

Ecological assessment (Revised)



Proposed rezoning
40 The Tunnell Road
Billinudgel, NSW
November 2024



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1 INTRODUCTION

1.1 Background

Blackwood Ecological Services has been engaged by Lisa Joel Investments to complete an Ecological assessment of land at the northern end of 40 The Tunnell Road, Billinudgel. The Ecological assessment is to accompany a Planning Proposal to amend the Byron Local Environmental Plan (L.E.P.) 2014 to rezone 4220m² of Lot 15 DP 1236885 from Zone RU2 Rural Landscape to Zone E4 General Industrial.

Part of this Lot, an area of 2541m², has a current approval as a truck depot. The land has been filled in the past to provide a flood free site.

1.2 Subject site

The Subject site refers to the area directly affected by the proposal. The Subject site for this study consists of land within the northern part of Lot 15 DP 1236885 40 The Tunnell Road Billinudgel. **FIGURE 1** shows the location of the site. **FIGURE 2** shows vegetation on the Subject site.

The property as a whole is an area of 5.4ha of predominantly vegetated land located between the Pacific Motorway to the east and the disused railway line to the west. The northern section of the land is accessed from Lucky Lane in the north and is adjacent to the Billinudgel Industrial Estate. The southern section of the site is accessed from The Tunnell Road and includes a dwelling and associated outbuildings.

1.3 Study area and proposed development

The Study area refers to the Subject site together with any additional areas which are likely to be affected by the proposal, either directly or indirectly. The Study area includes surrounding areas of vegetation on properties near to the site.

The proposed development involves the rezoning of 4220m² of land in the northern part of the site accessed via Lucky Lane. An area of land of approximately 1100m² within the larger rezoning area has been nominated as suitable for the location of structures associated with the future use of the site for Industrial purposes.

The proposed development involves improved stormwater management on the site with a kerb to be installed to the built-up area and all stormwater to be diverted to a filter pit and then to the existing stormwater system along Lucky Lane. This will reduce the potential for stormwater runoff impacts to the existing swamp forest area.

A Bushfire Strategic Study has been prepared for the site by LandUse (2024). This study identified Bushfire Asset Protection Zones (APZs) required on the site. These APZs extend for a distance of 22m to the west and south and 9m to the east.

This ecological assessment considers impacts associated with the establishment and maintenance of these APZs. APZs are shown in **FIGURE 3**.

2 FLORA

2.1 Introduction

This section discusses the methods used in the vegetation assessment and presents the results of the assessment. Relevant databases and reports were reviewed to identify records of locally occurring Threatened and Rare plant species, populations and communities. A site assessment was completed on the 25th of July 2024.

The objectives of the site assessment were:

- To identify vegetation communities and flora species present on the site.
- To complete targeted searches for significant flora species known from the locality and considered possible occurrences based on an assessment of site habitats.
- To identify potential impacts likely as a result of the proposed development.

2.2 Database searches

2.2.1 NPWS Database search

A search of the NPWS Database revealed records of 20 Threatened flora species within 5km of the Subject site. These species are shown in **TABLE 1**.

TABLE 1
NPWS DATABASE RECORDS OF THREATENED FLORA
SPECIES WITHIN 5 KM OF THE SUBJECT SITE

Botanical name	Common name	NSW Status
<i>Acacia bakeri</i>	Marblewood	V
<i>Acronychia littoralis</i>	Scented acronychia	E1
<i>Archidendron hendersonii</i>	White Lace Flower	V
<i>Arthraxon hispidus</i>	Hairy joint grass	V
<i>Bosistoa transversa</i>	Yellow satinheart	E1
<i>Choricarpia subargentea</i>	Giant Ironwood	E1
<i>Corokia whiteana</i>	Corokia	V
<i>Cryptocarya foetida</i>	Stinking Cryptocarya	V
<i>Cynanchum elegans</i>	White-flowered Wax Plant	E1
<i>Davidsonia jerseyana</i>	Davidson's Plum	E1
<i>Davidsonia johnsonii</i>	Smooth Davidson's Plum	E1
<i>Diospyros mabacea</i>	Red-fruited Ebony	E1
<i>Elaeocarpus williamsianus</i>	Hairy Quandong	E1
<i>Endiandra floydii</i>	Crystal Creek Walnut	E1
<i>Endiandra hayesii</i>	Rusty Rose Walnut	V
<i>Endiandra muelleri</i> subsp. <i>bracteata</i>	Green-leaved Rose Walnut	E1
<i>Floydia praealta</i>	Ball Nut	V
<i>Geodorum densiflorum</i>	Pink Nodding Orchid	E1
<i>Gossia fragrantissima</i>	Sweet Myrtle	E1
<i>Grevillea hilliania</i>	White Yiel Yiel	E1
<i>Harnieria hygrophiloides</i>		E1
<i>Hicksbeachia pinnatifolia</i>	Red Boppel Nut	V
<i>Knoxia sumatrensis</i>		E1
<i>Lindsaea brachypoda</i>	Short-footed Screw Fern	E1
<i>Macadamia integrifolia</i>	Macadamia Nut	E1
<i>Macadamia tetraphylla</i>	Rough-shelled Bush Nut	V
<i>Marsdenia longiloba</i>	Slender Marsdenia	E1
<i>Melicope vitiflora</i>	Coast Euodia	E1

KEY

2.2.2 Commonwealth EPBC Act (1999) Database search

TABLE 2
COMMONWEALTH EPBC ACT (1999) DATABASE THREATENED FLORA SPECIES WITH
SUITABLE HABITAT WITHIN 5 KM OF THE SUBJECT SITE

KEY

Ecological Assessment

2.3 Site assessment

2.3.1 Existing vegetation

This section describes existing vegetation communities present on the property. Site photographs are included in **APPENDIX B**. The property as a whole consists of areas of vegetation characteristic of the original native vegetation cover, areas under rehabilitation, open grassland areas and small areas of landscaped vegetation.

The northern portion of the site to the south and west of the existing truck depot area is characterised by an area of Broad-leaved paperbark dominated swamp forest with Swamp turpentine also present as well as Bleeding heart, Alexander palm and Bangalow palm. The groundlayer includes Swamp water fern, *Lepironia articulata*, Sawsedge, *Persicaria attenuata* and Common silkpod. Weed presence within the swamp forest interior is minimal although weeds including Singapore daisy, Small-leaved privet and *Ardisia crenata* occur on the margins.

Common regrowth species including Blackwood wattle, Bleeding heart, Cheese tree, Macaranga, Ribbonwood and Pink euodia occur on more elevated land around the swamp forest margins with weeds including Camphor laurel, Small-leaved privet, Winter senna, Alexander palm and Lantana also present.

The western and southern banks of the filled area in the north-eastern corner have been stabilised with jute mesh and extensively planted out with low growing native species amongst the occasional existing trees to stabilise the bank, reduce sedimentation and assist with filtration of stormwater runoff from the filled area. Bank plantings consist of Lomandra, Carex, Dianellas, Cordylines, Swamp lily, Cabbage palms and other species. Established trees amongst the plantings include Swamp turpentine, Pink bloodwood, Camphor laurel, Bangalow palm, Alexander palm, Brown kurrajong, Red kamala and Creek sandpaper fig.

South of the area subject to the planning proposal, the central part of the site is characterised by an open sclerophyll forest of Blackbutt, Ironbark, Pink bloodwood and Tallowwood with an open midstorey of scattered regrowth species including Bleeding heart, Native peach, Macaranga and Hard quandong. This area is augmented with plantings of native coastal sclerophyll forest species including Brush hovea, Macaranga, Red ash, eucalypts and others.

The current owners have implemented a program of ecological restoration on the site under the supervision of Mark Dunphy of Firewheel Nursery and George Roberts of EcoRestorations. Extensive planting areas are located to the north of the open sclerophyll forest (as well as within the open forest itself) and within lower lying land to the south of the swamp forest where the species mix favours wetland and swamp forest species including Bangalow palms, Cabbage palms, Broad-leaved paperbark, Cunjevoi and sedges.



Wetland margins with dense native groundcover plantings along the banks of the filled area

To the immediate east of the site a band of vegetation is located between the site and the Pacific Motorway. Here Camphor laurel is common with Blackwood wattle, Cheese tree, Small-leaved privet and Broad-leaved paperbark and Singapore daisy is a common weed. Stormwater runoff from the motorway has led to some scouring of adjacent drainage lines and the owners have reinforced drainage paths with cobblestone in some areas.

2.3.2 Significant species Threatened Ecological Communities and PCTs

No Threatened flora species listed on the NSW BC Act (2016) or Commonwealth EPBC Act (1999) were recorded.

Vegetation communities on the Subject site were compared with descriptions of vegetation communities listed as Threatened Ecological Communities under the NSW Biodiversity Conservation Act (2016) and the EPBC Act (1999). Vegetation within the area mapped as Broad-leaved paperbark Swamp sclerophyll forest conforms with the description of the TEC Swamp sclerophyll forest on coastal floodplains.

Vegetation communities on the site are analogous to the following PCT types:

- PCT 3990 Far North Paperbark Gahnia Swamp Forest
- PCT 3232 Far North Coastal Hills Blackbutt-Ironbark Forest

2.3.3 Southern swamp orchid (*Phaius australis*)

Council inspection in October 2024 recorded the occurrence of two Southern swamp orchid (*Phaius australis*) on the site at 56J 551860E, 6846425S and 551860E, 6846424S. Blackwood Ecology completed an additional site inspection on the 18th of October 2024. This inspection confirmed the location of the two orchids which were still in flower. A search throughout the proposed APZ area and adjacent sections of swampland did not record any additional

specimens. The two orchids located occur well outside of and to the south of the proposed APZ area.

The orchids occur within an area of plantings and rehabilitated low lying land adjacent to the wetter parts of the site which receives drainage from the Pacific Highway. Bush regenerator George Roberts of EcoRestorations confirmed that these orchids were planted as part of restoration works in this part of the site, (pers.comm. 18th Oct 2024).

2.3.4 Byron Council GIS mapping

FIGURES 4 and 5 show environmental values mapping for the Study area extracted from the Byron Shire GIS. The results show that areas of vegetation within the swamp forest and open sclerophyll forest are mapped as Areas of High Environmental Value with the vegetation communities mapped as Coastal swamp forest and North Coast Wet Sclerophyll Forest corresponding with these high value areas. Vegetation on the banks of the filled area is not mapped as High Environmental Value.

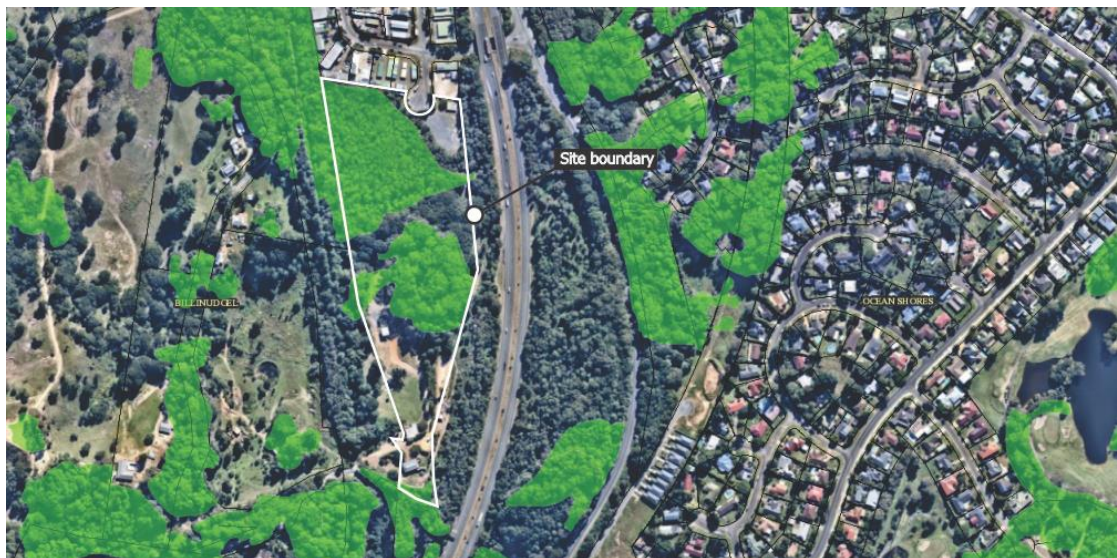


Figure 4 Areas of High Environmental Value from Byron Shire Council GIS (in green)

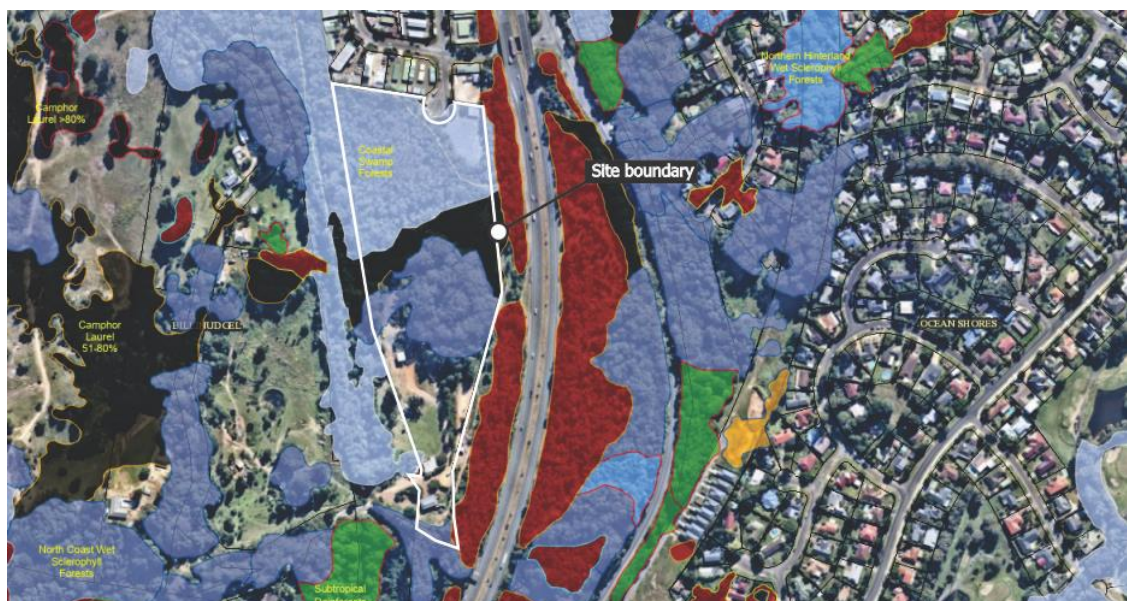




Figure 5 Areas of Coastal swamp forest (light blue) & North Coast Wet Sclerophyll Forest (in purple)
from Byron Shire Council GIS

3 FAUNA

3.1 Introduction

This section discusses the methods used in the fauna assessment and presents the results of the assessment. Relevant databases and reports were reviewed to identify records of locally occurring Threatened fauna species, populations and communities.

The fauna assessment consisted of:

- A review of relevant databases and literature.
- An assessment of site fauna habitats.

Site habitats were assessed in terms of their value for native fauna species. The site assessment was completed in conjunction with the flora assessment. The assessment focused on identifying habitat features associated with Threatened species known from the locality. Particular attention was paid to habitat features such as:

- The presence of mature trees with hollows, fissures and/or other suitable roosting/nesting places.
- Presence of hollow logs/debris and areas of dense leaf litter.
- The presence of Grey-headed Flying Fox camps
- The presence of preferred Koala food tree species.
- The presence of preferred Glossy black cockatoo feed trees.
- Condition, flow and water quality of drainage lines and bodies of water.
- Areas of dense vegetation.
- Presence of fruiting flora species and blossoming flora species, particularly winter-flowering species.
- Vegetation connectivity and proximity to neighbouring areas of vegetation.
- Presence of caves, hollow trees and/or man-made structures suitable as microchiropteran bat roost sites.

3.2 Database searches

3.2.1 NPWS Database search

A search of the NPWS Database revealed records of 33 Threatened fauna species (excluding marine species) within 5km of the Subject site. These species are shown in **TABLE 3**.

TABLE 3
NPWS DATABASE RECORDS OF THREATENED FAUNA
SPECIES WITHIN 5 KM OF THE SUBJECT SITE

Common name	Scientific name	NSW Status
Australasian bittern	<i>Botaurus poiciloptilus</i>	E1
Barred cuckoo-shrike	<i>Coracina lineata</i>	V
Beach Stone-curlew	<i>Esacus magnirostris</i>	E4A
Black Bittern	<i>Ixobrychus flavicollis</i>	V
Black-necked Stork	<i>Ephippiorhynchus asiaticus</i>	V
Brolga	<i>Grus rubicunda</i>	V
Bush Stone-curlew	<i>Burhinus grallarius</i>	E
Collared Kingfisher	<i>Todiramphus chloris</i>	V
Comb-crested Jacana	<i>Irediparra gallinacea</i>	V
Common Blossom-bat	<i>Syconycteris australis</i>	V
Common Planigale	<i>Planigale maculata</i>	V
Coxen's Fig-Parrot	<i>Cyclopsitta diophthalma coxeni</i>	E4
Dugong	<i>Dugong dugon</i>	E1

Common name	Scientific name	NSW Status
Eastern Bentwing-bat	<i>Miniopterus schreibersii oceanensis</i>	V
Eastern Curlew	<i>Numenius madagascariensis</i>	V
Eastern False Pipistrelle	<i>Falsistrellus tasmaniensis</i>	V
Eastern Freetail-bat	<i>Mormopterus norfolkensis</i>	V
Eastern Grass Owl	<i>Tyto longimembris</i>	V
Eastern Long-eared Bat	<i>Nyctophilus bifax</i>	V
Eastern Osprey	<i>Pandion cristatus</i>	V
Eastern Tube-nosed Bat	<i>Nyctimene robinsoni</i>	V
Flesh-footed Shearwater	<i>Ardenna carneipes</i>	V
Freckled Duck	<i>Stictonetta naevosa</i>	V
Glossy Black-Cockatoo	<i>Calyptorhynchus lathami</i>	V
Greater Broad-nosed Bat	<i>Scoteanax rueppellii</i>	V
Green Turtle	<i>Chelonia mydas</i>	V
Grey-headed Flying-fox	<i>Pteropus poliocephalus</i>	V
Hawksbill Turtle	<i>Eretmochelys imbricata</i>	V
Humpback Whale	<i>Megaptera novaeangliae</i>	V
Koala	<i>Phascolarctos cinereus</i>	V
Large-eared Pied Bat	<i>Chalinolobus dwyeri</i>	V
Little Bentwing-bat	<i>Miniopterus australis</i>	V
Little Lorikeet	<i>Glossopsitta pusilla</i>	V
Little Tern	<i>Sternula albifrons</i>	E1
Loggerhead Turtle	<i>Caretta caretta</i>	E1
Long-nosed Potoroo	<i>Potorous tridactylus</i>	V
Magpie Goose	<i>Anseranas semipalmata</i>	V
Mangrove Honeyeater	<i>Gavicalis fasciogularis</i>	V
Masked Owl	<i>Tyto novaehollandiae</i>	V
Mitchell's Rainforest Snail	<i>Thersites mitchellae</i>	E1
Olongburra Frog	<i>Litoria olongburensis</i>	V
Pale-vented Bush-hen	<i>Amaurornis moluccana</i>	V
Pied Oystercatcher	<i>Haematopus longirostris</i>	E1
Regent Honeyeater	<i>Anthochaera phrygia</i>	E4
Rose-crowned Fruit-Dove	<i>Ptilinopus regina</i>	V
Scarlet Robin	<i>Petroica boodang</i>	V
Sooty Oystercatcher	<i>Haematopus fuliginosus</i>	V
Southern Myotis	<i>Myotis macropus</i>	V
Spotted-tailed Quoll	<i>Dasyurus maculatus</i>	V
Square-tailed Kite	<i>Lophoictinia isura</i>	V
Swift Parrot	<i>Lathamus discolor</i>	E1
Wallum Froglet	<i>Crinia tinnula</i>	V
White Tern	<i>Gygis alba</i>	V
White-bellied Sea-Eagle	<i>Haliaeetus leucogaster</i>	V
White-eared Monarch	<i>Carterornis leucotis</i>	V
Wompoo Fruit-Dove	<i>Ptilinopus magnificus</i>	V
Yellow-bellied Sheath-tail-bat	<i>Saccolaimus flaviventris</i>	V

KEY

- E4A Critically endangered
E1 Endangered
V Vulnerable

3.2.2 Commonwealth EPBC Act (1999) Database search

A search of the Commonwealth EPBC Act (1999) Database revealed potential suitable habitat for a number of Threatened fauna species within 5km of the Subject site. These species are shown in **TABLE 4**.

The Commonwealth EPBC Act Protected Matters Report is included in full in **APPENDIX A**.

TABLE 4
COMMONWEALTH EPBC ACT (1999) DATABASE RESULTS
THREATENED FAUNA SPECIES WITH POTENTIAL HABITAT
WITHIN 5KM OF THE SUBJECT SITE

Common Name	Scientific name	Status
Australasian bittern	<i>Botaurus poiciloptilus</i>	E
Australian Painted Snipe	<i>Rostratula australis</i>	V
Black-throated Finch (southern)	<i>Poephila cincta cincta</i>	E
Coxen's Fig-Parrot	<i>Cyclopsitta diophthalma coxeni</i>	E
Fleay's frog	<i>Mixophyes fleayi</i>	E
Green and Golden Bell Frog	<i>Litoria aurea</i>	V
Grey-headed Flying-fox	<i>Pteropus poliocephalus</i>	V
Koala	<i>Phascolarctos cinereus</i>	V
Large-eared Pied Bat	<i>Chalinolobus dwyeri</i>	V
Long-nosed Potoroo (SE mainland)	<i>Potorous tridactylus tridactylus</i>	V
Mitchell's Rainforest snail	<i>Thersites mitchellae</i>	CE
New Holland mouse	<i>Pseudomys novaehollandiae</i>	V
Red Goshawk	<i>Erythrorhynchus radiatus</i>	V
Regent Honeyeater	<i>Xanthomyza phrygia</i>	E
Spotted-tail Quoll (south-eastern mainland population)	<i>Dasyurus maculatus maculatus</i> (SE mainland population)	E
Swift Parrot	<i>Lathamus discolor</i>	E
Wallum Sedge Frog	<i>Litoria olongburensis</i>	V
Water mouse	<i>Xeromys myoides</i>	V
Australian fritillary	<i>Argynnis hyperbius inconstans</i>	CE
Pink underwing moth	<i>Phyllodes imperialis smithersi</i>	E

KEY

CE	Critically endangered
E	Endangered
V	Vulnerable

3.3 Fauna assessment

3.3.1 Introduction

This section discusses fauna habitat types within the Subject site. It includes a discussion of the ecological significance of these habitats including the potential for threatened and significant fauna species to occur in the Study area.

3.3.2 Significant species

No Threatened (NSW BC Act 2016, EPBC Act 1999) fauna species were recorded during the site assessment. Some Swamp mahogany occurs toward the northern part of the site and the preferred Koala feed tree species Tallowwood is present within the area of open sclerophyll forest in the central part of the site. Koala trees in these areas were searched for evidence of Koala scats and scratches. No evidence of Koala use was recorded on site. **FIGURE 6** shows mapped Koala habitat from the Council GIS.



Figure 6 Areas of Koala habitat from Byron Shire Council GIS (in green)

3.3.3 Fauna habitats

Land within the Study area is of moderate-good value as fauna habitat. More extensive areas of habitat occur within Jinangong Nature Reserve to the south-west. The Pacific Highway, together with developed areas of Billinudgel and Ocean Shores, provide a barrier to movement to the north and east. Historic disturbance of the site, including the lack of a developed groundcover layer even within forested areas in the central and southern parts of the site, limits the availability of habitat niches for smaller mammals, reptiles and birds. Highly mobile bird and bat species that occur in forested vegetation – including Threatened species such as the Grey-headed flying-fox, Rose-crowned fruit-dove and Little bent-wing bat – may occasionally occur in the Study area but are highly unlikely to have any degree of reliance on site habitats.

The swamp forest patch is relatively isolated but supports intact native vegetation and provides habitat niches for amphibians and smaller mammals, birds and reptiles.

3.3.4 Potential occurrence of Threatened fauna

Based upon this assessment no threatened fauna species are considered likely to have any degree of reliance on habitats within the area subject to the proposed development.

Once developed, areas of restoration plantings on the site will substantially expand the availability of habitat on the site for native species, including Threatened species.

4 POTENTIAL IMPACTS AND AMELIORATION MEASURES

4.1 Introduction

This section discusses potential impacts associated with the proposed rezoning and in particular the establishment of Bushfire APZs in the north-eastern part of the site.

4.2 Potential ecological impacts

4.2.1 *Ongoing impacts associated with the proposed rezoning*

No native vegetation removal is required within the proposed rezoning area or as a result of ongoing use of the site. The proposed development involves improved stormwater management on the site with a kerb to be installed to the built-up area and all stormwater to be diverted to a filter pit and then to the existing stormwater system along Lucky Lane. This will reduce the potential for stormwater runoff impacts to the existing swamp forest area.

The swamp forest area is likely to be in somewhat of a minor state of transition in adapting to changes in local hydrological conditions in recent decades as a result of development of the Billinudgel Industrial Estate, construction of the Pacific Motorway and other localised changes in hydrological conditions. The ongoing use of the filled area is unlikely to be a significant factor in affecting hydrological conditions in this context.

4.2.2 *Bushfire Asset Protection Zones (APZs)*

A Bushfire Strategic Study has been prepared for the site by LandUse (2024). This study identified Bushfire Asset Protection Zones (APZs) required on the site. These APZs extend for a distance of 22m to the west and south and 9m to the east (see **FIGURE 3**).

The site assessment included a detailed assessment of vegetation within APZs to determine the extent of vegetation removal required to achieve APZ requirements. The assessment indicated that APZ requirements could be achieved through the removal of exotic species and a small amount of younger regrowth native trees.

An area of vegetation located on the **northern side of the front gate of the property** on the western side of the Lucky Lane cul-de-sac falls within the APZ area and would require the removal of exotic species consisting of:

- 1 Camphor laurel tree
- Substantial growth of Small-leaved privet
- Lantana
- Winter senna
- Tobacco bush.

A dead Blackwood wattle should also be removed. Well separated native species in this area can be retained including Pick euodia, Swamp turpentine and a Blackwood wattle.

Along the **western and south-western section of the APZ** all exotic species should be removed consisting of:

- All juvenile Camphor laurel trees.
- Some Winter senna and other weeds.

Several palm trees occur in these areas and include exotic Alexander palms, native Bangalow palms and some apparent hybrids of the two ("Alebangers"). Palm tree removal for establishment of the APZ will require the removal of 4 Alexander palms, 2 Bangalow palms and 2 hybrid individuals.

8 small Swamp turpentine trees (dbh <10cm) will require removal as well as two more established Swamp turpentine (dbh 11-20cm). 2 dead Broad-leaved paperbark trunks should be removed. A larger Swamp mahogany and other native species can be retained.

The **southern APZ** falls short of the treeline and no vegetation removal is required. No vegetation removal is required within the **eastern APZ**.

Swamp turpentine is a common regrowth native species in this kind of habitat and trees to be removed are well represented in adjacent sections of the wetland as well as further south on the property. The landscaped banks of the filled area do not form part of the Swamp sclerophyll forest TEC that occurs further to the west and south. An Assessment of Significance has been included and is included as **APPENDIX C**.

4.3 Amelioration Measures

Based on the assessment of potential impacts, it is considered that the program of weed control and restoration plantings currently underway on the site will more than offset any impacts associated with the establishment of APZs.

It is further recommended that:

- Sedimentation fencing be retained along the base of the banks and maintained/replaced as necessary.
- Bush regenerators on the site continue to target weeds along the interface of the banks and the adjacent coastal swamp forest area.

5 STATUTORY AND PLANNING ASSESSMENT

5.1 Introduction

This section includes assessments of the impacts of the Proposed development with regard to:

- The NSW Biodiversity Conservation Act 2016
- the Commonwealth Environment Protection and Biodiversity Conservation Act (1999).
- State Environmental Planning Policy (SEPP) Biodiversity and Conservation (2021)
- State Environmental Planning Policy (Resilience and Hazards) 2021

5.2 Biodiversity offset scheme (BOS) and Biodiversity assessment Method (BAM)

5.2.1 Introduction

The Biodiversity Offsets Scheme Threshold is a test used to determine when is necessary to engage an accredited assessor to apply the Biodiversity Assessment Method (the BAM) to assess the impacts of a proposal. It is used for local developments (development applications submitted to councils) and clearing that does not require development consent in urban areas and areas zoned for environmental conservation (under the State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017).

The Biodiversity Conservation Regulation 2017 sets out threshold levels for when the Biodiversity Offsets Scheme will be triggered. The threshold has three elements:

- whether the amount of native vegetation being cleared exceeds a threshold area set out below
- whether the impacts occur on an area mapped on the Biodiversity Values map published by the Minister for the Environment.
- whether the impacts exceed the Threatened species “test of significance” threshold.

If clearing and other impacts exceeds either trigger, the Biodiversity Offset Scheme applies to the proposed development including biodiversity impacts prescribed by clause 6.1 of the Biodiversity Regulation 2017.

5.2.2 Biodiversity offset scheme (BOS) Entry Test Report

The Biodiversity Offsets Scheme Entry Threshold Tool was accessed on 6th August 2024 following a site inspection. The BOSET map produced shows that:

- The site does not contain mapped Biodiversity Values within or adjacent to the proposed rezoning area.

The BOSET mapping is included as **FIGURE 7**. No native vegetation removal is proposed within any areas of mapped Biodiversity value. Future development of the site will require some native vegetation removal within the APZ which will fall below the area clearing threshold according to the assessment in Section 4. Any future development of the site that includes native vegetation removal will need to consider the area clearing threshold and the current state of Biodiversity mapping at that time and must not exceed 1ha or a BDAR will be required.

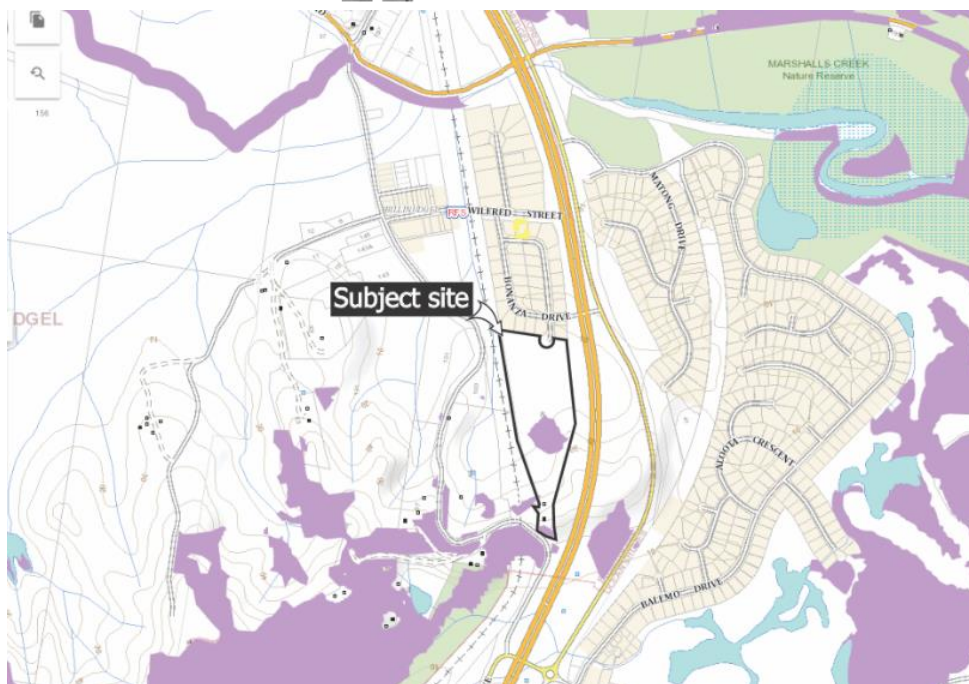


Figure 7 Biodiversity Value mapping (Biodiversity Conservation Act 2016)

No Threatened flora species or fauna were recorded on site. The fauna assessment concluded that no species of Threatened fauna is likely to have any degree of reliance on site habitats. An assessment of significance has been included for the Swamp sclerophyll forest TEC. The Threatened species "test of significance" threshold is not exceeded.

5.3 Commonwealth EPBC Act (1999)

5.3.1 Introduction

Under the environmental assessment provisions of the EPBC Act, actions that are likely to have a significant impact on a matter of National Environmental Significance are subject to a rigorous assessment and approval process. An action includes a project, development, undertaking, activity, or series of activities. An action will require approval from the Minister if the action has, will have, or is likely to have, a significant impact on a matter of national environmental significance.

The Act identifies seven matters of national environmental significance:

- World Heritage properties
- National heritage places
- Wetlands of international importance (Ramsar wetlands)
- Threatened species and ecological communities
- Migratory species
- Commonwealth marine areas
- Nuclear actions (including uranium mining)

The EPBC Act Policy Statement 1.1 Significant Impact Guidelines (DEH 2006) outline an assessment process, including detailed criteria, to assist in deciding whether or not referral to the Minister is required. These guidelines replace the EPBC Act Administrative Guidelines of July 2000.

No Commonwealth EPBC Act (1999) Threatened fauna or flora were recorded or are considered likely to occur within or immediately adjacent to the proposed road extension.

Based upon this assessment and with the implementation of the amelioration measures discussed in this report, the proposed development is unlikely to result in a significant impact on any matters of National Environmental Significance (NES) as listed under the EPBC Act 1999.

5.4 Resilience and Hazards SEPP Coastal Wetlands & Littoral Rainforests

The Resilience and Hazards SEPP outlines a range of development controls that aim to help protect and manage our sensitive coastal environments, manage risks from coastal hazards, and support appropriate urban development. Development controls for the mapped coastal wetlands and littoral rainforests area aim to continue existing protections for these important ecological communities.

FIGURE 8 shows an extract of mapping from the Resilience and Hazards SEPP. No areas mapped as Coastal wetland or Littoral rainforest occur within or adjacent to the site and the site does not fall within the proximity area for any Coastal Wetlands or Littoral rainforests.

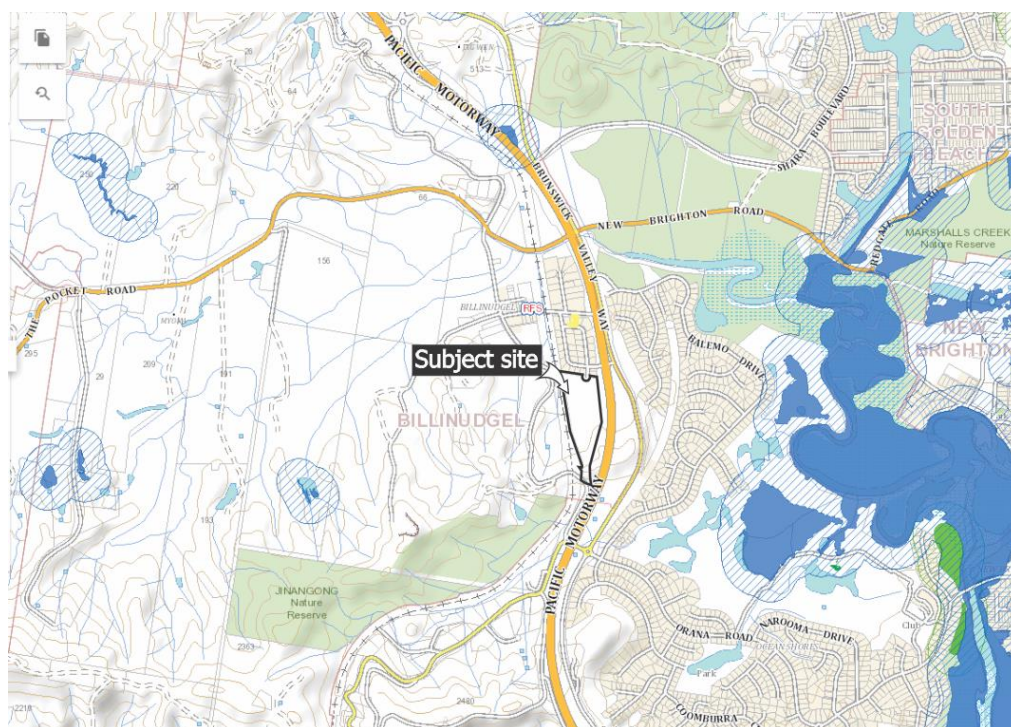


Figure 8 Coastal Management SEPP Mapping

5.5 Byron Coast Comprehensive Koala Plan of Management

The Subject site is located within the North Byron Coast Koala Management Area of the Byron Coast CKPoM. It is located outside of the North Ocean Shores Koala Management Precinct.

No removal of Koala feed trees is proposed and the proposed development will not result in an increase in any other threatening processes for Koalas or have any impact on Koala movement within or through the site.

5.6 State Environmental Planning Policy (Koala Habitat Protection) 2019

The State Environmental Planning Policy (Koala Habitat Protection) 2019 replaces and repeals the State Environmental Planning Policy No 44 – Koala Habitat Protection (SEPP 44). The Koala



Habitat Protection SEPP applies to 'development' under Part 4 of the NSW Environmental Planning and Assessment Act 1979 (EP&A Act), specifically excluding Part 5 'activities' (which are also excluded from assessment under the Biodiversity Assessment Method).

Step 1: Is the proposal a Part 4 'development' under the EP&A Act?

If yes, proceed to step 2. If no, then Koala Habitat Protection SEPP does not apply.

Yes.

Step 2: Does a Koala Plan of Management exist for the LGA or the part of the LGA in which the site is located?

If yes, the requirements of the KPOM are to be addressed. If no, then proceed to step 3.

Yes, the Subject site is located within the North Byron Coast Koala Management Area of the Byron Coast CKPoM. The Koala Habitat Protection provisions of State Environmental Planning Policy (SEPP) Biodiversity and Conservation (2021) do not apply.

6 BCD ASSESSMENT FOR PLANNING PROPOSAL

6.1 Introduction

The Biodiversity and Conservation Division (BCD) NE Branch of the Department of Planning and Environment (DPE) has prepared guidelines for assessing biodiversity and biodiversity impacts in Planning proposals.

The assessment process involves identifying and mapping areas of High Environmental Value (HEV) on the site. Identifying areas of HEV includes consideration of the following criterion:

Criterion 1 Sensitive biodiversity mapped on the Biodiversity Values Map

- 1.1 Biodiversity Values Map

Criterion 2 Native Vegetation of High Conservation Value

- 2.1 Over-cleared vegetation types
- 2.2 Vegetation in over-cleared landscapes (Mitchell landscapes)
- 2.3 Threatened Ecological Communities
- 2.4 100m buffer on Coastal wetlands and Littoral rainforest areas

Criterion 3 Threatened species

- 3.1 Key habitat for threatened species including Core Koala Habitat

Criterion 4 Wetlands, rivers, estuaries and coastal features of HEV

- 4.1 Nationally important wetlands
- 4.2 Vulnerable estuaries and ICOLLs

Criterion 5 Areas of geological significance

- 5.1 Karst landscapes
- 5.2 Sites on the State Heritage Register or Heritage Inventory

6.2 HEV assessment

This section considers the presence of areas of High Environmental Value (HEV) on the site. **TABLE 5** provides an analysis of HEV criteria in relation to the property as a whole. HEV mapping is shown in FIGURE 9.

TABLE 5
HEV CRITERIA

Criterion 1 Sensitive biodiversity mapped on the Biodiversity Values Map	
<i>1.1 Biodiversity Values Map</i>	A small area of mapped Biodiversity Value is located within the central part of the property.
Criterion 2 Native Vegetation of High Conservation Value	
<i>2.1 Over-cleared vegetation types</i>	PCT 3990 Far North Paperbark Gahnia Swamp forest is estimated at 69.42% cleared which is below the 70% threshold. PCT 3232 Far North Coastal Hills Blackbutt-Ironbark Forest is estimated at 40.21% cleared which is below the 70% threshold. There are no over-cleared vegetation types on the property.
<i>2.2 Vegetation in over-cleared landscapes (Mitchell landscapes)</i>	An area of mapped over-cleared landscape (Mitchell landscapes) extends west from the coast into the

	Billinudgel township and further to the west. This area extends into the northern portion of the property. FIGURE 9 shows areas of existing native vegetation on the site that occur within this area of mapped over-cleared landscape.
2.3 Threatened Ecological Communities	FIGURE 9 shows areas of Swamp sclerophyll forest TEC on the site.
2.4 100m buffer on Coastal wetlands and Littoral rainforest areas	No areas mapped as Coastal wetland or Littoral rainforest under the Resilience and Hazards SEPP occur within or adjacent to the site and the site does not fall within the proximity area for any Coastal Wetlands or Littoral rainforests.
Criterion 3 Threatened species	
3.1 Key habitat for threatened species including Core Koala Habitat	FIGURE 9 shows areas of mapped Koala habitat as well as the locations of planted <i>Phaius australis</i> on the site.
Criterion 4 Wetlands, rivers, estuaries and coastal features of HEV	
4.1 Nationally important wetlands	No nationally important wetlands occur within or near to the property.
4.2 Vulnerable estuaries and ICOLLs	No estuaries or ICOLLs occur within or near to the property.
Criterion 5 Areas of geological significance	
5.1 Karst landscapes	No limestone outcrops or caves occur within or near to the property.
5.2 Sites on the State Heritage Register or Heritage Inventory	The property does not include any sites of geological significance.

6.3 Conclusion

According to the Biodiversity and Conservation Division (BCD) NE Branch HEV criteria, the property does contain areas of land considered of HEV based on:

- Presence of areas of mapped biodiversity values.
- Presence of native vegetation within over-cleared Mitchell landscapes.
- Presence of a Threatened Ecological Community.
- Presence of habitat for Koalas.

These areas occur outside of the area proposed for rezoning. The proposed rezoning has been designed to allow for intensification of landuse within a small area of the site suitable for the purpose and outside of any areas of HEV.

7 SUMMARY AND CONCLUSIONS

Blackwood Ecological Services has been engaged by Lisa Joel Investments to complete an Ecological assessment of land at the northern end of 40 The Tunnell Road, Billinudgel. The Ecological assessment is to accompany a Planning Proposal to amend the Byron Local Environmental Plan (L.E.P.) 2014 to rezone 4220m² of Lot 15 DP 1236885 from Zone RU2 Rural Landscape to Zone E4 General Industrial.

The proposed development involves the rezoning of 4220m² of land in the northern part of the site accessed via Lucky Lane. Part of this Lot, an area of 2541m², has a current approval as a truck depot. The land has been filled in the past to provide a flood free site. An area of land of approximately 1100m² within the larger rezoning area has been nominated as suitable for the location of structures associated with the future use of the site for Industrial purposes.

The proposed development involves improved stormwater management on the site with a kerb to be installed to the built-up area and all stormwater to be diverted to a filter pit and then to the existing stormwater system along Lucky Lane. This will reduce the potential for stormwater runoff impacts to the existing swamp forest area.

A Bushfire Strategic Study has been prepared for the site by LandUse (2024). This study identified Bushfire Asset Protection Zones (APZs) required on the site. These APZs extend for a distance of 22m to the west and south and 9m to the east. This ecological assessment considers impacts associated with the establishment and maintenance of these APZs.

A site assessment was completed on the 25th of July 2024. The objectives of the site assessment were:

- To identify vegetation communities and flora species present on the site.
- To complete targeted searches for significant flora species known from the locality and considered possible occurrences based on an assessment of site habitats.
- To identify potential impacts likely as a result of the proposed development.
- To assess the fauna habitat values of the site.

The property as a whole consists of areas of vegetation characteristic of the original native vegetation cover, areas under rehabilitation, open grassland areas and small areas of landscaped vegetation.

The northern portion of the site to the south and west of the existing truck depot area is characterised by an area of Broad-leaved paperbark dominated swamp forest with Swamp turpentine also present as well as Bleeding heart, Alexander palm and Bangalow palm. The groundlayer includes Swamp water fern, *Lepironia articulata*, Sawsedge, *Persicaria attenuata* and Common silkpod. Weed presence within the swamp forest interior is minimal although weeds including Singapore daisy, Small-leaved privet and *Ardisia crenata* occur on the margins.

The western and southern banks of the filled area in the north-eastern corner have been stabilised with jute mesh and extensively planted out with low growing native species amongst the occasional existing trees to stabilise the bank, reduce sedimentation and assist with filtration of stormwater runoff from the filled area. Bank plantings consist of *Lomandra*, *Carex*, *Dianellas*, *Cordylines*, Swamp lily, Cabbage palms and other species. Established trees amongst the plantings include Swamp turpentine, Pink bloodwood, Camphor laurel, Bangalow palm, Alexander palm, Brown kurrajong, Red kamala and Creek sandpaper fig.

South of the area subject to the planning proposal, the central part of the site is characterised by an open sclerophyll forest of Blackbutt, Ironbark, Pink bloodwood and Tallowwood with an open midstorey of scattered regrowth species including Bleeding heart, Native peach, Macaranga and Hard quandong. This area is augmented with plantings of native coastal sclerophyll forest species including Brush hovea, Macaranga, Red ash, eucalypts and others.

The current owners have implemented a program of ecological restoration on the site under the supervision of Mark Dunphy of Firewheel Nursery and George Roberts of EcoRestorations. Extensive planting areas are located to the north of the open sclerophyll forest (as well as within the open forest itself) and within lower lying land to the south of the swamp forest where the species mix favours wetland and swamp forest species including Bangalow palms, Cabbage palms, Broad-leaved paperbark, Cunjevoi and sedges.

No Threatened flora species listed on the NSW BC Act (2016) or Commonwealth EPBC Act (1999) were recorded during the initial site inspections. Vegetation communities on the Subject site were compared with descriptions of vegetation communities listed as Threatened Ecological Communities under the NSW Biodiversity Conservation Act (2016) and the EPBC Act (1999). Vegetation within the area mapped as Broad-leaved paperbark Swamp sclerophyll forest conforms with the description of the TEC Swamp sclerophyll forest on coastal floodplains.

Council inspection in October 2024 recorded the occurrence of two Southern swamp orchid (*Phaius australis*) on the site at 56J 551860E, 6846425S and 551860E, 6846424S. Blackwood Ecology completed an additional site inspection on the 18th of October 2024. This inspection confirmed the location of the two orchids which were still in flower. A search throughout the proposed APZ area and adjacent sections of swampland did not record any additional specimens. The two orchids located occur well outside of and to the south of the proposed APZ area. The orchids occur within an area of plantings and rehabilitated low lying land adjacent to the wetter parts of the site which receives drainage from the Pacific Highway. Bush regenerator George Roberts of EcoRestorations confirmed that these orchids were planted as part of restoration works in this part of the site, (pers.comm. 18th Oct 2024).

No Threatened (NSW BC Act 2016, EPBC Act 1999) fauna species were recorded during the site assessment. Some Swamp mahogany occurs toward the northern part of the site and the preferred Koala feed tree species Tallowwood is present within the area of open sclerophyll forest in the central part of the site. Koala trees in these areas were searched for evidence of Koala scats and scratches. No evidence of Koala use was recorded on site.

No native vegetation removal is required within the proposed rezoning area or as a result of ongoing use of the site. The site assessment included a detailed assessment of vegetation within APZs to determine the extent of vegetation removal required to achieve APZ requirements. The assessment indicated that APZ requirements could be achieved through the removal of exotic species and a small amount of younger regrowth native trees.

An area of vegetation located on the **northern side of the front gate of the property** on the western side of the Lucky Lane cul-de-sac falls within the APZ area and would require the removal of exotic species consisting of:

- 1 Camphor laurel tree
- Substantial growth of Small-leaved privet
- Lantana
- Winter senna
- Tobacco bush.

Along the **western and south-western section of the APZ** all exotic species should be removed consisting of:

- All juvenile Camphor laurel trees.
- Some Winter senna and other weeds.

Several palm trees occur in these areas and include exotic Alexander palms, native Bangalow palms and some apparent hybrids of the two ("Alebangers"). Palm tree removal for establishment of the APZ will require the removal of 4 Alexander palms, 2 Bangalow palms and 2 hybrid individuals.

8 small Swamp turpentine trees (dbh <10cm) will require removal as well as two more established Swamp turpentine (dbh 11-20cm). 2 dead Broad-leaved paperbark trunks should be removed. A larger Swamp mahogany and other native species can be retained.

The **southern APZ** falls short of the treeline and no vegetation removal is required. No vegetation removal is required within the **eastern APZ**.

Swamp turpentine is a common regrowth native species in this kind of habitat and trees to be removed are well represented in adjacent sections of the wetland as well as further south on the property. The landscaped banks of the filled area do not form part of the Swamp sclerophyll forest TEC that occurs further to the west and south.

The Biodiversity Offsets Scheme Entry Threshold Tool was accessed on 6th August 2024 following a site inspection. The BOSET map produced shows that the site does not contain mapped Biodiversity Values within or adjacent to the proposed rezoning area. No native vegetation removal is proposed within any areas of mapped Biodiversity value. An assessment of significance has been included for the Swamp sclerophyll forest TEC. The Threatened species "test of significance" threshold is not exceeded.

Future development of the site will require some native vegetation removal within the APZ which will fall below the area clearing threshold according to the assessment in Section 4. Any future development of the site that includes native vegetation removal will need to consider the area clearing threshold and the current state of Biodiversity mapping at that time and must not exceed 1 ha or a BDAR will be required.

No areas mapped as Coastal wetland or Littoral rainforest under the Resilience and Hazards SEPP occur within or adjacent to the site and the site does not fall within the proximity area for any Coastal Wetlands or Littoral rainforests.

The Subject site is located within the North Byron Coast Koala Management Area of the Byron Coast CKPoM. The Koala Habitat Protection provisions of State Environmental Planning Policy (SEPP) Biodiversity and Conservation (2021) do not apply.

According to the Biodiversity and Conservation Division (BCD) NE Branch HEV criteria, the property does contain areas of land considered of HEV based on:

- Presence of areas of mapped biodiversity values.
- Presence of native vegetation within over-cleared Mitchell landscapes.
- Presence of a Threatened Ecological Community.
- Presence of habitat for Koalas.



These areas occur outside of the area proposed for rezoning. The proposed rezoning has been designed to allow for intensification of landuse within a small area of the site suitable for the purpose, outside of any areas of HEV and located so as to minimise future interactions with threatened species and ecological communities.

8 REFERENCES

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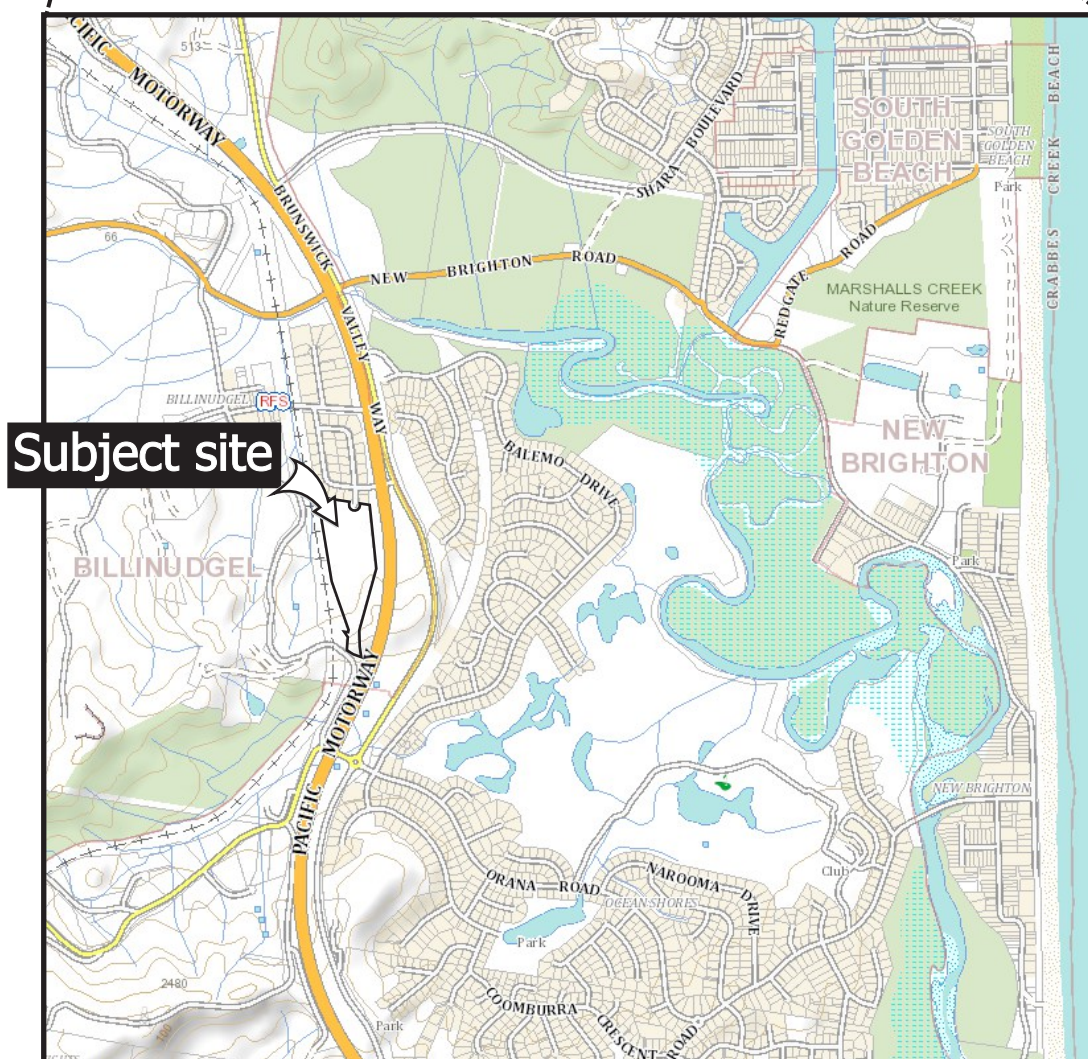
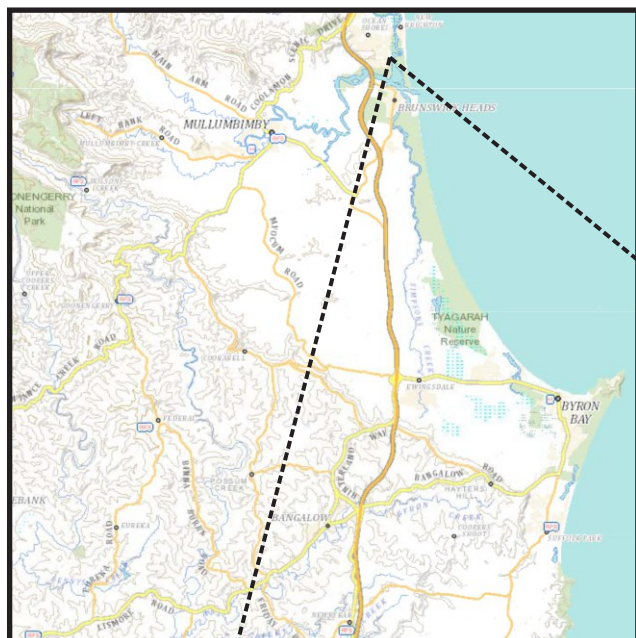
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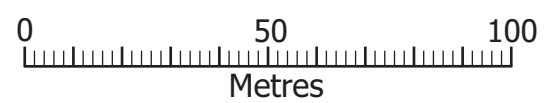
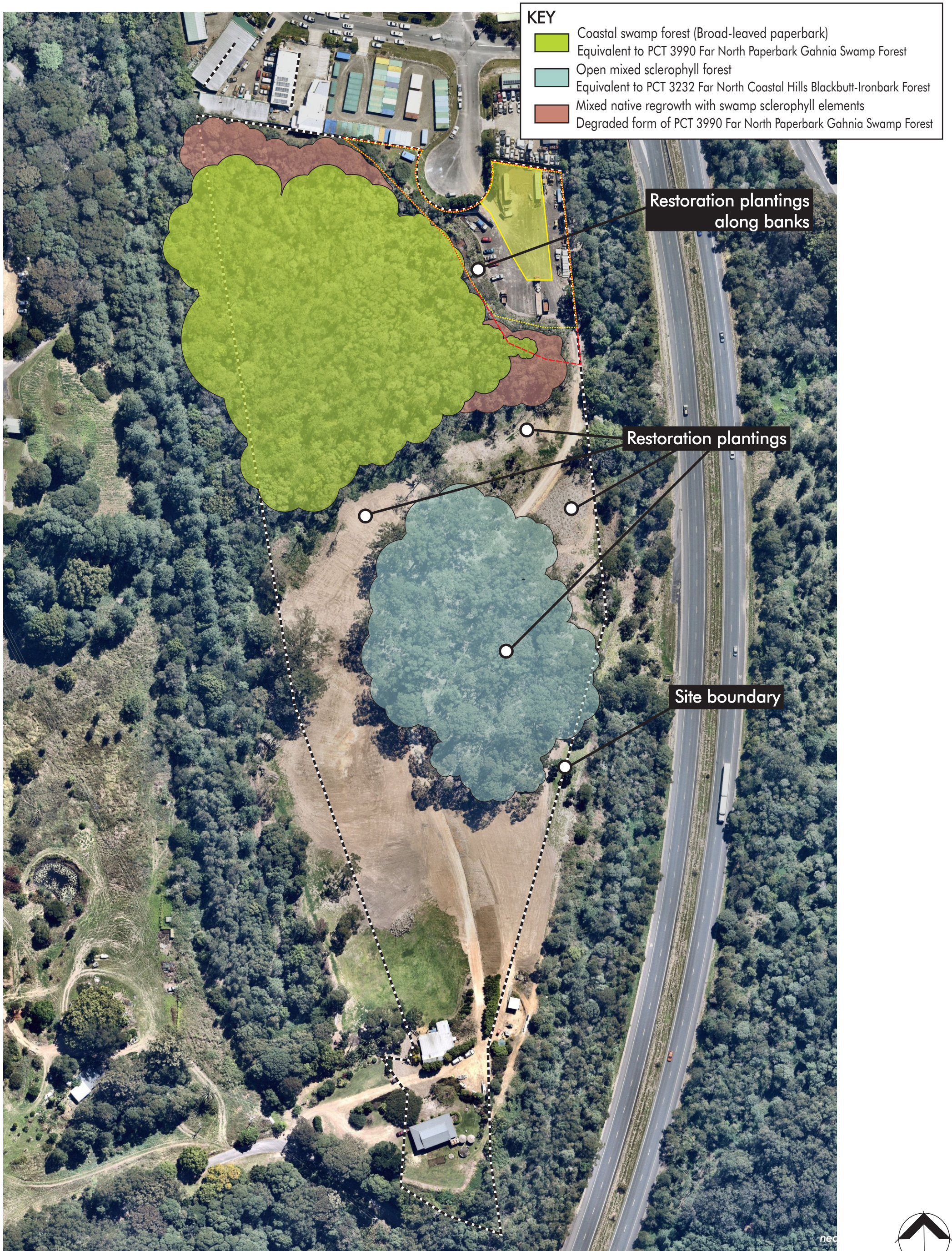
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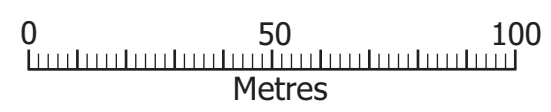
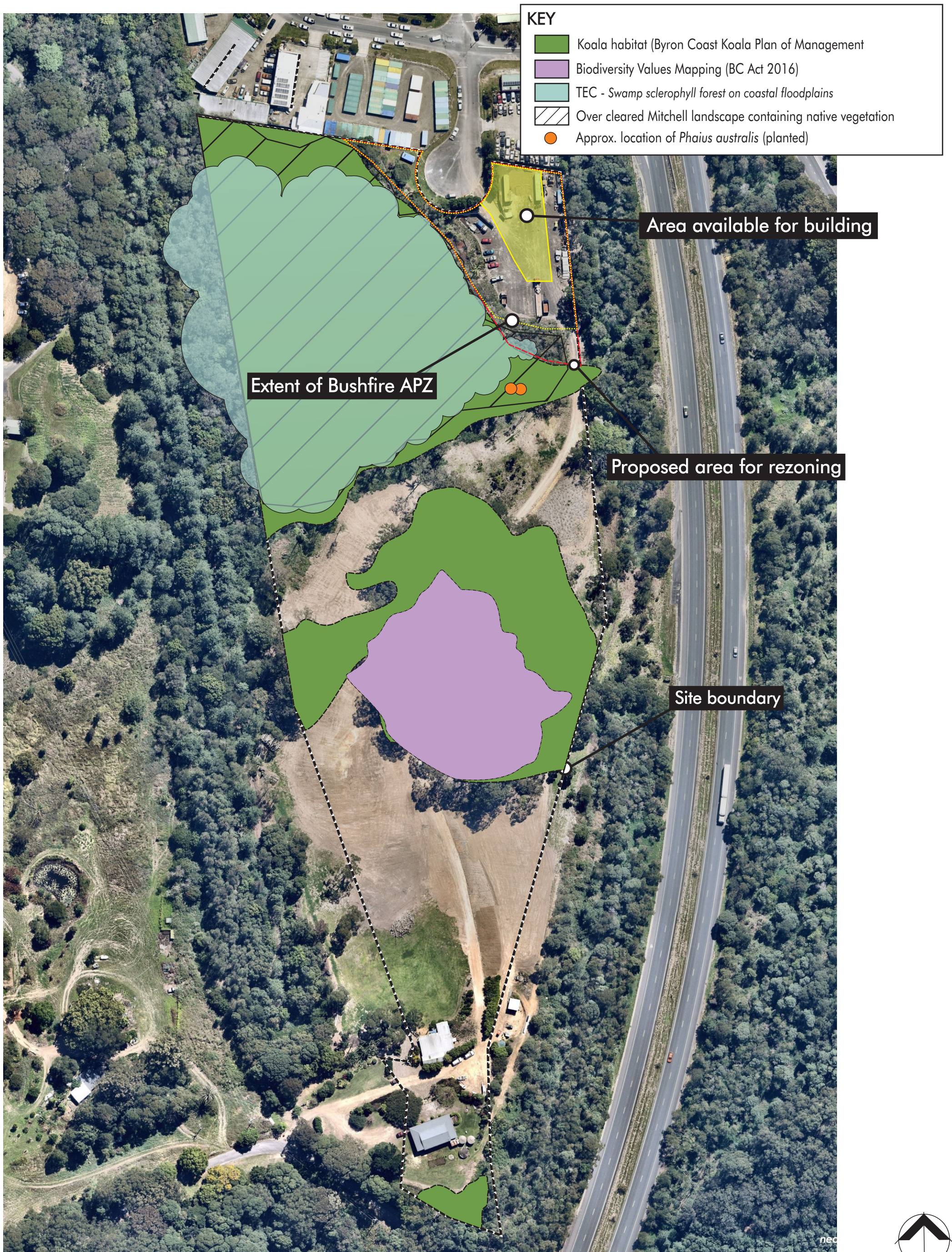
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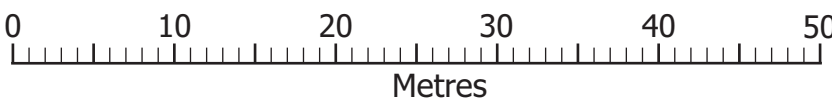
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FIGURES











APPENDIX A
EPBC PROTECTED MATTERS DATABASE SEARCH RESULTS



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. Please see the caveat for interpretation of information provided here.

Report created: 15-Dec-2022

[Summary](#)

[Details](#)

[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)

Summary

Matters of National Environment 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 (Ramsar)	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	6
Listed Threatened Species:	104
Listed Migratory Species:	64

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 <https://www.dcceew.gov.au/parks-heritage/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 Lands:	6
Commonwealth Heritage Places:	None
Listed Marine Species:	95
Whales and Other Cetaceans:	12
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

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

State and Territory Reserves:	6
Regional Forest Agreements:	1
Nationally Important Wetlands:	1
EPBC Act Referrals:	6
Key Ecological Features (Marine):	None
Biologically Important Areas:	5
Bioregional Assessments:	None
Geological and Bioregional Assessments:	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.

Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.

Community Name	Threatened Category	Presence Text	Buffer Status
Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community	Endangered	Community likely to occur within area	In feature area
Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland	Endangered	Community may occur within area	In buffer area only
Littoral Rainforest and Coastal Vine Thickets of Eastern Australia	Critically Endangered	Community likely to occur within area	In buffer area only
Lowland Rainforest of Subtropical Australia	Critically Endangered	Community likely to occur within area	In feature area
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	Community likely to occur within area	In buffer area only
Subtropical eucalypt floodplain forest and woodland of the New South Wales North Coast and South East Queensland bioregions	Endangered	Community likely to occur within area	In feature area

Listed Threatened Species

[[Resource Information](#)]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.

Number is the current name ID.

Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			
Anthochaera phrygia Regent Honeyeater [82338]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
Calyptorhynchus lathami lathami South-eastern Glossy Black-Cockatoo [67036]	Vulnerable	Species or species habitat known to occur within area	In feature area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Cyclopsitta diophthalma coxeni Coxen's Fig-Parrot [59714]	Endangered	Species or species habitat known to occur within area	In feature area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Diomedea antipodensis gibsoni Gibson's Albatross [82270]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Erythrotriorchis radiatus Red Goshawk [942]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
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	In buffer area only
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
Limosa lapponica baueri Nunivak Bar-tailed Godwit, Western Alaskan Bar-tailed Godwit [86380]	Vulnerable	Species or species habitat known to occur within area	In feature area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In buffer area only
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Pachyptila turtur subantarctica Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat known to occur within area	In feature area
Phoebastria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Pterodroma leucoptera leucoptera Gould's Petrel, Australian Gould's Petrel [26033]	Endangered	Species or species habitat may occur within area	In buffer area only
Pterodroma neglecta neglecta Kermadec Petrel (western) [64450]	Vulnerable	Foraging, feeding or related behaviour may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat known to occur within area	In feature area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche cauta Shy Albatross [89224]	Endangered	Species or species habitat may occur within area	In buffer area only
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Turnix melanogaster Black-breasted Button-quail [923]	Vulnerable	Species or species habitat may occur within area	In feature area
FISH			
Epinephelus daemeli Black Rockcod, Black Cod, Saddled Rockcod [68449]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Hippocampus whitei White's Seahorse, Crowned Seahorse, Sydney Seahorse [66240]	Endangered	Species or species habitat likely to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Seriolella brama Blue Warehou [69374]	Conservation Dependent	Species or species habitat known to occur within area	In buffer area only
Thunnus maccoyii Southern Bluefin Tuna [69402]	Conservation Dependent	Species or species habitat likely to occur within area	In buffer area only
FROG			
Litoria olongburensis Wallum Sedge Frog [1821]	Vulnerable	Species or species habitat known to occur within area	In feature area
Mixophyes fleayi Fleay's Frog [25960]	Endangered	Species or species habitat likely to occur within area	In feature area
INSECT			
Argynnis hyperbius inconstans Australian Fritillary [88056]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
Phyllodes imperialis smithersi Pink Underwing Moth [86084]	Endangered	Breeding may occur within area	In feature area
MAMMAL			
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area	In buffer area only
Chalinolobus dwyeri Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat known to occur within area	In feature area
Dasyurus maculatus maculatus (SE mainland population) Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat known to occur within area	In feature area
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Notamacropus parma Parma Wallaby [89289]	Vulnerable	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
<u>Petaurus australis australis</u> Yellow-bellied Glider (south-eastern) [87600]	Vulnerable	Species or species habitat may occur within area	In feature area
<u>Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)</u> Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Endangered	Species or species habitat known to occur within area	In feature area
<u>Potorous tridactylus tridactylus</u> Long-nosed Potoroo (northern) [66645]	Vulnerable	Species or species habitat known to occur within area	In feature area
<u>Pseudomys novaehollandiae</u> New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat likely to occur within area	In feature area
<u>Pteropus poliocephalus</u> Grey-headed Flying-fox [186]	Vulnerable	Roosting known to occur within area	In feature area
<u>Xeromys myoides</u> Water Mouse, False Water Rat, Yirrko [66]	Vulnerable	Species or species habitat may occur within area	In feature area
PLANT			
<u>Acronychia littoralis</u> Scented Acronychia [8582]	Endangered	Species or species habitat known to occur within area	In feature area
<u>Amyema plicatula</u> [81879]	Endangered	Species or species habitat may occur within area	In buffer area only
<u>Arthraxon hispidus</u> Hairy-joint Grass [9338]	Vulnerable	Species or species habitat known to occur within area	In feature area
<u>Baloghia marmorata</u> Marbled Baloghia, Jointed Baloghia [8463]	Vulnerable	Species or species habitat likely to occur within area	In feature area
<u>Bosistoia transversa</u> Three-leaved Bosistoia, Yellow Satinheart [16091]	Vulnerable	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Corokia whiteana [17820]	Endangered	Species or species habitat known to occur within area	In feature area
Cryptocarya foetida Stinking Cryptocarya, Stinking Laurel [11976]	Vulnerable	Species or species habitat known to occur within area	In feature area
Cryptostylis hunteriana Leafless Tongue-orchid [19533]	Vulnerable	Species or species habitat may occur within area	In feature area
Cynanchum elegans White-flowered Wax Plant [12533]	Endangered	Species or species habitat known to occur within area	In feature area
Davidsonia jerseyana Davidson's Plum [67219]	Endangered	Species or species habitat known to occur within area	In feature area
Davidsonia johnsonii Smooth Davidsonia, Smooth Davidson's Plum, Small-leaved Davidson's Plum [67178]	Endangered	Species or species habitat likely to occur within area	In feature area
Desmodium acanthocladum Thorny Pea [17972]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Diospyros mabacea Red-fruited Ebony, Silky Persimmon, Ebony [18548]	Endangered	Species or species habitat may occur within area	In buffer area only
Diploglottis campbellii Small-leaved Tamarind [21484]	Endangered	Species or species habitat known to occur within area	In feature area
Elaeocarpus williamsianus Hairy Quandong [8956]	Endangered	Species or species habitat known to occur within area	In feature area
Endiandra floydii Floyd's Walnut, Crystal Creek Walnut [52955]	Endangered	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Endiandra hayesii Rusty Rose Walnut, Velvet Laurel [13866]	Vulnerable	Species or species habitat known to occur within area	In feature area
Floydia praealta Ball Nut, Possum Nut, Big Nut, Beefwood [15762]	Vulnerable	Species or species habitat known to occur within area	In feature area
Fontainea australis Southern Fontainea [24037]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Gossia fragrantissima Sweet Myrtle, Small-leaved Myrtle [78867]	Endangered	Species or species habitat known to occur within area	In feature area
Hicksbeachia pinnatifolia Monkey Nut, Bopple Nut, Red Bopple, Red Bopple Nut, Red Nut, Beef Nut, Red Apple Nut, Red Boppel Nut, Ivory Silky Oak [21189]	Vulnerable	Species or species habitat known to occur within area	In feature area
Isoglossa eranthemoides Isoglossa [16663]	Endangered	Species or species habitat may occur within area	In buffer area only
Leichhardtia longiloba listed as Marsdenia longiloba Clear Milkvine [91911]	Vulnerable	Species or species habitat known to occur within area	In feature area
Macadamia integrifolia Macadamia Nut, Queensland Nut Tree, Smooth-shelled Macadamia, Bush Nut, Nut Oak [7326]	Vulnerable	Species or species habitat known to occur within area	In feature area
Macadamia tetraphylla Rough-shelled Bush Nut, Macadamia Nut, Rough-shelled Macadamia, Rough-leaved Queensland Nut [6581]	Vulnerable	Species or species habitat known to occur within area	In feature area
Ochrosia moorei Southern Ochrosia [11350]	Endangered	Species or species habitat known to occur within area	In feature area
Phaius australis Lesser Swamp-orchid [5872]	Endangered	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Plectranthus nitidus Nightcap Plectranthus, Silver Plectranthus [55742]	Endangered	Species or species habitat may occur within area	In buffer area only
Randia moorei Spiny Gardenia [10577]	Endangered	Species or species habitat known to occur within area	In feature area
Rhodamnia rubescens Scrub Turpentine, Brown Malletwood [15763]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Rhodomyrtus psidioides Native Guava [19162]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Sarcochilus fitzgeraldii Ravine Orchid [19131]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Sophora fraseri [8836]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Symplocos baeuerlenii Small-leaved Hazelwood, Shrubby Hazelwood [19010]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Syzygium hodgkinsoniae Smooth-bark Rose Apple, Red Lilly Pilly [3539]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Syzygium moorei Rose Apple, Coolamon, Robby, Durobby, Watermelon Tree, Coolamon Rose Apple [12284]	Vulnerable	Species or species habitat known to occur within area	In feature area
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Vincetoxicum woollsii listed as Tylophora woollsii [40080]	Endangered	Species or species habitat likely to occur within area	In feature area

REPTILE

Scientific Name	Threatened Category	Presence Text	Buffer Status
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding known to occur within area	In buffer area only
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Coeranoscincus reticulatus Three-toed Snake-tooth Skink [59628]	Vulnerable	Species or species habitat may occur within area	In feature area
Delma torquata Adorned Delma, Collared Delma [1656]	Vulnerable	Species or species habitat may occur within area	In feature area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Breeding likely to occur within area	In buffer area only
Natator depressus Flatback Turtle [59257]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
SHARK			
Carcharias taurus (east coast population) Grey Nurse Shark (east coast population) [68751]	Critically Endangered	Species or species habitat likely to occur within area	In buffer area only
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Galeorhinus galeus School Shark, Eastern School Shark, Snapper Shark, Tope, Soupfin Shark [68453]	Conservation Dependent	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Sphyrna lewini Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat likely to occur within area	In buffer area only

SNAIL			
Thersites mitchellae Mitchell's Rainforest Snail [66774]	Critically Endangered	Species or species habitat known to occur within area	In feature area

Listed Migratory Species			[Resource Information]
Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			
Anous stolidus Common Noddy [825]		Species or species habitat likely to occur within area	In feature area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
Ardenna carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Ardenna grisea Sooty Shearwater [82651]		Species or species habitat likely to occur within area	In buffer area only
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat known to occur within area	In buffer area only
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat known to occur within area	In feature area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat likely to occur within area	In buffer area only
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In buffer area only
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area	In buffer area only
Phoebastria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Sternula albifrons Little Tern [82849]		Species or species habitat may occur within area	In buffer area only
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche cauta Shy Albatross [89224]	Endangered	Species or species habitat may occur within area	In buffer area only
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Migratory Marine Species			
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area	In buffer area only
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area	In buffer area only
Carcharhinus longimanus Oceanic Whitetip Shark [84108]		Species or species habitat may occur within area	In buffer area only
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding known to occur within area	In buffer area only
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Dugong dugon Dugong [28]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Eubalaena australis as Balaena glacialis australis Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Lamna nasus Porbeagle, Mackerel Shark [83288]		Species or species habitat may occur within area	In buffer area only
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Breeding likely to occur within area	In buffer area only
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat known to occur within area	In buffer area only
Mobula alfredi as Manta alfredi Reef Manta Ray, Coastal Manta Ray [90033]		Species or species habitat known to occur within area	In buffer area only
Mobula birostris as Manta birostris Giant Manta Ray [90034]		Species or species habitat may occur within area	In buffer area only
Natator depressus Flatback Turtle [59257]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area	In buffer area only
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Sousa sahalensis as Sousa chinensis Australian Humpback Dolphin [87942]		Species or species habitat may occur within area	In buffer area only
Migratory Terrestrial Species			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Cuculus optatus Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area	In feature area
Motacilla flava Yellow Wagtail [644]		Species or species habitat likely to occur within area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area	In feature area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area	In feature area
Symposiachrus trivirgatus as Monarcha trivirgatus Spectacled Monarch [83946]		Species or species habitat known to occur within area	In feature area
Migratory Wetlands Species			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area	In feature area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat likely to occur within area	In feature area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat likely to occur within area	In feature area
Gallinago megala Swinhoe's Snipe [864]		Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Gallinago stenura Pin-tailed Snipe [841]		Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Numenius minutus Little Curlew, Little Whimbrel [848]		Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Numenius phaeopus Whimbrel [849]		Foraging, feeding or related behaviour known to occur within area	In buffer area only
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Pluvialis fulva			
Pacific Golden Plover [25545]		Foraging, feeding or related behaviour known to occur within area	In buffer area only
Tringa brevipes			
Grey-tailed Tattler [851]		Foraging, feeding or related behaviour known to occur within area	In buffer area only
Tringa nebularia			
Common Greenshank, Greenshank [832]		Species or species habitat known to occur within area	In feature area

Other Matters Protected by the EPBC Act

Commonwealth Lands [\[Resource Information \]](#)

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Commonwealth Land Name	State	Buffer Status
Communications, Information Technology and the Arts - Australian Postal Corporation		
Commonwealth Land - Australian Postal Commission [11267]	NSW	In buffer area only
Communications, Information Technology and the Arts - Telstra Corporation Limited		
Commonwealth Land - Australian Telecommunications Commission [11304]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [11266]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [14482]	NSW	In buffer area only

Unknown		
Commonwealth Land - [14475]	NSW	In feature area
Commonwealth Land - [14476]	NSW	In feature area

Listed Marine Species [\[Resource Information \]](#)

Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			
Actitis hypoleucos			
Common Sandpiper [59309]		Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Anous stolidus Common Noddy [825]		Species or species habitat likely to occur within area	In feature area
Anseranas semipalmata Magpie Goose [978]		Species or species habitat may occur within area overfly marine area	In feature area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
Ardenna carneipes as Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Ardenna grisea as Puffinus griseus Sooty Shearwater [82651]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Breeding likely to occur within area overfly marine area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area	In feature area
Calidris canutus Red Knot, Knot [855]		Species or species habitat known to occur within area overfly marine area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area overfly marine area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat likely to occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat known to occur within area	In buffer area only
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Charadrius ruficapillus Red-capped Plover [881]		Foraging, feeding or related behaviour known to occur within area overfly marine area	In buffer area only
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Diomedea antipodensis gibsoni as Diomedea gibsoni Gibson's Albatross [82270]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat known to occur within area	In feature area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat likely to occur within area	In buffer area only
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat likely to occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Gallinago megala Swinhoe's Snipe [864]		Foraging, feeding or related behaviour likely to occur within area overfly marine area	In buffer area only
Gallinago stenura Pin-tailed Snipe [841]		Foraging, feeding or related behaviour likely to occur within area overfly marine area	In buffer area only
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area	In feature area
Himantopus himantopus Pied Stilt, Black-winged Stilt [870]		Foraging, feeding or related behaviour known to occur within area overfly marine area	In buffer area only
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area overfly marine area	In feature area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area	In feature area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In buffer area only
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Merops ornatus Rainbow Bee-eater [670]	Critically Endangered	Species or species habitat may occur within area overfly marine area	In feature area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area overfly marine area	In feature area
Motacilla flava Yellow Wagtail [644]		Species or species habitat likely to occur within area overfly marine area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area overfly marine area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]		Species or species habitat known to occur within area	In feature area
Numenius minutus Little Curlew, Little Whimbrel [848]		Foraging, feeding or related behaviour likely to occur within area overfly marine area	In buffer area only
Numenius phaeopus Whimbrel [849]		Foraging, feeding or related behaviour known to occur within area	In buffer area only
Pachyptila turtur Fairy Prion [1066]		Species or species habitat known to occur within area	In feature area
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area	In feature area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Phoebastria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Pluvialis fulva Pacific Golden Plover [25545]		Foraging, feeding or related behaviour known to occur within area	In buffer area only
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area overfly marine area	In feature area
Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037]	Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
Stercorarius skua as Catharacta skua Great Skua [823]		Species or species habitat may occur within area	In buffer area only
Sternula albifrons as Sterna albifrons Little Tern [82849]		Species or species habitat may occur within area	In buffer area only
Symposiachrus trivirgatus as Monarcha trivirgatus Spectacled Monarch [83946]		Species or species habitat known to occur within area overfly marine area	In feature area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche cauta Shy Albatross [89224]	Endangered	Species or species habitat may occur within area	In buffer area only
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Tringa brevipes as Heteroscelus brevipes Grey-tailed Tattler [851]		Foraging, feeding or related behaviour known to occur within area	In buffer area only
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat known to occur within area overfly marine area	In feature area
Fish			
Acentronura tentaculata Shortpouch Pygmy Pipehorse [66187]		Species or species habitat may occur within area	In buffer area only
Campichthys tryoni Tryon's Pipefish [66193]		Species or species habitat may occur within area	In buffer area only
Corythoichthys amplexus Fijian Banded Pipefish, Brown-banded Pipefish [66199]		Species or species habitat may occur within area	In buffer area only
Corythoichthys ocellatus Orange-spotted Pipefish, Ocellated Pipefish [66203]		Species or species habitat may occur within area	In buffer area only
Festucalex cinctus Girdled Pipefish [66214]		Species or species habitat may occur within area	In buffer area only
Filicampus tigris Tiger Pipefish [66217]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Halicampus grayi Mud Pipefish, Gray's Pipefish [66221]		Species or species habitat may occur within area	In buffer area only
Hippichthys cyanospilos Blue-speckled Pipefish, Blue-spotted Pipefish [66228]		Species or species habitat may occur within area	In buffer area only
Hippichthys heptagonus Madura Pipefish, Reticulated Freshwater Pipefish [66229]		Species or species habitat may occur within area	In buffer area only
Hippichthys penicillus Beady Pipefish, Steep-nosed Pipefish [66231]		Species or species habitat may occur within area	In buffer area only
Hippocampus kelloggi Kellogg's Seahorse, Great Seahorse [66723]		Species or species habitat may occur within area	In buffer area only
Hippocampus kuda Spotted Seahorse, Yellow Seahorse [66237]		Species or species habitat may occur within area	In buffer area only
Hippocampus planifrons Flat-face Seahorse [66238]		Species or species habitat may occur within area	In buffer area only
Hippocampus trimaculatus Three-spot Seahorse, Low-crowned Seahorse, Flat-faced Seahorse [66720]		Species or species habitat may occur within area	In buffer area only
Hippocampus whitei White's Seahorse, Crowned Seahorse, Sydney Seahorse [66240]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Lissocampus runa Javelin Pipefish [66251]		Species or species habitat may occur within area	In buffer area only
Maroubra perserrata Sawtooth Pipefish [66252]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Micrognathus andersonii Anderson's Pipefish, Shortnose Pipefish [66253]		Species or species habitat may occur within area	In buffer area only
Micrognathus brevirostris thorntail Pipefish, Thorn-tailed Pipefish [66254]		Species or species habitat may occur within area	In buffer area only
Microphis manadensis Manado Pipefish, Manado River Pipefish [66258]		Species or species habitat may occur within area	In buffer area only
Solegnathus dunckeri Duncker's Pipehorse [66271]		Species or species habitat may occur within area	In buffer area only
Solegnathus hardwickii Pallid Pipehorse, Hardwick's Pipehorse [66272]		Species or species habitat may occur within area	In buffer area only
Solegnathus spinosissimus Spiny Pipehorse, Australian Spiny Pipehorse [66275]		Species or species habitat may occur within area	In buffer area only
Solenostomus cyanopterus Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]		Species or species habitat may occur within area	In buffer area only
Solenostomus paradoxus Ornate Ghostpipefish, Harlequin Ghost Pipefish, Ornate Ghost Pipefish [66184]		Species or species habitat may occur within area	In buffer area only
Stigmatopora nigra Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish [66277]		Species or species habitat may occur within area	In buffer area only
Syngnathoides biaculeatus Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area	In buffer area only
Trachyrhamphus bicoarctatus Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish [66280]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Urocampus carinirostris Hairy Pipefish [66282]		Species or species habitat may occur within area	In buffer area only
Vanacampus margaritifer Mother-of-pearl Pipefish [66283]		Species or species habitat may occur within area	In buffer area only
Mammal			
Dugong dugon Dugong [28]		Species or species habitat may occur within area	In buffer area only
Reptile			
Astrotia stokesii Stokes' Seasnake [1122]		Species or species habitat may occur within area	In buffer area only
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding known to occur within area	In buffer area only
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Hydrophis elegans Elegant Seasnake [1104]		Species or species habitat may occur within area	In buffer area only
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Breeding likely to occur within area	In buffer area only
Natator depressus Flatback Turtle [59257]	Vulnerable	Species or species habitat known to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Pelamis platurus Yellow-bellied Seasnake [1091]		Species or species habitat may occur within area	In buffer area only
Whales and Other Cetaceans [Resource Information]			
Current Scientific Name	Status	Type of Presence	Buffer Status
Mammal			
Balaenoptera acutorostrata Minke Whale [33]		Species or species habitat may occur within area	In buffer area only
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area	In buffer area only
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area	In buffer area only
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area	In buffer area only
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area	In buffer area only
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat known to occur within area	In buffer area only
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area	In buffer area only
Sousa sahulensis as Sousa chinensis Australian Humpback Dolphin [87942]		Species or species habitat may occur within area	In buffer area only

Current Scientific Name	Status	Type of Presence	Buffer Status
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area	In buffer area only
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area	In buffer area only
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area	In buffer area only

Extra Information

State and Territory Reserves			[Resource Information]
Protected Area Name	Reserve Type	State	Buffer Status
Billinudgel	Nature Reserve	NSW	In feature area
Brunswick Heads	Nature Reserve	NSW	In buffer area only
Cape Byron	Marine Park	NSW	In feature area
Jinangong	Nature Reserve	NSW	In feature area
Marshalls Creek	Nature Reserve	NSW	In feature area
Tyagarah	Nature Reserve	NSW	In buffer area only

Regional Forest Agreements			[Resource Information]
Note that all areas with completed RFAs have been included.			
RFA Name	State		Buffer Status
North East NSW RFA	New South Wales		In feature area

Nationally Important Wetlands			[Resource Information]
Wetland Name	State		Buffer Status
Billinudgel Nature Reserve	NSW		In buffer area only

EPBC Act Referrals					[Resource Information]
Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status	
Not controlled action					
construction of two sports fields, car park, amenities block and access road fro	2004/1376	Not Controlled Action	Completed	In buffer area only	
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area	

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action				
Koala Beach Estate -Stage 7	2003/1306	Not Controlled Action	Completed	In buffer area only
North Byron Parkland Cultural Events, NSW	2017/7973	Not Controlled Action	Completed	In buffer area only
Not controlled action (particular manner)				
Cultural Events Site at Yelgun, NSW	2012/6475	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only
Referral decision				
Breeding program for Grey Nurse Sharks	2007/3245	Referral Decision	Completed	In buffer area only
Biologically Important Areas				
Scientific Name		Behaviour	Presence	Buffer Status
Dolphins				
Tursiops aduncus				
Indo-Pacific/Spotted Bottlenose Dolphin [68418]		Breeding	Likely to occur	In buffer area only
Tursiops aduncus				
Indo-Pacific/Spotted Bottlenose Dolphin [68418]		Breeding	Known to occur	In buffer area only
Marine Turtles				
Caretta caretta				
Loggerhead Turtle [1763]		Nesting	Known to occur	In buffer area only
Sharks				
Carcharias taurus				
Grey Nurse Shark [64469]		Foraging	Known to occur	In buffer area only
Whales				
Megaptera novaeangliae				
Humpback Whale [38]		Foraging	Known to occur	In buffer area only

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data are available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and 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

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

Where little information is available for a 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 detailed distribution mapping methods are used to update these distributions

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

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

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded
- seals which have only been mapped for breeding sites near the Australian continent

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

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

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.



APPENDIX B
SITE PHOTOGRAPHS



APPENDIX C

ASSESSMENT OF SIGNIFICANCE FOR SWAMP SCLEROPHYLL FOREST ON COASTAL FLOODPLAINS

Section 7.3 of the Biodiversity Conservation Act (2016) requires a number of factors to be taken into account in determining the significance of impact of a development on threatened species, populations or ecological communities, or their habitats. The factors to be taken into account under the Assessment of Significance are known as the Five Part Test.

An Assessment of Significance has been completed for the EEC Swamp sclerophyll forest on coastal floodplains.

a) *in the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction,*

N/A

b) *in the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:*

i. *is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or*

ii. *is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction,*

- A number of listed Endangered Ecological Communities occur in the North Coast bioregion, including:
 - Byron Bay Dwarf Graminoid Clay Heath Community
 - Coastal Saltmarsh in the NSW North Coast, Sydney Basin and SE Corner bioregions
 - Freshwater wetlands on Coastal Floodplains of the NSW North Coast, Sydney Basin and SE Corner bioregions
 - Littoral rainforest in the NSW North Coast, Sydney Basin and SE Corner bioregions
 - Lowland Rainforest in the NSW North Coast and Sydney Basin bioregions
 - Lowland Rainforest on Floodplain in the NSW North Coast bioregion
 - Montane Peatlands and Swamps of the New England Tableland, NSW North Coast, Sydney Basin, SE Corner, SE Highlands and Australian Alps bioregions
 - Subtropical Coastal Floodplain Forest of the NSW North Coast bioregion
 - Swamp oak Floodplain Forest of the NSW North Coast, Sydney Basin and SE Corner bioregions
 - Swamp Sclerophyll Forest on Coastal Floodplains of the NSW North Coast, Sydney Basin and SE Corner bioregions
 - *Themeda* grassland on seacliffs and coastal headlands in the NSW North Coast, Sydney Basin and SE Corner bioregions
 - Coastal Cypress Pine Forest in the NSW North Coast Bioregion

Vegetation in the Broad-leaved paperbark community is consistent with the description of the EEC Swamp sclerophyll forest on coastal floodplains. No areas of Broad-leaved paperbark forest will be directly affected as a result of the proposed development.

It is unlikely that the proposed development will have a substantial impact on hydrological conditions within areas of Swamp sclerophyll forest on or adjacent to the site. The proposed development is unlikely to result in impacts on this EEC as a result of sedimentation, or introduction of exotic species.

The proposed development is unlikely to result in the local extinction of any EECs or the long-term modification of the composition of any ecological communities.

- c) *in relation to the habitat of a threatened species or ecological community:*
- i. *the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and*
 - ii. *whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and*
 - iii. *the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality,*

The proposed development will result in the loss of a small number of immature native trees and will not substantially affect the viability of any EECs considered in this assessment.

- d) *whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly),*

There are no areas of outstanding biodiversity value in the vicinity of the Study area.

- e) *whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process.*

A "threatening process" means a process that threatens, or may have the capability to threaten, the survival or evolutionary development of a species, population or ecological community. Key Threatening Processes have been listed in Schedule 3 of the TSC Act (1995).

A number of Key threatening processes have been listed on the schedules of the TSC Act (1995). The proposed development will not substantially increase the impact of any threatening process.

Conclusion

The proposed development is unlikely to result in a significant impact on any Threatened (BC Act 2016) species, population or ecological community. A Species Impact Statement or BDAR is not required.