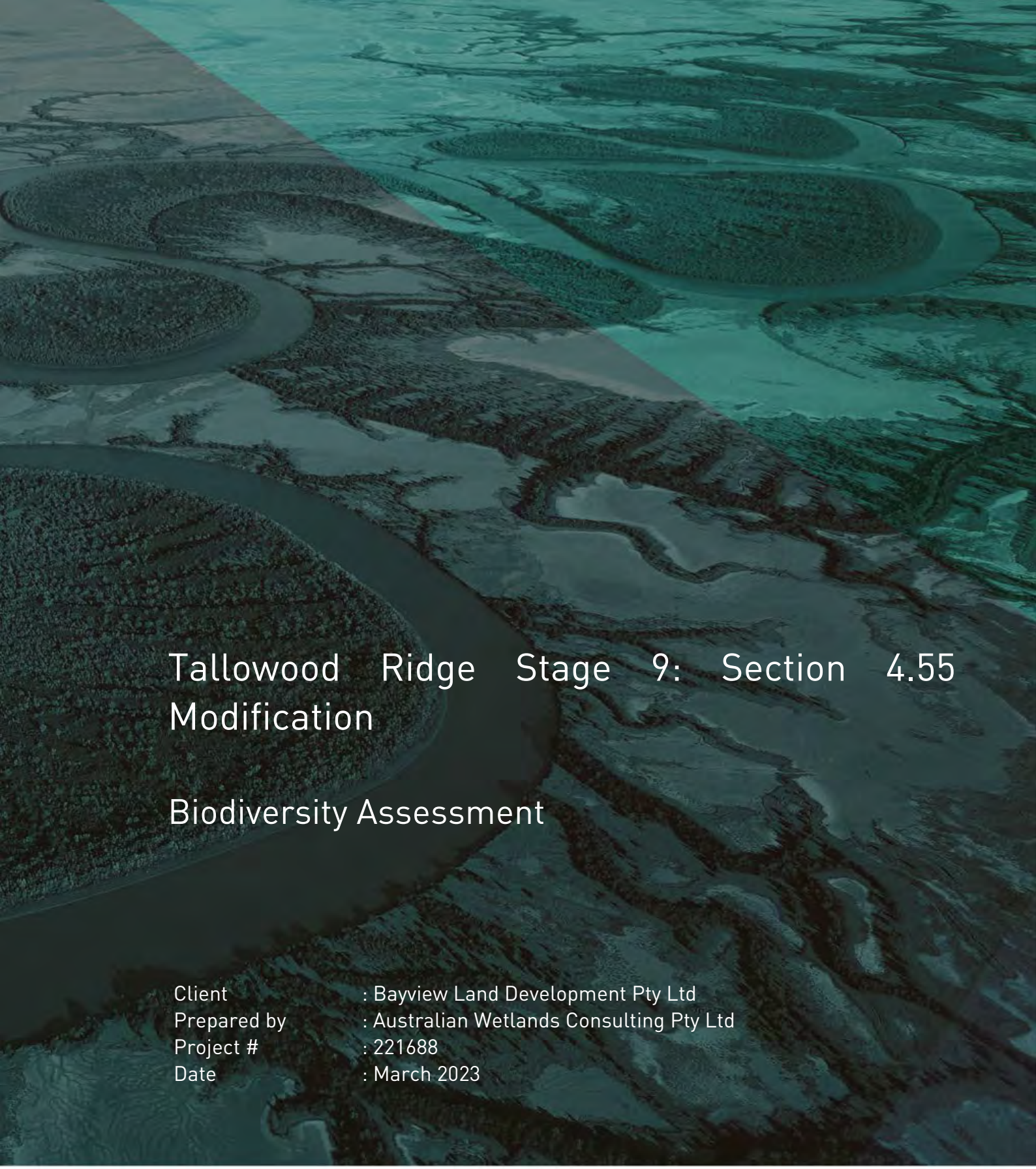

Tallowood Ridge Stage 9: Section 4.55 Modification

Biodiversity Assessment

Client	: Bayview Land Development Pty Ltd
Prepared by	: Australian Wetlands Consulting Pty Ltd
Project #	: 221688
Date	: March 2023

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AWC

Tallowood Ridge Stage 9: Section 4.55 Modification

Biodiversity Assessment

Project control

Project name: **Tallowood Ridge Stage 9: Section 4.55 Modification** Biodiversity Assessment

Project #: 221688a
Client: Bayview Land Development Pty Ltd
Contact: Eric Freeman

Prepared by: Australian Wetlands Consulting Pty Ltd

25 Leslie Street
Bangalow, NSW, 2479

P | (02) 6687 1550
E | admin@awconsult.com.au

Date:	Revision:	Prepared by:	Reviewed by:	Distributed to:
24/02/2023	A	Josie Lange	Damian McCann	Eric Freeman

Certification

As the author of this Biodiversity Assessment Report (BAR), I verify that:

- The development proposal subject to the BAR does not trigger the Biodiversity Offset Scheme (BOS) in the *Biodiversity Conservation Act 2016* (BC Act), and
- Five-part tests of significance completed in accordance with requirements of s7.3(1) of the BC Act concluded that the proposal would not significantly impact on biodiversity, and hence a Biodiversity Development Assessment Report (BDAR) is not required.

Josie Lange
Ecologist, AWC
21/03/2023

Damian McCann
Director
23/03/2023

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Executive Summary

This Biodiversity Assessment Report (BAR) has been completed to support the application for a section 4.55 modification to consent condition 4 (no tree removal) of the Tallowwood Ridge Stage 9 DA (No. 10.2020.109.1).

The proposed development does not impact on biodiversity value land or exceed clearing thresholds therefore the Biodiversity Offsets Scheme (BOS) is not triggered and a Biodiversity Development Assessment Report (BDAR) is not required.

Field assessment confirmed that:

- The site comprises historically cleared and degraded grazing land with native vegetation limited to small patches of rainforest regrowth interspersed with Camphor Laurel and landscape species
- No naturally occurring native vegetation characteristic of any plant community type (PCT) (as per BioNet) occurs.
- No threatened flora species were recorded.
- No Threatened Ecological Communities (TECs) listed in the *Biodiversity Conservation Act 2016* (BC Act) or *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) occur.
- No threatened fauna species were confirmed. Based on the degraded habitat present there is very limited potential for usage of the site by any threatened fauna species.

Biodiversity impacts from the proposed development (refer **Section 5.1**) are likely to include:

- Loss of native vegetation – up to 23 trees
- Loss of up to seven (7) Camphor Laurel trees greater than 5m tall, along with several small regenerating Camphor Laurel thickets
- Loss of two (2) trees with habitat value for local wildlife - one (1) hollow bearing tree (Tree 103 - Blue Lilly Pilly) and one (1) stag (Tree C2 – Camphor Laurel)
- Disturbance of piled logs and debris (fauna habitat) within patches of trees to be removed
- Noise and disturbance to fauna during tree removal (including to foraging habitat)
- Reduction of fauna resources (fruiting/flowering trees and shrubs)
- Potential for introduction of weed species into the remaining areas of vegetation and neighboring properties
- Potential damage to trees to be retained adjacent to works, including encroachment on Structural Root Zones (SRZ's).

Statutory assessment of the proposed development has been completed with regard to:

- Byron Shire Development Control Plan (DCP) 2014
- State Environmental Planning Policy (SEPP) Biodiversity and Conservation 2021 (via the *Byron Coast Comprehensive Koala Plan of Management 2016*)
- *Biodiversity Conservation Act 2016* (BC Act)
- *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

Statutory assessment determined that:

- Compensation requirements in Chapter B2 of the Byron DCP have been met, with a total 155 trees to be planted, consistent with local assemblages as per the existing BCMP (Dutton et al. 2011). As required under Chapter B1 of the Byron DCP, these works will be completed under the existing BCMP, which covers the total Tallowood Ridge development site.
- Chapter B1 of the Byron DCP has been addressed, with the proposed modification compliant with this chapter.
- The site does not contain preferred Koala habitat as per the *Byron Coast Comprehensive Koala Plan of Management 2016*; so the Plan does not apply.
- Impacts on threatened species and communities and their habitats listed in the BC Act are unlikely to be significant and a BDAR is not required.
- Impacts on Matters of National Environmental Significance (MNES) in the EPBC Act are unlikely to be significant and referral to the Minister of the Environment is not required.

To minimise biodiversity impacts of the proposal, a range of recommendations have been prescribed (refer **Section 5.2**).

1 Introduction and Background

1.1 Introduction

Australian Wetlands Consulting (AWC) has prepared this Biodiversity Assessment on behalf of Bayview Land Development Pty Ltd with regard to native and exotic vegetation removal to support Stage 9 of the Tallowood Ridge subdivision, Mullumbimby. This assessment supports an application for a section 4.55(2) modification to consent condition 4 (no tree removal) of the Tallowwood Ridge Stage 9 Development Application (DA10.2020.109.1), to be submitted to Byron Shire Council.

This assessment has been prepared to:

- Identify the conservation values of the site inclusive of habitat for threatened species or communities listed in the *Biodiversity Conservation Act 2016* (BC Act) or *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)
- Identify any significant features of biodiversity importance
- Determine potential direct and indirect impacts of the proposal
- Assess the proposal against relevant statutory requirements.

1.2 The Site

The site comprises the Stage 9 release area of the 'Tallowood Ridge' residential subdivision (Lot 196 DP 1281667) at 86 Tuckeroo Avenue, Mullumbimby (refer **Figure 1.1**). The site comprises a parcel of land of approximately 13 ha, zoned C2 (Environmental Conservation), C3 (Environmental Management), R2 (Low Density Residential), RU1 (Primary Production) and RU2 (Rural Landscape) in the Byron Local Environmental Plan 2014 (refer **Figure 1.2**).

The study area, and subject of the proposed modification, comprises the northern boundary of the site which has been historically cleared and modified for agricultural activities and includes areas of unmanaged grassland and minor forested areas. Natural drainage lines occur along the north-eastern and north-western boundaries of the study area.

The site occurs within the Burringbar-Conondale Ranges subregion of the South Eastern Queensland Bioregion as per the Interim Biogeographic Regionalisation for Australia (IBRA), Version 7 (refer Thackway & Cresswell, 1995).

1.3 Soils and Topography

The study area comprises relatively flat land which gradually rises towards the sites north-west; along the northern boundaries of Lots 256-262, the site steeply falls away to the north. Most of the study area lies within the Billinudgel (bi) soil landscape (eSPADE v2.1):

- Landscape: low rolling hills on metamorphics of the Neranleigh-Fernvale Group. Relief is 50–100 m, slopes 10–20% and locally >33%. Slopes are generally moderately long (100–300 m). Ridges and crests are narrow (100–150 m). Partly cleared open eucalypt forest. Littoral closed-forest at Brunswick and Broken Heads.

- Soils: shallow to moderately deep (100cm), moderately well-drained Yellow Podzolic Soils and Yellow Podzolic Soil/Soloth intergrades on crests and slopes. Deep (>100 cm), moderately well-drained Yellow Podzolic Soils and Red Podzolic Soil/Red Earths on siltstone.
- Limitations: hardsetting, shallow, stony and erodible soils of low fertility. Steep slopes and localised mass movement.

1.4 Description of Approved Development

Tallowood Ridge is a staged subdivision with works including:

- Construction of residential homesites
- Construction of public reserves
- Construction of new roads and associated civil infrastructure works
- Construction of stormwater treatment basins
- Construction of footpaths
- Installation of services and associated earthworks
- Construction of retaining walls
- Vegetation removal and landscaping.

Stages 1 to 7 have been completed and registered over the past 12 years. Stage 8, with 48 residential lots, is currently under construction. Stage 9 has a DA approval and will commence construction in 2023.

1.5 Proposed Development Modification

Condition 4 of DA10.2020.109.1 prohibits removal, lopping or damage to existing native trees. To construct roads and earthworks, as per the DA approval, removal of up to 23 native trees is required (refer **Table 1.1** and **Appendix A**).

Table 1.1 Native trees proposed for removal

Tag no.	Botanical Name	Common Name	Height (m)	DBH (cm)	TPZ (cm)	Canopy Spread (m2)	Reason for Removal
1	*Pittosporum undulatum*	Sweet Pittosporum	3	4.5	54	1	Located in the turnaround area adjacent to the proposed stormwater basin
53	*Melaleuca styphelioides*	Prickly Paperbark	7	15	180	9	Located in the middle of the road reserve
54	*Denhamia bilocularis*	Orangebark	5.5	11	132	1.5	To allow construction of the approved retaining wall
55	*Callistemon salignus*	White Bottlebrush Tree	6	21.5	258	3	To allow construction of the approved retaining wall
MG1 *	*Macaranga tanarius*	Macaranga	8	19	228	8	Located in the building area of Lot 261
	Macaranga tanarius	Macaranga	8	17	204		Located in the building area of Lot 261
90	*Melicope elleryana*	Pink Euodia	3	3.5	42	1	Located in the building area of Lot 261
91	*Glochidion sumatranum*	Umbrella Cheese Tree	4	5	60	1.5	Located in the building area of Lot 261

Tag no.	Botanical Name	Common Name	Height (m)	DBH (cm)	TPZ (cm)	Canopy Spread (m2)	Reason for Removal
92*	*Melicope elleryana*	Pink Euodia	3.5	3.5	42	1	Located in the building area of Lot 261
93*	*Melicope elleryana*	Pink Euodia	3.5	3	36	1	Located in the building area of Lot 261
94*	*Melicope elleryana*	Pink Euodia	4	4.5	54	1	Located in the building area of Lot 261
95	*Macaranga tanarius*	Macaranga	6	10	120	7	Located in the building area of Lot 261
96	*Macaranga tanarius*	Macaranga	6	7.5	90	2	Located in the building area of Lot 261
97	*Acacia melanoxylon*	Mudgeraba h	6	9	108	2	Located in the building area of Lot 261
100*	*Macaranga tanarius*	Macaranga	4	3	36	0.5	Located in the building area of Lot 261
101*	*Mallotus philippensis*	Red Kamala	3	1.5	18	0.5	Located in the building area of Lot 261
98	*Acacia melanoxylon*	Mudgeraba h	8	56	672	20	Located in the building area of Lot 262
99	*Acacia melanoxylon*	Mudgeraba h	8	20	240		Located in the building area of Lot 262
102	*Melicope elleryana*	Pink Euodia	6	15	180	4	Located in the building area of Lot 262
103	*Syzygium oleosum*	Blue Lilly Pilly	7	31	372	25	Located in the building area of Lot 262
104	*Acacia melanoxylon*	Mudgeraba h	9	38	456	10	Located in the building area of Lot 262
109*	*Homalanthus populifolius*	Bleeding Heart	3	3.5	42	0.5	Located in the building area of Lot 262
110*	*Homalanthus populifolius*	Bleeding Heart	2.5	4	48	1	Located in the building area of Lot 262

In addition to the removal of these native trees, exotic species, such as Lemon-scented Gum (*Corymbia citriodora*) and Camphor Laurel (*Cinnamomum camphora*), will be removed including those along the rear of Lots 244 to 253. This includes seven (7) Camphor Laurel of over 5m tall (refer **Table 1.2**).

Table 1.2 Large Camphor Laurel trees proposed for removal

Tag no.	Botanical Name	Common Name	Height (m)	DBH (cm)	TPZ (cm)	Canopy Spread (m2)	Reason for Removal
C1	*Cinnamomum camphora*	Camphor laurel	10	54.5	654	30	Located in the building area of Lot 244
C2	*Cinnamomum camphora*	Camphor laurel	9	46	552		Located in the building area of Lot 244
C3	*Cinnamomum camphora*	Camphor laurel	10	33.5	402		Located in the building area of Lot 244
C4	*Cinnamomum camphora*	Camphor laurel	8	15.5	186		Located in the building area of Lot 244
C5	*Cinnamomum camphora*	Camphor laurel	10	49	588		Located in the building area of Lot 244
C6	*Cinnamomum camphora*	Camphor laurel	12	80+	960+	30	Located in the building area of Lot 245
C7	*Cinnamomum camphora*	Camphor laurel	10	80	960	25	Located in the building area of Lot 245

Condition 4 is proposed to be re-worded to allow for the removal of these native trees and the pruning of several other native trees by an accredited arborist nominated by Australian Wetlands Consulting Pty Ltd.

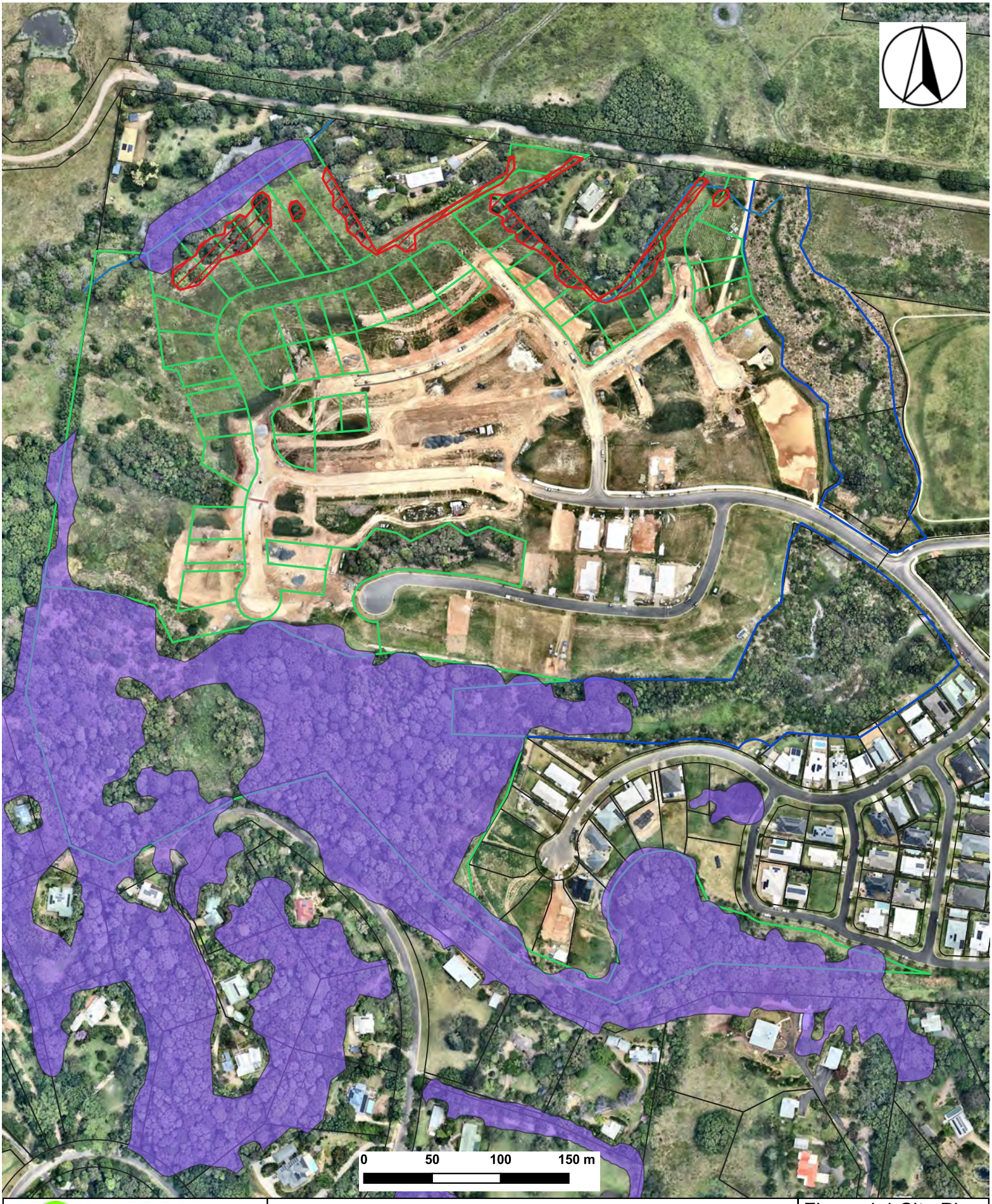
1.6 Assessment Pathway

The Biodiversity Offsets Scheme (BOS) established in the BC Act determines whether a development proposal may have a significant impact on biodiversity values and therefore require the preparation of a Biodiversity Development Assessment Report (BDAR).

The following matters have been considered:

- Biodiversity Value mapping: The site contains areas of land mapped as being of biodiversity value as per the Biodiversity Values Map and Threshold Tool (accessed 22/02/2023). These are located in the southern extent of the site and along the north-western boundary (along the rear of Lots 256-262) (refer **Figure 1.1)**. The proposed vegetation removal will not impact any mapped areas of biodiversity value.
- Area clearing threshold: the minimum lot size of the site is 400 m^2, as per the Byron Local Environmental Plan (LEP) 2014. On this basis, up to 0.25 ha of native vegetation may be cleared before triggering the BOS. The proposal requires clearing of 23 trees covering an area of approximately 0.065 ha. Therefore, the clearing threshold is not exceeded.

On the basis of the above, the BOS is not triggered and a BDAR is not required.



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Legend

- Subject Area
- BiodiversityValues Mapped Land
- Cadastre
- Tallowood Stage 9 Boundary
- Drainage Line
- Riparian Zone

A4 Scale 1:3500
Coordinate System: MGA 56 Projection: Transverse Mercator

Figure 1.1 Site Plan

Data source:
Aerial - Nearmaps 2023
BV Mapping - SEED 2023
Drainage Line - Tallowood BCMP 2011
Riparian Zone - Civiltech 2023
Stage 9 Boundary - Civiltech 2023
Cadastre - Byron Shire Council 2023
Subject Area - Civiltech and AWC 2023

Date:22.03.23
Job No:221688
Drawn:JL
Checked:DC

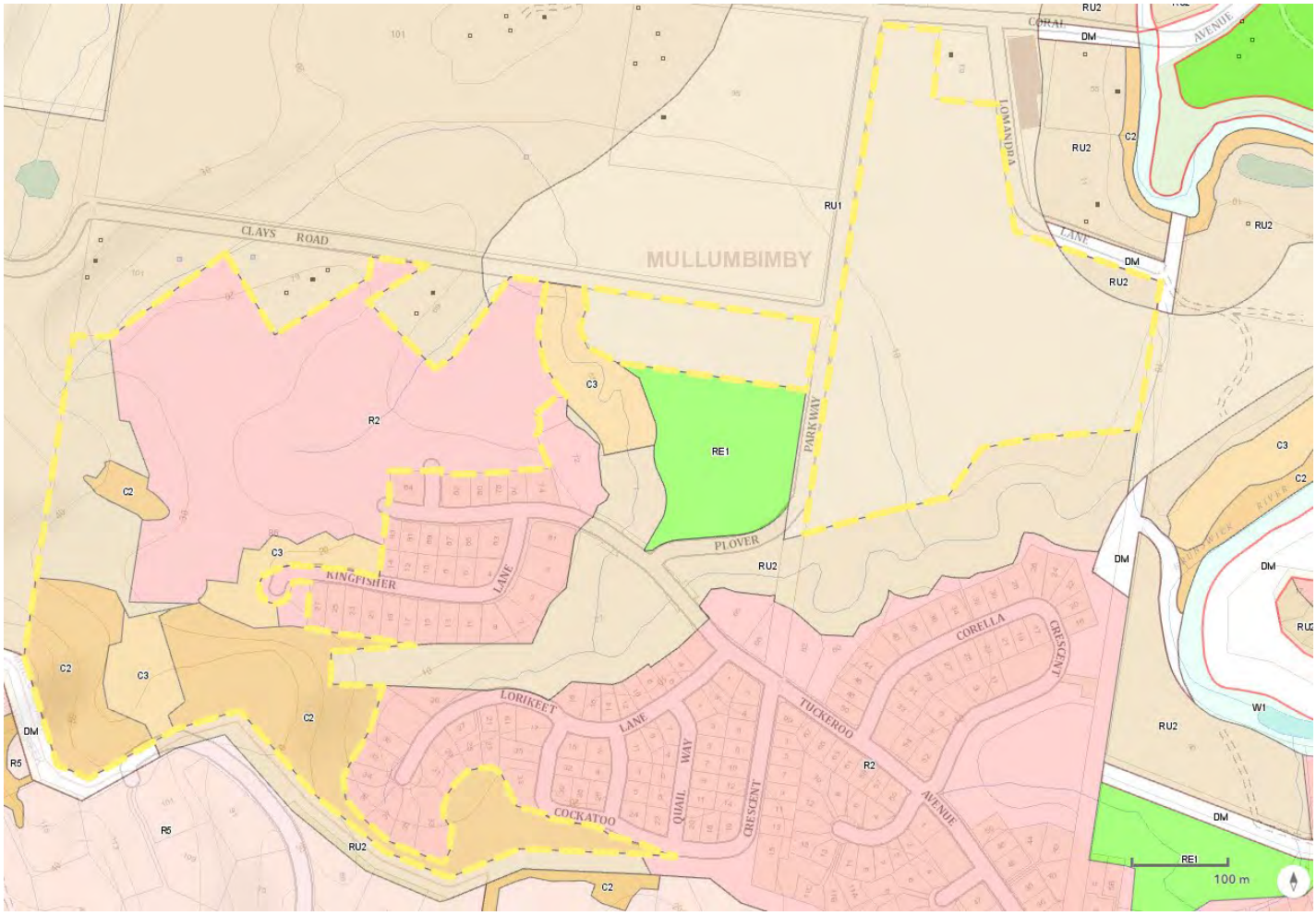


Figure 1.2 Site zoning

2 Methods

The methodology for this assessment is discussed in the following Sections.

2.1 Desktop Assessment

A desktop study was completed prior to field assessment to gather relevant information and data. The following databases and Geographic Information System (GIS) layers were searched/analysed:

- BioNet Atlas (DPE): 10 km x 10 km grid centred on the site (completed [22/02/23])
- Protected Matters Search Tool (Department of Climate Change, Energy, the Environment and Water [DCCEEW]): 5km radius of the site (completed [22/02/23])
- Byron Shire LGA Interactive Mapping
- Biodiversity Values Map and Threshold Tool and digital data layer (DPIE 2022)
- SEPP (Coastal Management) 2018 mapping

2.2 Field Assessment

Field assessments were completed on 02/11/2022 and 09/03/2023, with the following tasks completed:

- Mapping and assessment of vegetation communities and identification of threatened ecological communities (TECs)
- Targeted survey for threatened flora
- Opportunistic fauna survey based on visual or aural observations
- Identification of any key fauna habitat features (hollow-bearing trees, bat roosts etc).
- Assessment of trees proposed to be impacted by the development footprint (species, height, diameter at breast height (DBH) and spread)

2.3 Survey Limitations

Survey effort was primarily focused on the proposal footprint and adjacent habitats. The flora survey completed is considered adequate for determining vegetation communities at the site, their condition and conservation significance and determining the occurrence of threatened flora species. In lieu of a targeted fauna survey a habitat assessment was undertaken. Due to the small area of potential habitat and its degraded nature, this is considered sufficient for this assessment.

Given the minor nature of the proposal and the high levels of existing clearing and modification within the proposed dwelling location, the scope of assessment is considered sufficient to assess potential impacts on biodiversity.

3 Flora

3.1 Desktop Assessment

3.1.1 BioNet Atlas and PMST Search Tool

BioNet returned confirmed records of 38 threatened flora species within the search area, including 25 species listed in the EPBC Act (refer **Table 3.1**). Habitat for 15 threatened ecological communities (of which two are listed in the EPBC Act) may occur within the locality (refer **Table 3.2**). PMST search results identified habitat for 45 threatened flora species and six threatened ecological communities within the search area (refer **Appendix B**).

Table 3.1 Threatened flora recorded within 5 km of the site

Scientific Name	Common Name	BC Act	EPBC Act	No. Records
Acacia bakeri	Marblewood	V		61
Archidendron hendersonii	White Lace Flower	V		9
Backhousia subargentea	Giant Ironwood	E		65
Belvisia mucronata	Needle-leaf Fern	E		2
Bosistoa transversa	Yellow Satinheart	V	V	2
Cryptocarya foetida	Stinking Cryptocarya	V	V	1
Davidsonia jerseyana	Davidson's Plum	E	E	97
Davidsonia johnsonii	Smooth Davidson's Plum	E	E	13
Desmodium acanthocladum	Thorny Pea	V	V	24
Diospyros mabacea	Red-fruited Ebony	E	E	5
Diploglottis campbellii	Small-leaved Tamarind	E	E	9
Elaeocarpus williamsianus	Hairy Quandong	E	E	6
Endiandra floydii	Crystal Creek Walnut	E	E	17
Endiandra hayesii	Rusty Rose Walnut	V	V	6
Endiandra muelleri subsp. bracteata	Green-leaved Rose Walnut	E		11
Floydia praealta	Ball Nut	V	V	8
Gossia fragrantissima	Sweet Myrtle	E	E	47
Grevillea hilliana	White Yiel Yiel	E		5
Hicksbeachia pinnatifolia	Red Boppel Nut	V	V	42
Lindsaea brachypoda	Short-footed Screw Fern	E		6
Macadamia integrifolia	Macadamia Nut		V	1
Macadamia tetraphylla	Rough-shelled Bush Nut	V	V	94
Marsdenia longiloba	Slender Marsdenia	E	V	2
Niemeyera whitei	Rusty Plum, Plum Boxwood	V		1
Ochrosia moorei	Southern Ochrosia	E	E	3
Peristeranthus hillii	Brown Fairy-chain Orchid	V		2
Phaius australis	Southern Swamp Orchid	E	E	1
Phyllanthus microcladus	Brush Sauropus	E		14
Randia moorei	Spiny Gardenia	E	E	21
Rhodamnia maideniana	Smooth Scrub Turpentine	CE		13
Rhodamnia rubescens	Scrub Turpentine	CE	CE	24
Rhodomyrtus psidioides	Native Guava	CE	CE	1
Senna acclinis	Rainforest Cassia	E		1
Syzygium hodgkinsoniae	Red Lilly Pilly	V	V	17
Syzygium moorei	Durobby	V	V	66
Tinospora tinosporoides	Arrow-head Vine	V		18
Tylophora woollsii	Cryptic Forest Twiner	E	E	1
Uromyrtus australis	Peach Myrtle	E	E	1

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

Table 3.2 Threatened ecological communities in the locality

Community	BC Act	EPBC Act
Byron Bay Dwarf Graminoid Clay Heath Community	E3	
Coastal Cypress Pine Forest in the New South Wales North Coast Bioregion	E3	
Coastal Saltmarsh in the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	E3	
Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community		E
Freshwater Wetlands on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	E3	
Grey Box—Grey Gum Wet Sclerophyll Forest in the NSW North Coast Bioregion	E3	
Littoral Rainforest in the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	E3	
Lowland Rainforest in the NSW North Coast and Sydney Basin Bioregions	E3	
Lowland Rainforest of Subtropical Australia		CE
Lowland Rainforest on Floodplain in the New South Wales North Coast Bioregion	E3	
Subtropical Coastal Floodplain Forest of the New South Wales North Coast Bioregion	E3	
Swamp Oak Floodplain Forest of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	E3	
Swamp Sclerophyll Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	E3	
Themeda grassland on seacliffs and coastal headlands in the NSW North Coast, Sydney Basin and South East Corner Bioregions	E3	
White Gum Moist Forest in the NSW North Coast Bioregion	E3	

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

3.1.2 Vegetation Mapping

Council mapping depicts vegetation in and adjacent to the subject area as comprising planted sclerophyll forest and planted landscaping. Vegetation with the western extent of the subject area is undefined.

3.1.3 Previous Studies

Flora surveys undertaken by Peter Parker and WetlandCare Australia to inform the Biodiversity Conservation Management Plan (BCMP) (2021) for the broader site, along with the annual vegetation monitoring conducted by East Coast Bush Regeneration, have identified eight threatened flora species to be present within the greater Tallowood Ridge site area:

- Sweet Myrtle (*Gossia frangrantissima*)
- Spiny Gardenia (*Randia moorei*)
- Marblewood (*Acacia bakeri*)
- Davidson's Plum (*Davidsonia jerseyana*)
- Rough-shelled Bush Nut (*Macadamia tetraphylla*)
- Coolamon (*Szygium moorei*)
- Scrub Turpentine (*Rhodamnia rubescens*)
- Native Guava (*Rhodomyrus psidioides*)

These studies have also identified areas of the TEC *Lowland Rainforest on Floodplain in the New South Wales North Coast Bioregion - NSW North Coast* to occur along the eastern boundary of the broader site.

3.2 Site Assessment

3.2.1 Vegetation Communities

The subject area comprises cleared land dominated by pasture grass species such as Kikuyu (*Cenchrus clandestinus*), South African Pigeon Grass (*Setaria sphacelate*), Narrow-leaved Carpet Grass (*Axonopus fissifolius*) and Paspalum species (*Paspalum urvillei*, *Paspalum dilatatum, Paspalum mandiocanum*). Patches of disturbed regrowth vegetation occur along the site boundary lines and are dominated by Camphor Laurel (*Cinnamomum camphora*), Acacia species such as Mudgerabah (*Acacia melanoxylon*) and Coastal Hickory Wattle (*Acacia disparrima*) and exotic Eucalypts including Lemon-scented Gum (*Corymbia citriodora*) and Cadaghi (*Corymbia torelliana*).

Native vegetation within the subject area is dominated by pioneer species including Macaranga (*Macaranga tanarius*) and the previously mentioned *Acacia spp.*, with occasional immature regrowth rainforest species such as Pink Euodia (*Melicope elleryana*), Red Kamala (*Mallotus philippensis*) and Sandpaper Fig species (*Ficus fraseri, Ficus coronata*) infrequently occurring.

Typical vegetation assemblages within the subject area comprise Camphor Laurel dominant patches with regrowth native pioneer and rainforest species interspersed, regrowth landscape sclerophyll patches dominated by exotic Eucalypt species, and mown grassland (refer **Figure 3.1**).

Photographs of vegetation communities at the site are provided at **Appendix C**. A flora inventory is provided at **Appendix D.**

3.2.2 Threatened Flora

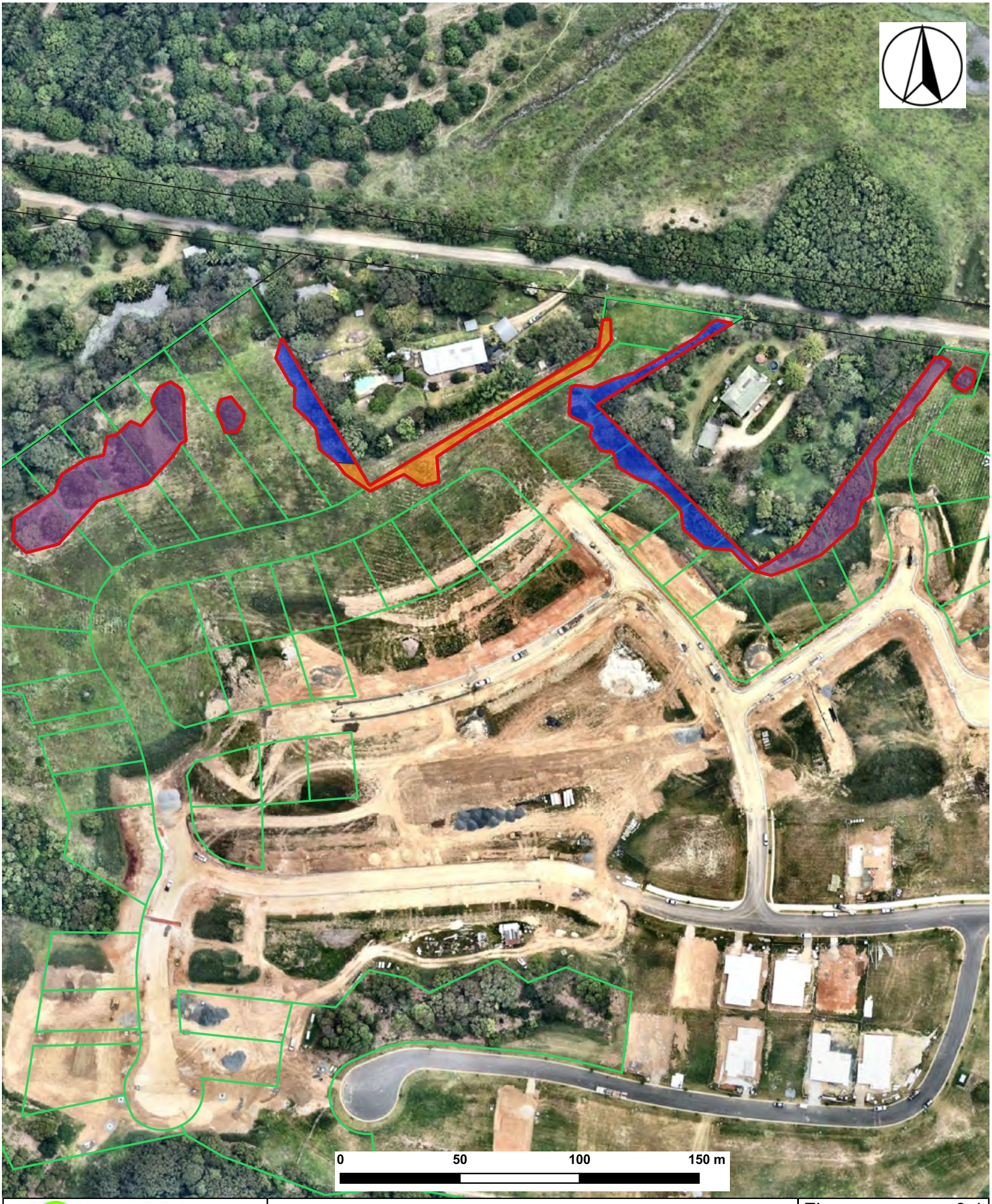
No threatened flora species were recorded within the subject area.

3.2.3 Threatened Ecological Communities (TECs)

No TECs occur.

3.2.4 Vegetation Condition

The subject area has been historically cleared and modified for agricultural purposes. Vegetation present comprises fragmented regrowth patches; woody environmental weeds such as Camphor Laurel and Lantana (*Lantana camara*) are common along with landscape species escaped from neighboring properties. The ground strata across the subject area supports a range of common agricultural weeds.



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Legend

- Cadastre
- Subject Area Boundary
- Tallowood Stage 9 Boundary

Vegetation Communities

- Camphor Laurel Dominant
- Landscape Sclerophyll Dominant
- Managed Grassland

A4 Scale 1:2000
Coordinate System: MGA 56 Projection: Transverse Mercator

Figure 3.1 Vegetation Plan

Data source:
Aerial - Nearmaps 2023
Vegetation communities - AWC 2023
Stage 9 Boundary - Civiltech 2023
Cadastre - Byron Shire Council 2023
Subject Area - Civiltech and AWC 2023

Date:22.03.23
Job No:221688
Drawn:JL
Checked:DC

4 Fauna

4.1 Desktop Assessment

4.1.1 BioNet Atlas and PMST Search Tool

BioNet returned confirmed records of 43 threatened fauna species within the search area, including nine species listed in the EPBC Act (refer **Table 4.1**). PMST search results identified habitat for 58 threatened fauna species and 49 migratory species within the search area (refer to **Appendix B**).

Table 4.1 Threatened fauna recorded within 5 km of the site

Scientific Name	Common Name	BC Act	EPBC Act	No. Records
Amphibians				
Assa darlingtoni	Pouched Frog	V,P		3
Birds				
Menura alberti	Albert's Lyrebird	V,P		1
Botaurus poiciloptilus	Australasian Bittern	E1,P	E	1
Ninox connivens	Barking Owl	V,P,3		5
Coracina lineata	Barred Cuckoo-shrike	V,P		11
Ixobrychus flavicollis	Black Bittern	V,P		6
Falco subniger	Black Falcon	V,P		3
Ephippiorhynchus asiaticus	Black-necked Stork	E1,P		4
Climacteris picumnus victoriae	Brown Treecreeper (eastern subspecies)	V,P		1
Todiramphus chloris	Collared Kingfisher	V,P		1
Irediparra gallinacea	Comb-crested Jacana	V,P		4
Artamus cyanopterus cyanopterus	Dusky Woodswallow	V,P		1
Pandion cristatus	Eastern Osprey	V,P,3		7
Stictonetta naevosa	Freckled Duck	V,P		6
Calyptorhynchus lathami	Glossy Black-Cockatoo	V,P,2	V	7
Hieraaetus morphnoides	Little Eagle	V,P		55
Lichenostomus fasciogularis	Mangrove Honeyeater	V,P		1
Podargus ocellatus	Marbled Frogmouth	V,P		1
Tyto novaehollandiae	Masked Owl	V,P,3		1
Amaurornis moluccana	Pale-vented Bush-hen	V,P		5
Ptilinopus regina	Rose-crowned Fruit-Dove	V,P		81
Petroica boodang	Scarlet Robin	V,P		4
Tyto tenebricosa	Sooty Owl	V,P,3		6
Circus assimilis	Spotted Harrier	V,P		1
Ptilinopus superbus	Superb Fruit-Dove	V,P		4
Haliaeetus leucogaster	White-bellied Sea-Eagle	V,P		11
Carterornis leucotis	White-eared Monarch	V,P		17
Hirundapus caudacutus	White-throated Needletail	P	V,C,J,K	108
Ptilinopus magnificus	Wompoo Fruit-Dove	V,P		21
Mammals				
Planigale maculata	Common Planigale	V,P		4
Nyctophilus bifax	Eastern Long-eared Bat	V,P		5
Nyctimene robinsoni	Eastern Tube-nosed Bat	V,P		3
Pteropus poliocephalus	Grey-headed Flying-fox	V,P	V	29
Phascolarctos cinereus	Koala	E1,P	E	1372

Scientific Name	Common Name	BC Act	EPBC Act	No. Records
Miniopterus orianae oceanensis	Large Bent-winged Bat	V,P		4
Miniopterus australis	Little Bent-winged Bat	V,P		44
Pseudomys novaehollandiae	New Holland Mouse	P	V	4
Myotis macropus	Southern Myotis	V,P		10
Dasyurus maculatus	Spotted-tailed Quoll	V,P	E	3
Petaurus norfolcensis	Squirrel Glider	V,P		3
Reptiles				
Hoplocephalus stephensii	Stephens' Banded Snake	V,P		1
Insects				
Argynnis hyperbius	Laced Fritillary	E1	CE	2
Gastropods				
Thersites mitchellae	Mitchell's Rainforest Snail	E1	CE	1

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

4.1.2 Wildlife Corridors

While the southern extent of the broader Tallowood Ridge site sits within a mapped wildlife corridor (Byron Shire Council 2023), the subject area of this assessment is not within the mapped corridor area.

4.1.3 Koala Habitat

Mapped Koala Habitat as per the Byron Shire Councils Koala Plan of Management (KPoM) occurs across the site including adjacent to the north-eastern extent of the subject area (refer **Figure 4.1**). No mapped koala habitat or preferred koala food trees are proposed to be impact by the proposed modification.

Figure 4.1 Mapped koala habitat within the Tallowood Development site under the Byron Shire Council KPoM

4.1.4 Previous Studies

Three threatened fauna species have been previously recorded within the broader Tallowood Ridge site area:

- Glossy Black-cockatoo (*Calyptorhynchus lathami*)
- Koala (*Phascolarctos cinereus*)
- Masked Owl (*Tyto novaehollandiae*)

4.2 Site Assessment

4.2.1 Habitat Values

A range of common bird species were observed during field assessment (refer **Appendix D**). The subject area provides habitat for a range of common bird species which utilise rural land and disturbed rainforest areas. The site also provides foraging habitat for several species of microchiropteran bats. No or preferred Koala feed trees occur within the subject area. Two key habitat features were recorded in the subject area comprising one hollow bearing tree (Tree 103 – Blue Lilly Pilly) and one stag (Tree C2 – Camphor Laurel). The drainage line occurring within the eastern extent of the subject area provides potential habitat for a range of common frog species.

4.2.2 Threatened Species Habitat

No threatened fauna species were recorded during field assessment. Based on the desktop analysis and habitat present, several threatened fauna species have potential to occur at the site on an opportunistic basis (refer to potential occurrence table at **Appendix E**). Tests of significance ('five-part tests') under Section 7.3 of the BC Act have been completed for threatened species recorded or considered as having potential to occur (refer to **Section 6.4.1** and **Appendix F**).

Koalas

While Koala's have been previously recorded within the broader Tallowood Ridge site area, no preferred Koala feed trees occur within the subject area. No Koala scats were found during searches conducted in the mapped Koala Habitat adjacent to the northwestern boundary of the subject area.

4.2.3 Connectivity

Vegetation within the subject area comprises isolated patches of degraded habitat within a largely cleared rural landscape; connectivity with consolidated areas of good quality habitat, such as that within the southern extent of the broader site, is lacking.

5 Impact Assessment

5.1 Biodiversity Impacts

To allow for approved earthworks and construction of Stage 9 of the Tallowood Ridge Development, potential biodiversity impacts are as follows:

- Loss of native vegetation – up to 23 trees (refer **Appendix A**)
- Loss of up to seven (7) Camphor Laurel greater than 5m tall, along with several small regenerating Camphor Laurel thickets (refer **Appendix A**)
- Loss of two (2) trees with habitat value for local wildlife - one (1) hollow bearing tree (Tree 103 - Blue Lilly Pilly) and one (1) stag (Tree C2 – Camphor Laurel)
- Disturbance of piled logs and debris (fauna habitat) within patches of trees to be removed
- Noise and disturbance to fauna during tree removal (including to foraging habitat)
- Reduction of fauna resources (fruiting/flowering trees and shrubs)
- Potential for introduction of weed species into the remaining areas of vegetation and neighboring properties
- Potential damage to trees to be retained adjacent to works, including encroachment on Structural Root Zones (SRZ's).

5.2 Mitigation

Measures to minimise biodiversity impacts have been developed and are prescribed below:

1. Large logs and woody debris requiring removal (for access, works) shall be completed sensitively and all material moved into adjacent areas to continue to serve as habitat.
2. All trees to be removed must be subject to a pre-clearing survey by an ecologist to ensure that trees are not occupied by fauna. In the unlikely event that a Koala is present in a tree to be cleared, works must not continue, and 24 hrs must be provided for the animal/s to disperse into adjacent habitats. If the pre-clearing inspection does not determine any Koalas (or other fauna) are present, clearing works may proceed without further supervision.
3. Any hollow-bearing trees and/or stags must be clearly marked by an ecologist prior to clearing and a two-stage clearing procedure implemented such that these trees are cleared after all other vegetation is removed, with a minimum of 24 hrs between clearing events. A spotter-catcher must be present during the removal of any HBT in the event that wildlife is present and require relocation or veterinary care.
4. Measures must be implemented during tree removal, earthworks and construction works so that machinery and plant do not introduce weed seed or propagules to the site (eg. by adoption and implementation of the 'Arrive Clean, Leave Clean' guidelines [DoE 2015]).
5. Measures must be implemented during tree removal, earthworks and construction works to ensure hygiene protocols for minimising the introduction and spread of Myrtle Rust/Chytrid Fungus/Cinnamon Fungus are developed and maintained in accordance with current best practice and/or NPWS policies or guidelines (e.g. Saving Our Species Hygiene Guidelines DPIE 2020).
6. All mitigation measures would be included within a project specific Construction Environmental Management Plan (CEMP) which would also include requirements for

contractor induction and a briefing on biodiversity matters.

Management measures specific to areas adjacent to mapped Koala Habitat:

1. All trees within mapped Koala Habitat areas adjacent to tree removal works must be subject to a pre-clearing survey by an ecologist to ensure that trees are not occupied by fauna. In the unlikely event that a Koala is present in the area, works must not continue, and 24 hrs must be provided for the animal/s to disperse into adjacent habitats. If the pre-clearing inspection does not determine any Koalas (or other fauna) are present, clearing works may proceed without further supervision.

5.3 Compensation

Compensation for trees removed as a result of the proposed modification must be undertaken in accordance with the compensatory ratios outlined in *Chapter B2 – Tree and Vegetation Management* of the Byron Shire Development Control Plan (DCP) 2014 (refer **Section 6.2** for further detail). Required offsets for the proposed vegetation clearing are provided in **Table 5.1.**

Table 5.1 Required compensation as per Byron Shire DCP (2014)

Conservation Category	Corresponding Habitat within Modification Footprint	No. Trees to be Removed	Offset Ratio Rate	Required Compensation (trees)
Trees of high environmental value	- Local indigenous rainforest trees: Pink Euodia, Red Kamala, Blue Lilly Pilly (also tree of habitat value)	8	1:10	80
Trees of medium environmental value	- Local indigenous trees not located in high environmental value vegetation and habitat: Prickly Paperbark, Orangebark, White Bottlebrush Tree, Macaranga, Umbrella Cheese Tree, Mudgerabah, Sweet Pittosporum, Bleeding Heart	15	1:5	75
			Total Trees	155

An area of approximately 900m^2 has been proposed for the offset plantings, located north of existing Management Zone (MZ) 8 as per the Tallowood Ridge BCMP (Dutton et al., 2011) (refer *Landscape and Tree Removal Plan* (CivilTech, 2023) at **Appendix A**). Trees will be planted at a density of approximately one (1) plant per 5m^2. Species will emulate the Lowland Rainforest Vegetation Community of MZ8 and be consistent with the prescribed MZ8 planting list within the Tallowood Ridge BCMP (refer **Appendix A**).

Management of the proposed offset planting area should be incorporated into the existing Tallowood Ridge BCMP. Any hollows or habitat features present within trees removed should be retained and relocated to the proposed offset planting area to continue to serve as habitat.

6 Statutory Assessment

6.1 Introduction

The proposal has been assessed in the context of environmental legislation/policy, including:

- Byron Shire DCP
- SEPP (Biodiversity and Conservation) 2021
- *Biodiversity Conservation Act 2016*
- *Environment Protection and Biodiversity Conservation Act 1999*.

6.2 Byron Shire Development Control Plan 2014

The subject area sits within the Byron Shire LGA and is located on land affected by the Byron Local Environment Plan (LEP) 2014 and Byron Shire Development Control Plan (DCP) 2014. As the proposed modification is for the removal of native vegetation, it is subject to BSDCP Chapter B2: Tree and Vegetation Management; within this chapter, Section B2.3 outlines compensatory habitat offsets. The requirements of the BSDCP regarding tree removal have been addressed within section 5.3.

6.3 State Environmental Planning Policies (SEPPs)

6.3.1 SEPP (Biodiversity and Conservation) 2021

State Environmental Planning Policy (Biodiversity and Conservation) 2021 commenced March 2022 and consolidates, transfers and repeals provisions of several SEPPs, including SEPP (Vegetation in Non-Rural Areas) 2017 ('Vegetation SEPP'), SEPP (Koala Habitat Protection) 2020 ('Koala SEPP 2020') and SEPP (Koala Habitat Protection) 2021 ('Koala SEPP 2021'). Previous Koala SEPPS (now repealed) are established as Chapters 3 and 4 of the Biodiversity and Conservation SEPP 2021. Clause 3.16 of Chapter 3 defers to approved koala plans of management (KPoM). The *Byron Coast Comprehensive Koala Plan of Management* (BCCKPoM) (BSC, 2016) is an approved KPoM and applies to various areas of coastal habitats within Byron Shire. The subject area is located within the Koala Planning Area of the BCCKPoM, specifically the West Mullumbimby Koala Management Precinct (KMP) of the South Byron Coast Koala Management Area (KMA). While the broader Tallowood site contains areas of Koala Habitat as per the BCCKPoM, the subject **does not contain any preferred koala food trees.** Thus, **no potential or core koala habitat is present within the subject area** and the BCCKPoM does not apply.

6.4 NSW Legislation

6.4.1 Biodiversity Conservation Act 2016

Section 7.3 of 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.

Based on the minor potential for several threatened fauna species to occur, tests of significance have been completed (refer to **Appendix F**). The tests concluded that the proposal would be

unlikely to significantly increase the risk of extinction for any fauna species, and hence a BDAR is not required.

6.5 Environment Protection and Biodiversity Conservation Act 1999

The EPBC Act considers nine matters of national environmental significance (MNES):

- World heritage properties
- National heritage places
- Wetlands of international importance ('Ramsar' wetlands)
- 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.

Under the EPBC Act, actions that have, or are likely to have, a significant impact on a matter of national environmental significance (MNES) require approval from the Australian Government Minister for the Environment (the Minister). Based on the search results and site assessment, no significant impacts to any MNES would be likely to result from the proposal (refer **Table 6.1**), therefore referral to the Minister for the Environment is not required.

Table 6.1 Assessment of MNES

MNES	Impact
Any impact on a World Heritage property?	
No World Heritage properties occur within five kilometres of the site.	Nil
Any impact on National heritage places?	
No National Heritage places occur within five kilometres of the site.	Nil
Any impact on wetlands of international importance?	
No wetlands of international importance occur within five kilometres of the site.	Nil
Any impact on nationally threatened species and ecological communities?	
Habitat for six threatened ecological communities (TECs) and 103 threatened species is identified within 5 km of the site. No threatened flora species or TECs occur at the site. While no listed threatened fauna species were recorded at the site, several may use the site and surrounds on an opportunistic or seasonal basis (e.g. Grey-headed Flying-fox). A test of significance for the Grey-headed Flying-fox determined that the proposal would be unlikely to have a significant impact on this species (refer **Appendix F**). The proposal would not result in the removal of habitat important to any threatened fauna species in a local context and is unlikely to significantly impact on any nationally threatened species or ecological communities.	Negligible
Any impact on migratory species?	
Habitat for 49 migratory species is identified within 5 km of the site. No migratory species were recorded within the subject area. No migratory species are likely to be significantly affected by the proposal given that no significant habitat would be affected.	Negligible
Any impact on Commonwealth marine areas?	
No Commonwealth marine areas occur within 5 km of the site.	Nil
Any impact on the Great Barrier Reef Marine Park?	
Not applicable.	Nil

MNES	Impact
Does the activity involve a nuclear action (including uranium mining)?	
Not applicable.	Nil
Any impact on a water resource from coal seam gas development or a large coal mining development?	
Not applicable.	Nil

7 References

Byron Shire Council (2014) *Byron Shire Development Control Plan 2014 – Chapter B2 – Preservation of Trees and Other Vegetation.* Byron Shire Council, Mullumbimby, NSW.

Byron Shire Council (2015) *Byron Coast Comprehensive Koala Plan of Management.* Byron Shire Council, Mullumbimby, NSW.

DPIE (2020) *Saving Our Species Hygiene guidelines. Protocols to protect priority biodiversity areas in NSW from Phytophthora cinnamomi, myrtle rust, amphibian chytrid fungus and invasive plants*. Department of Planning, Industry and Environment; Environment, Energy and Science division. https://www.environment.nsw.gov.au/research-and-publications/publications-search/hygiene-guidelines

DoE (2015) *Arrive Clean, Leave Clean. Guidelines to help prevent the spread of invasive plant diseases and weeds threatening our native plants, animals and ecosystems*. Commonwealth Department of the Environment. https://www.awe.gov.au/sites/default/files/documents/arrive-clean-leave-clean.pdf

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Floyd, A.G. (2008) Rainforest Trees of Mainland South-eastern Australia. Terania Rainforest Publishing, Lismore, NSW.

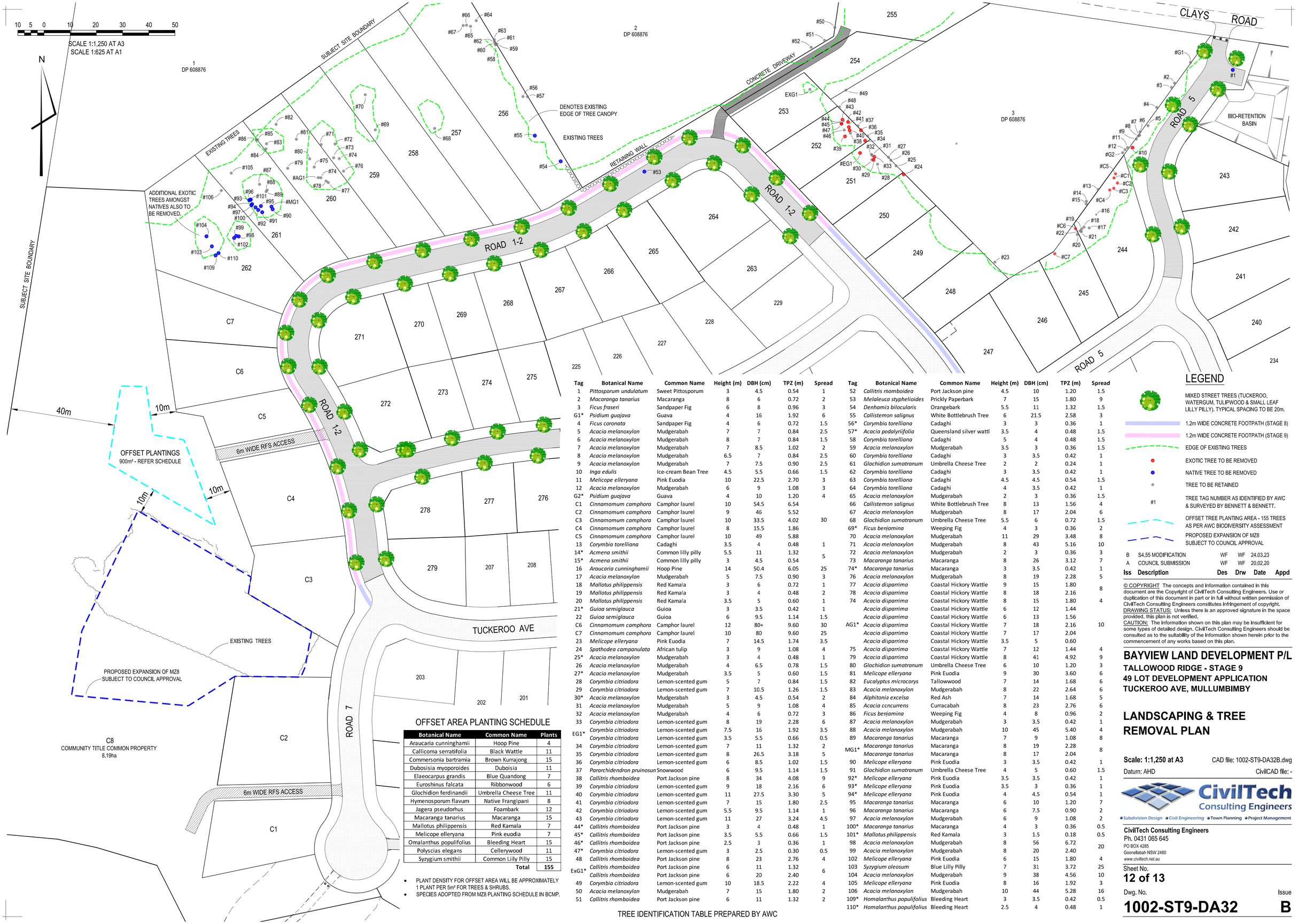
Jeremy Benwell (2022) *9th Annual Maintenance and Monitoring Progress Report for Tallowood Ridge Estate*. East Coast Regeneration, Possum Creek, NSW.

Phillips, S. & Callaghan, J. (2011) The Spot Assessment Technique: a tool for determining localised levels of habitat use by Koalas *Phascolarctos cinereus*. *Australian Zoologist*: 2011, Vol. 35, No. 3, pp. 774-780.

Scotts, D. (2003) *Key Habitats and Corridors for Forest Fauna. Occasional Paper 32.* NSW NPWS.

Thackway R. & Cresswell I. (1995) *An Interim Biogeographic Regionalisation for Australia: a framework for setting priorities in the National Reserves System Cooperative Program Version 4*, Australian Nature Conservation Agency, Canberra.

Appendix A – Landscaping and Tree Removal Plan



OFFSET AREA PLANTING SCHEDULE

Botanical Name	Common Name	Plants
Araucaria cunninghamii	Hoop Pine	4
Callicoma serratifolia	Black Wattle	11
Commersonia bartramia	Brown Kurrajong	15
Dubosisia myoporoides	Duboisia	11
Elaeocarpus grandis	Blue Quandong	7
Euroshinus falcata	Ribbonwood	6
Glochidion ferdinandii	Umbrella Cheese Tree	11
Hymenosporum flavum	Native Frangipani	8
Jagera pseudorhus	Foambark	12
Macaranga tanarius	Macaranga	15
Mallotus philippensis	Red Kamala	7
Melicope elleryana	Pink eudoia	7
Omalanthus populifolius	Bleeding Heart	15
Polyscias elegans	Cellerywood	11
Syzygium smithii	Common Lilly Pilly	15
	Total	**155**

- PLANT DENSITY FOR OFFSET AREA WILL BE APPROXIMATELY 1 PLANT PER 5m² FOR TREES & SHRUBS.
- SPECIES ADOPTED FROM MZ8 PLANTING SCHEDULE IN BCMP.

Tag	Botanical Name	Common Name	Height (m)	DBH (cm)	TPZ (m)	Spread
1	*Pittosporum undulatum*	Sweet Pittosporum	3	4.5	0.54	1
2	*Macaranga tanarius*	Macaranga	8	6	0.72	2
3	*Ficus fraseri*	Sandpaper Fig	6	8	0.96	3
G1*	*Psidium guajava*	Guava	4	16	1.92	6
4	*Ficus coronata*	Sandpaper Fig	4	6	0.72	1.5
5	*Acacia melanoxylon*	Mudgerabah	7	7	0.84	2.5
6	*Acacia melanoxylon*	Mudgerabah	8	7	0.84	1.5
7	*Acacia melanoxylon*	Mudgerabah	7	8.5	1.02	2
8	*Acacia melanoxylon*	Mudgerabah	6.5	7	0.84	2.5
9	*Acacia melanoxylon*	Mudgerabah	7	7.5	0.90	2.5
10	*Inga edulis*	Ice-cream Bean Tree	4.5	5.5	0.66	1.5
11	*Melicope elleryana*	Pink Euodia	10	22.5	2.70	3
12	*Acacia melanoxylon*	Mudgerabah	6	9	1.08	3
G2*	*Psidium guajava*	Guava	4	10	1.20	4
C1	*Cinnamomum camphora*	Camphor laurel	10	54.5	6.54	
C2	*Cinnamomum camphora*	Camphor laurel	9	46	5.52	
C3	*Cinnamomum camphora*	Camphor laurel	10	33.5	4.02	30
C4	*Cinnamomum camphora*	Camphor laurel	8	15.5	1.86	
C5	*Cinnamomum camphora*	Camphor laurel	10	49	5.88	
13	*Corymbia torelliana*	Cadaghi	3.5	4	0.48	1
14*	*Acmena smithii*	Common lilly pilly	5.5	11	1.32	5
15*	*Acmena smithii*	Common lilly pilly	3	4.5	0.54	
16	*Araucaria cunninghamii*	Hoop Pine	14	50.4	6.05	25
17	*Acacia melanoxylon*	Mudgerabah	5	7.5	0.90	3
18	*Mallotus philippensis*	Red Kamala	3	6	0.72	1
19	*Mallotus philippensis*	Red Kamala	3	4	0.48	2
20	*Mallotus philippensis*	Red Kamala	3.5	5	0.60	1
21*	*Guioa semiglauca*	Guioa	3	3.5	0.42	1
22	*Guioa semiglauca*	Guioa	6	9.5	1.14	1.5
C6	*Cinnamomum camphora*	Camphor laurel	12	80+	9.60	30
C7	*Cinnamomum camphora*	Camphor laurel	10	80	9.60	25
23	*Melicope elleryana*	Pink Euodia	7	14.5	1.74	3.5
24	*Spathodea campanulata*	African tulip	3	9	1.08	4
25*	*Acacia melanoxylon*	Mudgerabah	3	4	0.48	1
26	*Acacia melanoxylon*	Mudgerabah	4	6.5	0.78	1.5
27*	*Acacia melanoxylon*	Mudgerabah	3.5	5	0.60	1.5
28	*Corymbia citriodora*	Lemon-scented gum	5	7	0.84	1.5
29	*Corymbia citriodora*	Lemon-scented gum	7	10.5	1.26	1.5
30*	*Acacia melanoxylon*	Mudgerabah	3	4.5	0.54	2
31	*Acacia melanoxylon*	Mudgerabah	5	9	1.08	4
32	*Acacia melanoxylon*	Mudgerabah	4	6	0.72	3
33	*Corymbia citriodora*	Lemon-scented gum	8	19	2.28	6
EG1*	*Corymbia citriodora*	Lemon-scented gum	7.5	16	1.92	3.5
34	*Corymbia citriodora*	Lemon-scented gum	3.5	5.5	0.66	0.5
35	*Corymbia citriodora*	Lemon-scented gum	7	11	1.32	2
36	*Corymbia citriodora*	Lemon-scented gum	8	26.5	3.18	5
37	*Pararchidendron pruinosum*	Snowwood	6	8.5	1.02	1.5
38	*Callitris rhomboidea*	Port Jackson pine	6	9.5	1.14	1.5
39	*Corymbia citriodora*	Lemon-scented gum	8	34	4.08	9
40	*Corymbia citriodora*	Lemon-scented gum	9	18	2.16	6
41	*Corymbia citriodora*	Lemon-scented gum	11	27.5	3.30	5
42	*Corymbia citriodora*	Lemon-scented gum	7	15	1.80	2.5
43	*Corymbia citriodora*	Lemon-scented gum	5.5	9.5	1.14	1
44*	*Callitris rhomboidea*	Port Jackson pine	11	27	3.24	4.5
45*	*Callitris rhomboidea*	Port Jackson pine	3	4	0.48	1
46*	*Callitris rhomboidea*	Port Jackson pine	3.5	5.5	0.66	1.5
47*	*Corymbia citriodora*	Lemon-scented gum	2.5	3	0.36	1
48	*Callitris rhomboidea*	Port Jackson pine	3	2.5	0.30	0.5
ExG1*	*Callitris rhomboidea*	Port Jackson pine	8	23	2.76	4
49	*Corymbia citriodora*	Lemon-scented gum	6	11	1.32	6
50	*Acacia melanoxylon*	Mudgerabah	10	18.5	2.22	4
51	*Callitris rhomboidea*	Port Jackson pine	7	11	1.80	2
52	*Callitris rhomboidea*	Port Jackson pine	6	11	1.32	2
53	*Callitris rhomboidea*	Port Jackson pine	4.5	10	1.20	1.5
54	*Callistemon salignus*	White Bottlebrush Tree	6	21.5	2.58	3
55*	*Corymbia torelliana*	Cadaghi	3	3	0.36	1
56*	*Acacia pedalyriifolia*	Queensland silver wattl	3.5	4	0.48	1.5
57*	*Corymbia torelliana*	Cadaghi	5	4	0.48	1.5
58	*Acacia melanoxylon*	Mudgerabah	3.5	3	0.36	1.5
59	*Corymbia torelliana*	Cadaghi	3	3.5	0.42	1
60	*Glochidion sumatranum*	Umbrella Cheese Tree	2	2	0.24	1
61	*Corymbia torelliana*	Cadaghi	3	3.5	0.42	1
62	*Corymbia torelliana*	Cadaghi	4.5	4.5	0.54	1.5
63	*Corymbia torelliana*	Cadaghi	4	3.5	0.42	1
64	*Acacia melanoxylon*	Mudgerabah	2	3	0.36	1.5
65	*Callistemon salignus*	White Bottlebrush Tree	8	13	1.56	4
66	*Acacia melanoxylon*	Mudgerabah	8	17	2.04	6
67	*Glochidion sumatranum*	Umbrella Cheese Tree	5.5	6	0.72	1.5
68	*Ficus benjamina*	Weeping Fig	4	3	0.36	2
69*	*Acacia melanoxylon*	Mudgerabah	11	29	3.48	8
70	*Acacia melanoxylon*	Mudgerabah	8	43	5.16	10
71	*Acacia melanoxylon*	Mudgerabah	2	3	0.36	3
72	*Acacia melanoxylon*	Mudgerabah	8	26	3.12	7
73	*Macaranga tanarius*	Macaranga	3	3.5	0.42	1
74*	*Macaranga tanarius*	Macaranga	8	19	2.28	5
76	*Acacia melanoxylon*	Mudgerabah	8	22	2.64	8
77	*Acacia disparrima*	Coastal Hickory Wattle	9	15	1.80	
78	*Acacia disparrima*	Coastal Hickory Wattle	8	18	2.16	8
74	*Acacia disparrima*	Coastal Hickory Wattle	8	15	1.80	4
	Acacia disparrima	Coastal Hickory Wattle	6	12	1.44	
	Acacia disparrima	Coastal Hickory Wattle	6	13	1.56	
AG1*	*Acacia disparrima*	Coastal Hickory Wattle	7	18	2.16	10
	Acacia disparrima	Coastal Hickory Wattle	7	17	2.04	
	Acacia disparrima	Coastal Hickory Wattle	3.5	5	0.60	
75	*Acacia disparrima*	Coastal Hickory Wattle	7	12	1.44	4
79	*Acacia disparrima*	Coastal Hickory Wattle	8	41	4.92	9
80	*Glochidion sumatranum*	Umbrella Cheese Tree	6	10	1.20	3
81	*Melicope elleryana*	Pink Euodia	9	30	3.60	6
82	*Eucalyptus microcorys*	Tallowwood	7	14	1.68	6
83	*Acacia melanoxylon*	Mudgerabah	8	22	2.64	6
84	*Alphitonia excelsa*	Red Ash	7	14	1.68	5
85	*Acacia ccncurrens*	Curracabah	8	23	2.76	6
86	*Ficus benjamina*	Weeping Fig	4	8	0.96	2
87	*Acacia melanoxylon*	Mudgerabah	3	3.5	0.42	1
88	*Acacia melanoxylon*	Mudgerabah	10	45	5.40	4
89	*Macaranga tanarius*	Macaranga	7	9	1.08	8
MG1*	*Macaranga tanarius*	Macaranga	8	19	2.28	
	Macaranga tanarius	Macaranga	8	17	2.04	
90	*Melicope elleryana*	Pink Euodia	3	3.5	0.42	1
91	*Glochidion sumatranum*	Umbrella Cheese Tree	4	5	0.60	1.5
92*	*Melicope elleryana*	Pink Euodia	3.5	3.5	0.42	1
93*	*Melicope elleryana*	Pink Euodia	3.5	3	0.36	1
94*	*Melicope elleryana*	Pink Euodia	4	4.5	0.54	1
95	*Macaranga tanarius*	Macaranga	6	10	1.20	7
96	*Macaranga tanarius*	Macaranga	6	7.5	0.90	2
97	*Acacia melanoxylon*	Mudgerabah	6	9	1.08	2
100*	*Macaranga tanarius*	Macaranga	4	3	0.36	0.5
101*	*Mallotus philippensis*	Red Kamala	3	1.5	0.18	0.5
98	*Acacia melanoxylon*	Mudgerabah	8	56	6.72	20
99	*Acacia melanoxylon*	Mudgerabah	8	20	2.40	
102	*Melicope elleryana*	Pink Euodia	6	15	1.80	4
103	*Syzygium oleosum*	Blue Lilly Pilly	7	31	3.72	25
104	*Acacia melanoxylon*	Mudgerabah	9	38	4.56	10
105	*Melicope elleryana*	Pink Euodia	8	16	1.92	3
106	*Acacia melanoxylon*	Mudgerabah	10	44	5.28	16
109*	*Homalanthus populifolius*	Bleeding Heart	3	3.5	0.42	0.5
110*	*Homalanthus populifolius*	Bleeding Heart	2.5	4	0.48	1

TREE IDENTIFICATION TABLE PREPARED BY AWC

LEGEND

- MIXED STREET TREES (TUCKEROO, WATERGUM, TULIPWOOD & SMALL LEAF LILLY PILLY). TYPICAL SPACING TO BE 20m.
- 1.2m WIDE CONCRETE FOOTPATH (STAGE 8)
- 1.2m WIDE CONCRETE FOOTPATH (STAGE 9)
- EDGE OF EXISTING TREES
- EXOTIC TREE TO BE REMOVED
- NATIVE TREE TO BE REMOVED
- TREE TO BE RETAINED
- #1 TREE TAG NUMBER AS IDENTIFIED BY AWC & SURVEYED BY BENNETT & BENNETT.
- OFFSET TREE PLANTING AREA - 155 TREES AS PER AWC BIODIVERSITY ASSESSMENT
- PROPOSED EXPANSION OF MZ8 SUBJECT TO COUNCIL APPROVAL

Iss	Description	Des	Drw	Date	Appd
B	S4.55 MODIFICATION	WF	WF	24.03.23	
A	COUNCIL SUBMISSION	WF	WF	20.02.20	

BAYVIEW LAND DEVELOPMENT P/L

TALLOWOOD RIDGE - STAGE 9
49 LOT DEVELOPMENT APPLICATION
TUCKEROO AVE, MULLUMBIMBY

LANDSCAPING & TREE REMOVAL PLAN

Scale: 1:1,250 at A3 CAD file: 1002-ST9-DA32B.dwg
Datum: AHD CivilCAD file: -

CivilTech Consulting Engineers
Subdivision Design • Civil Engineering • Town Planning • Project Management

CivilTech Consulting Engineers
Ph. 0431 065 645
PO BOX 4285
Goonellabah NSW 2480
www.civiltech.net.au

Sheet No.
12 of 13

Dwg. No. **1002-ST9-DA32** Issue **B**

Appendix B – BioNet and PMST Search Results

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 0.1°C; ^^ rounded to 0.01°C. Copyright the State of NSW through the Department of Planning, Industry and Environment. Search criteria : Public Report of all Valid Records of Threatened (listed on BC Act 2016) or Commonwealth listed Plants in selected area [North: -28.50 West: 153.43 East: 153.53 South: -28.60] returned a total of 717 records of 38 species.

Report generated on 22/02/2023 2:59 PM

Kingdom	Class	Family	Species Code	Scientific Name	Common Name	NSW status	Comm. status	Records	Info
Plantae	Flora	Apocynaceae	1233	*Marsdenia longiloba*	Slender Marsdenia	E1	V	2	
Plantae	Flora	Apocynaceae	1176	*Ochrosia moorei*	Southern Ochrosia	E1	E	3	
Plantae	Flora	Apocynaceae	1245	*Tylophora woollsii*	Cryptic Forest Twiner	E1	E	1	
Plantae	Flora	Cunoniaceae	10943	*^Davidsonia jerseyana*	Davidson's Plum	E1,2	E	97	
Plantae	Flora	Cunoniaceae	10944	*Davidsonia johnsonii*	Smooth Davidson's Plum	E1	E	13	
Plantae	Flora	Ebenaceae	2564	*Diospyros mabacea*	Red-fruited Ebony	E1	E	5	
Plantae	Flora	Elaeocarpaceae	2575	*^^Elaeocarpus williamsianus*	Hairy Quandong	E1,3	E	6	
Plantae	Flora	Fabaceae (Caesalpinioideae)	8772	*Senna acclinis*	Rainforest Cassia	E1		1	
Plantae	Flora	Fabaceae (Faboideae)	2833	*Desmodium acanthocladum*	Thorny Pea	V	V	24	
Plantae	Flora	Fabaceae (Mimosoideae)	3711	*Acacia bakeri*	Marblewood	V		61	
Plantae	Flora	Fabaceae (Mimosoideae)	7757	*Archidendron hendersonii*	White Lace Flower	V		9	
Plantae	Flora	Lauraceae	3477	*Cryptocarya foetida*	Stinking Cryptocarya	V	V	1	
Plantae	Flora	Lauraceae	8948	*Endiandra floydii*	Crystal Creek Walnut	E1	E	17	
Plantae	Flora	Lauraceae	3491	*Endiandra hayesii*	Rusty Rose Walnut	V	V	6	
Plantae	Flora	Lauraceae	8480	*Endiandra muelleri subsp. bracteata*	Green-leaved Rose Walnut	E1		11	
Plantae	Flora	Lindsaeaceae	8126	*^^Lindsaea brachypoda*	Short-footed Screw Fern	E1,3		6	
Plantae	Flora	Menispermaceae	3691	*Tinospora tinosporoides*	Arrow-head Vine	V		18	
Plantae	Flora	Myrtaceae	15211	*^^Backhousia subargentea*	Giant Ironwood	E1,3		65	
Plantae	Flora	Myrtaceae	11894	*Gossia fragrantissima*	Sweet Myrtle	E1	E	47	
Plantae	Flora	Myrtaceae	4282	*Rhodamnia maideniana*	Smooth Scrub Turpentine	E4A		13	
Plantae	Flora	Myrtaceae	4283	*Rhodamnia rubescens*	Scrub Turpentine	E4A	CE	24	
Plantae	Flora	Myrtaceae	4284	*Rhodomyrtus psidioides*	Native Guava	E4A	CE	1	
Plantae	Flora	Myrtaceae	4290	*Syzygium hodgkinsoniae*	Red Lilly Pilly	V	V	17	
Plantae	Flora	Myrtaceae	4292	*Syzygium moorei*	Durobby	V	V	66	
Plantae	Flora	Myrtaceae	4298	*Uromyrtus australis*	Peach Myrtle	E1	E	1	

Plantae	Flora	Orchidaceae	4479	*^Peristeranthus hillii*	Brown Fairy-chain Orchid	V,P,2		2
Plantae	Flora	Orchidaceae	4480	*^Phaius australis*	Southern Swamp Orchid	E1,P,2	E	1
Plantae	Flora	Phyllanthaceae	9833	*Phyllanthus microcladus*	Brush Sauropus	E1		14
Plantae	Flora	Polypodiaceae	8154	*Belvisia mucronata*	Needle-leaf Fern	E1		2
Plantae	Flora	Proteaceae	5354	*Floydia praealta*	Ball Nut	V	V	8
Plantae	Flora	Proteaceae	5372	*Grevillea hilliana*	White Yiel Yiel	E1		5
Plantae	Flora	Proteaceae	5432	*Hicksbeachia pinnatifolia*	Red Boppel Nut	V	V	42
Plantae	Flora	Proteaceae	9680	*Macadamia integrifolia*	Macadamia Nut		V	1
Plantae	Flora	Proteaceae	5446	*Macadamia tetraphylla*	Rough-shelled Bush Nut	V	V	94
Plantae	Flora	Rubiaceae	8297	*Randia moorei*	Spiny Gardenia	E1	E	21
Plantae	Flora	Rutaceae	5765	*Bosistoa transversa*	Yellow Satinheart	V	V	2
Plantae	Flora	Sapindaceae	5889	*^Diploglottis campbellii*	Small-leaved Tamarind	E1,2	E	9
Plantae	Flora	Sapotaceae	11957	*Niemeyera whitei*	Rusty Plum, Plum Boxwood	V		1

Data from the 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 0.1°C; ^^ rounded to 0.01°C. Copyright the State of NSW through the Department of Planning, Industry and Environment. Search criteria : Public Report of all Valid Records of Threatened (listed on BC Act 2016) or Commonwealth listed Animals in selected area [North: -28.50 West: 153.43 East: 153.53 South: -28.60] returned a total of 1,862
Report generated on 22/02/2023 3:02 PM

Kingdom	Class	Family	Species Code	Scientific Name	Common Name	NSW status	Comm. status	Records	Info
Animalia	Amphibia	Myobatrachidae	3007	*Assa darlingtoni*	Pouched Frog	V,P		3	
Animalia	Reptilia	Elapidae	2677	*Hoplocephalus stephensii*	Stephens' Banded Snake	V,P		1	
Animalia	Aves	Anatidae	0214	*Stictonetta naevosa*	Freckled Duck	V,P		6	
Animalia	Aves	Columbidae	0025	*Ptilinopus magnificus*	Wompoo Fruit-Dove	V,P		21	
Animalia	Aves	Columbidae	0021	*Ptilinopus regina*	Rose-crowned Fruit-Dove	V,P		81	
Animalia	Aves	Columbidae	0023	*Ptilinopus superbus*	Superb Fruit-Dove	V,P		4	
Animalia	Aves	Podargidae	0314	*Podargus ocellatus*	Marbled Frogmouth	V,P		1	
Animalia	Aves	Apodidae	0334	*Hirundapus caudacutus*	White-throated Needletail	P	V,C,J,K	108	
Animalia	Aves	Ciconiidae	0183	*Ephippiorhynchus asiaticus*	Black-necked Stork	E1,P		4	
Animalia	Aves	Ardeidae	0197	*Botaurus poiciloptilus*	Australasian Bittern	E1,P	E	1	
Animalia	Aves	Ardeidae	0196	*Ixobrychus flavicollis*	Black Bittern	V,P		6	
Animalia	Aves	Accipitridae	0218	*Circus assimilis*	Spotted Harrier	V,P		1	
Animalia	Aves	Accipitridae	0226	*Haliaeetus leucogaster*	White-bellied Sea-Eagle	V,P		11	
Animalia	Aves	Accipitridae	0225	*Hieraaetus morphnoides*	Little Eagle	V,P		55	
Animalia	Aves	Accipitridae	8739	*^^Pandion cristatus*	Eastern Osprey	V,P,3		7	
Animalia	Aves	Falconidae	0238	*Falco subniger*	Black Falcon	V,P		3	
Animalia	Aves	Rallidae	0053	*Amaurornis moluccana*	Pale-vented Bush-hen	V,P		5	
Animalia	Aves	Jacanidae	0171	*Irediparra gallinacea*	Comb-crested Jacana	V,P		4	
Animalia	Aves	Cacatuidae	0265	*^Calyptorhynchus lathami*	Glossy Black-Cockatoo	V,P,2	V	7	
Animalia	Aves	Strigidae	0246	*^^Ninox connivens*	Barking Owl	V,P,3		5	
Animalia	Aves	Tytonidae	0250	*^^Tyto novaehollandiae*	Masked Owl	V,P,3		1	

Animalia	Aves	Tytonidae	9924	*^^Tyto tenebricosa*	Sooty Owl	V,P,3		6
Animalia	Aves	Alcedinidae	0327	*Todiramphus chloris*	Collared Kingfisher	V,P		1
Animalia	Aves	Menuridae	0351	*Menura alberti*	Albert's Lyrebird	V,P		1
Animalia	Aves	Climacteridae	8127	*Climacteris picumnus victoriae*	Brown Treecreeper (eastern subspecies)	V,P		1
Animalia	Aves	Meliphagidae	0610	*Lichenostomus fasciogularis*	Mangrove Honeyeater	V,P		1
Animalia	Aves	Campephagidae	0428	*Coracina lineata*	Barred Cuckoo-shrike	V,P		11
Animalia	Aves	Artamidae	8519	*Artamus cyanopterus cyanopterus*	Dusky Woodswallow	V,P		1
Animalia	Aves	Monarchidae	0376	*Carterornis leucotis*	White-eared Monarch	V,P		17
Animalia	Aves	Petroicidae	0380	*Petroica boodang*	Scarlet Robin	V,P		4
Animalia	Mammalia	Dasyuridae	1008	*Dasyurus maculatus*	Spotted-tailed Quoll	V,P	E	3
Animalia	Mammalia	Dasyuridae	1045	*Planigale maculata*	Common Planigale	V,P		4
Animalia	Mammalia	Phascolarctidae	1162	*Phascolarctos cinereus*	Koala	E1,P	E	1372
Animalia	Mammalia	Petauridae	1137	*Petaurus norfolcensis*	Squirrel Glider	V,P		3
Animalia	Mammalia	Pteropodidae	1290	*Nyctimene robinsoni*	Eastern Tube-nosed Bat	V,P		3
Animalia	Mammalia	Pteropodidae	1280	*Pteropus poliocephalus*	Grey-headed Flying-fox	V,P	V	29
Animalia	Mammalia	Vespertilionidae	1357	*Myotis macropus*	Southern Myotis	V,P		10
Animalia	Mammalia	Vespertilionidae	1336	*Nyctophilus bifax*	Eastern Long-eared Bat	V,P		5
Animalia	Mammalia	Miniopteridae	1346	*Miniopterus australis*	Little Bent-winged Bat	V,P		44
Animalia	Mammalia	Miniopteridae	3330	*Miniopterus orianae oceanensis*	Large Bent-winged Bat	V,P		4
Animalia	Mammalia	Muridae	1455	*Pseudomys novaehollandiae*	New Holland Mouse	P	V	4
Animalia	Insecta	Nymphalidae	I024	*Argynnis hyperbius*	Laced Fritillary	E1	CE	2
Animalia	Gastropoda	Camaenidae	I002	*Thersites mitchellae*	Mitchell's Rainforest Snail	E1	CE	1

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Report generated on 22/02/2023 3:04 PM

Kingdom	Class	Family	Species Code	Scientific Name	Exotic	Common Name	NSW status	Comm. status	Records	Inf
Community				*Byron Bay Dwarf Graminoid Clay Heath Community*		Byron Bay Dwarf Graminoid Clay Heath Community	E3		K	
Community				*Coastal Cypress Pine Forest in the New South Wales North Coast Bioregion*		Coastal Cypress Pine Forest in the New South Wales North Coast Bioregion	E3		K	
Community				*Coastal Saltmarsh in the New South Wales North Coast, Sydney Basin and South East Corner Bioregions*		Coastal Saltmarsh in the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	E3		K	
Community				*Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community*		Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community		E	K	
Community				*Freshwater Wetlands on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions*		Freshwater Wetlands on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	E3		K	
Community				*Grey Box—Grey Gum Wet Sclerophyll Forest in the NSW North Coast Bioregion*		Grey Box—Grey Gum Wet Sclerophyll Forest in the NSW North Coast Bioregion	E3		K	
Community				*Littoral Rainforest in the New South Wales North Coast, Sydney Basin and South East Corner Bioregions*		Littoral Rainforest in the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	E3		K	
Community				*Lowland Rainforest in the NSW North Coast and Sydney Basin Bioregions*		Lowland Rainforest in the NSW North Coast and Sydney Basin Bioregions	E3		K	

Community	*Lowland Rainforest of Subtropical Australia*	Lowland Rainforest of Subtropical Australia		CE	K	
Community	*Lowland Rainforest on Floodplain in the New South Wales North Coast Bioregion*	Lowland Rainforest on Floodplain in the New South Wales North Coast Bioregion	E3		K	
Community	*Subtropical Coastal Floodplain Forest of the New South Wales North Coast Bioregion*	Subtropical Coastal Floodplain Forest of the New South Wales North Coast Bioregion	E3		K	
Community	*Swamp Oak Floodplain Forest of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions*	Swamp Oak Floodplain Forest of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	E3		K	
Community	*Swamp Sclerophyll Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions*	Swamp Sclerophyll Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	E3		K	
Community	*Themeda grassland on seacliffs and coastal headlands in the NSW North Coast, Sydney Basin and South East Corner Bioregions*	Themeda grassland on seacliffs and coastal headlands in the NSW North Coast, Sydney Basin and South East Corner Bioregions	E3		K	
Community	*White Gum Moist Forest in the NSW North Coast Bioregion*	White Gum Moist Forest in the NSW North Coast Bioregion	E3		K	

Australian Government

Department of Climate Change, Energy, the Environment and Water

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 22-Feb-2023

Summary

Matters of National Environment Significance

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

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	6
Listed Threatened Species:	103
Listed Migratory Species:	49

Other Matters Protected by the EPBC Act

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

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

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

Commonwealth Lands:	3
Commonwealth Heritage Places:	None
Listed Marine Species:	55
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

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

State and Territory Reserves:	4
Regional Forest Agreements:	1
Nationally Important Wetlands:	None
EPBC Act Referrals:	1
Key Ecological Features (Marine):	None
Biologically Important Areas:	None
Bioregional Assessments:	1
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Listed Threatened Ecological Communities [Resource Information]

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.
Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.

Community Name	Threatened Category	Presence Text	Buffer Status
Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community	Endangered	Community likely to occur within area	In feature area
Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland	Endangered	Community may occur within area	In buffer area only
Dunn's white gum (Eucalyptus dunnii) moist forest in north-east New South Wales and south-east Queensland	Endangered	Community may occur within area	In buffer area only
Grey box-grey gum wet forest of subtropical eastern Australia	Endangered	Community may occur within area	In buffer area only
Lowland Rainforest of Subtropical Australia	Critically Endangered	Community likely to occur within area	In feature area
Subtropical eucalypt floodplain forest and woodland of the New South Wales North Coast and South East Queensland bioregions	Endangered	Community likely to occur within area	In feature area

Listed Threatened Species [Resource Information]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

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

Scientific Name	Threatened Category	Presence Text	Buffer Status
Atrichornis rufescens Rufous Scrub-bird [655]	Endangered	Species or species habitat may occur within area	In buffer area only
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area	In feature area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat likely to occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Calyptorhynchus lathami lathami South-eastern Glossy Black-Cockatoo [67036]	Vulnerable	Species or species habitat known to occur within area	In feature area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Cyclopsitta diophthalma coxeni Coxen's Fig-Parrot [59714]	Endangered	Species or species habitat likely to occur within area	In feature area
Dasyornis brachypterus Eastern Bristlebird [533]	Endangered	Species or species habitat may occur within area	In buffer area only
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Diomedea antipodensis gibsoni Gibson's Albatross [82270]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Erythrotriorchis radiatus Red Goshawk [942]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat may occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
Limosa lapponica baueri Nunivak Bar-tailed Godwit, Western Alaskan Bar-tailed Godwit [86380]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In buffer area only
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area	In feature area
Pachyptila turtur subantarctica Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Sternula nereis nereis			
Australian Fairy Tern [82950]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche cauta			
Shy Albatross [89224]	Endangered	Species or species habitat may occur within area	In buffer area only
Thalassarche impavida			
Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche melanophris			
Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche salvini			
Salvin's Albatross [64463]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche steadi			
White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Turnix melanogaster			
Black-breasted Button-quail [923]	Vulnerable	Species or species habitat may occur within area	In feature area
FISH			
Epinephelus daemelii			
Black Rockcod, Black Cod, Saddled Rockcod [68449]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Maccullochella ikei			
Clarence River Cod, Eastern Freshwater Cod [26170]	Endangered	Species or species habitat known to occur within area	In buffer area only
Thunnus maccoyii			
Southern Bluefin Tuna [69402]	Conservation Dependent	Species or species habitat likely to occur within area	In buffer area only
FROG			
Litoria olongburensis			
Wallum Sedge Frog [1821]	Vulnerable	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Mixophyes fleayi			
Fleay's Frog [25960]	Endangered	Species or species habitat likely to occur within area	In feature area
Mixophyes iteratus			
Giant Barred Frog, Southern Barred Frog [1944]	Vulnerable	Species or species habitat may occur within area	In feature area
INSECT			
Argynnis hyperbius inconstans			
Australian Fritillary [88056]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
Phyllodes imperialis smithersi			
Pink Underwing Moth [86084]	Endangered	Breeding may occur within area	In buffer area only
MAMMAL			
Chalinolobus dwyeri			
Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Dasyurus maculatus maculatus (SE mainland population)			
Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat known to occur within area	In feature area
Notamacropus parma			
Parma Wallaby [89289]	Vulnerable	Species or species habitat may occur within area	In feature area
Petauroides volans			
Greater Glider (southern and central) [254]	Endangered	Species or species habitat may occur within area	In buffer area only
Petaurus australis australis			
Yellow-bellied Glider (south-eastern) [87600]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)			
Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Endangered	Species or species habitat known to occur within area	In feature area
Potorous tridactylus tridactylus			
Long-nosed Potoroo (northern) [66645]	Vulnerable	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Pseudomys novaehollandiae New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Roosting known to occur within area	In feature area
Xeromys myoides Water Mouse, False Water Rat, Yirrkoo [66]	Vulnerable	Species or species habitat may occur within area	In buffer area only
PLANT			
Acronychia littoralis Scented Acronychia [8582]	Endangered	Species or species habitat known to occur within area	In feature area
Amyema plicatula [81879]	Endangered	Species or species habitat may occur within area	In buffer area only
Arthraxon hispidus Hairy-joint Grass [9338]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Baloghia marmorata Marbled Balogia, Jointed Baloghia [8463]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Bosistoa transversa Three-leaved Bosistoa, Yellow Satinheart [16091]	Vulnerable	Species or species habitat known to occur within area	In feature area
Bulbophyllum globuliforme Miniature Moss-orchid, Hoop Pine Orchid [6649]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Corokia whiteana [17820]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Cryptocarya foetida Stinking Cryptocarya, Stinking Laurel [11976]	Vulnerable	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Cryptostylis hunteriana Leafless Tongue-orchid [19533]	Vulnerable	Species or species habitat may occur within area	In feature area
Cynanchum elegans White-flowered Wax Plant [12533]	Endangered	Species or species habitat likely to occur within area	In feature area
Cyperus semifertilis [21559]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Davidsonia jerseyana Davidson's Plum [67219]	Endangered	Species or species habitat known to occur within area	In feature area
Davidsonia johnsonii Smooth Davidsonia, Smooth Davidson's Plum, Small-leaved Davidson's Plum [67178]	Endangered	Species or species habitat known to occur within area	In feature area
Desmodium acanthocladum Thorny Pea [17972]	Vulnerable	Species or species habitat known to occur within area	In feature area
Diospyros mabacea Red-fruited Ebony, Silky Persimmon, Ebony [18548]	Endangered	Species or species habitat known to occur within area	In buffer area only
Diploglottis campbellii Small-leaved Tamarind [21484]	Endangered	Species or species habitat known to occur within area	In feature area
Elaeocarpus sedentarius Minyon Quandong [83093]	Endangered	Species or species habitat known to occur within area	In buffer area only
Elaeocarpus williamsianus Hairy Quandong [8956]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Endiandra floydii Floyd's Walnut, Crystal Creek Walnut [52955]	Endangered	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Endiandra hayesii Rusty Rose Walnut, Velvet Laurel [13866]	Vulnerable	Species or species habitat known to occur within area	In feature area
Floydia praealta Ball Nut, Possum Nut, Big Nut, Beefwood [15762]	Vulnerable	Species or species habitat known to occur within area	In feature area
Fontainea australis Southern Fontainea [24037]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Gossia fragrantissima Sweet Myrtle, Small-leaved Myrtle [78867]	Endangered	Species or species habitat known to occur within area	In feature area
Hicksbeachia pinnatifolia Monkey Nut, Bopple Nut, Red Bopple, Red Bopple Nut, Red Nut, Beef Nut, Red Apple Nut, Red Boppel Nut, Ivory Silky Oak [21189]	Vulnerable	Species or species habitat known to occur within area	In feature area
Isoglossa eranthemoides Isoglossa [16663]	Endangered	Species or species habitat may occur within area	In buffer area only
Leichhardtia longiloba listed as Marsdenia longiloba Clear Milkvine [91911]	Vulnerable	Species or species habitat known to occur within area	In feature area
Macadamia integrifolia Macadamia Nut, Queensland Nut Tree, Smooth-shelled Macadamia, Bush Nut, Nut Oak [7326]	Vulnerable	Species or species habitat may occur within area	In feature area
Macadamia tetraphylla Rough-shelled Bush Nut, Macadamia Nut, Rough-shelled Macadamia, Rough-leaved Queensland Nut [6581]	Vulnerable	Species or species habitat known to occur within area	In feature area
Ochrosia moorei Southern Ochrosia [11350]	Endangered	Species or species habitat known to occur within area	In feature area
Owenia cepiodora Onionwood, Bog Onion, Onion Cedar [11344]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Ozothamnus vagans Wollumbin Dogwood [56207]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Phaius australis Lesser Swamp-orchid [5872]	Endangered	Species or species habitat likely to occur within area	In feature area
Plectranthus nitidus Nightcap Plectranthus, Silver Plectranthus [55742]	Endangered	Species or species habitat known to occur within area	In buffer area only
Randia moorei Spiny Gardenia [10577]	Endangered	Species or species habitat known to occur within area	In feature area
Rhodamnia rubescens Scrub Turpentine, Brown Malletwood [15763]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Rhodomyrtus psidioides Native Guava [19162]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Sarcochilus fitzgeraldii Ravine Orchid [19131]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Sarcochilus hartmannii Waxy Sarcochilus, Blue Knob Orchid [4124]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Sophora fraseri [8836]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Symplocos baeuerlenii Small-leaved Hazelwood, Shrubby Hazelwood [19010]	Vulnerable	Species or species habitat known to occur within area	In feature area
Syzygium hodgkinsoniae Smooth-bark Rose Apple, Red Lilly Pilly [3539]	Vulnerable	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Syzygium moorei Rose Apple, Coolamon, Robby, Durobby, Watermelon Tree, Coolamon Rose Apple [12284]	Vulnerable	Species or species habitat known to occur within area	In feature area
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Uromyrtus australis Peach Myrtle [8830]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Vincetoxicum woollsii listed as Tylophora woollsii [40080]	Endangered	Species or species habitat known to occur within area	In feature area
REPTILE			
Caretta caretta Loggerhead Turtle [1763]	Endangered	Congregation or aggregation known to occur within area	In buffer area only
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Coeranoscincus reticulatus Three-toed Snake-tooth Skink [59628]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Delma torquata Adorned Delma, Collared Delma [1656]	Vulnerable	Species or species habitat may occur within area	In feature area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area	In buffer area only
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Species or species habitat likely to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Natator depressus](#)			
Flatback Turtle [59257]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
SHARK			
[Sphyrna lewini](#)			
Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat likely to occur within area	In buffer area only
SNAIL			
[Thersites mitchellae](#)			
Mitchell's Rainforest Snail [66774]	Critically Endangered	Species or species habitat likely to occur within area	In feature area

Listed Migratory Species			[Resource Information]
Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			
[Anous stolidus](#)			
Common Noddy [825]		Species or species habitat likely to occur within area	In buffer area only
[Apus pacificus](#)			
Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
[Ardenna grisea](#)			
Sooty Shearwater [82651]		Species or species habitat likely to occur within area	In buffer area only
[Calonectris leucomelas](#)			
Streaked Shearwater [1077]		Species or species habitat known to occur within area	In buffer area only
[Diomedea antipodensis](#)			
Antipodean Albatross [64458]	Vulnerable	Species or species habitat may occur within area	In buffer area only
[Diomedea epomophora](#)			
Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area	In buffer area only
[Diomedea exulans](#)			
Wandering Albatross [89223]	Vulnerable	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat known to occur within area	In buffer area only
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat likely to occur within area	In buffer area only
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In buffer area only
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area	In buffer area only
Thalassarche cauta Shy Albatross [89224]	Endangered	Species or species habitat may occur within area	In buffer area only
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Migratory Marine Species			
Caretta caretta Loggerhead Turtle [1763]	Endangered	Congregation or aggregation known to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Chelonia mydas](#) Green Turtle [1765]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
[Dermochelys coriacea](#) Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area	In buffer area only
[Eretmochelys imbricata](#) Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
[Lamna nasus](#) Porbeagle, Mackerel Shark [83288]		Species or species habitat may occur within area	In buffer area only
[Lepidochelys olivacea](#) Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Species or species habitat likely to occur within area	In buffer area only
[Mobula alfredi as Manta alfredi](#) Reef Manta Ray, Coastal Manta Ray [90033]		Species or species habitat known to occur within area	In buffer area only
[Mobula birostris as Manta birostris](#) Giant Manta Ray [90034]		Species or species habitat may occur within area	In buffer area only
[Natator depressus](#) Flatback Turtle [59257]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Migratory Terrestrial Species			
[Cuculus optatus](#) Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area	In feature area
[Hirundapus caudacutus](#) White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area
[Monarcha melanopsis](#) Black-faced Monarch [609]		Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Motacilla flava](#) Yellow Wagtail [644]		Species or species habitat likely to occur within area	In feature area
[Myiagra cyanoleuca](#) Satin Flycatcher [612]		Species or species habitat known to occur within area	In feature area
[Rhipidura rufifrons](#) Rufous Fantail [592]		Species or species habitat known to occur within area	In feature area
[Symposiachrus trivirgatus as Monarcha trivirgatus](#) Spectacled Monarch [83946]		Species or species habitat known to occur within area	In feature area
Migratory Wetlands Species			
[Actitis hypoleucos](#) Common Sandpiper [59309]		Species or species habitat known to occur within area	In feature area
[Calidris acuminata](#) Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area	In feature area
[Calidris canutus](#) Red Knot, Knot [855]	Endangered	Species or species habitat likely to occur within area	In feature area
[Calidris ferruginea](#) Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
[Calidris melanotos](#) Pectoral Sandpiper [858]		Species or species habitat likely to occur within area	In feature area
[Charadrius leschenaultii](#) Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area	In feature area
[Gallinago hardwickii](#) Latham's Snipe, Japanese Snipe [863]		Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Gallinago megala Swinhoe's Snipe [864]		Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Gallinago stenura Pin-tailed Snipe [841]		Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area	In feature area
Numenius minutus Little Curlew, Little Whimbrel [848]		Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Numenius phaeopus Whimbrel [849]		Foraging, feeding or related behaviour known to occur within area	In buffer area only
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area	In buffer area only
Pluvialis fulva Pacific Golden Plover [25545]		Foraging, feeding or related behaviour known to occur within area	In buffer area only
Tringa brevipes Grey-tailed Tattler [851]		Foraging, feeding or related behaviour known to occur within area	In buffer area only
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat known to occur within area	In buffer area only

Other Matters Protected by the EPBC Act

Commonwealth Lands [Resource Information]

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

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

Listed Marine Species [Resource Information]

Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area	In feature area
Anous stolidus Common Noddy [825]		Species or species habitat likely to occur within area	In buffer area only
Anseranas semipalmata Magpie Goose [978]		Species or species habitat may occur within area overfly marine area	In feature area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
Ardenna grisea as Puffinus griseus Sooty Shearwater [82651]		Species or species habitat likely to occur within area	In buffer area only
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Breeding likely to occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area	In feature area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat likely to occur within area overfly marine area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area overfly marine area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat likely to occur within area overfly marine area	In feature area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat known to occur within area	In buffer area only
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Charadrius ruficapillus Red-capped Plover [881]		Foraging, feeding or related behaviour known to occur within area overfly marine area	In buffer area only
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Diomedea antipodensis gibsoni as Diomedea gibsoni Gibson's Albatross [82270]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Diomedea exulans](#) Wandering Albatross [89223]	Vulnerable	Species or species habitat may occur within area	In buffer area only
[Fregata ariel](#) Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat known to occur within area	In buffer area only
[Fregata minor](#) Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat likely to occur within area	In buffer area only
[Gallinago hardwickii](#) Latham's Snipe, Japanese Snipe [863]		Species or species habitat likely to occur within area overfly marine area	In feature area
[Gallinago megala](#) Swinhoe's Snipe [864]		Foraging, feeding or related behaviour likely to occur within area overfly marine area	In buffer area only
[Gallinago stenura](#) Pin-tailed Snipe [841]		Foraging, feeding or related behaviour likely to occur within area overfly marine area	In buffer area only
[Haliaeetus leucogaster](#) White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area	In feature area
[Himantopus himantopus](#) Pied Stilt, Black-winged Stilt [870]		Foraging, feeding or related behaviour known to occur within area overfly marine area	In buffer area only
[Hirundapus caudacutus](#) White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area overfly marine area	In feature area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In buffer area only
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area overfly marine area	In feature area
Motacilla flava Yellow Wagtail [644]		Species or species habitat likely to occur within area overfly marine area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area overfly marine area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area	In feature area
Numenius minutus Little Curlew, Little Whimbrel [848]		Foraging, feeding or related behaviour likely to occur within area overfly marine area	In buffer area only
Numenius phaeopus Whimbrel [849]		Foraging, feeding or related behaviour known to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Pachyptila turtur](#) Fairy Prion [1066]		Species or species habitat known to occur within area	In buffer area only
[Pandion haliaetus](#) Osprey [952]		Species or species habitat known to occur within area	In buffer area only
[Phaethon lepturus](#) White-tailed Tropicbird [1014]		Species or species habitat may occur within area	In buffer area only
[Pluvialis fulva](#) Pacific Golden Plover [25545]		Foraging, feeding or related behaviour known to occur within area	In buffer area only
[Rhipidura rufifrons](#) Rufous Fantail [592]		Species or species habitat known to occur within area overfly marine area	In feature area
[Rostratula australis as Rostratula benghalensis (sensu lato)](#) Australian Painted Snipe [77037]	Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
[Symposiachrus trivirgatus as Monarcha trivirgatus](#) Spectacled Monarch [83946]		Species or species habitat known to occur within area overfly marine area	In feature area
[Thalassarche cauta](#) Shy Albatross [89224]	Endangered	Species or species habitat may occur within area	In buffer area only
[Thalassarche impavida](#) Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In buffer area only
[Thalassarche melanophris](#) Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Thalassarche salvini](#) Salvin's Albatross [64463]	Vulnerable	Species or species habitat may occur within area	In buffer area only
[Thalassarche steadi](#) White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area	In buffer area only
[Tringa brevipes as Heteroscelus brevipes](#) Grey-tailed Tattler [851]		Foraging, feeding or related behaviour known to occur within area	In buffer area only
[Tringa nebularia](#) Common Greenshank, Greenshank [832]		Species or species habitat known to occur within area overfly marine area	In buffer area only
Reptile			
[Caretta caretta](#) Loggerhead Turtle [1763]	Endangered	Congregation or aggregation known to occur within area	In buffer area only
[Chelonia mydas](#) Green Turtle [1765]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
[Dermochelys coriacea](#) Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area	In buffer area only
[Eretmochelys imbricata](#) Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
[Lepidochelys olivacea](#) Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Species or species habitat likely to occur within area	In buffer area only
[Natator depressus](#) Flatback Turtle [59257]	Vulnerable	Species or species habitat known to occur within area	In buffer area only

Extra Information

State and Territory Reserves [Resource Information]

Protected Area Name	Reserve Type	State	Buffer Status
Brunswick Heads	Nature Reserve	NSW	In buffer area only
Cape Byron	Marine Park	NSW	In buffer area only
Jinangong	Nature Reserve	NSW	In buffer area only
Mount Jerusalem	National Park	NSW	In buffer area only

Regional Forest Agreements [Resource Information]

Note that all areas with completed RFAs have been included.

RFA Name	State	Buffer Status
North East NSW RFA	New South Wales	In feature area

EPBC Act Referrals [Resource Information]

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action				
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area

Bioregional Assessments

SubRegion	BioRegion	Website	Buffer Status
Clarence-Moreton	Clarence-Moreton	BA website	In buffer area only

Caveat

1 PURPOSE

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

The report contains the mapped locations of:

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

2 DISCLAIMER

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

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

3 DATA SOURCES

Threatened ecological communities

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

Threatened, migratory and marine species

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

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions

4 LIMITATIONS

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

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

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

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

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

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

Acknowledgements

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

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

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

Appendix C – Photographs

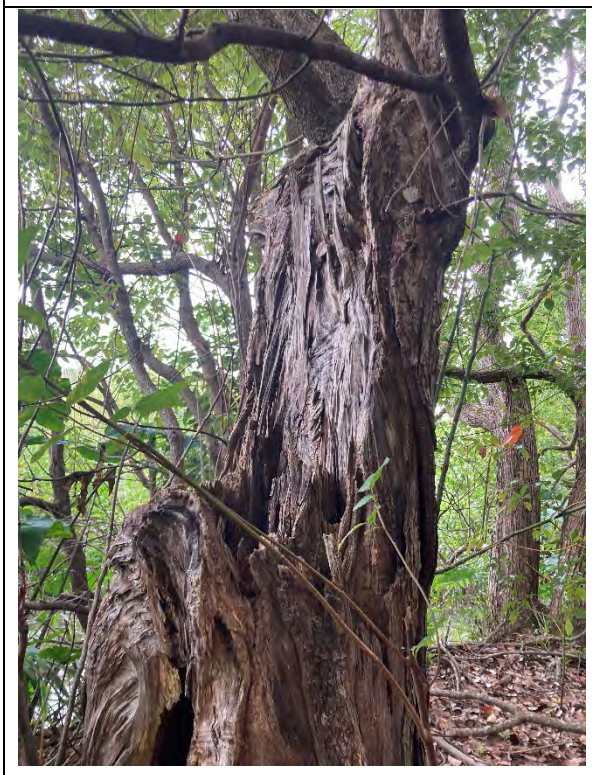
	*Plate 1. Patch of small Camphor Laurels and Sweet Pittosporum to be removed (located in approved turn-around bay).*
	*Plate 2. Camphor Laurel stag to be removed.*

	*Plate 3. Example of large Camphor Laurels to be removed (eastern extent of study area).*
	*Plate 4. Lemon-scented Gums to be removed on approved lots 250-252.*
	*Plate 5. Patch of small Camphor Laurels to be removed on lot 257.*

	*Plate 6. Prickly Paperbark to be removed as located in middle of approved roadway.*
	*Plate 7. Patch of Camphor Laurel, native pioneer species and rainforest regrowth characteristic of vegetation in western extent of study area.*

	*Plate 8. Large Blue Lilly Pilly proposed for removal on approved lot 262.*
	*Plate 9. Example of small hollows in stem of Blue Lilly Pilly. Proposed for removal.*

Appendix D – Flora and Fauna Inventory

Table D. 1 Flora records

Scientific name	Common name
Acacia melanoxylon	Mudgerabah
*Acacia podalyriifolia**	Queensland silver wattle
Acacia disparrima	Coastal Hickory Wattle
Acmena smithii	Common lilly pilly
*Ageratina adenophora**	Crofton Weed
*Ageratum houstonianum**	Billygoat Weed
Alphitonia excelsa	Red Ash
*Ambrosia artemisiifolia**	Annual Ragweed
Araucaria cunninghamii	Hoop Pine
*Axonopus fissifolius**	Narrow-leaved Carpet Grass
*Bambusa sp.**	Bamboo
*Bidens pilosa**	Cobbler's Pegs
Callistemon salignus	White Bottlebrush Tree
Callitris rhomboidea	Port Jackson pine
*Cenchrus clandestinus**	Kikuyu
Centella asiatica	Centella
*Cestrum nocturnum**	Night Jasmine
*Cinnamomum camphora**	Camphor laurel
*Cirsium vulgare**	Spear Thistle
*Colocasia esculenta**	Taro
Commelina cynaea	Scurvy Weed
*Conyza bonariensis**	Fleabane
*Corymbia citriodora**	Lemon-scented gum
*Corymbia torelliana**	Cadaghi
*Cuphea carthagenensis**	Waxweed
*Cyperus brevifolius**	Mullumbimby Couch
Denhamia bilocularis	Orangebark
*Ficus benjamina**	Weeping Fig
Ficus coronata	Sandpaper Fig
Ficus fraseri	Sandpaper Fig
Geitonoplesium cymosum	Scrambling Lily
Glochidion sumatranum	Umbrella Cheese Tree
Guioa semiglauca	Guioa
Homalanthus populifolius	Bleeding Heart
Hypolepis muelleri	Harsh ground fern
*Inga edulis**	Ice-cream Bean Tree
*Lantana camara**	Lantana
*Ligustrum sinense**	Small-leaf privet
Macaranga tanarius	Macaranga

Scientific name	Common name
Maclura cochinchinensis	Cockspur
Mallotus philippensis	Red Kamala
Melaleuca styphelioides	Prickly Paperbark
Melicope elleryana	Pink Euodia
*Nephrolepis cordifolia**	Fishbone fern
Oplismenus aemulus	Basket Grass
*Paspalum dilatatum**	Dallas Grass
*Paspalum mandiocanum**	Broad-leaved Paspalum
*Paspalum urvillei**	Vasey's grass
Persicaria decipiens	Slender Knotweed
Pittosporum undulatum	Sweet Pittosporum
*Psidium guajava**	Guava
Rubus rosifolius	Native Raspberry
*Setaria sphacelate**	South African Pigeon Grass
*Sida rhombifolia**	Paddy's Lucerne
*Solanum mauritianum**	Wild Tobacco
*Spathodea campanulata**	African tulip
*Sphagneticola trilobata**	Singapore daisy
*Syngonium podophyllum**	Goosefoot
Syzygium oleosum	Blue Lilly Pilly

*Introduced species

Table D. 2 Fauna records

Scientific name	Common name	Record
Reptiles		
Intellagama lesueurii	Australian Water Dragon	O
Amphibians		
Limnodynastes peronii	Striped Marsh Frog	C
Birds		
Anthochaera chrysoptera	*Little Wattlebird*	*C*
Corvus orru	*Torresian Crow*	*C*
Geopelia humeralis	*Bar-shouldered Dove*	*C*
Grallina cyanoleuca	*Magpie-lark*	*O*
Gymnorhina tibicen	*Australian Magpie*	*C*
Platycercus eximius	*Eastern Rosella*	*O*
Psophodes olivaceus	*Eastern Whipbird*	*C*
Rhipidura albiscapa	*Grey Fantail*	*C*

C = Call; O = Observed

Appendix E – Potential Occurrence Table

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

Species	BC Act	EPBC Act	Habitat Requirements (DPIE/SPRAT)	Potential Occurrence/Test of Significance
Amphibians				
Pouched Frog	✓		Cool, moist rainforest, including Antarctic Beech, or moist eucalypt forest in mountainous areas, mostly above 800 m but have been found as low as 300m.	No suitable habitat. Test of Significance not required.
Reptiles				
Stephens' Banded Snake	✓		Rainforest and eucalypt forests and rocky areas up to 950 m in altitude.	No suitable habitat. Test of Significance not required.
Invertebrates				
Laced Fritillary	✓	✓	Restricted to south-east Queensland and north-east NSW in open swampy coastal areas where the larval food plant Arrowhead Violet *Viola betonicifolia* occurs.	No habitat impacted. Test of Significance not required.
Mitchell's Rainforest Snail	✓	✓	Remnant areas of lowland subtropical rainforest and swamp forest on alluvial soils, found amongst leaf litter on the forest floor.	No habitat impacted. Test of Significance not required.
Birds				
Albert's Lyrebird	✓		Mainly occur in the wettest rainforests or wet sclerophyll forests with a wet understorey, often of rainforest plants.	No suitable habitat. Test of Significance not required.
Australasian Bittern	✓	✓	Eucalypt woodland, open forest, swamp woodlands and timber along watercourses.	No habitat impacted. Test of Significance not required.
Barking Owl	✓		Eucalypt woodland, open forest, swamp woodlands and timber along watercourses.	No habitat impacted. Test of Significance not required.
Barred Cuckoo-shrike	✓		Rainforest, eucalypt woodlands, swamp woodlands and timber along watercourses.	No suitable habitat. Test of Significance not required.
Black Bittern	✓		Dense vegetation fringing and in streams, swamps, tidal creeks and mudflats, particularly amongst swamp sheoaks and mangroves.	No suitable habitat. Test of Significance not required.
Black Falcon	✓		Widely, but sparsely, distributed in New South Wales, mostly occurring in inland regions. In NSW there is assumed to be a single population that is continuous with a broader continental population	No habitat impacted. Test of Significance not required.
Black-necked Stork	✓		Swamps, mangroves, mudflats, dry floodplains.	No suitable habitat. Test of Significance not required.

Species	BC Act	EPBC Act	Habitat Requirements (DPIE/SPRAT)	Potential Occurrence/Test of Significance
Brown Treecreeper (eastern subspecies)	✓		Eucalypt forests and woodlands of inland plains and slopes of the Great Dividing Range. It is less commonly found on coastal plains and ranges.	No suitable habitat. Test of Significance not required.
Collared Kingfisher	✓		Restricted to mangroves and other estuarine habitats, occur about mouths of larger coastal rivers.	No suitable habitat (mangroves are sparse and at tidal limits). Test of Significance not required.
Comb-crested Jacana	✓		Among vegetation floating on slow-moving rivers and permanent lagoons, swamps, lakes and dams.	No suitable habitat. Test of Significance not required.
Dusky Woodswallow	✓		Primarily inhabit dry, open eucalypt forests and woodlands, including mallee associations, with an open or sparse understorey of eucalypt saplings, acacias and other shrubs, and ground-cover of grasses or sedges and fallen woody debris.	No suitable habitat. Test of Significance not required.
Eastern Osprey	✓		Littoral and coastal habitats and terrestrial wetlands of tropical and temperate Australia and offshore islands.	No suitable habitat. Test of Significance not required.
Freckled Duck	✓		Permanent freshwater swamps and creeks with heavy growth of Cumbungi, Lignum or Tea-tree.	No suitable habitat. Test of Significance not required.
Glossy Black-Cockatoo	✓		**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.**	**Potential foraging habitat occurs. Test of Significance completed.**
Little Eagle	✓		Occupies open eucalypt forest, woodland or open woodland. Sheoak or Acacia woodlands and riparian woodlands of interior NSW are also used.	No suitable habitat. Test of Significance not required.
Mangrove Honeyeater	✓		Mangrove forest, also near coastal forests and woodlands including casuarina and paperbark swamps.	No suitable habitat. Test of Significance not required.
Marbled Frogmouth	✓		Subtropical rainforest with deep, wet sheltered gullies.	No suitable habitat. Test of Significance not required.
Masked Owl	✓		**Dry eucalypt forest and woodlands.**	**Potential foraging habitat occurs. Test of Significance completed.**
Pale-vented Bush-hen	✓		Variety of coastal wetlands from wetlands, mangroves, lagoons and swamps to river margins and creeks running through rainforest.	No suitable habitat. Test of Significance not required.
Rose-crowned Fruit-Dove	✓		**Subtropical and dry rainforest, moist eucalypt forest and swamp forest.**	**Potential foraging habitat occurs. Test of Significance completed.**

Species	BC Act	EPBC Act	Habitat Requirements (DPIE/SPRAT)	Potential Occurrence/Test of Significance
Scarlet Robin	✓		Dry eucalypt forests and woodlands. The understorey is usually open and grassy with few scattered shrubs. This species lives in both mature and regrowth vegetation. It occasionally occurs in mallee or wet forest communities, or in wetlands and tea-tree swamps.	No suitable habitat. Test of Significance not required.
Sooty Owl	✓		Subtropical and dry rainforest, moist eucalypt forest and swamp forest.	No suitable habitat. Test of Significance not required.
Spotted Harrier	✓		Grassy open woodland, inland riparian woodland, grassland and shrub steppe.	No suitable habitat. Test of Significance not required.
Superb Fruit-Dove	✓		**Subtropical and dry rainforest, moist eucalypt forest and swamp forest.**	**Potential foraging habitat occurs. Test of Significance completed.**
White-bellied Sea-Eagle	✓		Coastal habitats and around terrestrial wetlands characterised by the presence of large areas of open water (larger rivers, swamps, lakes, ocean).	No suitable habitat. Test of Significance not required.
White-eared Monarch	✓		Coastal rainforest, swamp forest and wet eucalypt forest, prefers edges where trees frequently covered with vines.	No suitable habitat. Test of Significance not required.
White-throated Needletail		✓	Occur over most types of habitat; recorded most often above wooded areas, including open forest and rainforest, and may also fly between trees or in clearings.	No habitat affected (aerial foraging); assessed under EPBC Act.
Wompoo Fruit-Dove	✓		**Rainforests, low-elevation moist eucalypt forest and Brush Box forests.**	**No suitable habitat. Test of Significance not required.**
Mammals				
Eastern Tube-nosed Bat	✓		**Favours streamside habitats within coastal subtropical rainforest and moist eucalypt forests with a well-developed rainforest understorey.**	**Potential foraging habitat occurs. Test of Significance completed.**
Common Planigale	✓		Rainforest, eucalypt forest, heathland, marshland, grassland and rocky areas with surface cover close to water.	No suitable habitat. Test of Significance not required.
Eastern Long-eared Bat	✓		**Lowland subtropical rainforest and wet and swamp eucalypt forest, extending into adjacent moist eucalypt forest. Coastal rainforest and patches of coastal scrub are particularly favoured.**	**Potential foraging habitat occurs. Test of Significance completed.**
Grey-headed Flying-fox	✓	✓	**Subtropical and temperate rainforests, tall sclerophyll forests and woodlands, heaths and swamps as well as urban gardens and cultivated fruit crops.**	**Potential foraging habitat occurs. Test of Significance completed.**

Species	BC Act	EPBC Act	Habitat Requirements (DPIE/SPRAT)	Potential Occurrence/Test of Significance
Koala	✓	✓	**Appropriate food trees in forests and woodlands, and treed urban areas.**	**Potential habitat. Test of Significance required**
Large Bent-winged Bat	✓		**Forest or woodland, roost in caves, old mines and stormwater channels.**	**Potential foraging habitat occurs. Test of Significance completed.**
Little Bent-winged Bat	✓		**Moist eucalypt forest, rainforest and dense coastal scrub.**	**Potential foraging habitat occurs. Test of Significance completed.**
New Holland Mouse		✓	Inhabits open heathlands, woodlands and forests with a heathland understorey and vegetated sand dunes	No habitat affected; assessed under EPBC Act.
Southern Myotis	✓		Bodies of water, rainforest streams, large lakes, reservoirs.	No suitable habitat. Test of Significance not required.
Spotted-tailed Quoll	✓	✓	Dry and moist eucalypt forests and rainforests, fallen hollow logs, large rocky outcrops.	No suitable habitat. Test of Significance not required.
Squirrel Glider	✓		Blackbutt, bloodwood and ironbark eucalypt forest with heath understorey in coastal areas, and box-ironbark woodlands and River Red Gum forest inland.	No suitable habitat. Test of Significance not required.

***Migratory/pelagic and marine species identified in the search results are not assessed as no suitable habitat occurs at the site**

Appendix F – Tests of Significance (BC Act)

Based on the field results and potential occurrence assessment, tests of significance ('five-part tests') under Section 7.3 of the BC Act have been completed as follows:

Fauna:

Forest Birds

- Glossy Black Cockatoo
- Masked Owl
- Rose-crowned Fruit-Dove
- Superb Fruit Dove
- Wompoo Fruit Dove

Nectar-feeding Bats

- Eastern Tube-nosed Bat
- Grey-headed Flying Fox

Microbats

- Eastern Long-eared Bat
- Large Bent-winged Bat
- Little Bent-winged Bat

Mammals

- Koala

Fauna species profiles

Wompoo/ Rose-crowned/ Superb Fruit-dove	Vulnerable – BC Act
Habitat description/ life cycle components	Fruit-doves occupy similar habitat niches in moist sclerophyll and rainforests, predominantly along the east coast of NSW. They feed on ripe fruits from a diverse range of fruit bearing species including figs, palms, trees, shrubs and vines. These birds are thought to be effective medium to long distance vectors for seed dispersal due their locally nomadic behaviour. Breeding takes place from spring to summer within a stick nest where typically a single egg is laid. Both parent birds take turns to incubate the egg.
Threats	• Clearing and fragmentation of low to mid-elevation rainforest due to coastal development and grazing. • Logging and roading in moist eucalypt forest with well-developed rainforest understorey. • Burning, which reduces remnant rainforest habitat patches. • Infestation of rainforest habitat by invasive weeds. • Removal of Camphor Laurel food source without appropriate mitigation measures.

Masked Owl	Vulnerable – BC Act
Habitat description/ life cycle components	Masked Owls live in dry eucalypt forests and woodlands from sea level to 1100 m. While forest owls, they often hunts along the edges of forests, including roadsides. The typical diet consists of tree-dwelling and ground mammals, especially rats. Pairs have a large home-range of 500 to 1000 hectares. They roosts and breed in moist eucalypt forested gullies, using large tree hollows or sometimes caves for nesting.
Threats	• Loss of mature hollow-bearing trees and changes to forest and woodland structure, which leads to fewer such trees in the future. • Clearing of habitat for grazing, agriculture, forestry or other development. • A combination of grazing and regular burning is a threat, through the effects on the quality of ground cover for mammal prey, particularly in open, grassy forests. • Secondary poisoning from rodenticides. • Vehicle strike.

Glossy Black-Cockatoo	Vulnerable – BC Act/ EPBC Act
Habitat description/ life cycle components	Inhabits open forest and woodlands of the coast and the Great Dividing Range where stands of sheoak occur. Black Sheoak (*Allocasuarina littoralis*) and Forest Sheoak (*A. torulosa*) are important foods. Inland populations feed on a wide range of sheoaks, including Drooping Sheoak, *Allocasuaraina diminuta*, and *A. gymnathera*. Belah is also utilised and may be a critical food source for some populations. Feeds almost exclusively on the seeds of several species of she-oak (Casuarina and Allocasuarina species), shredding the cones with the massive bill. Dependent on large hollow-bearing eucalypts for nest sites. A single egg is laid between March and May.
Threats	• Reduction of suitable habitat through clearing for development. • Decline of hollow bearing trees over time due to land management activities. • Excessively frequent fire which eliminates sheoaks from areas, prevents the development of mature sheoak stands, and destroys nest trees. • Firewood collection resulting in loss of hollow-bearing trees, reduced recruitment of hollow-bearing trees, and disturbance of breeding attempts. • Decline in extent and productivity of sheoak foraging habitat due to feral herbivores. • Reduced access to surface water in close proximity to foraging and nesting habitat. • Limited information on the location of nesting aggregations and the distribution of high quality breeding habitat. • Disturbance from coal seam gas and open cut coal mining causing loss of foraging and breeding habitat as well as disturbing reproductive attempts. • Decline in extent and productivity of sheoak foraging habitat caused by moisture stress due to climate change. • Forestry activity resulting in loss of hollow-bearing trees, reduced recruitment of hollow-bearing trees, degradation of foraging habitat, and disturbance of breeding attempts. • Degradation of foraging habitat and reduced regeneration of sheoak stands due to grazing by domestic stock. • Loss of foraging habitat due to slashing/underscrubbing. • Change in the spatial and temporal distribution of resources due to global warming. • Illegal bird smuggling and egg-collecting. • Habitat infestation by weeds such as African boxthorn, Gazania, buffel grass and other invasive grasses.

Eastern Tube-nosed Bat	Vulnerable – BC Act
Habitat description/ life cycle components	Favours streamside habitats within coastal subtropical rainforest and moist eucalypt forests with a well-developed rainforest understorey. They feed mainly on fruit and nectar from trees in the rainforest canopy and sometimes come close to human settlement to visit flowering or fruiting trees.
Threats	• Clearing and fragmentation of rainforest and wet eucalypt forest for agriculture and residential development. • Habitat fragmentation and degradation from past land clearing for agriculture, forestry, and urban development reducing habitat availability and condition and food and water availability • Degradation from weeds including lantana and vines suppressing regeneration of food trees. • Destruction of Black Bean, an important food tree, because the seeds are toxic to cattle. • Predation by cats particularly while foraging on low hanging fruit and flowers. • Disturbance due to agricultural development, individuals getting caught on barbed wire fences near feeding and drinking areas (e.g. near orchards and dams). • Alteration of habitat from climate change including structure, floristic composition, resource availability (water and food trees and palms), rainforest drying including gullies and streams.

Eastern Long-eared Bat	Vulnerable – BC Act
Habitat description/ life cycle components	Occurs in lowland subtropical rainforest and wet and swamp eucalypt forest, extending into adjacent moist eucalypt forest. Coastal rainforest and patches of coastal scrub are particularly favoured. Roosts in tree hollows, the hanging foliage of palms, in dense clumps of foliage of rainforest trees, under bark and in shallow depressions on trunks and branches, among epiphytes, in the roots of strangler figs, among dead fronds of tree ferns and less often in buildings.
Threats	• Development pressures in or near swamp, wet sclerophyll and rainforests resulting in habitat degradation, alterations to moisture regimes, and edge effects, and loss of connectivity • Loss of hollow-bearing trees and stands of palms and rainforest trees used for roosting and maternity sites. • Invasion of habitat by weeds, particularly by Bitou Bush on the coast. • High frequency fire. • Climate change resulting in degradation of habitat from forest drying and increasing likelihood of fire. • Limited known sites for the species reducing NSW population viability. • Predation from cats. • Vehicle strike. • Light pollution in and near habitat areas impacting species behaviour.

Koala	Vulnerable – BC Act; Endangered – EPBC Act
Habitat description/ life cycle components	The Koala has a fragmented distribution throughout eastern Australia from north-east Queensland to the Eyre Peninsula in South Australia. In New South Wales it mainly occurs on the central and north coasts, with populations on the western side of the Great Dividing Range. Habitat consists of eucalypt woodlands and forests, in which the Koala feeds on more than 70 eucalypt species and 30 non-eucalypt species. Preferred browse species are differ across regions. Koalas are inactive for most of the day and do most of their feeding and moving during the night. Although predominantly arboreal, Koalas will descend and traverse open ground to move between trees. Home range size varies with quality of habitat, ranging from less than two (2) hectares to several hundred hectares in size. Generally solitary, the Koala has complex social hierarchies based on a dominant male with a territory that overlaps that of several females, with sub-ordinate males on the periphery. Females breed at two years of age and produce one young per year. In Byron LGA, preferred food trees include Forest Red Gum (*Eucalyptus tereticornis*), Swamp Mahogany (*E. robusta*) and Tallowwood (*E. microcorys*).
Threats	• Loss, modification and fragmentation of habitat. • Predation by feral and domestic dogs. • Intense fires that scorch or kill the tree canopy. • Road-kills. • Human-induced climate change, especially drought.

Grey-headed Flying-fox	Vulnerable – BC Act
Habitat description/ life cycle components	Grey-headed Flying-foxes (GHFF) forage within subtropical and temperate rainforests, tall sclerophyll forests and woodlands, heaths and swamps as well as urban gardens and cultivated fruit crops. GHFF feed on the nectar and pollen of native trees, in particular Eucalyptus, Melaleuca and Banksia, and fruits of rainforest trees and vines, as well as from cultivated gardens and orchards. Roosting camps are generally located within 20 km of a regular food source and are commonly found in gullies, close to water, in vegetation with a dense canopy. Individual camps may have tens of thousands of animals and are used for mating, and for giving birth and rearing young. Annual mating commences in January and conception occurs in April or May; a single young is born in October or November. Site fidelity to camps is high; some camps have been used for over a century. GHFF may travel up to 50 km from the camp to forage; commuting distances are more often <20 km.
Threats	• Clearing of woodlands for agriculture. • Loss of roosting and foraging sites. • Electrocution on powerlines, entanglement in netting and on barbed-wire. • Heat stress. • Conflict with humans.

Bent-winged Bats	Vulnerable – BC Act
Habitat description/ life cycle components	Bent-winged bats occur in moist eucalypt forest, rainforest, vine thicket, wet and dry sclerophyll forest, Melaleuca swamps, dense coastal forests and banksia scrub. Roosting occurs in caves, tunnels, tree hollows, abandoned mines, stormwater drains, culverts, bridges and sometimes buildings during the day, and at night forage for small insects beneath the canopy of densely vegetated habitats. Little Bentwinged-bats often share roosting sites with the Large Bent-winged Bat and, in winter, the two species may form mixed clusters. In NSW, the largest maternity colony is in close association with a large maternity colony of Large Bent-winged Bats and appears to depend on the large colony to provide the high temperatures needed to rear its young. Maternity colonies form in spring and birthing occurs in early summer. Males and juveniles disperse in summer. Only five nursery sites/ maternity colonies are known in Australia.
Threats	• Disturbance of colonies, especially in nursery or hibernating caves. • Destruction of caves that provide seasonal or potential roosting sites. • Changes to habitat, especially surrounding maternity/ nursery caves and winter roosts. • Pesticides on insects and in water consumed by bats bio accumulates, resulting in poisoning of individuals. • Predation from foxes, particularly around maternity caves, winter roosts and roosts within culverts, tunnels and under bridges. • Predation from feral cats, particularly around maternity caves, winter roosts and roosts within culverts, tunnels and under bridges. • Introduction of exotic pathogens such as the White-nosed fungus. • Hazard reduction and wildfire fires during the breeding season. • Large scale wildfire or hazard reduction can impact on foraging resources. • Poor knowledge of reproductive success and population dynamics.

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,

- Fruit-doves (Wompoo/ Rose-crowned/ Superb Fruit-dove): works would result in minor loss of foraging habitat (Camphor Laurel, Blue Lilly Pilly) which would have a negligible effect on foraging abilities for the subject species with large areas of mature rainforest retained elsewhere within the broader site. No roost habitat would be affected. On this basis it would be highly unlikely that an adverse effect on the life cycle of the subject species would occur such that a viable local population of the species is likely to be placed at risk of extinction.
- Masked Owl: works would result in minor loss of foraging habitat (disturbed woody vegetation and debris) which would have a negligible effect on foraging abilities for the subject species with large areas of mature forest retained elsewhere within the broader site. No roost habitat would be affected. On this basis it would be highly unlikely that an adverse effect on the life cycle of the subject species would occur such that a viable local population of the species is likely to be placed at risk of extinction.
- Nectar-feeding Bats (Eastern Tube-nosed Bat, Grey-headed Flying-fox):): works would result in minor loss of foraging habitat (Camphor Laurel, Lemon-scented Gum, Blue Lilly Pilly) which would have a negligible effect on foraging abilities for the subject species with large areas of mature rainforest and woodlands retained elsewhere within the broader site. No roost habitat would be affected. On this basis it would be highly unlikely that an adverse effect on the life cycle of either of the subject species would occur such that a viable local population of the species is likely to be placed at risk of extinction.

- Microbats (Eastern Long-eared Bat, Large & Little Bent-winged Bat): works would result in minor disturbance which would have a negligible effect on insect prey or foraging abilities and no roost habitat would be affected. On this basis it would be highly unlikely that an adverse effect on the life cycle of either of the subject species would occur such that a viable local population of the species is likely to be placed at risk of extinction.
- Mammals (Koala): no loss of Koala habitat or preferred feed trees would occur, with impacts limited to minor short term disturbance in proximity to potential foraging areas (adjacent mapped Koala Habitat as per the BCCKPoM). On this basis it would be highly unlikely that an adverse effect on the life cycle of Koalas would occur such that a viable local population of the species is likely to be 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,

No TECs occur.

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

The proposed works would result in the loss of approximately 23 native trees (including one hollow bearing tree and one stag) from within a highly degraded and modified area. Other habitat loss is limited to patches of Camphor Laurel and exotic eucalypt species which may provide potential opportunistic foraging habitat. As most of the subject species are highly mobile and forage widely, habitat loss is not significant in a local context; no habitat of significance would be removed. The proposed works would be unlikely to significantly affect foraging or breeding resources for any of the subject species.

(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

The proposed works would remove habitat which is already isolated, fragmented and disturbed. The works would not result in any barriers to dispersal for any of the subject species.

(iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality,

The proposed works would result in the loss of approximately 23 native trees (one hollow bearing tree and one stag) from within highly degraded and modified communities. No barriers to dispersal for any of the subject species would be created due to the proposal. The habitat to be removed (highly disturbed patches of Camphor Laurel, landscape escapees and immature regrowth rainforest species) is unlikely to be of any significant importance to the subject species.

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 Byron 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 threat may be listed as a key threatening process (KTP) under the BC Act if it adversely affects threatened species or ecological communities OR could cause species or ecological communities to become threatened. KTPs listed under the BC Act are shown in **Table F.1**, with an indication whether the proposal may contribute to any KTP.

Table F.1 Key Threatening Processes

Key Threatening Processes	Applicable to proposal
Aggressive exclusion of birds by noisy miners (*Manorina melanocephala*)	N
Alteration of habitat following subsidence due to longwall mining	N
Alteration to the natural flow regimes of rivers and streams and their floodplains and wetlands	N
Anthropogenic climate change	N
Bushrock removal	N
Clearing of native vegetation	**Y**
Competition and grazing by the feral European Rabbit (*Oryctolagus cuniculus*)	N
Competition and habitat degradation by feral goats (*Capra hircus*)	N
Competition from feral honeybees (*Apis mellifera*)	N
Death or injury to marine species following capture in shark control programs on ocean beaches	N
Entanglement in or ingestion of anthropogenic debris in marine and estuarine environments	N
Forest eucalypt dieback associated with over-abundant psyllids and bell miners	N
Habitat degradation and loss by Feral Horses, *Equus caballus*	N
Herbivory and environmental degradation caused by feral deer	N
High frequency fire resulting in the disruption of life cycle processes in plants and animals and loss of vegetation structure and composition	N
Importation of red imported fire ants (*Solenopsis invicta*)	N
Infection by Psittacine circoviral (beak and feather) disease affecting endangered psittacine species and populations	N
Infection of frogs by amphibian chytrid causing the disease chytridiomycosis	N
Infection of native plants by *Phytophthora cinnamomi*	N
Introduction and Establishment of Exotic Rust Fungi of the order Pucciniales pathogenic on plants of the family Myrtaceae	N
Introduction of the large earth bumblebee (*Bombus terrestris*)	N
Invasion and establishment of exotic vines and scramblers	N
Invasion and establishment of Scotch Broom (*Cytisus scoparius*)	N
Invasion and establishment of the Cane Toad (*Bufo marinus*)	N
Invasion, establishment and spread of Lantana (*Lantana camara*)	N
Invasion of native plant communities by African Olive (*Olea europaea L. subsp. cuspidata*)	N
Invasion of native plant communities by *Chrysanthemoides monilifera*	N
Invasion of native plant communities by exotic perennial grasses	N
Invasion of the Yellow Crazy Ant (*Anoplolepis gracilipes*) into NSW	N
Loss and degradation of native plant and animal habitat by invasion of escaped garden	N

Key Threatening Processes	Applicable to proposal
plants, including aquatic plants	
Loss of hollow-bearing trees	**Y**
Loss or degradation (or both) of sites used for hill-topping by butterflies	N
Predation and hybridisation by feral dogs (*Canis lupus familiaris*)	N
Predation by the European Red Fox (*Vulpes vulpes*)	N
Predation by the feral cat (*Felis catus*)	N
Predation by *Gambusia holbrooki* (Plague Minnow or Mosquito Fish)	N
Predation by the Ship Rat (*Rattus rattus*) on Lord Howe Island	N
Predation, habitat degradation, competition and disease transmission by feral pigs (*Sus scrofa*)	N
Removal of dead wood and dead trees	**Y**

The proposal is characteristic of the following KTPs:

- Clearing of native vegetation: minor loss of native regrowth interspersed within patches of exotic vegetation. The final determination for this KTP defines clearing as: *"…the destruction of a sufficient proportion of one or more strata (layers) within a stand or stands of native vegetation so as to result in the loss, or long term modification, of the structure, composition and ecological function of stand or stands. The definition of clearing does not preclude management activities to control exotic species, or Australian species growing outside their natural geographic range".* The proposal would not result in the loss, or long term modification, of the structure, composition and ecological function of any stands of native vegetation within the broader site.
- Loss of hollow-bearing trees: one isolated hollow-bearing tree (Blue Lilly Pilly) would be lost as a part of the works. This represents a minor loss of habitat for a range of highly mobile species; substantial areas of high-quality habitat are provided elsewhere on the broader site.
- Removal of dead wood and dead trees: One stag (dead Camphor Laurel trunk), along with minor loss of dead branches and woody debris may be incurred by the works. This habitat is not of importance to any of the subject species, with substantial areas of suitable habitat occurring within the broader site.

Conclusion

The proposed works would not result in any significant impact to any of the subject threatened species, therefore a BDAR is not required.

Bangalow

25 Leslie Street
Bangalow NSW 2479
P 02 6687 1550
info@awconsult.com.au

www.awconsult.com.au