au>
Cc: s22 @awe.gov.au>; s22 s22 @environment.gov.au>; s22 @environment.gov.au>; Andrew McNee <Andrew.McNee@environment.gov.au>
Subject: Urgent: request to call in Manyana Development under EPBC Act

Dear Minister

We **attach** a copy of our letter of today's date for your urgent attention, together with enclosures.

We are instructed that the developer is proposing to begin clearing important threatened species habitat on Monday, 18 May 2020.

We seek a response to our letter by 12 noon tomorrow (Friday).

Kindly confirm receipt of this email and its attachments.

Kind regards

Elaine

Elaine Johnson – Principal Lawyer
Level 5, 263 Clarence Street, Sydney NSW 2000
T: +61 2 9262 6989 F: +61 2 9264 2414
E: elaine.johnson@edonsw.org.au W: edo.org.au

As we all adjust to major changes brought about by the public health response to the Covid-19 pandemic, please note that I am sending this email at a time convenient to me. I may have emailed you at an odd hour, I certainly do not expect a response outside of business hours. I understand that responses will be dicated by personal circumstances during this time.

EDO recognises the traditional owners and custodians of the land, seas and rivers of Australia. We pay our respects to Aboriginal and Torres Strait Islander elders past and present, and aspire to learn from traditional knowledge and customs so that, together, we can protect our environment and cultural heritage through law.

s22

From: s22
Sent: Thursday, 14 May 2020 1:44 PM
To: s22 ; s22
Cc: s22
Subject: RE: Urgent: request to call in Manyana Development under EPBC Act [SEC=OFFICIAL]

Hi
I have some time this afternoon. I found s42 - see below. s22 - out of scope - irrelevant material
Cheers
s22

Attachment D

s42

From: s22 @environment.gov.au>
Sent: Thursday, 14 May 2020 12:21 PM
To: s22 @environment.gov.au>; s22 @environment.gov.au>
Cc: s22 @environment.gov.au>
Subject: RE: Urgent: request to call in Manyana Development under EPBC Act [SEC=OFFICIAL]

Does anyone else in the section have time to follow this up?

From: s22 @environment.gov.au>
Sent: Thursday, 14 May 2020 12:18 PM
To: s22 @environment.gov.au>
Cc: s22 @environment.gov.au>; s22 @environment.gov.au>
Subject: FW: Urgent: request to call in Manyana Development under EPBC Act [SEC=OFFICIAL]

FYI

From: Elaine Johnson <elaine.johnson@edonsw.org.au>
Sent: Thursday, 14 May 2020 12:12 PM
To: Minister Ley <Minister.Ley@environment.gov.au>
Cc: s22 @awe.gov.au; s22 @environment.gov.au>; s22 s22 @environment.gov.au>; Andrew McNee <Andrew.McNee@environment.gov.au>
Subject: Urgent: request to call in Manyana Development under EPBC Act

Dear Minister

We **attach** a copy of our letter of today's date for your urgent attention, together with enclosures.

We are instructed that the developer is proposing to begin clearing important threatened species habitat on Monday, 18 May 2020.

We seek a response to our letter by 12 noon tomorrow (Friday).

Kindly confirm receipt of this email and its attachments.

Kind regards

Elaine

Elaine Johnson – Principal Lawyer
Level 5, 263 Clarence Street, Sydney NSW 2000
T: +61 2 9262 6989 F: +61 2 9264 2414
E: elaine.johnson@edonsw.org.au W: edo.org.au

DONATE – you can support EDO by making a tax-deductible donation today.

As we all adjust to major changes brought about by the public health response to the Covid-19 pandemic, please note that I am sending this email at a time convenient to me. I may have emailed you at an odd hour, I certainly do not expect a response outside of business hours. I understand that responses will be dicated by personal circumstances during this time.

EDO recognises the traditional owners and custodians of the land, seas and rivers of Australia. We pay our respects to Aboriginal and Torres Strait Islander elders past and present, and aspire to learn from traditional knowledge and customs so that, together, we can protect our environment and cultural heritage through law.

s22

From: noreply@pws.gov.au
Sent: Tuesday, 19 May 2020 1:13 PM
To: s22
Subject: MC20-006740 : PDMS Notification - Record Assigned [SEC=OFFICIAL]

Follow Up Flag: Follow up
Flag Status: Flagged

SEC=OFFICIAL

s22 has assigned MC20-006740 tos22. This record can be accessed from the following link:
MC20-006740

Record details *please note if any of the below fields are empty, the associated field is not populated on the record.*	
PDR Subject	protection of the Greater Glider at Lake Conjola from Ozy Homes proposal
Processing Instructions	Please draft a response
Milestones	Due for: Clearance 22/05/2020 5:00:00 PM Due to **Parliamentary**: 25/05/2020 5:00:00 PM Critical Date: Critical Reason:
Status	Draft

For assistance please contact the Parliamentary Helpdesk at s22 or on (02) 6274 s22

Thank you

PDMS Notification Service

Note: Please do not reply to this message.

SEC=OFFICIAL

s22

From: s22
Sent: Tuesday, 15 May 2018 1:20 PM
To: s22
Subject: FW: Proposed Manyana development [SEC=UNCLASSIFIED]

s22 is the compliance officer in DP&E who you could contact and let know that we are following up some concerns.
K

From: s22 @planning.nsw.gov.au]
Sent: Thursday, 21 December 2017 3:38 PM
To: s22
Subject: RE: Proposed Manyana development [SEC=UNCLASSIFIED]

Hi s22

As discussed, these are the contact details for the owner of this site:

- Ghazi Sangari – Ozyhomes Pty Ltd – s47F (note that this number came up on my phone but the number I was provided by Martens and Associates was 0414 357 112).

He did seem to be a little bit concerned about what the issue was and he indicated that he wanted to do the right thing.

Let me know if you need anything further.

Cheers,
s22

s22
Senior Compliance Officer
T s22
E s22

From: s22 @environment.gov.au]
Sent: Thursday, 21 December 2017 11:12 AM
To: s22 @planning.nsw.gov.au>
Subject: Proposed Manyana development [SEC=UNCLASSIFIED]

H s22
Good to chat this morning. Just to let you know, I have confirmed that under the EPBC Act, on the basis that the proponent hasn't referred the action to the Commonwealth for a decision under s75 of the EPBC Act on whether the action requires approval or not, and even if the action has commenced, any new listings must be considered and if there are a possibility of significant impacts on MNES, must be referred to Commonwealth for consideration. If there are significant impacts on MNES that haven't been referred, the proponent will be non-compliant. We will send the proponent a letter – let me know if you get any details,
Much appreciated
s22

s22
Director Project Liaison (NSW)
Assessments (NSW&ACT) and Fuel Branch
Environment Standards Division
s22

s22

From: s22 @planning.nsw.gov.au>
Sent: Friday, 19 October 2018 2:25 PM
To: s22
Subject: RE: Manyana residential development [SEC=UNCLASSIFIED]

Thanks s22 .

s22
Senior Compliance Officer
T 02 4224 s22 M s22
E s22 @planning.nsw.gov.au

From: s22
Sent: Friday, 19 October 2018 2:03 PM
To: s22
Subject: Manyana residential development [SEC=UNCLASSIFIED]

Hi s22

As discussed, please see attached letters the Department sent re: Manyana residential development (noting it's not for further distribution).

Cheers
s22

s22
Southern NSW & ACT Assessments
Department of the Environment and Energy
(02) 6274 s22 | s22 @environment.gov.au

FOI 200510
Document 29

s22

From: s22 @environment.nsw.gov.au>
Sent: Thursday, 17 May 2018 4:34 PM
To: s22
Cc: s22
Subject: RE: Manyana [SEC=UNCLASSIFIED]

Hi s22
I'm not sure if you have had a had a chance to speak to s22 yet, I mentioned your query to him.
I just had a look at the development on the Major projects register. Looks like the orchid *Cryptostylis hunteriana* has potential with nearby records. You may want to discuss this orchid with s22 as well.
Regards, s22

From: s22 @environment.gov.au]
Sent: Thursday, 17 May 2018 11:22 AM
To: s22
Subject: RE: Manyana [SEC=UNCLASSIFIED]

Hi s22

Yes, that'd be great – I should be around most of today, so call whenever is convenient for you. I'm most interested in 05_0059 Berringer & Cunjurong Point Roads, Manyana.

Cheers
s22

s22
Assessment Officer
Southern NSW & ACT Assessments
Environment Standards Division
Department of the Environment and Energy
(02) 6274 s22 | s22 @environment.gov.au

From: s22 @environment.nsw.gov.au]
Sent: Thursday, 17 May 2018 10:50 AM
To: s22 @environment.gov.au>
Subject: Manyana

Hi s22

I understand you are looking for someone in OEH to chat about developments around Manyana?

The person who has the background on this has moved on but I'm happy to dig up the files and have a chat, I have a few meetings today but will try and contact you in between.

Regards, s22

s22
Senior Conservation Planning Officer
Planning (Illawarra)

South East Region
Regional Operations Division
Office of Environment and Heritage
Level 3, 84 Crown Street, Wollongong, NSW, 2500
PO Box 513, Wollongong, NSW, 2520
s22
W: www.environment.nsw.gov.au
(Please note I am not available on Fridays)

This email is intended for the addressee(s) named and may contain confidential and/or privileged information.
If you are not the intended recipient, please notify the sender and then delete it immediately.
Any views expressed in this email are those of the individual sender except where the sender expressly and with authority states them to be the views of the NSW Office of Environment and Heritage.

PLEASE CONSIDER THE ENVIRONMENT BEFORE PRINTING THIS EMAIL

s22

From: s45, s47F
Sent: Saturday, 5 May 2018 12:03 PM
To: s22
Subject: RE: EPBC Act potential compliance issue, Manyana NSW. [SEC=UNCLASSIFIED]

G'day s22 ,
Thanks very much for the update. Will the response from the proponent (Ozy Homes) be made available to the public? There are a lot of current residents and the local community organisation that would be very interested in the results.

Thanks again
s45, s47F

From: s22
Sent: Thursday, 3 May 2018 8:42 AM
To: s45, s47F
Cc: s22 EPBC Referrals
Subject: RE: EPBC Act potential compliance issue, Manyana NSW. [SEC=UNCLASSIFIED]

Hi s45, s47F ,

Thanks for your email. The Department wrote to Ozy Homes last year about the proposed development at Berringer and Cunjurong Roads, Manyana, and their obligations under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). We have been advised that a site investigation was undertaken earlier this year, and we expect to receive further information from the proponent shortly.

The Department is following up on the matter, including with Shoalhaven Council.

Cheers
s22

s22
Southern NSW & ACT Assessments
(02) 6274 s22 | s22 @environment.gov.au

From: EPBC Referrals
Sent: Friday, 27 April 2018 3:58 PM
To: s22 @environment.gov.au>
Cc: EPBC Referrals <EPBC.Referrals@environment.gov.au>; s22 @environment.gov.au>
Subject: FW: EPBC Act potential compliance issue, Manyana NSW. [SEC=UNCLASSIFIED]

Hi s22 ,

Please see below correspondence received from s45, s47F regarding a third-party report made for a proposal in Manyana, NSW.

s45, s47F is after an update on the outcome, as they were contacted by the proponent's ecologist regarding the matter. Seeking your advice on this one – please let me know if you'd like me to provide a response back.

Kind regards,

s22
Referrals Gateway
Department of the Environment and Energy
P: 02 6274 2496 | E: EPBC.Referrals@environment.gov.au

From: s45, s47F
Sent: Monday, 23 April 2018 12:03 PM
To: EPBC Referrals <EPBC.Referrals@environment.gov.au>
Subject: RE: EPBC Act potential compliance issue, Manyana NSW. [SEC=UNCLASSIFIED]

G'day s22
I am wondering if I may be able to get an update from the NSW Assessment Officer that is dealing with this project please? A short time ago I was directly contacted by the proponents Ecologist, who wanted to know about various local MNES so I assume the Department has contacted the proponent for clarification? I am wondering how this matter is progressing, as there have also been a few recent EPBC listed species recorded on or near the property in question that did not make it into my letter.

Also will the information supplied to the Department in answer to your questions be made publicly available? Possibly on the referrals notices page?

Thanks in advance for any information.

Cheers
s45, s47F

Ph: s45, s47F
Email: s45, s47F

From: EPBC Referrals <EPBC.Referrals@environment.gov.au>
Sent: Friday, 22 December 2017 12:21 PM
To: s45, s47F
Cc: EPBC Referrals <EPBC.Referrals@environment.gov.au>
Subject: RE: EPBC Act potential compliance issue, Manyana NSW. [SEC=UNCLASSIFIED]

Hi s45, s47F,

Thank you for your submission. I have forwarded your email and attachment to the NSW Assessments area for action.

Kind regards,

s22
Referrals Gateway
Department of the Environment and Energy

From: s45, s47F
Sent: Thursday, 21 December 2017 2:31 PM
To: EPBC Referrals <EPBC.Referrals@environment.gov.au>
Subject: FW: EPBC Act potential compliance issue, Manyana NSW.

G'day s22,
Thanks for discussing this matter with me earlier. As I mentioned this matter is now a little more critical that I first thought as the signs for the lots for sale went up around the development this week and you can buy the proposed

lots beginning the end of this week!. We have not been notified by the proponent and Shoalhaven Council has not delivered its approval for the construction certificates as yet as is required under NSW legislation (or so we have been advised by Shoalhaven City Council earlier this week).
Please find a letter outlining of my concerns attached. Please also note the email I send the compliance sections below on the 6th December

As we discussed I would like to remain anonymous, but provide my contact details to assist you in investigating, in the knowledge that my identity will be kept completely confidential.

Cheers
s45, s47F

s45, s47F

Ph: s45, s47F
Email: s45, s47F

From: s45, s47F
Sent: Wednesday, 6 December 2017 1:42 PM
To: compliance@environment.gov.au
Cc: s45, s47F
Subject: EPBC Act potential compliance issue, Manyana NSW.

To whom it may concern,

I would like to bring to your attention a possible EPBC Act compliance issue. I believe that it is likely that Matters of National Environmental Significance will be impacted if the NSW approved residential sub-division (approval given 10 years ago, under the now repealed part 3A Major projects legislation), is allowed to proceed. Given that the proponent is about to commence the sub-division in the coming weeks, and that no referral to your department is listed on the DEE referrals list, this matter is of the utmost urgency.

Due to privacy concerns I would like to remain anonymous, but provide my contact details to assist you in investigating, in the knowledge that my identity will be kept completely confidential.
Please find a letter attached regarding the MNES outlining in detail all of my concerns.

Regards
s47F

s45, s47F

Ph: s45, s47F
Email: s45, s47F

---

s22

From: s22
Sent: Wednesday, 9 May 2018 3:45 PM
To: s22
Subject: FW: Manyana development [SEC=UNCLASSIFIED]

FYI

From: s47F
Sent: Monday, 26 March 2018 3:02 PM
To: s22
Subject: Re: Manyana development

Hi s22

You were out of the office last time I replied.

Can you please let me know if you have had any response to your previous letter to the proponent?

Thank you.

Regards,

s47F

From: s22
Sent: Thursday, 8 March 2018 4:17 PM
To: s47F
Cc: CIU Mail; s22 s22
Subject: Manyana development [SEC=UNCLASSIFIED]

Hi s47F

As discussed, here is a link to the protected matters search tool. It is used as an indicator of potential presence only and detailed surveys are usually required to ground truth before we can adequately assess impacts on Matters of National Environmental Significance (MNES)

http://www.environment.gov.au/epbc/protected-matters-search-tool

Also, here is a link to the environmental assessments home page on our web site.

http://www.environment.gov.au/protection/environment-assessments

I am still following up on any response to our previous letter to the proponent.

Cheers, s22

s22
Director
Southern NSW and ACT Assessments Section
ESD
Department of the Environment and Energy

Office Phone (02) 6274 s22
Mobile: s22

s22

From: s22
Sent: Wednesday, 9 May 2018 3:46 PM
To: s22
Subject: FW: Manyana development [SEC=UNCLASSIFIED]

FYI

From: s47F
Sent: Friday, 9 March 2018 3:49 PM
To: s22
Subject: Re: Manyana development [SEC=UNCLASSIFIED]

Thank you s22

Finally got to have a look at those links.

Great.

Hear back from you on the other.

Did I mention that the property changed hands last year?

s47F

From: s22
Sent: Thursday, 8 March 2018 4:17 PM
To: s47F
Cc: CIU Mail; s22 s22
Subject: Manyana development [SEC=UNCLASSIFIED]

Hi s47F

As discussed, here is a link to the protected matters search tool. It is used as an indicator of potential presence only and detailed surveys are usually required to ground truth before we can adequately assess impacts on Matters of National Environmental Significance (MNES)

http://www.environment.gov.au/epbc/protected-matters-search-tool

Protected Matters Search Tool | Department of the ...

www.environment.gov.au

Use this search tool to generate a report that will help determine whether matters of national environmental significance or other matters protected by the ...

Also, here is a link to the environmental assessments home page on our web site.

http://www.environment.gov.au/protection/environment-assessments

Environment assessments under the Environment Protection ...

www.environment.gov.au

Under the Environment Protection and Biodiversity Conservation Act 1999, environment assessments are undertaken to enable environment and heritage protection and ...

I am still following up on any response to our previous letter to the proponent.

Cheers, s22

s22
Director
Southern NSW and ACT Assessments Section
ESD
Department of the Environment and Energy

Office Phone (02) 6274 s22
Mobile: s22

s22

From: s22
Sent: Wednesday, 9 May 2018 3:48 PM
To: s22
Subject: FW: Letter of concern regarding residential subdivision Manyana NSW [SEC=UNCLASSIFIED]

Oops!

From: s22
Sent: Monday, 5 March 2018 3:42 PM
To: s22
Subject: RE: Letter of concern regarding residential subdivision Manyana NSW

HI s22
We've already sent the proponent a reply suggesting they should check whether they need to refer. It's on file (sent in December) it was the first of letters we did under the new SOP after handover from post approval. I also followed up with the State who were going to look into whether their previous Planning approval had lapsed. I think the letter had asked them to respond to us – so not sure if they have or not,
s22

From: s22
Sent: Monday, 5 March 2018 3:27 PM
To: s22 @environment.gov.au>
Subject: FW: Letter of concern regarding residential subdivision Manyana NSW [SEC=UNCLASSIFIED]
Importance: High

Hi s22

We discussed this once before I think.

Cheers, s22

From: EPBC Referrals
Sent: Monday, 5 March 2018 12:24 PM
To: s22 @environment.gov.au>
Cc: s22 @environment.gov.au>; s22 @environment.gov.au>; s22 s22 @environment.gov.au>; EPBC Referrals <EPBC.Referrals@environment.gov.au>
Subject: FW: Letter of concern regarding residential subdivision Manyana NSW [SEC=UNCLASSIFIED]
Importance: High

Hi s22

Just following up on the email and attachment, which s22 forwarded to you in January.

The Gateway received a 'phone call this morning from a s47F, calling on behalf of s47F from the Red Head Villages Association.

Grateful if you or one of your team could please give s47F a call on s47F to discuss the query.

Kind regards
s22

s4

s22 | Referrals Gateway
Environment Standards Division
Department of the Environment and Energy

From: EPBC Referrals
Sent: Tuesday, 16 January 2018 4:22 PM
To: s22 @environment.gov.au>
Cc: EPBC Referrals <EPBC.Referrals@environment.gov.au>
Subject: FW: Letter of concern regarding residential subdivision Manyana NSW [SEC=UNCLASSIFIED]

Hi s22,

We've received an email and letter regarding the proposed residential subdivision in Manyana, which was previously looked into by your section.

I thought it best to pass this letter on to you for information/action, as there is currently no corresponding EPBC project or referral application.

Please let me know if you have any questions.

Kind regards,

s22
Referrals Gateway
Department of the Environment and Energy
P: 02 6274 2496 | E: EPBC.Referrals@environment.gov.au

From: s47F
Sent: Tuesday, 16 January 2018 1:12 PM
To: EPBC Referrals <EPBC.Referrals@environment.gov.au>
Cc: s22 @shoalhaven.nsw.gov.au; s22 @planning.nsw.gov
Subject: Letter of concern regarding residential subdivision Manyana NSW

Dear Sir/ Madam,

Please find attached a letter of concern from the executive of the Red Head Villages Association, Bendalong, NSW in regard to a proposed 182 lot residential subdivision bounded by Berringer and Cunjurong Point Roads, Manyana, NSW.

We would appreciate your attention to this matter.
Kind regards,
s47F
Secretary
Red Head Villages Association
s47F

RED HEAD VILLAGES ASSOCIATION (Inc)

North Bendalong, Bendalong, Berringer, Cunjurong, Manyana

Email: s47F

Phone s47F
PO Box 2015
Bendalong NSW 2539

EPBC Referrals Branch
Environment Assessment and Compliance Division
Department of the Environment
GPO Box 787
Canberra ACT 2601
email : EPBC.Referrals@environment.gov.au

cc s22
Subdivisions Group
Shoalhaven City Council Nowra
s22

cc s22
NSW Department of Planning
s22

Dear Sir/Madam

Re: Concerns regarding lack of current environmental assessment on the impact of the proposed 182 Lot residential subdivision Lot 172DP 755923 ans Lot 823 DP 247285 , Manyana , NSW (Planning NSW ref MP05_0059 Berringer and Cunjurong Point Roads, Manyana)

Red Head Villages Association represents the communities of Manyana, Cunjurong Point, Berringer Lake, Bendalong and North Bendalong on the NSW south coast. We have over 100 members , being both residents and holiday home owners. Currently we have seen 5 hectares of land being fully cleared of all vegetation to make way for the 'Coast ' residential development for 40 home sites (Lots 99,810 off Manyana Drive, Manyana ,NSW). Recently sale signs have been erected for a second residential development known as Manyana Beach Estates (www.manyanabeach.com.au) which is a proposed 182 lot development being marketed by Bella Coastal Property . (contact : Karen White : karen@bellacoastalproperty.com.au ph 02 4455 2525). Both these developments are in very close proximity , affecting current wildlife corridors and flora biodiversity.

These two developments were approved under now repealed NSW State Government legislation (3A major projects or state significant developments) , thus circumventing effective community consultation. There have been significant additions and changes to the EPBC Act in the 10 years since both these develpoments were approved.

Many of our members are concerned that , in relation , in particular , to the Manyana Beach Estates development , no recent biodiversity assessment has been conducted and they have grave concerns for the impending destruction of a further 18 hectares of natural bushland on top of the 5 hectares already lost to the environment with the 'Coast' subdivision development (a total of 23 hectares within a small coastal community population 521 in 2016 census).

The data on which the approval stands for the Manyana Estates development is now over 11 years old. It is logical to assume that, in that time, there have been changes to the habitat values of this site. We would urge that the shift in vegetation type and ecological function be addressed and re-assessed before the proponent / developer clears 18 hectares of intact and Matter of National Environmental Significance (MNES) habitat .

Our members value our local fauna and flora and are aware of the nationally listed threatened species that occur locally . We are aware that there are species that have been added since the original EIS on this site.An example of a threatened species is the Greater Glider which is known to occupy the site (recorded in the 11 year old EIS). Its habitat has already been compromised by the 'Coast' development and will be further eroded by the 182 lot subdivision . There are many other federally listed species known to occur on the site that were not recorded or assessed in the original EIS and now need to be assessed. The question has been raised of why a referral to your department has not taken place.

Our community would also question whether the proponent has been required to include offsets within the development approval process. Currently no land has been cleared on the Manyana Estates site but the agent, Karen White , has informed our association that clearing will take place in early 2018. She has also informed us that , as of 6th January, 2018 seven blocks were already under offer .

We are informed that the Department of Environment and Energy can call in this development as a 'Controlled Action' under the provisions of the EPBC Act in order to prevent the wanton destruction of high diversity and known threatened species habitat. We would encourage the DEE to direct the proponent to properly assess the likely impact on all MNES before the commencement of the development.

Our executive would be happy to discuss this matter further with all interested parties . Our Annual General Meeting will be held on Saturday 27th January at 3pm in the Yulunga Community Hall, Manyana, NSW . We have been informed that many of our members and the community at large will want to discuss , at our meeting , the issue of the large scale residential development that has and will take place in our small community since November, 2017. We would therefore seek a response to this letter in the near future.

Your sincerely

s47F
President
Red Head Villages Association

s47F
Secretary
Red Head Villages Association

14th January, 2018

s22

From: s22 @planning.nsw.gov.au>
Sent: Tuesday, 8 May 2018 2:24 PM
To: s22
Cc: s22
Subject: RE: MP 06_0165 Manyana

Hi s22

s22 - out of scope - irrelevant material

Kind regards,

s22
Senior Planner
Regional Assessments
320 Pitt Street | GPO Box 39, SYDNEY NSW 2001
T 02 9274 s22 |E s22 @planning.nsw.gov.au

NSW GOVERNMENT | Planning & Environment

From: s22 @environment.gov.au]
Sent: Tuesday, 8 May 2018 1:10 PM
To: s22 @planning.nsw.gov.au>
Subject: MP 06_0165 Manyana

Hi s22

I'm emailing regarding s22 - out of scope - irrelevant ma, which is a residential development in Manyana, NSW. I was hoping to discuss the project with you - could you please call me at your convenience?

Cheers
s22

s22
Assessment Officer
Southern NSW & ACT Assessments
Environment Standards Division
Department of the Environment and Energy
(02) 6274 s22 | s22 @environment.gov.au

s22

From: s22
Sent: Tuesday, 12 May 2020 10:54 AM
To: Compliance
Cc: EPBC Referrals
Subject: RE: Manyana Beach Estate/Impacts on MNES/s47F [SEC=OFFICIAL]

Thanks for that. I am waiting to hear from council and NSW Government.

From: Compliance
Sent: Tuesday, 12 May 2020 8:56 AM
To: s22
Cc: Compliance ; EPBC Referrals
Subject: FW: Manyana Beach Estate/Impacts on MNES/s47F [SEC=OFFICIAL]

Hi s22

Please see below.

This relates to a previous email (forwarded to you – 5/05/2020) relating to the proposed residential development – Manyana Beach Estate (Lake Conjola area)

Triage and Wildlife
Environment Compliance Branch
CITES Enforcement Authority of Australia
Compliance Division
Department of the Agriculture, Water and the Environment
Email: compliance@environment.gov.au
Phone: (02) 6274 1372 or free call 1800 110 395
GPO Box 858
Canberra ACT 2601

From: EPBC Referrals <EPBC.Referrals@environment.gov.au>
Sent: Tuesday, 12 May 2020 8:45 AM
To: Compliance <Compliance@environment.gov.au>
Cc: s22 @environment.gov.au>; EPBC Referrals <EPBC.Referrals@environment.gov.au>
Subject: FW: Manyana Beach Estate/Impacts on MNES/s47F [SEC=OFFICIAL]

Hi s22 and Compliance Team

For appropriate action:

Please see the email trail below regarding a development known as the Manyana Beach Estate on the NSW south coast.

The complainant indicated that development is imminent and was to have commenced on 6 May 2020 but has been held up for a fortnight. Depending on the commencement of action, this could sit with either of your sections as a Third Party Report or as a potential breach of compliance with the EPBC Act.

Kind regards

Referrals Gateway | Environment Approvals Division
Department of Agriculture, Water and the Environment
GPO Box 787, CANBERRA ACT 2601
Email: EPBC.Referrals@environment.gov.au | Web: www.awe.gov.au | Phone: 02 6274 2496

From: s47F
Sent: Thursday, 7 May 2020 11:21 AM
To: EPBC Referrals <EPBC.Referrals@awe.gov.au>
Cc: EPBC Referrals <EPBC.Referrals@environment.gov.au>
Subject: Re: Manyana Beach Estate - Impacts on MNES [SEC=OFFICIAL]

Thank you for your response.

This action was due to commence yesterday and has been postponed for 2 weeks for negotiations between the developer and the community.

Sent from my iPhone

On 7 May 2020, at 10:11 am, EPBC Referrals <EPBC.Referrals@awe.gov.au> wrote:

> Good morning s47F
>
> Thank you for your email. The Referrals Gateway does not have visibility of this action and will need to direct your email to the appropriate area within the Department for their consideration.
>
> Could you please indicate whether this action is proposed or has commenced? We need this information to best direct your query.
>
> Kind regards
>
> Referrals Gateway | Assessments and Governance Branch
> Department of Agriculture, Water and the Environment
> : GPO Box 787, CANBERRA ACT 2601
> : EPBC.Referrals@environment.gov.au | : www.environment.gov.au | : 02 6274 2496

From: s47F >
Sent: Wednesday, 6 May 2020 5:38 PM
To: EPBC Referrals <EPBC.Referrals@environment.gov.au>
Subject: Manyana Beach Estate - Impacts on MNES

I am writing to you to express my concern about the Manyana Beach Estate (you may have heard of this issue already). I'll be brief. There is a small patch of high quality remnant bush land approved to be cleared. This area is suitable for many threatened species (under the EPBC and BE Acts) with numerous historically and recent records. Following the bushfires that ravaged the area, this bush is even more critical to all species, threatened or protected.

Threatened species known to occur on the site listed under the **EPBC Act** and/or BC Act are as follows:

- Greater Glider
- Southern Brown Bandicoot
- Grey-headed Flying-fox
- Large-eared Pied Bat; and
- Swift Parrot.

Additional species known to occur in the locality, but not recorded on the site (yet!) including Giant Burrowing Frog, Stuttering Frog, Little John's Tree Frog, Eastern Bristlebird, Regent Honeyeater, Long-nosed Potoroo, Spotted-tail Quoll, New Holland Mouse and Smoky Mouse. Along with flora species: Biconvex Paperbark, Magenta Lilly Pilly, Dense Cordrush and Chef's Cap Correa, Pterostylis vernalis, Genoplesium baueri, Rhizanthella slateri, Caladenia tessellata, Cryptostylis hunteriana; and Genoplesium vernale.

It is imperative that this area be saved and the DA approval be re-assessed. The original environmental assessment was disgustingly vague and did not provide accurate assessment. **There will be serious and irreversible impacts on MNES** if this goes ahead! Please find attached, for you reference, another senior ecologist's summarized points on the matter.

Can you please stop or pause this work and have this land reassessed. This clearing and loss of incredibly important bushland will have irreversible impacts!! Please confirm your receipt of this email and a reply with your proposed actions.

Kind regards
s47F

s22

From: s22
Sent: Thursday, 21 May 2020 5:16 PM
To: s22 ; s22 ; s22
Cc: s22 ; s22
Subject: RE: Manyana development [SEC=OFFICIAL]

Thanks, s22, appreciate your help with this.

From: s22
Sent: Thursday, 21 May 2020 4:45 PM
To: s22 ; s22 ; s22
Cc: s22
Subject: RE: Manyana development

Hi s22

I have checked today, and no clearing has commenced. I have heard clearing is proposed to commence next week but I cannot confirm this.

I am not sure who at NSW DPIE is the correct contact for the Mayana development site.

I have copied in s22 from DPIE. s22 can you assist and advise s22 who the best contact is. s22 contact details –

s22
Director South East Branch

Biodiversity and Conservation | Department of Planning, Industry and Environment
T 02 6229 s22 M s22 E s22 @environment.nsw.gov.au

Here is a link to the recent Council report and resolution –

Report:

https://shoalhaven.infocouncil.biz/Open/2020/05/CL_20200512_AGN_16189_AT_EXTRA.PDF

Minutes:

https://shoalhaven.infocouncil.biz/Open/2020/05/CL_20200512_MIN_16189_EXTRA.PDF

resolution:

CL20.107 Proposed Subdivision of Land, Approved by NSW State Government - Manyana
HPERM Ref:
D20/163340
Recommendation
That this report be received and any actions determined.
MOTION (Clr Findley / Clr Digiglio)
That Council:
1. Receive the report for information

2. Acknowledge that council has no legal pathway to impose a moratorium for land clearing on approved development that is deemed commenced.
3. Council supports the Manyana community in its ongoing representations to the State Government seeking a moratorium on the Manyana Estate given the current fragile state of the land post bushfire.
4. Council make representations to the state on behalf of the community requesting further verification of threatened species distribution in the Manyana Estate in order to avoid the destruction of any threatened species on the site that contravenes current law.

5. Council request that the NSW state government consider purchase of the land for conservation.
PROCEDURAL MOTION – MOTION BE PUT (Clr Wells)
That the MOTION be PUT.
PROCEDURAL MOTION CARRIED
RESOLVED (Clr Findley / Clr Digiglio) MIN20.345
That Council:
1. Receive the report for information
2. Acknowledge that council has no legal pathway to impose a moratorium for land clearing on approved development that is deemed commenced.
3. Supports the Manyana community in its ongoing representations to the State Government seeking a moratorium on the Manyana Estate given the current fragile state of the land post bushfire.
4. Make representations to the State Government on behalf of the community requesting further verification of threatened species distribution in the Manyana Estate in order to avoid the destruction of any threatened species on the site that contravenes current law.
5. Request that the NSW State Government consider purchase of the land for conservation.
FOR: Clr Findley, Clr Gash, Clr Digiglio, Clr Alldrick, Clr Levett and Clr Proudfoot
AGAINST: Clr Wells, Clr White, Clr Guile, Clr Pakes, Clr Watson and Clr Kitchener
CARRIED ON THE CASTING VOTE OF THE CHAIRPERSON
There

s22

From: s22 @awe.gov.au>
Sent: Wednesday, 20 May 2020 5:08 PM
To: s22 @shoalhaven.nsw.gov.au>; s22
s22 @shoalhaven.nsw.gov.au>
Cc: s22 @environment.gov.au>
Subject: RE: Manyana [SEC=OFFICIAL]

H s22 in addition to the below request, can you please advise whether clearing has commenced on site?

Thanks
s22

From: s22
Sent: Thursday, 14 May 2020 12:41 PM
To: s22 @shoalhaven.nsw.gov.au>; s22
s22 @shoalhaven.nsw.gov.au>
Cc: s22 @environment.gov.au>
Subject: RE: Manyana [SEC=OFFICIAL]

Hi s22

Thanks for chatting yesterday - do you have the contact details for anyone in NSW DPIE who I could discuss this project with?

Cheers
s22

From: s22 @shoalhaven.nsw.gov.au>
Sent: Friday, 8 May 2020 7:19 PM
To: s22 @awe.gov.au>; s22 @shoalhaven.nsw.gov.au>
Subject: Re: Manyana [SEC=OFFICIAL]

H s22
You can call me on s22
s22

Get Outlook for iOS

From: s22
Sent: Friday, May 8, 2020 4:48:39 PM
To: s22 @shoalhaven.nsw.gov.au>; s22
s22 @shoalhaven.nsw.gov.au>
Subject: RE: Manyana [SEC=OFFICIAL]

Thanks, s22. s22 can you please provide the best number to call you on; otherwise you can call me when convenient on 6274 s22

Have a nice weekend!
s22

From: s22 @shoalhaven.nsw.gov.au>
Sent: Friday, 8 May 2020 4:33 PM
To: s22 @awe.gov.au>; s22 @shoalhaven.nsw.gov.au>
Subject: Re: Manyana [SEC=OFFICIAL]

Hi s22 , please see the contact details for s22 , manager of environmental services at Shoalhaven.
I tried to call you for more details however the number is unavailable. I am doing field work in the Manyana area on Monday next week. Please feel free to call if you require further assistance.
Regards
s22

From: s22 @awe.gov.au>
Sent: Friday, 8 May 2020, 3:47 pm
To: s22
Subject: Manyana [SEC=OFFICIAL]

Hi s22

My colleague s22 passed on your details. I was hoping to touch base about the recent developments around the Manyana subdivision at Berringer & Cunjurong Point Road. Back in 2018 I spoke to s22 from Shoalhaven Council about the project, but don't have her contact details to follow up now – can you please point me in the right direction to an appropriate contact?

Thank you,
s22

s22
Assistant Director
Southern NSW & ACT Assessments
Department of Agriculture, Water and the Environment
6274 s22

The Department acknowledges the traditional owners of country throughout Australia and their continuing connection to land, sea and community. We pay our respects to them and their cultures and to their elders past, present, and emerging.

This message may contain both confidential and privileged information intended only for the addressee named above.
If you have received this email in error, please notify the sender immediately then destroy the original message.