

# Biodiversity Assessment

## Super Lot 7 – Epiq Lennox



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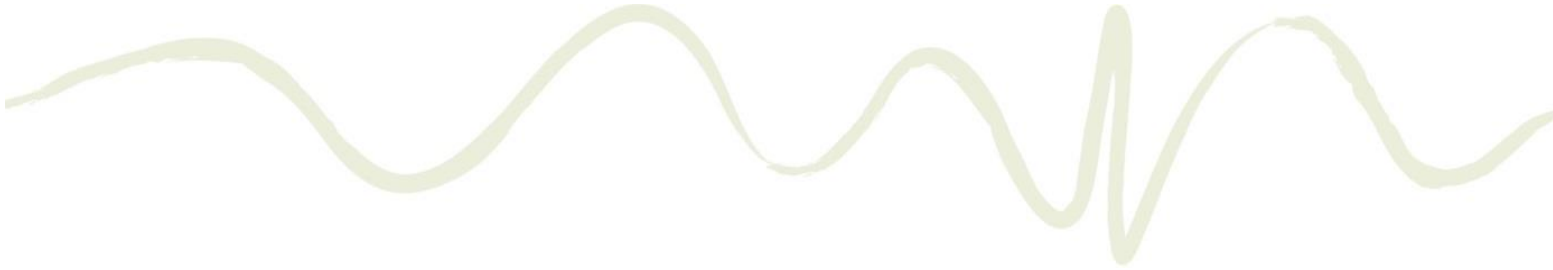
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# 1. Introduction

## 1.1 Background

GeoLINK has prepared this Biodiversity Assessment on behalf of Clarence Property to support an amendment for the modification to the Major Project approval (s.75W application) of the Epiq Lennox development site (previously known as Pacific Pines). The proposed modification seeks to undertake amendments to Super Lot 7 ('SL7') under the Concept Approval (MP 07\_0026) prepared under Part 3A of the *Environmental Planning and Assessment Act 1979* (EPA Act) and approved October 2008.

While Secretary's Environmental Assessment Requirements (SEARs) were provided for the proposed modification, the SEARs did not specify any requirements with regard to biodiversity matters.

The aim of this assessment is to identify any significant biodiversity matters relevant to the proposed modification, which may include:

- Habitat for threatened species or communities listed in the *Biodiversity Conservation Act 2016* (BC Act).
- Koala habitat (as per State Environmental Planning Policy [SEPP] 44 – Koala Habitat Protection).
- Matters protected under the *Coastal Management Act 2016* and State Environmental Planning Policy (Coastal Management) 2018.
- Threatened species or communities listed in the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

## 1.2 The Site and Study Area

The Epiq Lennox site consists of multiple allotments at Lennox Head within the Ballina Local Government Area (LGA) and comprises former grazing land which has been historically cleared and disturbed, with some small areas of remnant vegetation retained (refer to **Illustration 1.1**). The Epiq Lennox site has been subject to ongoing earthworks and construction as part of site development for the past two years. A significant drainage corridor runs through the central portion of the site and drains to North Creek to the west. This area lies within the approved Conservation Zone (as per (MP 07\_0026), established for the retention, protection and management of threatened communities and threatened species habitat.

The study area (SL7) comprises Lot 7 DP1239938 Hutley Drive in the north-west corner of Epiq Lennox and includes Management Zone 1, the majority of which has been planted out with rainforest trees (refer to **Illustration 1.2**). The balance of SL7 comprises pasture grass, with infrequent trees (Camphor Laurel, rainforest trees, regrowth). Substantial earthworks have been completed and are ongoing in the eastern portion of the lot (refer to **Illustration 1.2**).



### 1.3 The Proposal

The proposed modification will seek to undertake amendments to the Concept Approval (MP 07\_0026); refer to **Appendix A**. The key changes proposed for the approved development are:

- Increasing the number of residential lots from 47 to 60 residential lots comprising of 34 conventional residential lots and 26 live-work lots;
- Introduce two neighbourhood commercial lots to re-introduce a tavern lot and the commencement of a community child care and storage facility; and
- Modify the subdivision design and road network within Super Lot 7.

Information shown is for illustrative purposes only



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Information shown is for illustrative purposes only



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## 2. Methodology

### 2.1 Personnel

The site was assessed by GeoLINK Senior Ecologist Ian Colvin on 5 April 2018.

### 2.2 Desktop Review

Prior to assessment of the study area, the following desktop analysis was completed:

- Review of previous ecological assessments and reporting (James Warren and Associates 2003, GeoLINK 2007, 2013, 2015a, 2015b, 2017).
- A search of the BioNet Wildlife Atlas (10 km x 10 km grid centred on the site).
- A search of the Protected Matters Search Tool for Matters of National Environmental Significance (MNES) within a 5 km radius of the site.
- Review of littoral rainforest mapping in State Environmental Planning Policy (Coastal Management) 2018.

### 2.3 Assessment

The assessment of the study area utilised the following methodology:

- Random meander of SL7 and completing a general flora inventory using a modified Braun-Blanquet index.
- Searches for threatened flora species (with the exception of targeted survey for Hairy Jointgrass)
- Opportunistic survey of all fauna based on visual or aural observations.

Given that a number of detailed ecological assessments have undertaken at the Epiq site and that the study area is small in area, highly disturbed and lacking significant habitat, the scope of assessment is considered adequate.

# 3. Flora

## 3.1 Desktop Analysis

### 3.1.1 Database Searches

BioNet search results identified (refer to **Appendix B**):

- Records of 16 threatened flora species within 5 km of the site, including 12 species listed in the EPBC Act
- Records of ten EECs from within the Ballina LGA; four of these communities are listed under the EPBC Act.

Protected Matters Search Tool results identified (refer to **Appendix B**):

- Habitat for 23 threatened flora species within 5 km of the site
- Habitat for three threatened communities within 5 km of the site.

### 3.1.2 Previous Studies

Seven threatened flora species and four threatened communities have been identified and mapped (refer to **Table 3.1** and **Appendix C**) at Epiq Lennox. Of the species/ communities recorded to date, one has been recorded within SL7 (Rough-shelled Bush Nut).

**Table 3.1 Threatened Flora and Communities Recorded at the Site from Previous Studies**

Scientific Name	Common Name	BC Act	EPBC Act
<b>THREATENED FLORA</b>			
<i>Archidendron hendersonii</i>	White Laceflower	V	-
<i>Arthraxon hispidus</i>	Hairy Jointgrass	V	V
<i>Eleocharis tetraquetra</i>	Square-stemmed Spike-rush	E	-
<i>Macadamia tetraphylla</i>	Rough-shelled Bush Nut	V	V
<i>Syzygium hodgkinsoniae</i>	Red Lilly Pilly	V	V
<i>Tinospora tinosporoides</i>	Arrow-head Vine	V	-
<i>Xylosma terrae-reginae</i>	Queensland Xylosma	E	-
<b>THREATENED COMMUNITIES</b>			
Freshwater Wetlands on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions		E	-
Littoral Rainforest in the New South Wales North Coast, Sydney Basin and South East Corner Bioregions		E	CE
Swamp Oak Floodplain Forest of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions		E	E
Swamp Sclerophyll Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions		E	-

CE = Critically Endangered, E = Endangered, V = Vulnerable



## 3.2 Assessment

### 3.2.1 Vegetation

Vegetation within SL7 comprises disturbed land with a mosaic of small, isolated communities (refer to **Illustration 3.1**):

1. Closed grassland (rank pasture) dominated by Broad-leaved Paspalum (*Paspalum mandiocanum*) with other pasture grasses (Vasey Grass *Paspalum urvillei*, Kikuyu *Cenchrus clandestinum*) and common agricultural weeds. Native vegetation is sparse to absent.
2. A rainforest planting within the Management Zone (which includes a small stand of naturally occurring Tuckeroo *Cupaniopsis anacardioides*).
3. A small patch of degraded littoral rainforest dominated by mature Tuckeroo, a mature Hard Quandong (*Elaeocarpus obovatus*), and several mature Camphor Laurel (*Cinnamomum camphora*). This community is characteristic of plant community type (PCT) 1275 *Tuckeroo - Riberry - Yellow Tulipwood littoral rainforest of the NSW North Coast Bioregion* in the BioNet Vegetation Classification.
4. A small patch of isolated regrowth Swamp Oak (*Casuarina glauca*). This community is characteristic of PCT 1145 *Swamp Oak swamp forest of the coastal lowlands of the NSW North Coast Bioregion*, although is a very poor example of the community.
5. Patches of Camphor Laurel (*Cinnamomum camphora*), typically with Lantana (*Lantana camara*). Native vegetation is sparse to absent.

As noted, substantial earthworks have been completed and are ongoing in the eastern portion of SL7 and this portion of the site comprises bare earth.


Photographs of SL7 are provided at **Appendix D**; a flora inventory is provided at **Appendix E**.

### 3.2.2 Threatened Flora

One threatened flora species occurs within SL7 – Rough-shelled Bush Nut. A mature tree occurs along the western boundary, with a single immature tree and several seedlings retained along the northern buffer area of the Management Zone (refer to **Illustration 3.1**). All trees will be retained in-situ.

### 3.2.3 Threatened Ecological Communities

The small patch of tuckeroo (Community 3) is characteristic of the Threatened Ecological Community (TEC) *Littoral Rainforest in the New South Wales North Coast, Sydney Basin and South East Corner Bioregions*. This community also occurs in the adjacent road reserve and within the adjacent former SEPP 26 rainforest patch (known as the 'Gradwell remnant') to the north within Lot 1 DP1070446 and Lot 2 DP1177902. Rainforest plantings within Management Zone 1 could be considered representative of this same TEC upon maturity.

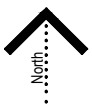


The small patch of regrowth Swamp Oak is elevated from the floodplain and has colonised a small seepage area expressing at the toe of the hillslope. This area would not be subject to 1 in 100 year flood inundation and so is not characteristic of the TEC *Swamp Oak Floodplain Forest of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions*. This vegetation does not meet condition thresholds for the recently listed TEC in the EPBC Act *Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community*.

#### **3.2.4 Condition**

SL7 is highly degraded from overgrown rank pasture and earthworks and contains little naturally occurring native vegetation except for the small stand of littoral rainforest (approximately 8 trees) and minor regrowth.

Information shown is for illustrative purposes only



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# 4. Fauna

## 4.1 Desktop Analysis

### 4.1.1 Database Searches

BioNet search results identified records of 60 threatened fauna species within 5 km of the site, including 17 species listed in the EPBC Act (refer to **Appendix B**). Protected Matters Search Tool results identified habitat for 56 threatened fauna species and 76 migratory species within 5 km of the site (refer to **Appendix B**).

### 4.1.2 Previous Studies

Five threatened fauna species have been recorded at the Epiq site (refer to **Table 4.1**). It is likely that a number of additional threatened fauna may utilise Epiq for foraging on an opportunistic or seasonal basis including the Black-necked Stork, Brolga, Eastern Grass Owl and several microchiropteran bat species.

**Table 4.1 Threatened Fauna Recorded at the Site**

Scientific Name	Common Name	BC Act	EPBC Act
<i>Amaurornis moluccana</i> *	Pale-vented Bush-hen	V	-
<i>Botaurus poiciloptilus</i>	Australasian Bittern	E	E
<i>Daphoenositta chrysoptera</i>	Varied Sittella	V	-
<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	V	V
<i>Scoteanax rueppellii</i>	Greater Broad-nosed Bat	V	-

E = Endangered, V = Vulnerable

\* recorded by GeoLINK during vegetation monitoring in the west of the site in 2017


## 4.2 Habitat Assessment

### 4.2.1 Threatened Fauna

No threatened fauna species listed under the BC Act or EPBC Act have been recorded within SL7 and none were observed during the site inspection. Given the small size and disturbed condition of SL7 (an active earthworks zone) it is unlikely that any threatened fauna species would depend on resources within the study area for key life cycle requirements (foraging, roosting, breeding).

### 4.2.2 Habitat Values

The Epiq Lennox site comprises disturbed farmland which is under construction and subject to ongoing noise, disturbance and earthworks. Nevertheless, the site as a whole is likely to support a range of common frog, bird and mammal species, with wetland areas providing habitat for frogs and waterfowl. Flowering rainforest trees and paperbarks provide resources for fruit and nectar feeding birds (honeyeaters, friarbirds, lorikeets, figbirds etc) and also support insect feeding species such as thornbills, fantails etc. The Epiq site may provide habitat for a limited range of mammals, with dense



grass cover providing refuge for introduced ground dwelling species such as the House Mouse and Black Rat, while arboreal mammals such as the Ringtail and Brushtail Possum may occur.

SL7 has very low fauna habitat values due to lack of any significant habitat attributes and ongoing noise and disturbance from earthworks. Rank grassland provides habitat for ground-dwelling mammals and cryptic bird species (eg. Brown Quail, Tawny Grassbird, Australasian Pipit, Golden-headed Cisticola). No hollow-bearing trees (or significant habitat features) or primary Koala feed trees occur. Fifteen common bird species were recorded in and adjacent to SL7 during the site assessment.

#### **4.2.3 Wildlife Corridors**

The site occurs within the Lennox regional corridor as per Scotts (2003) and is described as a 'coastal corridor/ very patchy section of coastal corridor/ patchy key habitats'.

#### **4.2.4 Potential for Threatened Species Occurrence**

Based on the desktop analysis, habitat present and previous records, the potential for threatened fauna to occur has been assessed<sup>1</sup> (refer to **Appendix F**). Due to the absence of significant habitat within SL7 and that ongoing noise and disturbance occur nearby from ongoing construction activities on a daily basis, no habitat of importance (ie. core foraging or breeding habitat) for any threatened fauna species occurs.

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<sup>1</sup> Marine species for which no habitat occurs at the site are not considered.

# 5. Impacts and Mitigation

## 5.1 Potential Impacts of the Proposal

Impacts of the proposal are very low on the basis that SL7 comprises vacant grassland with minimal native vegetation or significant habitat. The main biodiversity impact of the proposal is the loss of the small stand of mature littoral rainforest (8 trees). The loss of these trees has already been considered in the designation of the conservation and management zones for the project where native vegetation has been retained and enhanced (including habitat for Hairy Jointgrass).

Rough-shelled Bush Nut along the northern boundary will be retained within Management Zone 1, while the single mature Rough-shelled Bush Nut along the western boundary will be retained within a residential lot (Lot 1). A sewer line is proposed within approximately 4.2 metres of the western Rough-shelled Bush Nut (refer to **Figure 5.1**). Mitigation measures are prescribed to ensure the potential for damage to this tree are minimised.

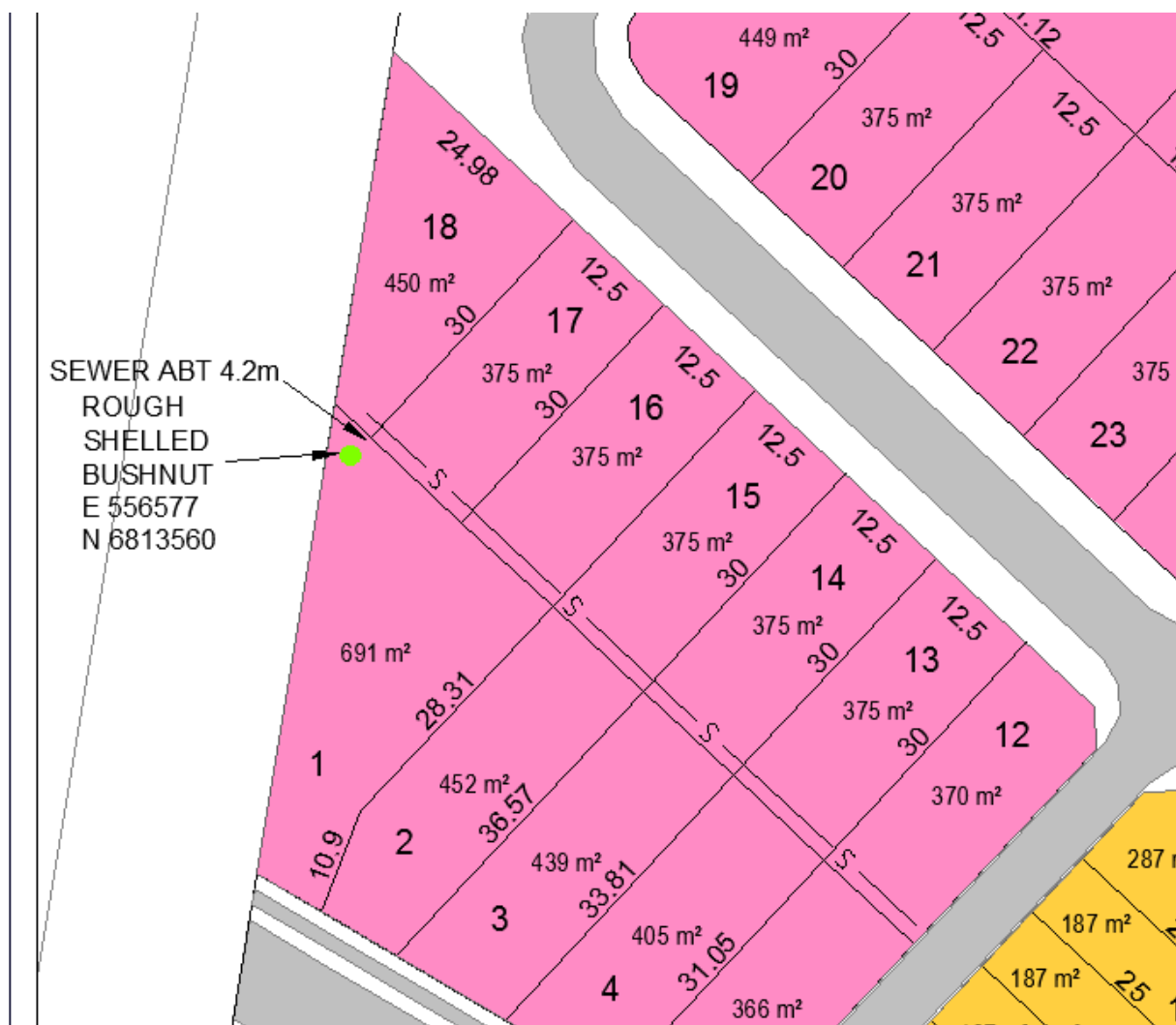



Figure 5.1 Rough-shelled Bush Nut and proposed sewer line





On this basis, biodiversity impacts of the proposal may include:

### **Construction phase**

- Loss of a small stand of isolated mature littoral rainforest (8 trees).
- Loss of a small stand of isolated regrowth Swamp Oak.
- Minor localised disturbance to fauna (this is already occurring).
- Potential for spread and/ or introduction of weeds and pathogens.
- Potential for disturbance to rainforest plantings within Management Zone1.
- Potential for disturbance to Rough-shelled bush Nut retained in-situ on the western boundary from installation of the sewer line.

### **Occupation phase**

- Resident activity within Management Zone1.

## **5.2 Mitigation**

To minimise biodiversity impacts which may result from the proposal, the following mitigation measures are prescribed:

### **Construction phase**

- Measures to minimise the potential for the spread of weeds must be implemented during construction.
- Sediment fencing and erosion controls must be implemented and maintained for the duration of the works.
- The western Rough-shelled Bush Nut must be clearly marked on site and a temporary exclusion zone (eg. parawebbing) established within 3 metres of the tree.
- Trenching works for the sewer line completed as sensitively as possible within Lot 1 to avoid damaging the Rough-shelled Bush Nut.
- Construction work limits must be clearly marked prior to commencement of works and parawebbing or similar must be placed along the boundary of Management Zone 1 with signage stating *'Protected vegetation – keep out'* or words of similar intention.
- Requirements to avoid vegetation disturbance or damage and protect the western Rough-shelled Bush Nut must be clearly explained to all personnel and subcontractors during the induction process prior to construction works.

### **Occupation phase**

To protect rainforest plantings within Management Zone 1, the following prescriptions apply:

- Permanent boundary markings (eg. bollards) shall be installed along the boundary of Management Zone 1 to restrict access. Signage stating *"Conservation Zone - entry prohibited"* (or words of similar intention) shall be placed along the fencing.
- If fencing of Management Zone 1 is completed it must be permeable to permit fauna movement (eg. post and rail fencing) and barbed wire must not be utilised.

## 6. Statutory Assessment

The following sections assess the findings of the site assessment with regard to relevant statutory requirements.

### 6.1 Coastal Management Act 2016

The *Coastal Management Act 2016* (CM Act) aims to achieve ecologically sustainable development that:

- protects and enhances sensitive coastal environments, habitats and natural processes
- strategically manages risks from coastal hazards
- maintains and enhances public access to scenic areas, beaches and foreshores
- supports the objectives for our marine environments under the *Marine Estate Management Act 2014*
- protects and enhances the unique character, cultural and built heritage of our coastal areas, including Aboriginal cultural heritage.

The Act defines the coastal zone as comprising four coastal management areas. Each area has different characteristics and may at times overlap. The four coastal management areas are:

1. Coastal wetlands and littoral rainforests area; areas which display the characteristics of coastal wetlands or littoral rainforests that were previously protected by SEPP 14 and SEPP 26.
2. Coastal vulnerability area; areas subject to coastal hazards such as coastal erosion and tidal inundation
3. Coastal environment area; areas that are characterised by natural coastal features such as beaches, rock platforms, coastal lakes and lagoons and undeveloped headlands.
4. Coastal use area; land adjacent to coastal waters, estuaries and coastal lakes and lagoons.

The north-western corner of the site occurs within the designated 100 m proximity area to a patch of adjacent littoral rainforest mapped under the CM Act (refer to **Figure 6.1**). However, no development is proposed in this part of the site as it lies within a Management Zone and no littoral rainforest will be affected.



**Figure 6.1 Littoral rainforest mapped in the CM Act adjacent to the site**



## 6.2 State Environmental Planning Policy (Coastal Management) 2018

SEPP Coastal Management 2018 aims to promote an integrated and co-ordinated approach to land use planning in the coastal zone in a manner consistent with the objects of the *Coastal Management Act 2016*, including the management objectives for each coastal management area, by:

- (a) managing development in the coastal zone and protecting the environmental assets of the coast, and
- (b) establishing a framework for land use planning to guide decision-making in the coastal zone, and
- (c) mapping the 4 coastal management areas that comprise the NSW coastal zone for the purpose of the definitions in the *Coastal Management Act 2016*.

As noted, the north-western portion of Super Lot 7 lies within the 100 m proximity area to a patch of adjacent littoral rainforest depicted on the *Coastal Wetlands and Littoral Rainforests Area Map*. The Policy states that: *development consent must not be granted to development on land identified as “proximity area for coastal wetlands” or “proximity area for littoral rainforest” on the Coastal Wetlands and Littoral Rainforests Area Map unless the consent authority is satisfied that the proposed development will not significantly impact on:*

- (a) *the biophysical, hydrological or ecological integrity of the adjacent coastal wetland or littoral rainforest, or*
- (b) *the quantity and quality of surface and ground water flows to and from the adjacent coastal wetland or littoral rainforest.*


The proposed modification will not affect adjacent littoral rainforests and the need to buffer this community has been taken into account from the early planning stages, by designation Management Zone 1 as a planted rainforest buffer. Surface water flows will not be altered as SL7 occurs downslope of littoral rainforest communities.

## 6.3 State Environmental Planning Policy (SEPP) 44 – Koala Habitat Protection

SEPP 44 applies to all LGAs listed under Schedule 1, which includes Ballina LGA. The Policy applies to areas of land at least one hectare in size and may include adjoining land under the same ownership. Ballina Shire Council have completed the *Ballina Shire Koala Management Strategy* (2017) under the provisions of SEPP 44 which applies to areas of land designated as Koala Planning Areas (KPAs). Where land is not within a KPA, the ‘standard’ Policy applies. Epiq Lennox is not within a KPA, so a standard SEPP 44 assessment has been completed as follows.

SEPP 44 listed Schedule 2 listed Koala feed tree species are as follows:

- Bimble Box (*Eucalyptus populnea*)
- Broad-leaved Scribbly Gum (*Eucalyptus haemastoma*)
- Forest Red Gum (*Eucalyptus tereticornis*)
- Large-fruited Grey Gum (*Eucalyptus punctata*)
- Ribbon Gum (*Eucalyptus viminalis*)
- River Red Gum (*Eucalyptus camaldulensis*)

- 
- Scribbly Gum (*Eucalyptus signata*)
  - Swamp Mahogany (*Eucalyptus robusta*)
  - Tallowwood (*Eucalyptus microcorys*)
  - White Box (*Eucalyptus albens*)

The Policy defines potential Koala habitat as areas of native vegetation where Schedule 2 trees constitute at least 15% of the total number of trees in the upper or lower strata of the tree component. No Schedule 2 trees occur at SL7, therefore potential Koala habitat does not occur and no further assessment under SEPP 44 is required.

## 6.4 Biodiversity Conservation Act 2016 (BC Act)

The BC Act requires a test of significance ('five-part test') when assessing whether an action, development or activity is likely to significantly affect threatened species, ecological communities, or their habitats.

As threatened flora and communities occur within and in close proximity to SL7, tests of significance have been completed (refer to **Appendix G**). The test concluded that the proposal would be unlikely to significantly increase the risk of extinction for any flora species or communities, and hence a Species Impact Statement (SIS) is not required.

## 6.5 Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)

The EPBC Act protects/ regulates MNES, including:

- World heritage properties.
- National heritage places.
- Wetlands of international importance.
- Nationally threatened species and ecological communities.
- Migratory species.
- Commonwealth marine areas.
- The Great Barrier Reef Marine Park.
- Nuclear actions (including uranium mining).
- A water resource, in relation to coal seam gas development and large coal mining development.

Based on the search results and site assessment (refer to summary at **Table 6.1**), no significant impacts to any MNES are likely to result from the proposal, therefore referral to the Minister for the Environment and Energy is not required.

**Table 6.1 Assessment of MNES**

<b>Factor</b>	<b>Impact</b>
<b><i>Any impact on a World Heritage property?</i></b>	
No World Heritage properties occur within 5 km of the site.	Nil
<b><i>Any impact on a National Heritage place?</i></b>	
No National Heritage places occur within 5 km of the site.	Nil
<b><i>Any impact on a wetland of international importance?</i></b>	
No Wetlands of International Significance (Ramsar Sites) occur within 5 km of the site.	Nil
<b><i>Any impact on nationally listed threatened biodiversity?</i></b>	
Habitat for three threatened ecological communities, 79 threatened species and 76 migratory species are identified within 5 km of the site. The modified proposed would not impact on any habitat for nationally listed species or communities. All Rough-shelled Bush Nut in SL7 will be retained in-situ.	Nil
<b><i>Any impact on a Commonwealth marine area?</i></b>	
No Commonwealth marine areas occur within 5 km of the site.	Nil
<b><i>Any impact on the Great Barrier Reef Marine Park?</i></b>	
The Great Barrier Reef Marine park is distant from the site.	Nil
<b><i>Does the proposal involve a nuclear action (including uranium mining)?</i></b>	
The proposal does not involve a nuclear action.	Nil
<b><i>Any impact on a water resource, in relation to coal seam gas development and large coal mining development?</i></b>	
The Proposal does not involve any impact on a water resource, in relation to coal seam gas development and large mining development.	Nil



## 7. Conclusion

In response to the (modified) proposal and its potential impacts on biodiversity, the following applies:

- Native vegetation is very sparse and SL7 is highly degraded and disturbed.
- One threatened flora species occurs (Rough-shelled Bush Nut) – all trees and seedlings will be retained in-situ.
- A small patch of disturbed littoral rainforest TEC will be removed. This is adequately compensated for by the substantial plantings already completed within Management Zone 1.
- No significant habitat for threatened fauna occurs.
- Assessments of significance for Rough-shelled Bush Nut and littoral rainforest concluded that a significant impact is unlikely as a result of the proposal.
- Assessment under SEPP 44 (Koala Habitat Protection) determined that potential Koala habitat does not occur at the site.
- Assessment under SEPP Coastal Management 2018 determined that the modification would not impact on adjacent littoral rainforest depicted on the *Coastal Wetlands and Littoral Rainforests Area Map*.

Impacts of the proposal are very low on the basis that SL7 comprises an active construction site with little native vegetation or significant habitat. Mitigation measures have been proposed to minimise the limited biodiversity impacts that may result from the proposal.

An SIS is not required and referral to the federal Minister of the Department of Environment and Energy is not required.



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## Appendix A

# Super Lot 7 Concept Plan

# Legend

- Site Boundary
- Major Contour (1m)
- Regeneration Area
- 10m Buffer
- 14 CP Carparking Nos



# Yield Breakdown

- Residential A ..... 33 Lots
- Residential B ..... 1 Lot
- Work Live ..... 26 Lots
- Commercial ..... 2 Lots
- TOTAL LOTS ..... 62 Lots**

# Land Use Breakdown

- Residential Lots ..... 1.44 ha
- Work/Live Lots ..... 0.55 ha
- Commercial ..... 0.86 ha
- Open Space ..... 0.78 ha
- Buffer ..... 0.17 ha
- Road ..... 1.85 ha
- TOTAL AREA ..... 5.65 ha**

### Note:

All Lot Numbers, Dimensions and Areas are approximate only, and are subject to survey and Council approval.

Dimensions have been rounded to the nearest 0.1 metres.

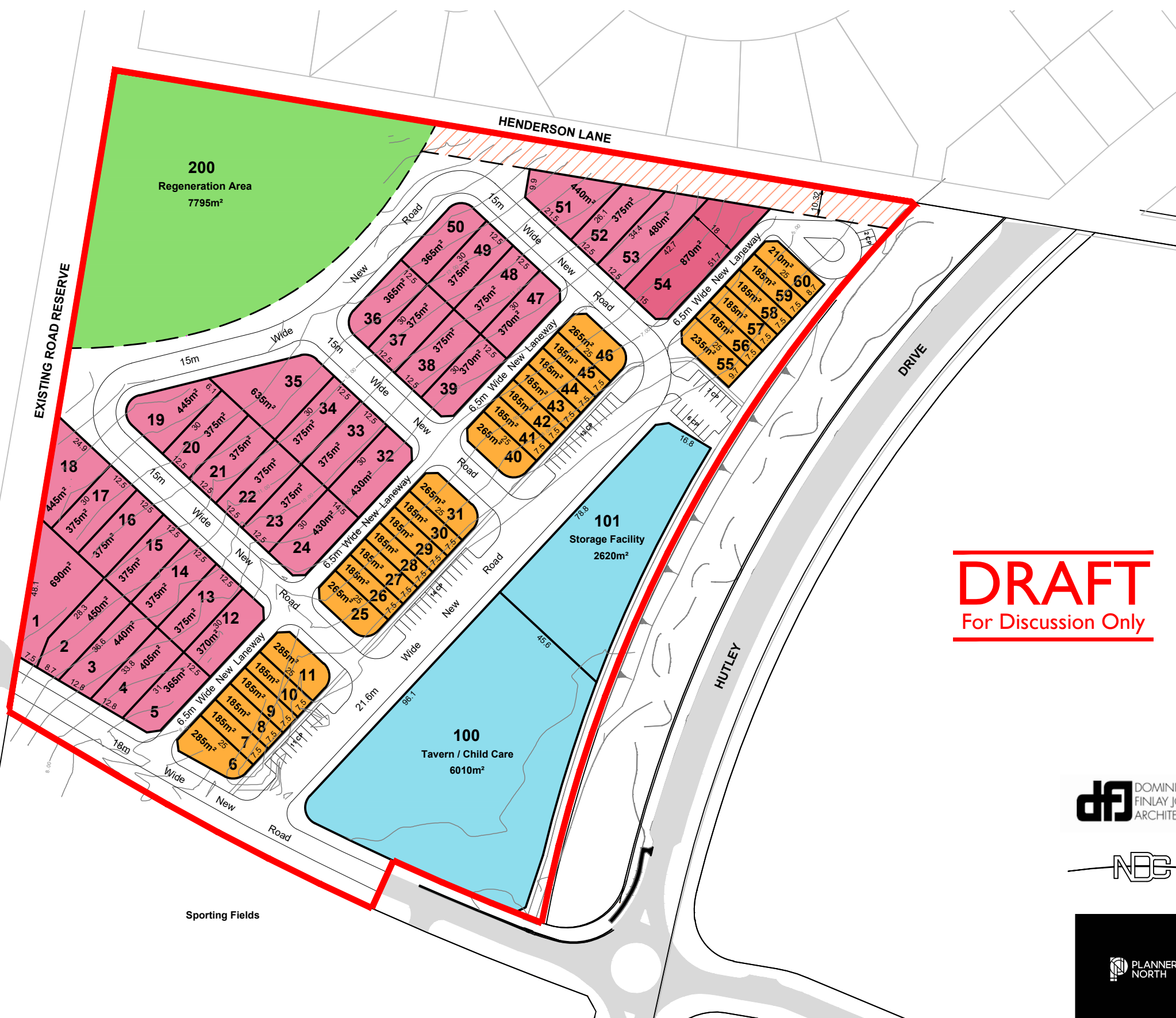
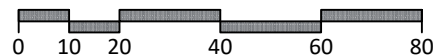
Areas have been rounded down to the nearest 5m<sup>2</sup>.

The boundaries shown on this plan should not be used for final detailed engineers design.

### Source Information:

- Site boundaries:** NDC.
- Adjoining information:** DCDB.
- Contours:** NDC.

Scale 1 : 1500 @ A3



DRAFT

For Discussion Only



PROJECT <b>EPIQ</b>	
Job Ref. 131433	Date. 17 OCTOBER 2017
Comp By. JLS	DWG Name. 131433-14 PROP PLAN
Chk'd By. PHE	Locality. LENNOX HEAD
Local Authority. BALLINA SHIRE COUNCIL	

CLIENT <b>CLARENCE PROPERTY CORPORATION</b>
PLAN OF SUBDIVISION LOT 1-60, 100, 101 & 200 ALLOTMENT LAYOUT SUPER LOT 7

	RPS Australia East Pty Ltd ACN 140 292 762 ABN 44 140 292 762		Urban Design Brisbane Design Studio 455 Brunswick Street Fortitude Valley QLD 4006 T +61 7 3124 9300 F +61 7 3124 9399 W rpsgroup.com.au
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Scale 1:1500	Sheet A3	Plan Ref <b>131433-14</b>	Rev



## **Appendix B**

# **Search Results**

Data from the BioNet BioNet Atlas website, which holds records from a number of custodians. The data are only indicative and cannot be considered a comprehensive inventory, and may contain errors and omissions. Species listed under the Sensitive Species Data Policy may have their locations denatured (^ rounded to 0.1Å°; ^^ rounded to 0.01Å°). Copyright the State of NSW through the Office of Environment and Heritage. Search criteria : Public Report of all Valid Records of Threatened (listed on TSC Act 1995) Entities in selected area [North: -28.76 West: 153.53 East: 153.63 South: -28.86] returned a total of 8,562 records of 76 species.

Report generated on 8/03/2018 1:49 PM

Kingdom	Class	Family	Species Code	Scientific Name	Exotic	Common Name	NSW status	Comm. status	Records	Info
Animalia	Amphibia	Myobatrachidae	3137	<i>Crinia tinnula</i>		Wallum Froglet	V,P		55	
Animalia	Amphibia	Hylidae	3166	<i>Litoria aurea</i>		Green and Golden Bell Frog	E1,P	V	1	
Animalia	Amphibia	Hylidae	3202	<i>Litoria olongburensis</i>		Olongburra Frog	V,P	V	16	
Animalia	Reptilia	Cheloniidae	2004	<i>Caretta caretta</i>		Loggerhead Turtle	E1,P	E	4	
Animalia	Reptilia	Cheloniidae	2007	<i>Chelonia mydas</i>		Green Turtle	V,P	V	2	
Animalia	Reptilia	Dermochelyidae	2013	<i>Dermochelys coriacea</i>		Leatherback Turtle	E1,P	E	2	
Animalia	Aves	Anseranatidae	0199	<i>Anseranas semipalmata</i>		Magpie Goose	V,P		2	
Animalia	Aves	Anatidae	0200	<i>Nettapus coromandelianus</i>		Cotton Pygmy-Goose	E1,P		2	
Animalia	Aves	Anatidae	0214	<i>Stictonetta naevosa</i>		Freckled Duck	V,P		2	
Animalia	Aves	Columbidae	0021	<i>Ptilinopus regina</i>		Rose-crowned Fruit-Dove	V,P		5	
Animalia	Aves	Podargidae	0314	<i>Podargus ocellatus</i>		Marbled Frogmouth	V,P		1	
Animalia	Aves	Diomedidae	0092	<i>Phoebastria fusca</i>		Sooty Albatross	V,P	V	1	
Animalia	Aves	Procellariidae	0072	<i>Ardenna carneipes</i>		Flesh-footed Shearwater	V,P	J,K	4	
Animalia	Aves	Procellariidae	0971	<i>Pterodroma solandri</i>		Providence Petrel	V,P	J	1	
Animalia	Aves	Ciconiidae	0183	<i>Ephippiorhynchus asiaticus</i>		Black-necked Stork	E1,P		64	
Animalia	Aves	Ardeidae	0197	<i>Botaurus poiciloptilus</i>		Australasian Bittern	E1,P	E	3	
Animalia	Aves	Ardeidae	0196	<i>Ixobrychus flavicollis</i>		Black Bittern	V,P		1	
Animalia	Aves	Accipitridae	0218	<i>Circus assimilis</i>		Spotted Harrier	V,P		4	
Animalia	Aves	Accipitridae	0226	<i>Haliaeetus leucogaster</i>		White-bellied Sea-Eagle	V,P	C	61	
Animalia	Aves	Accipitridae	0225	<i>Hieraaetus morphnoides</i>		Little Eagle	V,P		15	

Animal ia	Aves	Accipitrid ae	8739	<sup>^</sup> <i>Pandion cristatus</i>	Eastern Osprey	V,P, 3	104	
Animal ia	Aves	Gruidae	0177	<i>Grus rubicunda</i>	Brolga	V,P	4	
Animal ia	Aves	Burhinida e	0174	<i>Burhinus grallarius</i>	Bush Stone- curlew	E1,P	6	
Animal ia	Aves	Burhinida e	0175	<i>Esacus magnirostris</i>	Beach Stone- curlew	E4A, P	4	
Animal ia	Aves	Haemato podidae	0131	<i>Haematopus fuliginosus</i>	Sooty Oystercatcher	V,P	20	
Animal ia	Aves	Haemato podidae	0130	<i>Haematopus longirostris</i>	Pied Oystercatcher	E1,P	59	
Animal ia	Aves	Charadrii dae	0141	<i>Charadrius leschenaultii</i>	Greater Sand- plover	V,P V,C, J,K	27	
Animal ia	Aves	Charadrii dae	0139	<i>Charadrius mongolus</i>	Lesser Sand- plover	V,P E,C, J,K	45	
Animal ia	Aves	Jacanida e	0171	<i>Irediparra gallinacea</i>	Comb-crested Jacana	V,P	3	
Animal ia	Aves	Rostratuli dae	0170	<i>Rostratula australis</i>	Australian Painted Snipe	E1,P E	1	
Animal ia	Aves	Scolopaci dae	0166	<i>Calidris alba</i>	Sanderling	V,P C,J, K	14	
Animal ia	Aves	Scolopaci dae	0161	<i>Calidris ferruginea</i>	Curlew Sandpiper	E1,P CE, C,J, K	95	
Animal ia	Aves	Scolopaci dae	0165	<i>Calidris tenuirostris</i>	Great Knot	V,P CE, C,J, K	54	
Animal ia	Aves	Scolopaci dae	0167	<i>Limicola falcinellus</i>	Broad-billed Sandpiper	V,P C,J, K	4	
Animal ia	Aves	Scolopaci dae	0152	<i>Limosa limosa</i>	Black-tailed Godwit	V,P C,J, K	17	
Animal ia	Aves	Scolopaci dae	0160	<i>Xenus cinereus</i>	Terek Sandpiper	V,P C,J, K	75	
Animal ia	Aves	Laridae	0972	<i>Gygis alba</i>	White Tern	V,P	1	
Animal ia	Aves	Laridae	0120	<i>Onychoprion fuscata</i>	Sooty Tern	V,P	1	
Animal ia	Aves	Laridae	0117	<i>Sternula albifrons</i>	Little Tern	E1,P C,J, K	81	
Animal ia	Aves	Cacatuid ae	0265	<sup>^</sup> <i>Calyptorhynch us lathamii</i>	Glossy Black- Cockatoo	V,P, 2	1	
Animal ia	Aves	Psittacida e	8913	<sup>^</sup> <i>Pezoporus wallicus wallicus</i>	Eastern Ground Parrot	V,P, 3	3	
Animal ia	Aves	Tytonidae	0252	<sup>^</sup> <i>Tyto longimembris</i>	Eastern Grass Owl	V,P, 3	19	
Animal ia	Aves	Tytonidae	0250	<sup>^</sup> <i>Tyto novaehollandia e</i>	Masked Owl	V,P, 3	4	
Animal ia	Aves	Meliphagi dae	0610	<i>Gavicalis fasciolaris</i>	Mangrove Honeyeater	V,P	14	

Animal ia	Aves	Pomatostomidae	8388	<i>Pomatostomus temporalis temporalis</i>	Grey-crowned Babbler (eastern subspecies)	V,P		4	
Animal ia	Aves	Neosittidae	0549	<i>Daphoenositta chrysoptera</i>	Varied Sittella	V,P		15	
Animal ia	Aves	Artamidae	8519	<i>Artamus cyanopterus cyanopterus</i>	Dusky Woodswallow	V,P		1	
Animal ia	Mammalia	Dasyuridae	1008	<i>Dasyurus maculatus</i>	Spotted-tailed Quoll	V,P	E	2	
Animal ia	Mammalia	Dasyuridae	1045	<i>Planigale maculata</i>	Common Planigale	V,P		5	
Animal ia	Mammalia	Phascolarctidae	1162	<i>Phascolarctos cinereus</i>	Koala	V,P	V	13	
Animal ia	Mammalia	Pteropodidae	1280	<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	V,P	V	27	
Animal ia	Mammalia	Pteropodidae	1294	<i>Syconycteris australis</i>	Common Blossom-bat	V,P		1	
Animal ia	Mammalia	Molossidae	1329	<i>Mormopterus norfolkensis</i>	Eastern Freetail-bat	V,P		1	
Animal ia	Mammalia	Vespertilionidae	1346	<i>Miniopterus australis</i>	Little Bentwing-bat	V,P		16	
Animal ia	Mammalia	Vespertilionidae	1834	<i>Miniopterus schreibersii oceanensis</i>	Eastern Bentwing-bat	V,P		4	
Animal ia	Mammalia	Vespertilionidae	1357	<i>Myotis macropus</i>	Southern Myotis	V,P		2	
Animal ia	Mammalia	Vespertilionidae	1336	<i>Nyctophilus bifax</i>	Eastern Long-eared Bat	V,P		2	
Animal ia	Mammalia	Vespertilionidae	1361	<i>Scoteanax rueppellii</i>	Greater Broad-nosed Bat	V,P		3	
Animal ia	Mammalia	Balaenopteridae	1575	<i>Megaptera novaeangliae</i>	Humpback Whale	V,P	V	1	
Animal ia	Gastropoda	Camaenidae	1002	<i>Thersites mitchellae</i>	Mitchell's Rainforest Snail	E1	CE	3	
Plante	Flora	Cunoniaceae	10943	<i>Davidsonia jerseyana</i>	Davidson's Plum	E1,P,2	E	2	
Plante	Flora	Cunoniaceae	10944	<i>Davidsonia johnsonii</i>	Smooth Davidson's Plum	E1,P	E	3	
Plante	Flora	Euphorbiaceae	8334	<i>Fontainea oraria</i>	Coastal Fontainea	E4A,P,2	E	41	
Plante	Flora	Fabaceae (Mimosoideae)	7757	<i>Archidendron hendersonii</i>	White Lace Flower	V,P		17	
Plante	Flora	Lauraceae	3477	<i>Cryptocarya foetida</i>	Stinking Cryptocarya	V,P	V	32	
Plante	Flora	Lauraceae	8480	<i>Endiandra muelleri subsp. bracteata</i>	Green-leaved Rose Walnut	E1,P		2	
Plante	Flora	Meliaceae	3682	<i>Owenia cepiodora</i>	Onion Cedar	V,P	V	1	
Plante	Flora	Menispermaceae	3691	<i>Tinospora tinoporoides</i>	Arrow-head Vine	V,P		17	

Plante	Flora	Myrtaceae	11894	<i>Gossia fragrantissima</i>	Sweet Myrtle	E1,P	E	2	
Plante	Flora	Myrtaceae	4290	<i>Syzygium hodgkinsoniae</i>	Red Lilly Pilly	V,P	V	5	
Plante	Flora	Myrtaceae	4292	<i>Syzygium moorei</i>	Durobby	V,P	V	1	
Plante	Flora	Orchidaceae	4480	<i>Phaius australis</i>	Southern Swamp Orchid	E1,P,2	E	5	
Plante	Flora	Orchidaceae	7324	<i>Pterostylis nigricans</i>	Dark Greenhood	V,P,2		1	
Plante	Flora	Poaceae	4776	<i>Arthraxon hispidus</i>	Hairy Jointgrass	V,P	V	7352	
Plante	Flora	Proteaceae	5446	<i>Macadamia tetraphylla</i>	Rough-shelled Bush Nut	V,P	V	56	
Plante	Flora	Rutaceae	6457	<i>Acronychia littoralis</i>	Scented Acronychia	E1,P	E	23	



# EPBC Act Protected Matters Report

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

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

Information is available about [Environment Assessments](#) and the EPBC Act including significance guidelines, forms and application process details.

Report created: 20/04/18 17:51:22

[Summary](#)

[Details](#)

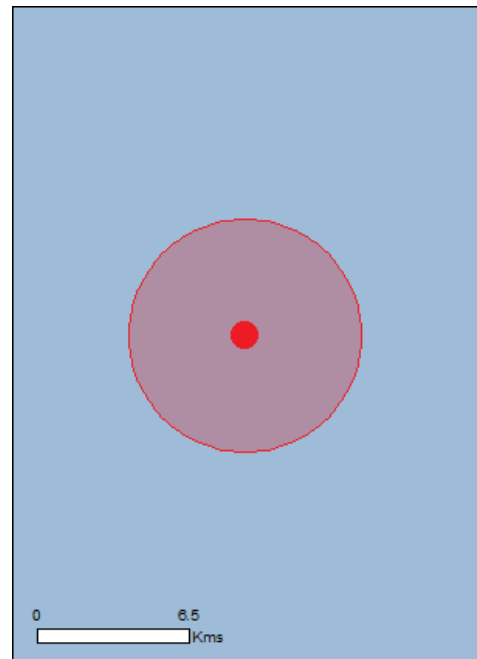
[Matters of NES](#)

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

[Extra Information](#)

[Caveat](#)

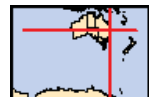
[Acknowledgements](#)



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[Coordinates](#)

Buffer: 5.0Km





# Summary

## Matters of National Environmental Significance

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

<a href="#">World Heritage Properties:</a>	None
<a href="#">National Heritage Places:</a>	None
<a href="#">Wetlands of International Importance:</a>	None
<a href="#">Great Barrier Reef Marine Park:</a>	None
<a href="#">Commonwealth Marine Area:</a>	None
<a href="#">Listed Threatened Ecological Communities:</a>	3
<a href="#">Listed Threatened Species:</a>	79
<a href="#">Listed Migratory Species:</a>	76

## Other Matters Protected by the EPBC Act

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

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

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

<a href="#">Commonwealth Land:</a>	1
<a href="#">Commonwealth Heritage Places:</a>	None
<a href="#">Listed Marine Species:</a>	110
<a href="#">Whales and Other Cetaceans:</a>	12
<a href="#">Critical Habitats:</a>	None
<a href="#">Commonwealth Reserves Terrestrial:</a>	None
<a href="#">Commonwealth Reserves Marine:</a>	None

## Extra Information

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

<a href="#">State and Territory Reserves:</a>	1
<a href="#">Regional Forest Agreements:</a>	1
<a href="#">Invasive Species:</a>	38
<a href="#">Nationally Important Wetlands:</a>	None
<a href="#">Key Ecological Features (Marine)</a>	None

# Details

## Matters of National Environmental Significance

### Listed Threatened Ecological Communities [\[ Resource Information \]](#)

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

Name	Status	Type of Presence
<a href="#">Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community</a>	Endangered	Community may occur within area
<a href="#">Littoral Rainforest and Coastal Vine Thickets of Eastern Australia</a>	Critically Endangered	Community likely to occur within area
<a href="#">Lowland Rainforest of Subtropical Australia</a>	Critically Endangered	Community may occur within area

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

Name	Status	Type of Presence
<b>Birds</b>		
<a href="#">Anthochaera phrygia</a> Regent Honeyeater [82338]	Critically Endangered	Foraging, feeding or related behaviour likely to occur within area
<a href="#">Botaurus poiciloptilus</a> Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area
<a href="#">Calidris canutus</a> Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area
<a href="#">Calidris ferruginea</a> Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
<a href="#">Calidris tenuirostris</a> Great Knot [862]	Critically Endangered	Roosting known to occur within area
<a href="#">Charadrius leschenaultii</a> Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Roosting known to occur within area
<a href="#">Charadrius mongolus</a> Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area
<a href="#">Cyclopsitta diophthalma coxeni</a> Coxen's Fig-Parrot [59714]	Endangered	Species or species habitat may occur within area
<a href="#">Diomedea antipodensis</a> Antipodean Albatross [64458]	Vulnerable	Species or species habitat may occur within area
<a href="#">Diomedea antipodensis gibsoni</a> Gibson's Albatross [82270]	Vulnerable	Species or species habitat may occur within area

Name	Status	Type of Presence
<a href="#">Diomedea epomophora</a> Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area
<a href="#">Diomedea exulans</a> Wandering Albatross [89223]	Vulnerable	Species or species habitat may occur within area
<a href="#">Erythrotriorchis radiatus</a> Red Goshawk [942]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Fregetta grallaria grallaria</a> White-bellied Storm-Petrel (Tasman Sea), White-bellied Storm-Petrel (Australasian) [64438]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Lathamus discolor</a> Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area
<a href="#">Limosa lapponica baueri</a> Bar-tailed Godwit (baueri), Western Alaskan Bar-tailed Godwit [86380]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Limosa lapponica menzbieri</a> Northern Siberian Bar-tailed Godwit, Bar-tailed Godwit (menzbieri) [86432]	Critically Endangered	Species or species habitat may occur within area
<a href="#">Macronectes giganteus</a> Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
<a href="#">Macronectes halli</a> Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
<a href="#">Numenius madagascariensis</a> Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
<a href="#">Pachyptila turtur subantarctica</a> Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Phoebastria fusca</a> Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area
<a href="#">Pterodroma leucoptera leucoptera</a> Gould's Petrel, Australian Gould's Petrel [26033]	Endangered	Species or species habitat may occur within area
<a href="#">Pterodroma neglecta neglecta</a> Kermadec Petrel (western) [64450]	Vulnerable	Foraging, feeding or related behaviour may occur within area
<a href="#">Rostratula australis</a> Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area
<a href="#">Thalassarche cauta cauta</a> Shy Albatross, Tasmanian Shy Albatross [82345]	Vulnerable	Species or species habitat may occur within area
<a href="#">Thalassarche cauta steadi</a> White-capped Albatross [82344]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<a href="#">Thalassarche eremita</a> Chatham Albatross [64457]	Endangered	Species or species habitat may occur within area

Name	Status	Type of Presence
<a href="#">Thalassarche impavida</a> Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
<a href="#">Thalassarche melanophris</a> Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
<a href="#">Thalassarche salvini</a> Salvin's Albatross [64463]	Vulnerable	Species or species habitat may occur within area
<a href="#">Turnix melanogaster</a> Black-breasted Button-quail [923]	Vulnerable	Species or species habitat may occur within area
<b>Fish</b>		
<a href="#">Epinephelus daemeli</a> Black Rockcod, Black Cod, Saddled Rockcod [68449]	Vulnerable	Species or species habitat likely to occur within area
<b>Frogs</b>		
<a href="#">Litoria olongburensis</a> Wallum Sedge Frog [1821]	Vulnerable	Species or species habitat known to occur within area
<b>Insects</b>		
<a href="#">Argynnis hyperbius inconstans</a> Australian Fritillary [88056]	Critically Endangered	Species or species habitat may occur within area
<a href="#">Phyllodes imperialis smithersi</a> Pink Underwing Moth [86084]	Endangered	Species or species habitat may occur within area
<b>Mammals</b>		
<a href="#">Balaenoptera musculus</a> Blue Whale [36]	Endangered	Species or species habitat may occur within area
<a href="#">Chalinolobus dwyeri</a> Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Dasyurus maculatus maculatus (SE mainland population)</a> Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat likely to occur within area
<a href="#">Eubalaena australis</a> Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area
<a href="#">Megaptera novaeangliae</a> Humpback Whale [38]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Petauroides volans</a> Greater Glider [254]	Vulnerable	Species or species habitat may occur within area
<a href="#">Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)</a> Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Potorous tridactylus tridactylus</a> Long-nosed Potoroo (SE mainland) [66645]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Pseudomys novaehollandiae</a> New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat likely to occur within area

Name	Status	Type of Presence
<a href="#">Pteropus poliocephalus</a> Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
<a href="#">Xeromys myoides</a> Water Mouse, False Water Rat, Yirrkoo [66]	Vulnerable	Species or species habitat may occur within area
<b>Other</b>		
<a href="#">Thersites mitchellae</a> Mitchell's Rainforest Snail [66774]	Critically Endangered	Species or species habitat known to occur within area
<b>Plants</b>		
<a href="#">Acronychia littoralis</a> Scented Acronychia [8582]	Endangered	Species or species habitat likely to occur within area
<a href="#">Allocasuarina defungens</a> Dwarf Heath Casuarina [21924]	Endangered	Species or species habitat likely to occur within area
<a href="#">Arthraxon hispidus</a> Hairy-joint Grass [9338]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Baloghia marmorata</a> Marbled Baloghia, Jointed Baloghia [8463]	Vulnerable	Species or species habitat may occur within area
<a href="#">Bulbophyllum globuliforme</a> Miniature Moss-orchid, Hoop Pine Orchid [6649]	Vulnerable	Species or species habitat may occur within area
<a href="#">Cryptocarya foetida</a> Stinking Cryptocarya, Stinking Laurel [11976]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Cryptostylis hunteriana</a> Leafless Tongue-orchid [19533]	Vulnerable	Species or species habitat may occur within area
<a href="#">Cynanchum elegans</a> White-flowered Wax Plant [12533]	Endangered	Species or species habitat likely to occur within area
<a href="#">Davidsonia jerseyana</a> Davidson's Plum [67219]	Endangered	Species or species habitat may occur within area
<a href="#">Davidsonia johnsonii</a> Smooth Davidsonia, Smooth Davidson's Plum, Small-leaved Davidson's Plum [67178]	Endangered	Species or species habitat likely to occur within area
<a href="#">Diploglottis campbellii</a> Small-leaved Tamarind [21484]	Endangered	Species or species habitat likely to occur within area
<a href="#">Endiandra floydii</a> Floyd's Walnut [52955]	Endangered	Species or species habitat likely to occur within area
<a href="#">Floydia praealta</a> Ball Nut, Possum Nut, Big Nut, Beefwood [15762]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Fontainea oraria</a> Coastal Fontainea [24038]	Endangered	Species or species habitat known to occur within area
<a href="#">Gossia fragrantissima</a> Sweet Myrtle, Small-leaved Myrtle [78867]	Endangered	Species or species habitat likely to occur

Name	Status	Type of Presence
<a href="#">Macadamia integrifolia</a> Macadamia Nut, Queensland Nut Tree, Smooth-shelled Macadamia, Bush Nut, Nut Oak [7326]	Vulnerable	within area Species or species habitat may occur within area
<a href="#">Macadamia tetraphylla</a> Rough-shelled Bush Nut, Macadamia Nut, Rough-shelled Macadamia, Rough-leaved Queensland Nut [6581]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Owenia cepiodora</a> Onionwood, Bog Onion, Onion Cedar [11344]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Phaius australis</a> Lesser Swamp-orchid [5872]	Endangered	Species or species habitat known to occur within area
<a href="#">Randia moorei</a> Spiny Gardenia [10577]	Endangered	Species or species habitat likely to occur within area
<a href="#">Syzygium hodgkinsoniae</a> Smooth-bark Rose Apple, Red Lilly Pilly [3539]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Syzygium moorei</a> Rose Apple, Coolamon, Robby, Durobby, Watermelon Tree, Coolamon Rose Apple [12284]	Vulnerable	Species or species habitat may occur within area
<a href="#">Thesium australe</a> Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat may occur within area

#### Reptiles

<a href="#">Caretta caretta</a> Loggerhead Turtle [1763]	Endangered	Breeding known to occur within area
<a href="#">Chelonia mydas</a> Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
<a href="#">Dermochelys coriacea</a> Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding known to occur within area
<a href="#">Eretmochelys imbricata</a> Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Natator depressus</a> Flatback Turtle [59257]	Vulnerable	Species or species habitat known to occur within area

#### Sharks

<a href="#">Carcharias taurus (east coast population)</a> Grey Nurse Shark (east coast population) [68751]	Critically Endangered	Species or species habitat likely to occur within area
<a href="#">Carcharodon carcharias</a> White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Rhincodon typus</a> Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area

#### Listed Migratory Species

[ [Resource Information](#) ]

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

Name	Threatened	Type of Presence
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#### Migratory Marine Birds

<a href="#">Anous stolidus</a> Common Noddy [825]		Species or species
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Name	Threatened	Type of Presence
<a href="#">Apus pacificus</a> Fork-tailed Swift [678]		habitat likely to occur within area  Species or species habitat likely to occur within area
<a href="#">Ardenna carneipes</a> Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Species or species habitat likely to occur within area
<a href="#">Calonectris leucomelas</a> Streaked Shearwater [1077]		Species or species habitat known to occur within area
<a href="#">Diomedea antipodensis</a> Antipodean Albatross [64458]	Vulnerable	Species or species habitat may occur within area
<a href="#">Diomedea epomophora</a> Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area
<a href="#">Diomedea exulans</a> Wandering Albatross [89223]	Vulnerable	Species or species habitat may occur within area
<a href="#">Fregata ariel</a> Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat known to occur within area
<a href="#">Fregata minor</a> Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat known to occur within area
<a href="#">Macronectes giganteus</a> Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
<a href="#">Macronectes halli</a> Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
<a href="#">Phoebastria fusca</a> Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area
<a href="#">Sternula albifrons</a> Little Tern [82849]		Species or species habitat may occur within area
<a href="#">Thalassarche cauta</a> Tasmanian Shy Albatross [89224]	Vulnerable*	Species or species habitat may occur within area
<a href="#">Thalassarche eremita</a> Chatham Albatross [64457]	Endangered	Species or species habitat may occur within area
<a href="#">Thalassarche impavida</a> Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
<a href="#">Thalassarche melanophris</a> Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
<a href="#">Thalassarche salvini</a> Salvin's Albatross [64463]	Vulnerable	Species or species habitat may occur within area
<a href="#">Thalassarche steadi</a> White-capped Albatross [64462]	Vulnerable*	Foraging, feeding or related behaviour likely

Name	Threatened	Type of Presence to occur within area
<b>Migratory Marine Species</b>		
<a href="#">Balaena glacialis australis</a> Southern Right Whale [75529]	Endangered*	Species or species habitat likely to occur within area
<a href="#">Balaenoptera edeni</a> Bryde's Whale [35]		Species or species habitat may occur within area
<a href="#">Balaenoptera musculus</a> Blue Whale [36]	Endangered	Species or species habitat may occur within area
<a href="#">Carcharodon carcharias</a> White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Caretta caretta</a> Loggerhead Turtle [1763]	Endangered	Breeding known to occur within area
<a href="#">Chelonia mydas</a> Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
<a href="#">Dermochelys coriacea</a> Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding known to occur within area
<a href="#">Dugong dugon</a> Dugong [28]		Species or species habitat may occur within area
<a href="#">Eretmochelys imbricata</a> Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Lamna nasus</a> Porbeagle, Mackerel Shark [83288]		Species or species habitat may occur within area
<a href="#">Manta alfredi</a> Reef Manta Ray, Coastal Manta Ray, Inshore Manta Ray, Prince Alfred's Ray, Resident Manta Ray [84994]		Species or species habitat known to occur within area
<a href="#">Manta birostris</a> Giant Manta Ray, Chevron Manta Ray, Pacific Manta Ray, Pelagic Manta Ray, Oceanic Manta Ray [84995]		Species or species habitat may occur within area
<a href="#">Megaptera novaeangliae</a> Humpback Whale [38]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Natator depressus</a> Flatback Turtle [59257]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Orcinus orca</a> Killer Whale, Orca [46]		Species or species habitat may occur within area
<a href="#">Rhincodon typus</a> Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
<a href="#">Sousa chinensis</a> Indo-Pacific Humpback Dolphin [50]		Species or species habitat likely to occur within area
<b>Migratory Terrestrial Species</b>		
<a href="#">Cuculus optatus</a> Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area



Name	Threatened	Type of Presence
<a href="#">Hirundapus caudacutus</a> White-throated Needletail [682]		Species or species habitat known to occur within area
<a href="#">Monarcha melanopsis</a> Black-faced Monarch [609]		Species or species habitat known to occur within area
<a href="#">Monarcha trivirgatus</a> Spectacled Monarch [610]		Species or species habitat known to occur within area
<a href="#">Motacilla flava</a> Yellow Wagtail [644]		Species or species habitat likely to occur within area
<a href="#">Myiagra cyanoleuca</a> Satin Flycatcher [612]		Species or species habitat known to occur within area
<a href="#">Rhipidura rufifrons</a> Rufous Fantail [592]		Species or species habitat known to occur within area
<b>Migratory Wetlands Species</b>		
<a href="#">Actitis hypoleucos</a> Common Sandpiper [59309]		Species or species habitat known to occur within area
<a href="#">Arenaria interpres</a> Ruddy Turnstone [872]		Roosting known to occur within area
<a href="#">Calidris acuminata</a> Sharp-tailed Sandpiper [874]		Roosting known to occur within area
<a href="#">Calidris alba</a> Sanderling [875]		Roosting known to occur within area
<a href="#">Calidris canutus</a> Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area
<a href="#">Calidris ferruginea</a> Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
<a href="#">Calidris melanotos</a> Pectoral Sandpiper [858]		Species or species habitat known to occur within area
<a href="#">Calidris ruficollis</a> Red-necked Stint [860]		Roosting known to occur within area
<a href="#">Calidris subminuta</a> Long-toed Stint [861]		Roosting known to occur within area
<a href="#">Calidris tenuirostris</a> Great Knot [862]	Critically Endangered	Roosting known to occur within area
<a href="#">Charadrius bicinctus</a> Double-banded Plover [895]		Roosting known to occur within area
<a href="#">Charadrius leschenaultii</a> Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Roosting known to occur within area
<a href="#">Charadrius mongolus</a> Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area
<a href="#">Charadrius veredus</a> Oriental Plover, Oriental Dotterel [882]		Roosting known to occur within area

Name	Threatened	Type of Presence
<a href="#">Gallinago hardwickii</a> Latham's Snipe, Japanese Snipe [863]		Roosting known to occur within area
<a href="#">Gallinago megala</a> Swinhoe's Snipe [864]		Roosting likely to occur within area
<a href="#">Gallinago stenura</a> Pin-tailed Snipe [841]		Roosting likely to occur within area
<a href="#">Limicola falcinellus</a> Broad-billed Sandpiper [842]		Roosting known to occur within area
<a href="#">Limosa lapponica</a> Bar-tailed Godwit [844]		Species or species habitat known to occur within area
<a href="#">Limosa limosa</a> Black-tailed Godwit [845]		Roosting known to occur within area
<a href="#">Numenius madagascariensis</a> Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
<a href="#">Numenius minutus</a> Little Curlew, Little Whimbrel [848]		Roosting known to occur within area
<a href="#">Numenius phaeopus</a> Whimbrel [849]		Roosting known to occur within area
<a href="#">Pandion haliaetus</a> Osprey [952]		Breeding known to occur within area
<a href="#">Philomachus pugnax</a> Ruff (Reeve) [850]		Roosting known to occur within area
<a href="#">Pluvialis fulva</a> Pacific Golden Plover [25545]		Roosting known to occur within area
<a href="#">Pluvialis squatarola</a> Grey Plover [865]		Roosting known to occur within area
<a href="#">Tringa brevipes</a> Grey-tailed Tattler [851]		Roosting known to occur within area
<a href="#">Tringa glareola</a> Wood Sandpiper [829]		Roosting known to occur within area
<a href="#">Tringa incana</a> Wandering Tattler [831]		Roosting known to occur within area
<a href="#">Tringa nebularia</a> Common Greenshank, Greenshank [832]		Species or species habitat known to occur within area
<a href="#">Tringa stagnatilis</a> Marsh Sandpiper, Little Greenshank [833]		Roosting known to occur within area
<a href="#">Xenus cinereus</a> Terek Sandpiper [59300]		Roosting known to occur within area

## Other Matters Protected by the EPBC Act

### Commonwealth Land [ [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.

#### Name

Commonwealth Land - Australian Telecommunications Commission

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

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

Name	Threatened	Type of Presence
<b>Birds</b>		
<a href="#">Actitis hypoleucos</a> Common Sandpiper [59309]		Species or species habitat known to occur within area
<a href="#">Anous stolidus</a> Common Noddy [825]		Species or species habitat likely to occur within area
<a href="#">Apus pacificus</a> Fork-tailed Swift [678]		Species or species habitat likely to occur within area
<a href="#">Ardea alba</a> Great Egret, White Egret [59541]		Breeding known to occur within area
<a href="#">Ardea ibis</a> Cattle Egret [59542]		Species or species habitat may occur within area
<a href="#">Arenaria interpres</a> Ruddy Turnstone [872]		Roosting known to occur within area
<a href="#">Calidris acuminata</a> Sharp-tailed Sandpiper [874]		Roosting known to occur within area
<a href="#">Calidris alba</a> Sanderling [875]		Roosting known to occur within area
<a href="#">Calidris canutus</a> Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area
<a href="#">Calidris ferruginea</a> Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
<a href="#">Calidris melanotos</a> Pectoral Sandpiper [858]		Species or species habitat known to occur within area
<a href="#">Calidris ruficollis</a> Red-necked Stint [860]		Roosting known to occur within area
<a href="#">Calidris subminuta</a> Long-toed Stint [861]		Roosting known to occur within area
<a href="#">Calidris tenuirostris</a> Great Knot [862]	Critically Endangered	Roosting known to occur within area
<a href="#">Calonectris leucomelas</a> Streaked Shearwater [1077]		Species or species habitat known to occur within area
<a href="#">Catharacta skua</a> Great Skua [59472]		Species or species habitat may occur within

Name	Threatened	Type of Presence area
<a href="#">Charadrius bicinctus</a> Double-banded Plover [895]		Roosting known to occur within area
<a href="#">Charadrius leschenaultii</a> Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Roosting known to occur within area
<a href="#">Charadrius mongolus</a> Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area
<a href="#">Charadrius ruficapillus</a> Red-capped Plover [881]		Roosting known to occur within area
<a href="#">Charadrius veredus</a> Oriental Plover, Oriental Dotterel [882]		Roosting known to occur within area
<a href="#">Cuculus saturatus</a> Oriental Cuckoo, Himalayan Cuckoo [710]		Species or species habitat may occur within area
<a href="#">Diomedea antipodensis</a> Antipodean Albatross [64458]	Vulnerable	Species or species habitat may occur within area
<a href="#">Diomedea epomophora</a> Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area
<a href="#">Diomedea exulans</a> Wandering Albatross [89223]	Vulnerable	Species or species habitat may occur within area
<a href="#">Diomedea gibsoni</a> Gibson's Albatross [64466]	Vulnerable*	Species or species habitat may occur within area
<a href="#">Fregata ariel</a> Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat known to occur within area
<a href="#">Fregata minor</a> Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat known to occur within area
<a href="#">Gallinago hardwickii</a> Latham's Snipe, Japanese Snipe [863]		Roosting known to occur within area
<a href="#">Gallinago megala</a> Swinhoe's Snipe [864]		Roosting likely to occur within area
<a href="#">Gallinago stenura</a> Pin-tailed Snipe [841]		Roosting likely to occur within area
<a href="#">Haliaeetus leucogaster</a> White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area
<a href="#">Heteroscelus brevipes</a> Grey-tailed Tattler [59311]		Roosting known to occur within area
<a href="#">Heteroscelus incanus</a> Wandering Tattler [59547]		Roosting known to occur within area
<a href="#">Himantopus himantopus</a> Black-winged Stilt [870]		Roosting known to occur within area
<a href="#">Hirundapus caudacutus</a> White-throated Needletail [682]		Species or species habitat known to occur within area
<a href="#">Lathamus discolor</a> Swift Parrot [744]	Critically Endangered	Species or species

Name	Threatened	Type of Presence
<a href="#">Limicola falcinellus</a> Broad-billed Sandpiper [842]		habitat likely to occur within area  Roosting known to occur within area
<a href="#">Limosa lapponica</a> Bar-tailed Godwit [844]		Species or species habitat known to occur within area
<a href="#">Limosa limosa</a> Black-tailed Godwit [845]		Roosting known to occur within area
<a href="#">Macronectes giganteus</a> Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
<a href="#">Macronectes halli</a> Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
<a href="#">Merops ornatus</a> Rainbow Bee-eater [670]		Species or species habitat may occur within area
<a href="#">Monarcha melanopsis</a> Black-faced Monarch [609]		Species or species habitat known to occur within area
<a href="#">Monarcha trivirgatus</a> Spectacled Monarch [610]		Species or species habitat known to occur within area
<a href="#">Motacilla flava</a> Yellow Wagtail [644]		Species or species habitat likely to occur within area
<a href="#">Myiagra cyanoleuca</a> Satin Flycatcher [612]		Species or species habitat known to occur within area
<a href="#">Numenius madagascariensis</a> Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
<a href="#">Numenius minutus</a> Little Curlew, Little Whimbrel [848]		Roosting known to occur within area
<a href="#">Numenius phaeopus</a> Whimbrel [849]		Roosting known to occur within area
<a href="#">Pachyptila turtur</a> Fairy Prion [1066]		Species or species habitat known to occur within area
<a href="#">Pandion haliaetus</a> Osprey [952]		Breeding known to occur within area
<a href="#">Philomachus pugnax</a> Ruff (Reeve) [850]		Roosting known to occur within area
<a href="#">Phoebastria fusca</a> Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area
<a href="#">Pluvialis fulva</a> Pacific Golden Plover [25545]		Roosting known to occur within area
<a href="#">Pluvialis squatarola</a> Grey Plover [865]		Roosting known to occur within area
<a href="#">Puffinus carneipes</a> Flesh-footed Shearwater, Fleshy-footed Shearwater [1043]		Species or species habitat likely to occur

Name	Threatened	Type of Presence
<a href="#">Rhipidura rufifrons</a> Rufous Fantail [592]		within area Species or species habitat known to occur within area
<a href="#">Rostratula benghalensis (sensu lato)</a> Painted Snipe [889]	Endangered*	Species or species habitat likely to occur within area
<a href="#">Sterna albifrons</a> Little Tern [813]		Species or species habitat may occur within area
<a href="#">Thalassarche cauta</a> Tasmanian Shy Albatross [89224]	Vulnerable*	Species or species habitat may occur within area
<a href="#">Thalassarche eremita</a> Chatham Albatross [64457]	Endangered	Species or species habitat may occur within area
<a href="#">Thalassarche impavida</a> Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
<a href="#">Thalassarche melanophris</a> Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
<a href="#">Thalassarche salvini</a> Salvin's Albatross [64463]	Vulnerable	Species or species habitat may occur within area
<a href="#">Thalassarche steadi</a> White-capped Albatross [64462]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
<a href="#">Tringa glareola</a> Wood Sandpiper [829]		Roosting known to occur within area
<a href="#">Tringa nebularia</a> Common Greenshank, Greenshank [832]		Species or species habitat known to occur within area
<a href="#">Tringa stagnatilis</a> Marsh Sandpiper, Little Greenshank [833]		Roosting known to occur within area
<a href="#">Xenus cinereus</a> Terek Sandpiper [59300]		Roosting known to occur within area
<b>Fish</b>		
<a href="#">Acentronura tentaculata</a> Shortpouch Pygmy Pipehorse [66187]		Species or species habitat may occur within area
<a href="#">Campichthys tryoni</a> Tryon's Pipefish [66193]		Species or species habitat may occur within area
<a href="#">Corythoichthys amplexus</a> Fijian Banded Pipefish, Brown-banded Pipefish [66199]		Species or species habitat may occur within area
<a href="#">Corythoichthys ocellatus</a> Orange-spotted Pipefish, Ocellated Pipefish [66203]		Species or species habitat may occur within area
<a href="#">Festucalex cinctus</a> Girdled Pipefish [66214]		Species or species habitat may occur within area
<a href="#">Filicampus tigris</a> Tiger Pipefish [66217]		Species or species

Name	Threatened	Type of Presence
<a href="#">Halicampus grayi</a> Mud Pipefish, Gray's Pipefish [66221]		habitat may occur within area  Species or species habitat may occur within area
<a href="#">Hippichthys cyanospilos</a> Blue-speckled Pipefish, Blue-spotted Pipefish [66228]		Species or species habitat may occur within area
<a href="#">Hippichthys heptagonus</a> Madura Pipefish, Reticulated Freshwater Pipefish [66229]		Species or species habitat may occur within area
<a href="#">Hippichthys penicillus</a> Beady Pipefish, Steep-nosed Pipefish [66231]		Species or species habitat may occur within area
<a href="#">Hippocampus kelloggi</a> Kellogg's Seahorse, Great Seahorse [66723]		Species or species habitat may occur within area
<a href="#">Hippocampus kuda</a> Spotted Seahorse, Yellow Seahorse [66237]		Species or species habitat may occur within area
<a href="#">Hippocampus planifrons</a> Flat-face Seahorse [66238]		Species or species habitat may occur within area
<a href="#">Hippocampus trimaculatus</a> Three-spot Seahorse, Low-crowned Seahorse, Flat-faced Seahorse [66720]		Species or species habitat may occur within area
<a href="#">Hippocampus whitei</a> White's Seahorse, Crowned Seahorse, Sydney Seahorse [66240]		Species or species habitat may occur within area
<a href="#">Lissocampus runa</a> Javelin Pipefish [66251]		Species or species habitat may occur within area
<a href="#">Maroubra perserrata</a> Sawtooth Pipefish [66252]		Species or species habitat may occur within area
<a href="#">Micrognathus andersonii</a> Anderson's Pipefish, Shortnose Pipefish [66253]		Species or species habitat may occur within area
<a href="#">Micrognathus brevirostris</a> thorntail Pipefish, Thorn-tailed Pipefish [66254]		Species or species habitat may occur within area
<a href="#">Microphis manadensis</a> Manado Pipefish, Manado River Pipefish [66258]		Species or species habitat may occur within area
<a href="#">Solegnathus dunckeri</a> Duncker's Pipehorse [66271]		Species or species habitat may occur within area
<a href="#">Solegnathus hardwickii</a> Pallid Pipehorse, Hardwick's Pipehorse [66272]		Species or species habitat may occur within area
<a href="#">Solegnathus spinosissimus</a> Spiny Pipehorse, Australian Spiny Pipehorse [66275]		Species or species habitat may occur within area
<a href="#">Solenostomus cyanopterus</a> Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]		Species or species habitat may occur within

Name	Threatened	Type of Presence area
<a href="#">Solenostomus paegnius</a> Rough-snout Ghost Pipefish [68425]		Species or species habitat may occur within area
<a href="#">Solenostomus paradoxus</a> Ornate Ghostpipefish, Harlequin Ghost Pipefish, Ornate Ghost Pipefish [66184]		Species or species habitat may occur within area
<a href="#">Stigmatopora nigra</a> Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish [66277]		Species or species habitat may occur within area
<a href="#">Syngnathoides biaculeatus</a> Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area
<a href="#">Trachyrhamphus bicoarctatus</a> Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish [66280]		Species or species habitat may occur within area
<a href="#">Urocampus carinirostris</a> Hairy Pipefish [66282]		Species or species habitat may occur within area
<a href="#">Vanacampus margaritifer</a> Mother-of-pearl Pipefish [66283]		Species or species habitat may occur within area

#### Mammals

<a href="#">Dugong dugon</a> Dugong [28]		Species or species habitat may occur within area
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#### Reptiles

<a href="#">Astrotia stokesii</a> Stokes' Seasnake [1122]		Species or species habitat may occur within area
<a href="#">Caretta caretta</a> Loggerhead Turtle [1763]	Endangered	Breeding known to occur within area
<a href="#">Chelonia mydas</a> Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
<a href="#">Dermochelys coriacea</a> Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding known to occur within area
<a href="#">Eretmochelys imbricata</a> Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Hydrophis elegans</a> Elegant Seasnake [1104]		Species or species habitat may occur within area
<a href="#">Natator depressus</a> Flatback Turtle [59257]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Pelamis platurus</a> Yellow-bellied Seasnake [1091]		Species or species habitat may occur within area

#### Whales and other Cetaceans

[ Resource Information ]

Name	Status	Type of Presence
<b>Mammals</b>		
<a href="#">Balaenoptera acutorostrata</a> Minke Whale [33]		Species or species habitat may occur within



Name	Status	Type of Presence area
<a href="#">Balaenoptera edeni</a> Bryde's Whale [35]		Species or species habitat may occur within area
<a href="#">Balaenoptera musculus</a> Blue Whale [36]	Endangered	Species or species habitat may occur within area
<a href="#">Delphinus delphis</a> Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
<a href="#">Eubalaena australis</a> Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area
<a href="#">Grampus griseus</a> Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
<a href="#">Megaptera novaeangliae</a> Humpback Whale [38]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Orcinus orca</a> Killer Whale, Orca [46]		Species or species habitat may occur within area
<a href="#">Sousa chinensis</a> Indo-Pacific Humpback Dolphin [50]		Species or species habitat likely to occur within area
<a href="#">Stenella attenuata</a> Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area
<a href="#">Tursiops aduncus</a> Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area
<a href="#">Tursiops truncatus s. str.</a> Bottlenose Dolphin [68417]		Species or species habitat may occur within area

## Extra Information

### State and Territory Reserves [\[ Resource Information \]](#)

Name	State
Ballina	NSW

### Regional Forest Agreements [\[ Resource Information \]](#)

Note that all areas with completed RFAs have been included.

Name	State
<a href="#">North East NSW RFA</a>	New South Wales

### Invasive Species [\[ Resource Information \]](#)

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

Name	Status	Type of Presence
Birds		

Name	Status	Type of Presence
Acridotheres tristis Common Myna, Indian Myna [387]		Species or species habitat likely to occur within area
Anas platyrhynchos Mallard [974]		Species or species habitat likely to occur within area
Carduelis carduelis European Goldfinch [403]		Species or species habitat likely to occur within area
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Lonchura punctulata Nutmeg Mannikin [399]		Species or species habitat likely to occur within area
Passer domesticus House Sparrow [405]		Species or species habitat likely to occur within area
Streptopelia chinensis Spotted Turtle-Dove [780]		Species or species habitat likely to occur within area
Sturnus vulgaris Common Starling [389]		Species or species habitat likely to occur within area
<b>Frogs</b>		
Rhinella marina Cane Toad [83218]		Species or species habitat known to occur within area
<b>Mammals</b>		
Bos taurus Domestic Cattle [16]		Species or species habitat likely to occur within area
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Feral deer Feral deer species in Australia [85733]		Species or species habitat likely to occur within area
Lepus capensis Brown Hare [127]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Rattus norvegicus Brown Rat, Norway Rat [83]		Species or species habitat likely to occur within area
Rattus rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur

Name	Status	Type of Presence
Sus scrofa Pig [6]		within area Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
<b>Plants</b>		
Alternanthera philoxeroides Alligator Weed [11620]		Species or species habitat likely to occur within area
Anredera cordifolia Madeira Vine, Jalap, Lamb's-tail, Mignonette Vine, Anredera, Gulf Madeiravine, Heartleaf Madeiravine, Potato Vine [2643]		Species or species habitat likely to occur within area
Asparagus aethiopicus Asparagus Fern, Ground Asparagus, Basket Fern, Sprengi's Fern, Bushy Asparagus, Emerald Asparagus [62425]		Species or species habitat likely to occur within area
Asparagus plumosus Climbing Asparagus-fern [48993]		Species or species habitat likely to occur within area
Cabomba caroliniana Cabomba, Fanwort, Carolina Watershield, Fish Grass, Washington Grass, Watershield, Carolina Fanwort, Common Cabomba [5171]		Species or species habitat likely to occur within area
Chrysanthemoides monilifera Bitou Bush, Boneseed [18983]		Species or species habitat likely to occur within area
Chrysanthemoides monilifera subsp. rotundata Bitou Bush [16332]		Species or species habitat likely to occur within area
Eichhornia crassipes Water Hyacinth, Water Orchid, Nile Lily [13466]		Species or species habitat likely to occur within area
Genista sp. X Genista monspessulana Broom [67538]		Species or species habitat may occur within area
Lantana camara Lantana, Common Lantana, Kamara Lantana, Large-leaf Lantana, Pink Flowered Lantana, Red Flowered Lantana, Red-Flowered Sage, White Sage, Wild Sage [10892]		Species or species habitat likely to occur within area
Opuntia spp. Prickly Pears [82753]		Species or species habitat likely to occur within area
Pinus radiata Radiata Pine Monterey Pine, Insignis Pine, Wilding Pine [20780]		Species or species habitat may occur within area
Protasparagus densiflorus Asparagus Fern, Plume Asparagus [5015]		Species or species habitat likely to occur within area
Protasparagus plumosus Climbing Asparagus-fern, Ferny Asparagus [11747]		Species or species habitat likely to occur within area
Sagittaria platyphylla Delta Arrowhead, Arrowhead, Slender Arrowhead [68483]		Species or species habitat likely to occur within area
Salvinia molesta Salvinia, Giant Salvinia, Aquarium Watermoss,		Species or species

Name	Status	Type of Presence
Kariba Weed [13665]		habitat likely to occur within area
Senecio madagascariensis		
Fireweed, Madagascar Ragwort, Madagascar		Species or species habitat
Groundsel [2624]		likely to occur within area
<b>Reptiles</b>		
Hemidactylus frenatus		
Asian House Gecko [1708]		Species or species habitat likely to occur within area

# Caveat

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

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

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

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

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

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

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

- migratory and
- marine

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

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

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

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

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

## Coordinates

-28.80545 153.58616

# Acknowledgements

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

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

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

Please feel free to provide feedback via the [Contact Us](#) page.



## Appendix C

# Threatened Flora & TEC Records



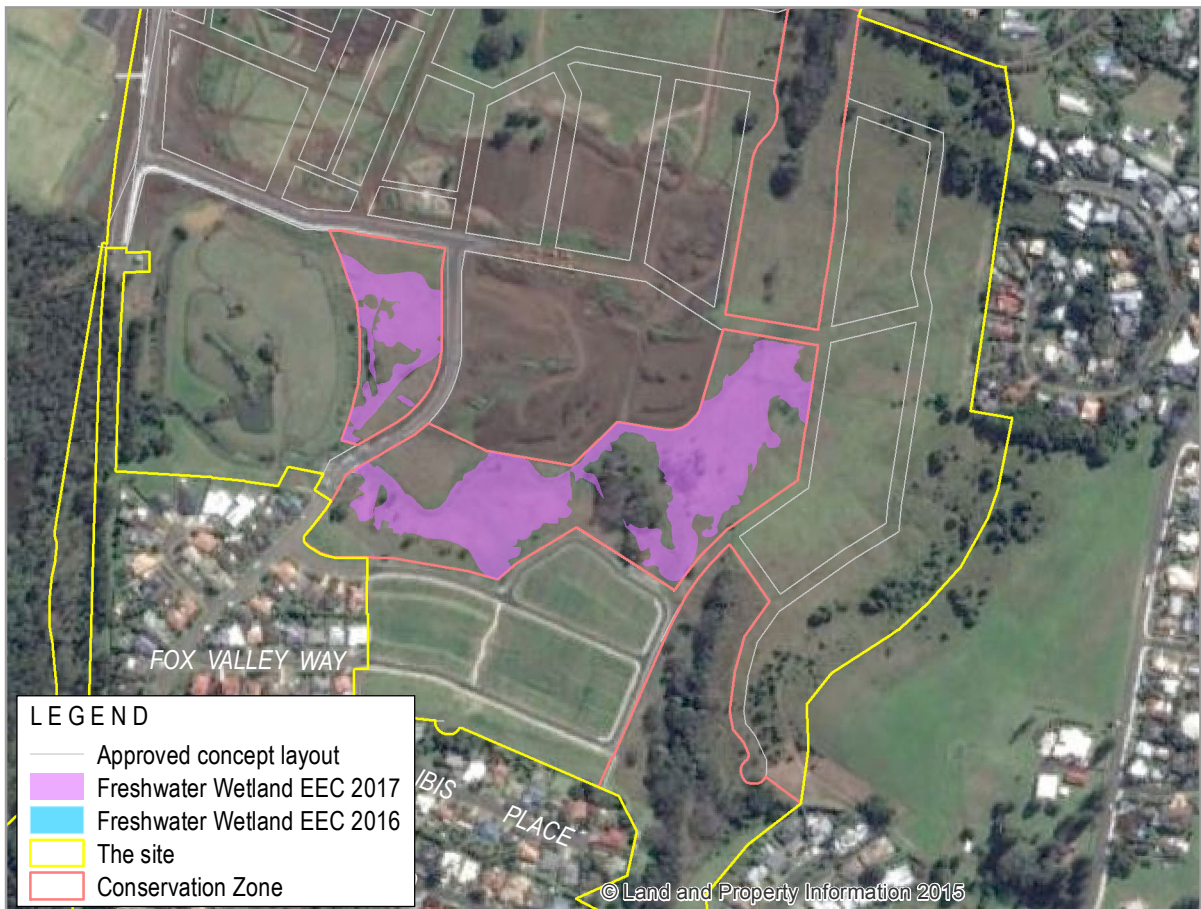
**LEGEND**

- The site
- *Archidendron hendersonii*
- *Macadamia tetraphylla*
- *Syzygium hodgkinsoniae*
- *Tinospora tinosporoides*
- Littoral Rain Forest EEC
- Swamp Sclerophyll EEC
- Freshwater Wetland EEC
- SEPP 14 wetland
- SEPP 26 Littoral Rainforest
- Approved concept layout

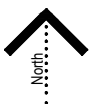
**Distribution of all EECs and Threatened Species (excluding HJG and SSSR) at the Site**



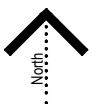
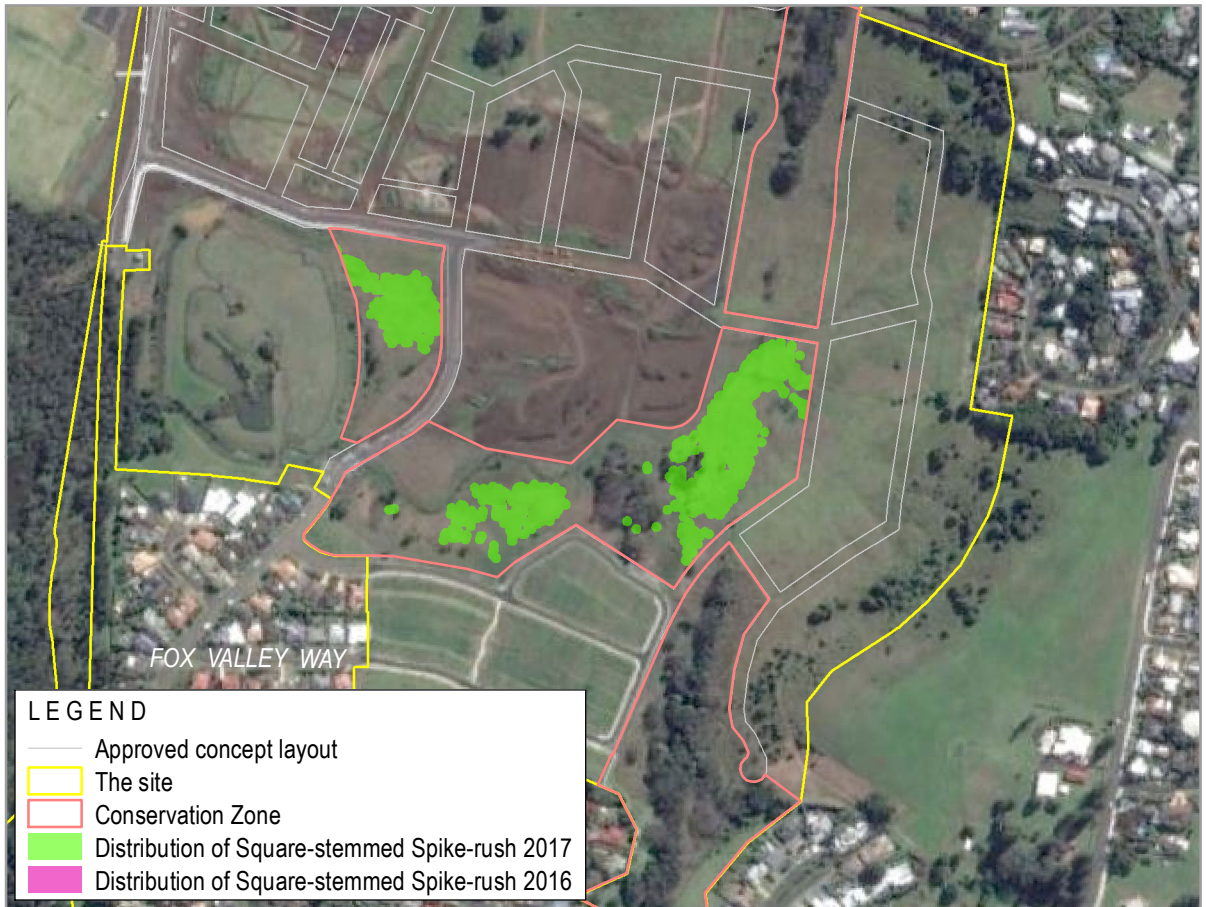




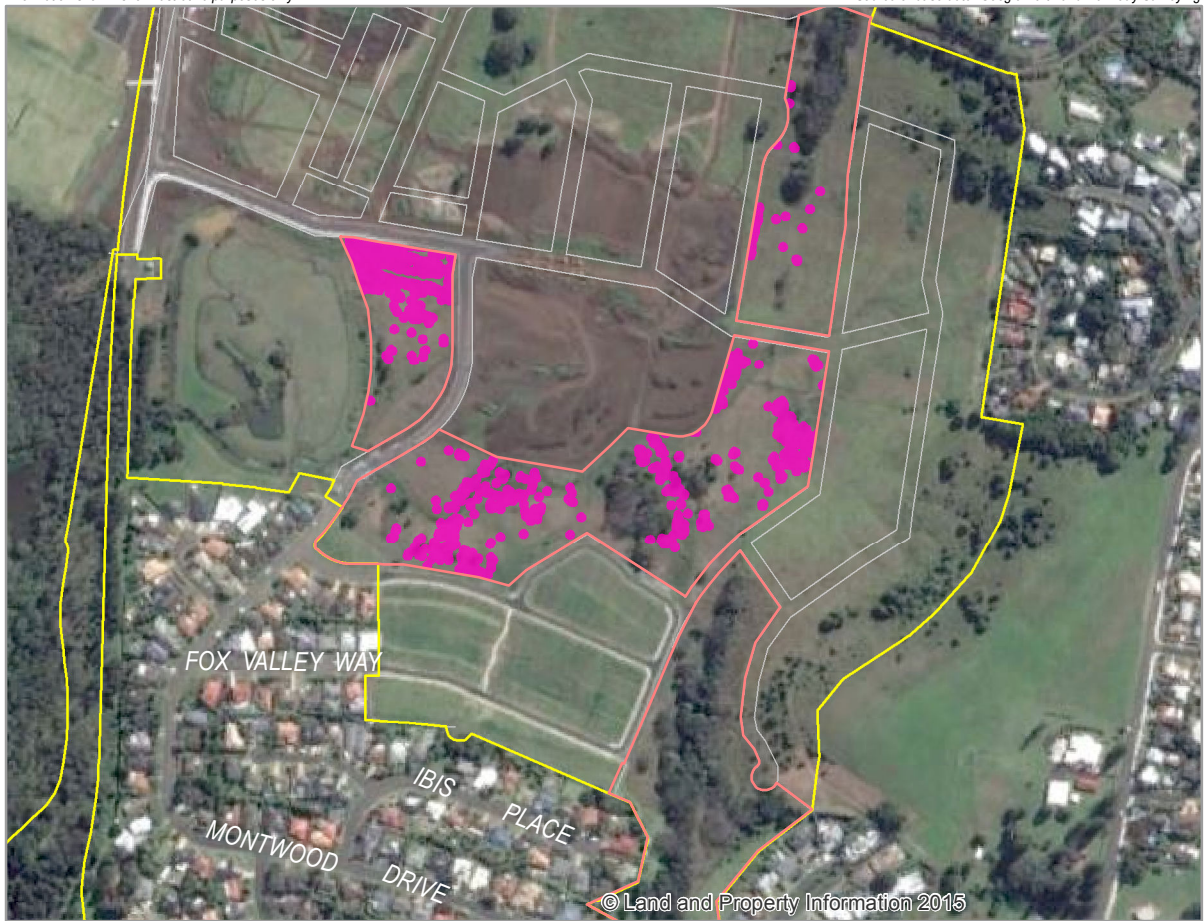
## Freshwater Wetland EEC Distribution within Conservation Zone



0 150



### Square-stemmed Spike-rush Distribution within Conservation Zone



0 150

## Hairy Joint Grass Distribution within Conservation Zone



**Appendix D**  
**Site Photographs**



**Plate D1** Typical grassland in west of SL7, looking east to Montwood Drive (note earthworks)



**Plate D2** Camphor Laurel and Swamp Oak regrowth in south of SL7



**Plate D3** Mature Rough-shelled Bush Nut on western boundary (to be retained in-situ)



Plate D4 Small stand of littoral rainforest in west of site (to be removed)



Plate D5 Rainforest plantings in north-west of site (Management Zone 1)



**Appendix E**  
**Flora Inventory**

**Table E.1 Flora Inventory (does not include trees planted within Management Zone 1)**

Family	Scientific name	Common name
Apiaceae	<i>Centella asiatica</i>	Pennywort
Apocynaceae	<i>Melodinus australis</i>	Southern Melodinus
Araliaceae	<i>Schefflera actinophylla</i> *	Umbrella Tree
Arecaceae	<i>Archontophoenix cunninghamiana</i>	Bangalow Palm
Asparagaceae	<i>Asparagus aethiopicus</i> *	Asparagus Fern
Asteraceae	<i>Ageratina adenophora</i> *	Crofton Weed
Asteraceae	<i>Ageratum houstonianum</i> *	Blue Billygoat Weed
Asteraceae	<i>Ambrosia artemisiifolia</i> *	Annual Ragweed
Asteraceae	<i>Baccharis halimifolia</i> *	Groundsel Bush
Asteraceae	<i>Bidens pilosa</i> *	Cobbler's Pegs
Casuarinaceae	<i>Casuarina glauca</i>	Swamp Oak
Convolvulaceae	<i>Ipomoea cairica</i> *	Coast Morning Glory
Cyperaceae	<i>Cyperus polystachyos</i>	Bunchy Sedge
Davalliaceae	<i>Nephrolepis cordifolia</i> *	Fishbone Fern
Dennstaedtiaceae	<i>Hypolepis muelleri</i>	Harsh Ground Fern
Dennstaedtiaceae	<i>Pteridium esculentum</i>	Bracken
Dilleniaceae	<i>Hibbertia scandens</i>	Climbing Guinea Flower
Ebenaceae	<i>Diospyros pentamera</i>	Myrtle Ebony
Elaeocarpaceae	<i>Elaeocarpus obovatus</i>	Hard Quandong
Euphorbiaceae	<i>Glochidion sumatranum</i>	Umbrella Cheese Tree
Euphorbiaceae	<i>Macaranga tanarius</i>	Macaranga
Euphorbiaceae	<i>Mallotus discolor</i>	Yellow Kamala
Euphorbiaceae	<i>Mallotus philippensis</i>	Red Kamala
Fabaceae (Caesalpinioideae)	<i>Senna pendula</i> var. <i>glabrata</i> *	Winter Senna
Fabaceae (Faboideae)	<i>Desmodium uncinatum</i> *	Silver-leaf Desmodium
Fabaceae (Faboideae)	<i>Vigna parkeri</i> *	Creeping Vigna
Iridaceae	<i>Freesia laxa</i> *	False Freesia
Lauraceae	<i>Cinnamomum camphora</i> *	Camphor Laurel
Lauraceae	<i>Cryptocarya triplinervis</i> var. <i>triplinervis</i>	Three-veined Laurel
Lauraceae	<i>Neolitsea australiensis</i>	Green Bolly Gum
Luzuriagaceae	<i>Geitonoplesium cymosum</i>	Scrambling Lily
Lythraceae	<i>Cuphea carthagenensis</i> *	Cuphea
Malvaceae	<i>Sida rhombifolia</i> *	Paddy's Lucerne
Meliaceae	<i>Dysoxylum fraserianum</i>	Rosewood
Meliaceae	<i>Dysoxylum mollissimum</i>	Red Bean
Menispermaceae	<i>Stephania japonica</i> var. <i>discolor</i>	Snake Vine
Moraceae	<i>Ficus coronata</i>	Creek Sandpaper Fig
Moraceae	<i>Maclura cochinchinensis</i>	Cockspur Thorn
Myrtaceae	<i>Austromyrtus dulcis</i>	Midgen Berry
Myrtaceae	<i>Psidium cattleianum</i> *	Cherry Guava



Family	Scientific name	Common name
Myrtaceae	<i>Rhodomyrtus psidioides</i>	Native Guava
Oleaceae	<i>Ligustrum lucidum</i> *	Large-leaved Privet
Onagraceae	<i>Ludwigia octovalvis</i>	Willow Primrose
Oxalidaceae	<i>Oxalis corniculata</i> *	Creeping Oxalis
Passifloraceae	<i>Passiflora foetida</i> *	Stinking Passionfruit
Passifloraceae	<i>Passiflora suberosa</i> *	Corky Passionfruit
Passifloraceae	<i>Passiflora subpeltata</i> *	White Passionflower
Pittosporaceae	<i>Pittosporum undulatum</i>	Sweet Pittosporum
Poaceae	<i>Andropogon virginicus</i> *	Whiskey Grass
Poaceae	<i>Cenchrus clandestinus</i> *	Kikuyu
Poaceae	<i>Leersia hexandra</i>	Swamp Ricegrass
Poaceae	<i>Oplismenus aemulus</i>	Basket Grass
Poaceae	<i>Paspalum mandiocanum</i> *	Broad-leaved Paspalum
Poaceae	<i>Paspalum urvillei</i> *	Vasey Grass
Poaceae	<i>Pennisetum alopecuroides</i>	Swamp Foxtail
Poaceae	<i>Sacciolepis indica</i>	Indian Cupscale Grass
Poaceae	<i>Setaria sphacelata</i> *	Setaria
Poaceae	<i>Sorghum halepense</i> *	Johnson Grass
Polygonaceae	<i>Persicaria attenuata</i>	Smartweed
Polygonaceae	<i>Persicaria strigosa</i>	Spotted Knotweed
Proteaceae	<i>Macadamia tetraphylla</i> #	Rough-shelled Bush Nut
Rosaceae	<i>Rubus rosifolius</i>	Native Raspberry
Rutaceae	<i>Citrus x taitensis</i> *	Bush Lemon
Rutaceae	<i>Murraya paniculata</i> *	Murraya
Salicaceae	<i>Dovyalis caffra</i> *	Kei Apple
Sapindaceae	<i>Cupaniopsis anacardioides</i>	Tuckeroo
Sapindaceae	<i>Guioa semiglauc</i>	Guioa
Simaroubaceae	<i>Quassia sp. Mt Nardi</i>	Quassia
Smilacaceae	<i>Smilax australis</i>	Lawyer Vine
Solanaceae	<i>Solanum capsicoides</i> *	Devil's Apple
Solanaceae	<i>Solanum mauritianum</i> *	Tobacco Bush
Solanaceae	<i>Solanum pseudocapsicum</i> *	Madeira Winter Cherry
Solanaceae	<i>Solanum seafortianum</i> *	Climbing Nightshade
Thymelaeaceae	<i>Wikstroemia indica</i>	Tie Bush
Verbenaceae	<i>Lantana camara</i> *	Lantana
Zingiberaceae	<i>Hedychium gardnerianum</i> *	Ginger Lily

\* Introduced species

# threatened species (BC Act, EPBC Act)



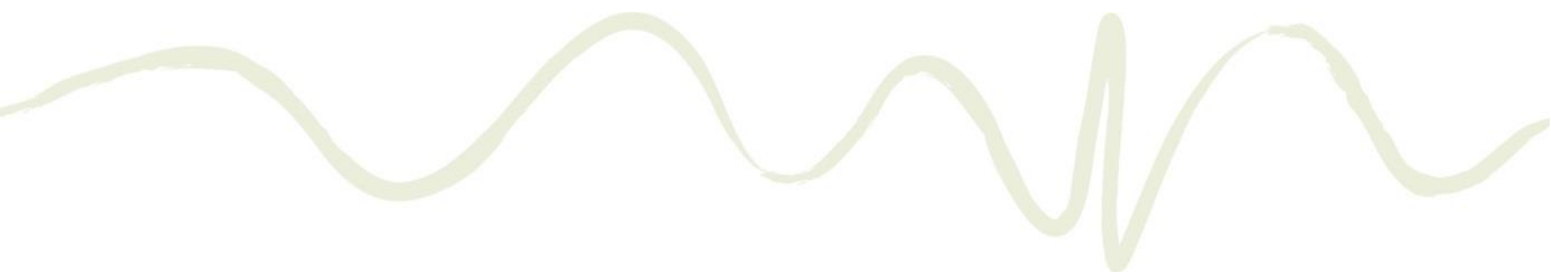
## Appendix F

# Potential for Threatened Fauna Occurrence

**Table F.1 Threatened Fauna Potential Occurrence Assessment**

Scientific Name	Common Name	Status		Habitat Requirement (EPBC Act SPRAT and/ or OEH Threatened Species Profiles websites)	Suitability of Site Habitat	Potential Occurrence and need for Test of Significance
		BC Act	EPBC Act			
<b>AMPHIBIANS</b>						
<i>Crinia tinnula</i>	Wallum Froglet	V	-	Acid paperbark and sedge swamps known as 'wallum', this is a banksia-dominated lowland heath ecosystem characterised by acidic waterbodies.	Low	Low; no further assessment required.
<i>Litoria aurea</i>	Green and Golden Bell Frog	E	V	Amongst vegetation in and around permanent swamps, lagoons, farm dams and on flood-prone river flats, particularly where there are bullrushes or spikerushes.	Low	Low; no further assessment required.
<i>Litoria olongburensis</i>	Olongburra Frog	V	V	Paperbark swamps and sedge swamps of the coastal 'wallum' country amongst sedges and rushes.	Low	Low; no further assessment required.
<b>AVIFAUNA</b>						
<i>Amaurornis moluccana</i>	Pale-vented Bush-hen	V	-	Variety of coastal wetlands from wetlands, mangroves, lagoons and swamps to river margins and creeks running through rainforest.	Low	Low; no further assessment required.
<i>Anseranas semipalmata</i>	Magpie Goose	V	-	Shallow wetlands (<1 m deep), large swamps and dams with dense growth of rushes or sedges.	Low	Low; no further assessment required.
<i>Anthochaera phrygia</i>	Regent Honeyeater	CE	CE	Dry open forest and woodland with an abundance of nectar-producing eucalypts, particularly box-ironbark woodland, swamp mahogany forests, and riverine sheoak woodlands.	Low	Low. No OEH records within locality; no further assessment required.
<i>Artamus cyanopterus cyanopterus</i>	Dusky Woodswallow	V	-	Woodlands and dry open sclerophyll forests, usually dominated by eucalypts; also recorded in shrublands, heathlands and various modified habitats.	Low	Low; no further assessment required.
<i>Botaurus poiciloptilus</i>	Australasian Bittern	E	E	Permanent freshwater wetlands with tall dense vegetation, particularly bullrushes and spikerushes.	Low	Low; no further assessment required.
<i>Burhinus grallarius</i>	Bush Stone-curlew	E	-	Lightly timbered open forest and woodland, and partly cleared farmland with woodland remnants, preferring areas with dry leaf-litter, fallen timber and sparse ground cover.	Low	Low; no further assessment required.

Scientific Name	Common Name	Status		Habitat Requirement (EPBC Act SPRAT and/ or OEH Threatened Species Profiles websites)	Suitability of Site Habitat	Potential Occurrence and need for Test of Significance
		BC Act	EPBC Act			
<i>Calyptorhynchus lathamii</i>	Glossy Black-Cockatoo	V	-	Sheoaks in coastal forests and woodlands, timbered watercourses, and moist and dry eucalypt forests of the coast and the Great Divide up to 1,000 m.	Low	Low; no further assessment required.
<i>Circus assimilis</i>	Spotted Harrier	V	-	Grassy open woodland, inland riparian woodland, grassland and shrub steppe.	Low	Low; no further assessment required.
<i>Cyclopsitta diophthalma coxeni</i>	Coxen's Fig-Parrot	CE	E	Drier rainforests and adjacent wet eucalypt forest, wetter lowland also wetter lowland rainforests.	Low	Low; no further assessment required.
<i>Daphoenositta chrysoptera</i>	Varied Sittella	V	-	Inhabits eucalypt forests and woodlands, especially rough-barked species and mature smooth-barked gums with dead branches, mallee and Acacia woodland.	Low	Low; no further assessment required.
<i>Ephippiorhynchus asiaticus</i>	Black-necked Stork	E	-	Swamps, mangroves, mudflats, dry floodplains.	Low	Low; no further assessment required.
<i>Erythroriorchis radiatus</i>	Red Goshawk	CE	E	In NSW, preferred habitats include mixed subtropical rainforest, Melaleuca swamp forest and riparian Eucalyptus forest of coastal rivers.	Low	Low; no further assessment required.
<i>Gavicalis fasciogularis</i>	Mangrove Honeyeater	V	-	Mangrove forest, also near coastal forests and woodlands including casuarina and paperbark swamps.	Low	Low; no further assessment required.
<i>Grus rubicunda</i>	Brolga	V	-	Shallow swamps, floodplains, grasslands and pastoral lands, usually in pairs or parties.	Low	Low; no further assessment required.
<i>Haliaeetus leucogaster</i>	White-bellied Sea-Eagle	V	-	Around the Australian coastline and inland along rivers and wetlands of the Murray Darling Basin.	Low	Low; no further assessment required.
<i>Hieraaetus morphnoides</i>	Little Eagle	V	-	Open eucalypt forest, woodland or open woodland. Sheoak or acacia woodlands and riparian woodlands of interior NSW are also used.	Low	Low; no further assessment required.
<i>Irediparra gallinacea</i>	Comb-crested Jacana	V	-	Vegetation floating on slow-moving rivers and permanent lagoons, swamps, lakes and dams.	Low	Low; no further assessment required.
<i>Ixobrychus flavicollis</i>	Black Bittern	V	-	Dense vegetation fringing and in streams, swamps, tidal creeks and mudflats, particularly amongst swamp sheoaks and mangroves.	Low	Low; no further assessment required.



Scientific Name	Common Name	Status		Habitat Requirement (EPBC Act SPRAT and/ or OEH Threatened Species Profiles websites)	Suitability of Site Habitat	Potential Occurrence and need for Test of Significance
		BC Act	EPBC Act			
<i>Lathamus discolor</i>	Swift Parrot	E	E	Forests, woodlands, plantations, and banksias.	Low	Low. No OEH records within locality; no further assessment required.
<i>Nettapus coromandelianus</i>	Cotton Pygmy-Goose	E	-	Freshwater lakes, lagoons, swamps and dams, particularly those vegetated with waterlilies and other floating and submerged aquatic vegetation.	Low	Low; no further assessment required.
<i>Pandion cristatus</i>	Eastern Osprey	V	-	Forages for fish in fresh, brackish or saline waters of rivers, lakes, estuaries with suitable nesting sites nearby.	Low	Low; no further assessment required.
<i>Pezoporus wallicus wallicus</i>	Eastern Ground Parrot	V	-	Heathland and sedgeland within or adjacent to swamps.	Low	Low; no further assessment required.
<i>Podargus ocellatus</i>	Marbled Frogmouth	V	-	Subtropical rainforest spending most time in deep, wet sheltered gullies.	Low	Low; no further assessment required.
<i>Pomatostomus temporalis temporalis</i>	Grey-crowned Babbler	V	-	Box-Gum Woodlands on the slopes, and Box-Cypress-pine and open Box Woodlands on alluvial plains.	Low	Low; no further assessment required.
<i>Ptilinopus regina</i>	Rose-crowned Fruit-Dove	V	-	Subtropical and dry rainforest, moist eucalypt forest and swamp forest.	Low	Low; no further assessment required.
<i>Rostratula benghalensis</i>	Australian Painted Snipe	E	V	Well-vegetated shallows and margins of wetlands, dams, sewage ponds, wet pastures, marshy areas, irrigation systems, lignum, tea-tree scrub, and open timber.	Low	Low; no further assessment required.
<i>Stictonetta naevosa</i>	Freckled Duck	V	-	Permanent freshwater swamps and creeks with heavy growth of Cumbungi, Lignum or Tea-tree.	Low	Low; no further assessment required.
<i>Turnix melanogaster</i>	Black-breasted Button-quail	V	V	Drier rainforests and vine scrubs, often in association with Hoop Pine and a deep moist leaf litter layer.	Low	Low. No OEH records within locality; no further assessment required.

Scientific Name	Common Name	Status		Habitat Requirement (EPBC Act SPRAT and/ or OEH Threatened Species Profiles websites)	Suitability of Site Habitat	Potential Occurrence and need for Test of Significance
		BC Act	EPBC Act			
<i>Tyto longimembris</i>	Eastern Grass Owl	V	-	Areas of tall grass, including tussocks in swampy areas, grassy plains, swampy heath, cane grass, sedges on flood plains.	Low	Low; no further assessment required.
<i>Tyto novaehollandiae</i>	Masked Owl	V	-	Dry eucalypt forest and woodlands.	Low	Low; no further assessment required.
<b>MAMMALS</b>						
<i>Chalinolobus dwyeri</i>	Large-eared Pied Bat	V	V	Sandstone cliffs and fertile woodland valley habitat.	Low	Low. No OEH records within locality; no further assessment required.
<i>Dasyurus maculatus maculatus</i>	Spotted-tailed Quoll	V	E	Dry and moist eucalypt forests and rainforests, fallen hollow logs, large rocky outcrops.	Low	Low; no further assessment required.
<i>Miniopterus australis</i>	Little Bentwing-bat	V	-	Moist eucalypt forest, rainforest and dense coastal scrub.	Low	Low; no further assessment required.
<i>Miniopterus schreibersii oceanensis</i>	Eastern Bentwing-bat	V	-	Forest or woodland; roosts in caves, old mines and stormwater channels.	Low	Low; no further assessment required.
<i>Mormopterus norfolkensis</i>	Eastern Freetail-bat	V	-	Occurs in dry sclerophyll forest, woodland, swamp forests and mangrove forests east of the Great Dividing Range.	Low	Low; no further assessment required.
<i>Myotis macropus</i>	Southern Myotis	V	-	Bodies of water, rainforest streams, large lakes, reservoirs.	Low	Low; no further assessment required.
<i>Nyctophilus bifax</i>	Eastern Long-eared Bat	V	-	Lowland subtropical rainforest and wet and swamp eucalypt forest, extending to adjacent moist eucalypt forest.	Low	Low; no further assessment required.
<i>Petauroides volans</i>	Greater Glider	-	V			
<i>Phascolarctos cinereus</i>	Koala	V	V	Appropriate food trees in forests and woodlands, and treed urban areas.	Low; no primary feed trees occur.	Low; no further assessment required.

Scientific Name	Common Name	Status		Habitat Requirement (EPBC Act SPRAT and/ or OEH Threatened Species Profiles websites)	Suitability of Site Habitat	Potential Occurrence and need for Test of Significance
		BC Act	EPBC Act			
<i>Planigale maculata</i>	Common Planigale	V	-	Rainforest, eucalypt forest, heathland, marshland, grassland and rocky areas with surface cover close to water.	Low	Low; no further assessment required.
<i>Potorous tridactylus tridactylus</i>	Long-nosed Potoroo	V	V	Cool temperate rainforest, moist and dry forests, and wet heathland, inhabiting dense layers of grass, ferns, vines and shrubs.	Low	Low. No OEH records within locality; no further assessment required.
<i>Pseudomys novaehollandiae</i>	New Holland Mouse	V	V	Occurs in open heathlands, open woodlands with a heathland understorey, and vegetated sand dunes.	Low	Low. No OEH records within locality; no further assessment required.
<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	V	V	Subtropical and temperate rainforests, tall sclerophyll forests and woodlands, heaths and swamps as well as urban gardens and cultivated fruit crops.	Low	Low; no further assessment required.
<i>Scoteanax rueppellii</i>	Greater Broad-nosed Bat	V	-	Woodland through to moist and dry eucalypt forest and rainforest, though it is most commonly found in tall wet forest.	Low	Low; no further assessment required.
<i>Syconycteris australis</i>	Common Blossom-bat	V	-	Roosts in littoral rainforest and feeds on flowers in adjacent heathland and paperbark swamps.	Low	Low; no further assessment required.
<i>Xeromys myoides</i>	Water Mouse	-	V	Mangroves and associated saltmarsh, sedgeland, clay pans, heathlands and freshwater wetlands.	Low	Nil - not recorded in NSW.
<b>INVERTEBRATES</b>						
<i>Argynnis hyperbius inconstans</i>	Australian Fritillary	E	CE	Open swampy coastal habitat where the caterpillar's food plant, Arrowhead Violet ( <i>Viola betonicifolia</i> ) occurs.	Low	Low. No OEH records within locality; no further assessment required.
<i>Phyllodes imperialis smithersi</i>	Pink Underwing Moth	E	E	Found in undisturbed subtropical rainforest below 600 m. Breeding habitat is restricted to areas where the caterpillar's food plant, <i>Carronia multisejala</i> , grows in a collapsed shrub-like form.	Low	Low. No OEH records within locality; no further assessment required.
<i>Thersites mitchellae</i>	Mitchell's Rainforest Snail	E	CE	Remnant areas of lowland subtropical rainforest and swamp forest on alluvial soils.	Low	Low; no further assessment required.


V = Vulnerable; E = Endangered; EP = Endangered Population; CE = Critically Endangered



## Appendix G

# BC Act Tests of Significance





Tests of significance are required for the following threatened communities and species for which habitat occurs within the Conservation Zone:

**Flora:**

- Rough-shelled Bush Nut

**TECs:**

- Littoral rainforest

**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,***

**Rough-shelled Bush Nut**

The Rough-shelled Bush Nut is a small to medium-sized, usually densely bushy, tree growing up to 18m tall. The leaves are 7 – 25 cm long and oblong or slightly lance-shaped. The leaf-margins are toothed and prickly. Creamy pink to purplish flowers hang in long strings among the leaves. The fruit is woody brown and globular, 2 – 3 cm in diameter. Flowering occurs August–October; fruit ripe in January. The species is confined chiefly to the north of the Richmond River in north-east NSW, extending just across the border into Queensland and typically occurs in subtropical rainforest.

Threatening processes for this species include:

- Clearing and fragmentation of habitat for coastal development, agriculture and roadworks.
- Risk of local extinction due to low numbers.
- Grazing and trampling by domestic stock.
- Fire.
- Invasion of habitat by weeds.
- Loss of local genetic strains through hybridisation with commercial varieties.
- Reduction of genetic diversity as a result of fragmentation

*Potential Impacts from the Proposal*

The proposal would have no direct impact on Rough-shelled Bush Nut, as all stems will be retained, either within management Zone 1, or within a private allotment (the single mature tree on the western boundary). As such, the modified proposal would be unlikely to have an adverse effect on the life cycle of Rough-shelled Bush Nut in the locality such that a viable local population of the species is placed at risk of extinction.

**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,***

The small stand of littoral rainforest within Super Lot 7 will be removed, however other areas of littoral rainforest are retained and protected at the site. The loss of this small stand (8 trees) will not place the local occurrence of littoral rainforest at risk of extinction

**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**

Rough-shelled Bush Nut: no habitat will be removed or modified as a result of the modified proposal.

Littoral rainforest: a small area of habitat will be removed as a result of the modified proposal. This is not significant in the context of retained vegetation at the Epiq site.

**(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**

Rough-shelled Bush Nut: no habitat will be fragmented or isolated as a result of the modified proposal.

Littoral rainforest: the small stand within SL7 (8 trees) will be removed; no other littoral rainforest habitat at the site will be fragmented or isolated as a result of the modified proposal.

**(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,**

Rough-shelled Bush Nut: no habitat will be removed or modified as a result of the modified proposal.

Littoral rainforest: the habitat to be removed (8 trees) is not important in the context of the broader Epiq site and areas of adjacent reserved littoral rainforest.

**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),**

No areas of outstanding biodiversity value have been declared in Ballina LGA.

**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 key threatening process (KTP) is defined under the BC Act as a process that threatens, or may have the capability to threaten, the survival or evolutionary development of species or ecological communities. The current list of KTP under the BC Act, and whether the Proposal is recognised as a KTP is shown in **Table G.1**.

**Table G.1 Key Threatening Processes**

<b>Key Threatening Process (as per Schedule 4 of the BC Act)</b>	<b>Is the development or activity proposed of a class of development or activity that is recognised as a threatening process?</b>		
	<b>Likely</b>	<b>Possible</b>	<b>Unlikely</b>
Aggressive exclusion of birds by noisy miners ( <i>Manorina melanoccephala</i> )			✓
Alteration of habitat following subsidence due to longwall mining			✓
Alteration to the natural flow regimes of rivers and streams and their floodplains and wetlands			✓
Anthropogenic climate change			✓
Bushrock removal			✓

Key Threatening Process (as per Schedule 4 of the BC Act)	Is the development or activity proposed of a class of development or activity that is recognised as a threatening process?		
	Likely	Possible	Unlikely
Clearing of native vegetation	✓		
Competition and grazing by the feral European Rabbit ( <i>Oryctolagus cuniculus</i> )			✓
Competition and habitat degradation by feral goats ( <i>Capra hircus</i> )			✓
Competition from feral honeybees ( <i>Apis mellifera</i> )			✓
Death or injury to marine species following capture in shark control programs on ocean beaches			✓
Entanglement in or ingestion of anthropogenic debris in marine and estuarine environments			✓
Forest eucalypt dieback associated with over-abundant psyllids and bell miners			✓
Herbivory and environmental degradation caused by feral deer			✓
High frequency fire resulting in the disruption of life cycle processes in plants and animals and loss of vegetation structure and composition			✓
Importation of red imported fire ants ( <i>Solenopsis invicta</i> )			✓
Infection by <i>Psittacine circoviral</i> (beak and feather) disease affecting endangered psittacine species and populations			✓
Infection of frogs by amphibian chytrid causing the disease chytridiomycosis			✓
Infection of native plants by <i>Phytophthora cinnamomi</i>			✓
Introduction and Establishment of Exotic Rust Fungi of the order Pucciniales pathogenic on plants of the family Myrtaceae			✓
Introduction of the large earth bumblebee ( <i>Bombus terrestris</i> )			✓
Invasion and establishment of exotic vines and scramblers			✓
Invasion and establishment of Scotch Broom ( <i>Cytisus scoparius</i> )			✓
Invasion and establishment of the Cane Toad ( <i>Bufo marinus</i> )			✓
Invasion, establishment and spread of Lantana ( <i>Lantana camara</i> )			✓
Invasion of native plant communities by African Olive ( <i>Olea europaea L. subsp. cuspidata</i> )			✓
Invasion of native plant communities by <i>Chrysanthemoides monilifera</i> (bitou bush and boneseed)			✓
Invasion of native plant communities by exotic perennial grasses			✓
Invasion of the Yellow Crazy Ant ( <i>Anoplolepis gracilipes</i> ) into NSW			✓
Loss and degradation of native plant and animal habitat by invasion of escaped garden plants, including aquatic plants			✓
Loss of hollow-bearing trees			✓
Loss or degradation (or both) of sites used for hill-topping by butterflies			✓
Predation and hybridisation by feral dogs ( <i>Canis lupus familiaris</i> )			✓
Predation by the European Red Fox ( <i>Vulpes vulpes</i> )			✓
Predation by the feral cat ( <i>Felis catus</i> )			✓
Predation by <i>Gambusia holbrooki</i> (Plague Minnow or Mosquito Fish)			✓



Key Threatening Process (as per Schedule 4 of the BC Act)	Is the development or activity proposed of a class of development or activity that is recognised as a threatening process?		
	Likely	Possible	Unlikely
Predation by the Ship Rat ( <i>Rattus rattus</i> ) on Lord Howe Island			✓
Predation, habitat degradation, competition and disease transmission by feral pigs ( <i>Sus scrofa</i> )			✓
Removal of dead wood and dead trees	✓		

The proposal is not characteristic of two KTPs - clearing of native vegetation (minor regrowth, small stand of littoral rainforest), and removal of dead wood and dead trees (dead Camphor Laurel, dead tree limbs and debris). These impacts are very low in the context of the overall development of the Epiq site. The degree that the proposed modification would contribute to any threatening process is not considered likely to place the local population of any of the subject species or communities at significant risk of extinction.

**Conclusion**

It is considered unlikely that the local population of any of the subject species/ communities would be placed at significant risk of extinction as a result of the proposed modification.