

BLACKWOOD ECOLOGICAL SERVICES



Biodiversity Assessment

1 Phillip Street
Goonellabah



A Report to Social Futures
March 2024

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1 INTRODUCTION

1.1 Background

Blackwood Ecological Services has been engaged by Social Futures to complete a Biodiversity assessment for a proposed unit development of land 1 Phillip Street and 5-7 McDermott Avenue, Goonellabah.

APPENDIX A shows the proposed development of the site.

1.2 Subject site

The Subject site refers to the area directly affected by the proposal. The Subject site for this study consists of land within Lots 69, 70 and 71 DP230448. **FIGURE 1** shows the location of the site. **FIGURE 2** shows vegetation on the Subject site.

1.3 Study area

The Study area refers to the Subject site together with any additional areas which are likely to be affected by the proposal, either directly or indirectly. The Study area includes areas of vegetation proximate to the site. The site is located within the residential area of Goonellabah with native vegetation in the surrounding Study area generally limited to landscape plantings and isolated native trees.

1.4 Proposed development

The proposed development is shown in **APPENDIX A** and includes 18 units with common areas, car parking and associated infrastructure.

2 FLORA

2.1 Introduction

This section discusses the methods used in the vegetation assessment and presents the results of the assessment. Relevant databases and reports were reviewed to identify records of locally occurring Threatened and Rare plant species, populations and communities. A site assessment was completed on the 24th of August 2023.

The objectives of the site assessment were:

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

2.2 Database searches

2.2.1 NPWS Database search

A search of the NPWS Database revealed 27 Threatened flora species within 5km of the Subject site. These species are shown in **TABLE 1**.

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

Botanical name	Common name	NSW Status
<i>Arthraxon hispidus</i>	Hairy Jointgrass	V
<i>Clematis fawcettii</i>	Northern Clematis	V
<i>Coatesia paniculata</i>	Axe-Breaker	E1
<i>Corchorus cunninghamii</i>	Native Jute	E1
<i>Desmodium acanthocladum</i>	Thorny Pea	V
<i>Doryanthes palmeri</i>	Giant Spear Lily	V
<i>Endiandra hayesii</i>	Rusty Rose Walnut	V
<i>Floydia praealta</i>	Ball Nut	V
<i>Gossia fragrantissima</i>	Sweet Myrtle	E1
<i>Hicksbeachia pinnatifolia</i>	Red Boppel Nut	V
<i>Macadamia tetraphylla</i>	Rough-shelled Bush Nut	V
<i>Marsdenia longiloba</i>	Slender Marsdenia	E1
<i>Myrsine richmondensis</i>	Ripple-leaf Muttonwood	E1
<i>Oberonia complanata</i>	Yellow-flowered King of the Fairies	E1
<i>Ochrosia moorei</i>	Southern Ochrosia	E1
<i>Owenia cepiodora</i>	Onion Cedar	V
<i>Randia moorei</i>	Spiny Gardenia	E1
<i>Rhodamnia rubescens</i>	Scrub Turpentine	E4A
<i>Rhodomyrtus psidioides</i>	Native Guava	E4A
<i>Rhynchosia acuminatissima</i>	Pointed Trefoil	V
<i>Sarcochilus dilatatus</i>	Brown Butterfly Orchid	E1
<i>Senna acclinis</i>	Rainforest Cassia	E1
<i>Syzygium hodgkinsoniae</i>	Red Lilly Pilly	V
<i>Thesium australe</i>	Austral Toadflax	V

Botanical name	Common name	NSW Status
<i>Tinospora smilacina</i>	Tinospora Vine	E1
<i>Tinospora tinoporoides</i>	Arrow-head Vine	V
<i>Triflorensia cameronii</i>	Cameron's Tarenna	E1

KEY

E1	Endangered
E4A	Critically endangered
V	Vulnerable

2.2.2 Commonwealth EPBC Act (1999) Database search

A search of the Commonwealth EPBC Act (1999) Database revealed potential suitable habitat for a number of Threatened flora species within 5km of the Subject site. These species are shown in **TABLE 2**. The Commonwealth EPBC Act Protected Matters Report is included in full in **APPENDIX B**.

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

Botanical name	Common name	Comm Status
<i>Acronychia littoralis</i>	Scented Acronychia	E
<i>Arthraxon hispidus</i>	Hairy Jointgrass	V
<i>Baloghia marmorata</i>	Jointed Baloghia	V
<i>Bulbophyllum globuliforme</i>	Miniature moss-orchid	V
<i>Clematis fawcettii</i>	Stream Clematis	V
<i>Corchorus cunninghamii</i>	Native jute	E
<i>Cryptocarya foetida</i>	Stinking Cryptocarya	V
<i>Cryptostylis hunteriana</i>	Leafless tongue-orchid	V
<i>Cynanchum elegans</i>	White-flowered wax plant	E
<i>Desmodium acanthocladum</i>	Thorny pea	V
<i>Diploglottis campbellii</i>	Small leaved Tamarind	E
<i>Endiandra floydii</i>	Floyd's walnut	E
<i>Floydia praealta</i>	Ball Nut	V
<i>Gossia fragrantissima</i>	Sweet myrtle	E
<i>Hicksbeachia pinnatifolia</i>	Red Boppel Nut	V
<i>Macadamia integrifolia</i>	Macadamia nut	V
<i>Macadamia tetraphylla</i>	Rough-shelled Bush Nut	V
<i>Marsdenia longiloba</i>	Slender Marsdenia	V
<i>Myrsine richmondensis</i>	Lismore Muttonwood	E
<i>Ochrosia moorei</i>	Southern Ochrosia	E
<i>Owenia cepiodora</i>	Onion Cedar	V
<i>Persicaria elatior</i>	Tall knotweed	V
<i>Phaius australis</i>	Lesser swamp-orchid	E
<i>Plectranthus nitidus</i>	Nightcap Plectranthus	E
<i>Randia moorei</i>	Spiny gardenia	E
<i>Rhodamnia rubescens</i>	Scrub Turpentine	CE
<i>Rhodomyrtus psidioides</i>	Native Guava	CE
<i>Sophora fraseri</i>	Brush Sophora	V
<i>Syzygium hodgkinsoniae</i>	Red Lilly Pilly	V
<i>Thesium australe</i>	Austral toadflax	V
<i>Tylophora woolsii</i>	Cryptic forest twiner	E

KEY

CE	Critically Endangered
E	Endangered

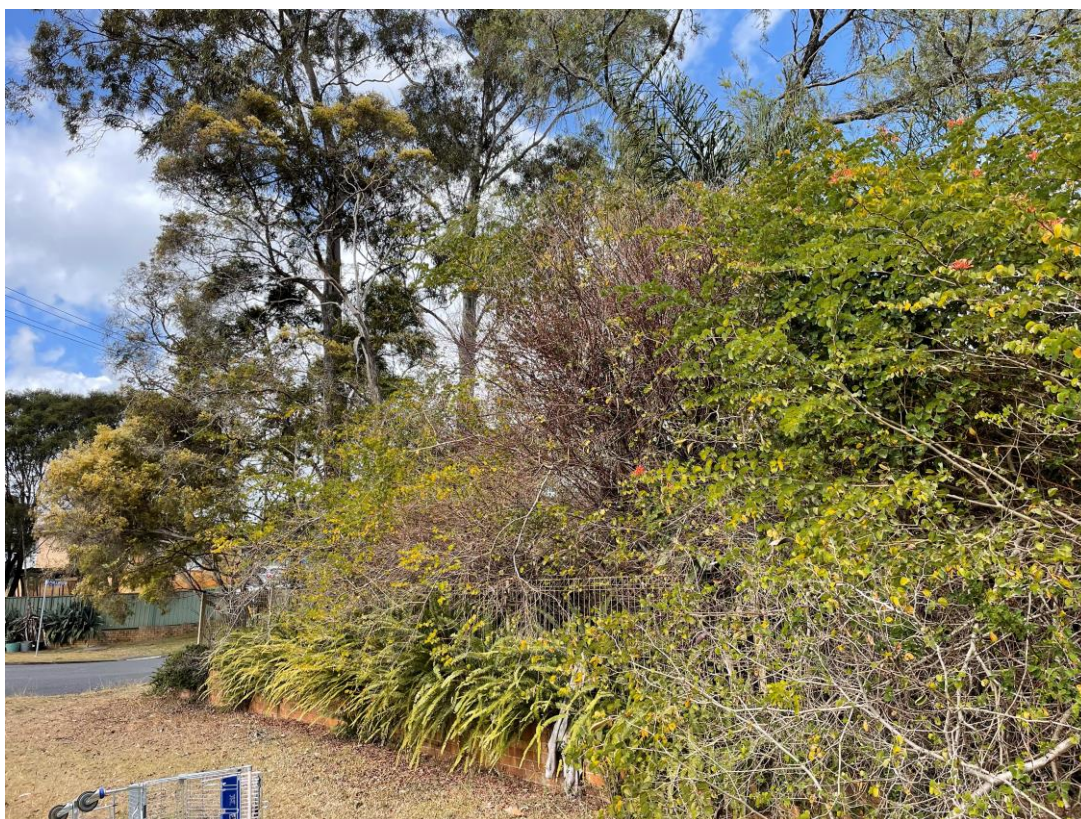
V Vulnerable

2.3 Site assessment

2.3.1 Existing vegetation

This section discusses individual trees and vegetation communities located within the Subject site and the ecological significance of these communities. A flora species list is included as **APPENDIX C**. Site vegetation is mapped in **FIGURE 2**.

The Subject site is located on the south-western side of the intersection of Phillip Street and McDermott Avenue in Goonellabah. The site currently includes two unit blocks with a parking area and other infrastructure.



Vegetation along the McDermott Avenue frontage

The site currently includes a mix of native and exotic planted vegetation typical of the locality. Tree species on the site and adjacent nature strips include Lemon-scented gum, Weeping bottlebrush, Golden rain tree, Prickly-leaved tea-tree, Mango, Jacaranda and African tulip tree.

Shrubs and groundcovers include Lilly pillys, Bauhinia, Weeping fig, Fishbone fern, Chinese celtis, Paw paw, Magnolia, Agapanthus and Hibiscus.



Vegetation along the Phillip Street frontage

Several weed species were recorded including Winter senna, English ivy, Fishbone fern, Cocos palm, Lantana, Ochna, Sow thistle, Cobblers pegs and Carpet grass.

The site is located on the Wollongbar soil landscape (Morand 1994). This soil landscape occurs on hills of lower relief on the Lismore Basalts. It is underlain by Lamington Volcanics.

2.3.2 Significant species and Threatened Ecological Communities

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

Vegetation communities on the Subject site were compared with descriptions of vegetation communities listed as Threatened Ecological Communities under the NSW Biodiversity Conservation Act (2016) and the EPBC Act (1999). Vegetation on the Subject site is not considered to be part of any Threatened Ecological Community.

The value of site vegetation for native fauna species is discussed in the following section.

3 FAUNA

3.1 Introduction

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

The fauna assessment consisted of:

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

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

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

3.2 Database searches

3.2.1 NPWS Database search

A search of the NPWS Database revealed records of 34 Threatened fauna species within 5km of the Subject site. These species are shown in **TABLE 3**.

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

Scientific name	Common name	NSW Status
<i>Cacophis harriettae</i>	White-crowned Snake	V
<i>Stictonetta naevosa</i>	Freckled Duck	V
<i>Phaethon rubricauda</i>	Red-tailed Tropicbird	V
<i>Ptilinopus magnificus</i>	Wompoo Fruit-Dove	V
<i>Ptilinopus regina</i>	Rose-crowned Fruit-Dove	V
<i>Podargus ocellatus</i>	Marbled Frogmouth	V
<i>Hirundapus caudacutus</i>	White-throated Needletail	P
<i>Ephippiorhynchus asiaticus</i>	Black-necked Stork	E1

Scientific name	Common name	NSW Status
<i>Ixobrychus flavicollis</i>	Black Bittern	V
<i>Erythrorhynchus radiatus</i>	Red Goshawk	E4A
<i>Haliaeetus leucogaster</i>	White-bellied Sea-Eagle	V
<i>Hieraaetus morphnoides</i>	Little Eagle	V
<i>Pandion cristatus</i>	Eastern Osprey	V
<i>Amaurornis moluccana</i>	Pale-vented Bush-hen	V
<i>Irediparra gallinacea</i>	Comb-crested Jacana	V
<i>Calyptrorhynchus lathamii</i>	Glossy Black-Cockatoo	V
<i>Ninox strenua</i>	Powerful Owl	V
<i>Tyto longimembris</i>	Eastern Grass Owl	V
<i>Tyto tenebricosa</i>	Sooty Owl	V
<i>Atrichornis rufescens</i>	Rufous Scrub-bird	V
<i>Carterornis leucotis</i>	White-eared Monarch	V
<i>Petroica boodang</i>	Scarlet Robin	V
<i>Dasyurus maculatus</i>	Spotted-tailed Quoll	V
<i>Planigale maculata</i>	Common Planigale	V
<i>Phascolarctos cinereus</i>	Koala	E1
<i>Petaurus norfolcensis</i>	Squirrel Glider	V
<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	V
<i>Micronomus norfolkensis</i>	Eastern Coastal Free-tailed Bat	V
<i>Falsistrellus tasmaniensis</i>	Eastern False Pipistrelle	V
<i>Nyctophilus bifax</i>	Eastern Long-eared Bat	V
<i>Scoteanax rueppellii</i>	Greater Broad-nosed Bat	V
<i>Miniopterus australis</i>	Little Bent-winged Bat	V
<i>Nurus brevis</i>	Shorter Rainforest Ground-beetle	E1
<i>Phyllodes imperialis</i> southern subspecies	Southern Pink Underwing Moth	E1

KEY

E1 Endangered

E4A Critically endangered

V Vulnerable

3.2.2 Commonwealth EPBC Act (1999) Database search

A search of the Commonwealth EPBC Act (1999) Database revealed records of several Threatened fauna species that have been recorded or have suitable habitat within 5km of the Subject site. These species are shown in **TABLE 4**. The Commonwealth EPBC Act Protected Matters Report is included in full in **APPENDIX B**.

TABLE 4
COMMONWEALTH EPBC ACT(1999) DATABASE RECORDS OF THREATENED FAUNA SPECIES WITHIN 5 KM OF THE SUBJECT SITE

Scientific name	Common name	Comm Status
<i>Coeranoscincus reticulatus</i>	Three-toed Snake-tooth Skink	V
<i>Mixophyes fleayi</i>	Fleay's frog	E
<i>Mixophyes iteratus</i>	Giant barred frog	V
<i>Anthochaera phrygia</i>	Regent Honeyeater	CE
<i>Botaurus poiciloptilus</i>	Australasian Bittern	E
<i>Calidris ferruginea</i>	Curlew Sandpiper	CE
<i>Charadrius leschenaultii</i>	Greater sand plover	V
<i>Cyclopsitta diophthalma coxeni</i>	Coxen's fig-parrot	E
<i>Dasyornis brachypterus</i>	Eastern Bristlebird	E
<i>Erythrorhynchus radiatus</i>	Red Goshawk	V

Scientific name	Common name	Comm Status
<i>Falco hypoleucos</i>	Grey falcon	V
<i>Hirundapus caudacutus</i>	White-throated Needletail	V
<i>Lathamus discolor</i>	Swift Parrot	CE
<i>Numenius madagascariensis</i>	Eastern curlew	CE
<i>Rostratula australis</i>	Australian Painted Snipe	E
<i>Turnix melanogaster</i>	Black-breasted button-quail	V
<i>Dasyurus maculatus</i>	Spotted-tailed Quoll	E
<i>Petauroides volans</i>	Greater Glider	V
<i>Phascolarctos cinereus</i>	Koala	V
<i>Phyllodes imperialis</i> southern subspecies	Southern Pink Underwing Moth	E
<i>Potorous tridactylus</i>	Long-nosed Potoroo	V
<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	V

KEY

CE	Critically endangered
E	Endangered
V	Vulnerable

3.3 Fauna assessment

3.3.1 Introduction

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

3.3.2 Fauna species

No Threatened (NSW BC Act 2016, EPBC Act 1999) fauna species were recorded during the site assessment. The site survey did not record any evidence of Koalas on the site. Lemon-scented gum is not a preferred Koala feed tree species and no preferred Koala feed tree species were recorded on the site. Forest red gum occurs within the adjacent road reserve and as an occasional tree in the local streetscape along with other Koala feed tree species.

3.3.3 Fauna habitats and wildlife corridors

The Subject site occurs within a fragmented and disturbed landscape with the original forest cover being largely cleared over many years. Steeper gullies and waterways in the Goonellabah area support some growth of native vegetation.

Koalas are regularly recorded within this area. Native fauna that have some degree of tolerance to disturbed and open country habitats may occur on the site over time. Vegetation patches on the site are weedy and not highly structurally complex and there is a lack of understorey and leaf litter development.

For bird species, the site contains a limited diversity of microhabitats due to the lack of vegetation cover and structural and floristic diversity. Flowering Eucalypts provide some foraging habitat for nectar seeking birds.

Mammal diversity is likely to be low in the Study area due to the disturbance history and highly modified landscape. The Short-beaked echidna and Northern brown bandicoot

and Common brushtail and Ringtail possum are considered likely to occur in the Study area. Introduced species including the House mouse, Black rat, Cat and Dog are all likely occurrences.

The Subject site does not support any mature trees with large hollows suitable for hollow-dwelling mammals. Flying-foxes will occur in the vicinity from time to time.

3.3.4 Lismore Council GIS mapping

A search of the Lismore Council Intramaps was completed to examine online environmental mapping for the site.

There are no areas of *High Conservation Value*, *Key habitats for priority vertebrate assemblages*, *Rainforest* or *Land containing Threatened species* mapped for the site.

FIGURE 3 shows Koala Habitat mapping for the site. An area of *Primary koala habitat* is located to the north of McDermott Avenue. No areas of Koala habitat are mapped on the Subject site.



FIGURE 3 KOALA HABITAT MAPPING (LISMORE INTRAMAPS)

The area subject to the proposed development does not include any areas mapped as Wildlife Corridor.

3.3.5 Koala records in the vicinity of the Subject site

FIGURE 4 shows mapped Koala records from the Bionet Atlas of NSW Wildlife accessed in July 2023. These results show Koala records in all directions around the Subject site.

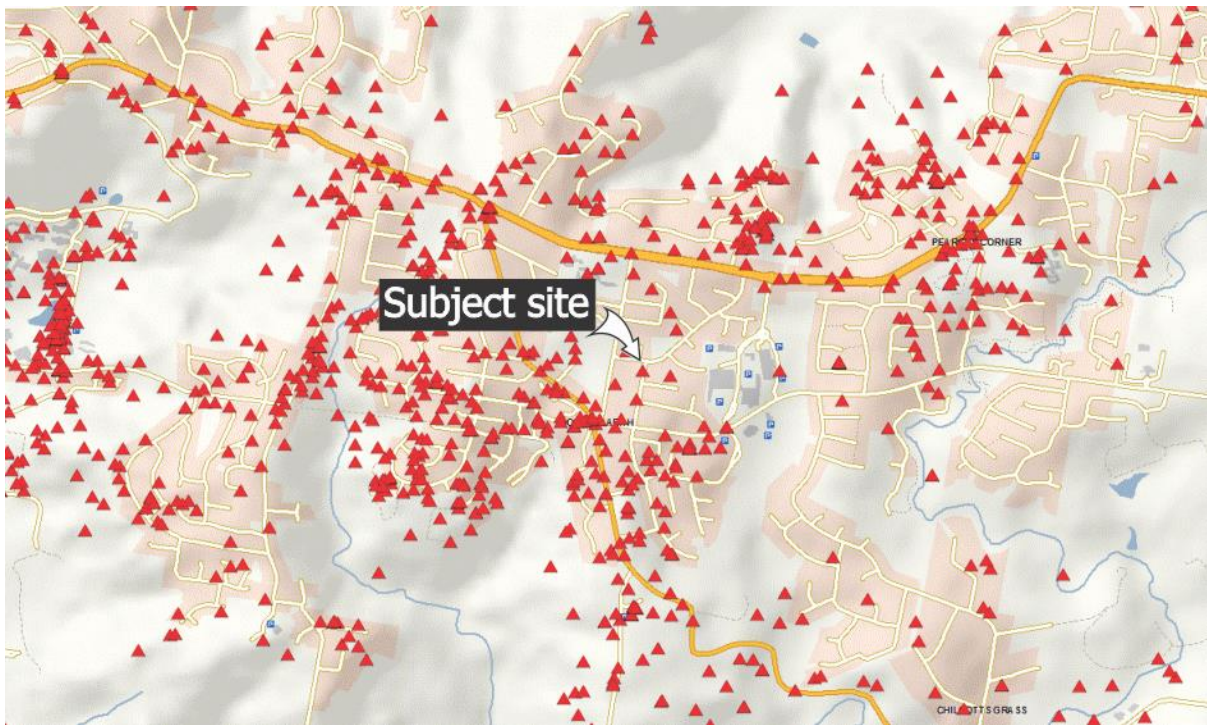


FIGURE 4 KOALA RECORDS IN THE VICINITY OF THE SITE (BIONET 2023)

3.3.6 *Potential occurrence of Threatened fauna*

Based upon this assessment no Koala habitat is present on site and the site is not considered to provide habitat for any other species of Threatened fauna.

4 POTENTIAL IMPACTS AND AMELIORATION MEASURES

4.1 Introduction

This section discusses potential impacts associated with the proposed development. Design plans in **APPENDIX A** show the proposed development.

The proposed development will require the removal of all existing vegetation on the site with the exception of two large Lemon-scented gums (a non-local native species) and a Prickly tea-tree that will be retained.

4.2 Potential ecological impacts

4.2.1 Flora

4.2.1.1 Direct removal of vegetation

The proposed development will require the removal of understorey consisting of largely exotic landscape plantings and weeds with native vegetation including landscape specimens of bottlebrush, lilly-pillys and a small number of other species.

Vegetation to be removed is considered to be of limited conservation or habitat value.

4.2.1.2 Indirect physical effects on vegetation adjacent to the works area

There is little potential for the nearby Forest red gum or other retained trees adjacent to the site to be affected by accidental damage from construction vehicles or by root zone impacts. The development area is open and easily accessible and no areas of substantial retained native vegetation are likely to be affected.

4.2.2 Fauna

4.2.2.1 Loss of fauna habitat

Trees to be removed consist primarily of exotic and native garden species and provide low-moderate quality fauna habitat. They do not provide any tree hollows suitable for hollow dependant fauna.

The extent of fauna habitat loss is unlikely to have a substantial impact on any native fauna.

4.2.2.2 Loss of Koala habitat

No Koala feed trees will be removed and the proposed development will not result in any other Koala feed trees becoming inaccessible to Koalas or otherwise substantially affect Koala movement within or around the site.

4.2.2.3 Degradation of neighbouring areas of habitat

There is little potential for fauna habitat adjacent to the works area to be affected by accidental damage, sedimentation, introduction of weeds or other indirect effects. The works area is easily accessible.

4.2.2.4 Direct impacts on fauna

There is little potential for native fauna to be killed or injured as a result of tree removal activities or other construction works as trees to be removed are relatively small and do not provide tree hollows or other specific habitat resources.

4.2.2.5 Impacts on corridor values

The proposed works are unlikely to have any significant impact on fauna movement opportunities and would not sever any important wildlife corridors.

5 STATUTORY AND PLANNING ASSESSMENT

5.1 Introduction

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

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

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

5.2.1 Introduction

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

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

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

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

5.2.2 Biodiversity offset scheme (BOS) Entry Test Report

The Biodiversity Offsets Scheme Entry Threshold Tool was accessed in August 2023. The site does not contain any mapped Biodiversity Values (see **FIGURE 5**).

Native vegetation will consist of the removal of a small number of well separated planted small native trees on the site. Based on the likely extent of native vegetation removal the Biodiversity Assessment Method (BAM) will not need to be applied. A BDAR report is not required.

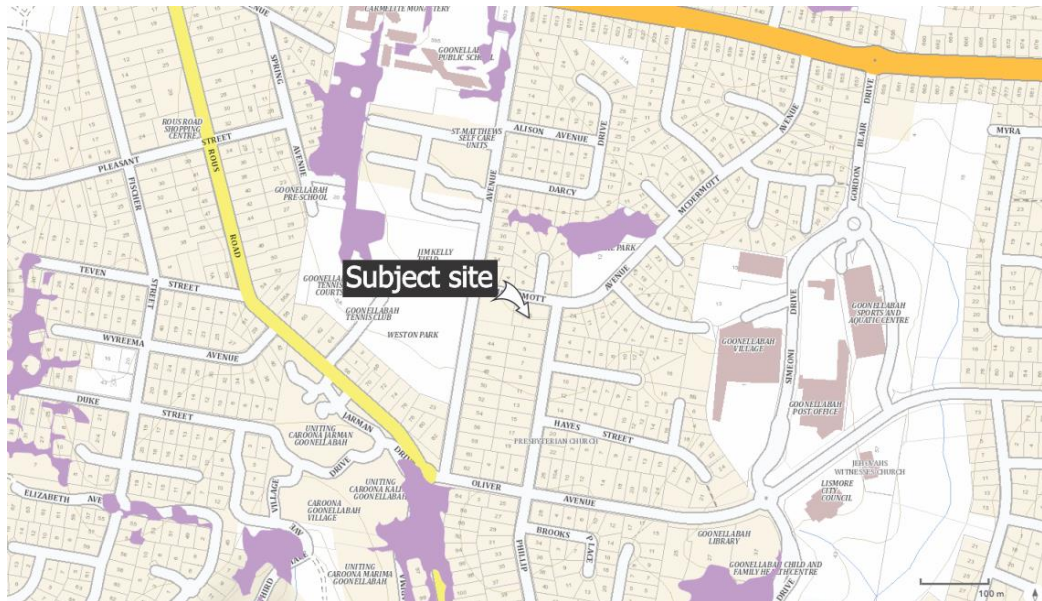


FIGURE 5 BIODIVERSITY VALUES MAPPING

5.3 Commonwealth EPBC Act (1999)

5.3.1 Introduction

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

The Act identifies seven matters of national environmental significance:

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

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

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

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

5.4 State Environmental Planning Policy (Biodiversity & Conservation) 2021

The State Environmental Planning Policy (Biodiversity and Conservation) 2021 replaces and repeals the State Environmental Planning Policy No 44 – Koala Habitat Protection (SEPP 44). The Koala Habitat Protections in the Biodiversity and Conservation SEPP apply to ‘development’ under Part 4 of the NSW Environmental Planning and Assessment Act 1979 (EP&A Act), specifically excluding Part 5 ‘activities’ (which are also excluded from assessment under the Biodiversity Assessment Method).

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

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

Yes.

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

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

Yes. The Subject site is located within the planning area for the South-East Lismore CKPoM. The South-East Lismore CKPoM is to be addressed rather than the Biodiversity and Conservation SEPP.

5.5 Comprehensive Koala Plan of Management for South-East Lismore

5.5.1 Introduction

The Subject site is located within the planning area for the Comprehensive Koala Plan of Management for South-East Lismore. Koala habitat has not been mapped on the site.

The CKPoM aims to ensure that the current extent of preferred koala habitat is maintained in the koala planning area, to mitigate processes which threaten the koala population and to encourage the recognition of koalas as one of Lismore’s natural assets. The CKPoM provides the following information and guidelines which have been reviewed as part of this ecological advice:

- List of preferred koala food tree species likely to be found in the area;
- Maps of preferred koala habitat in the area;
- Provision of a clear development application assessment pathway, assessment guidelines and performance criteria;
- Provision of minimum standard guidelines for koala habitat assessments; and
- Provision of guidelines on how to compensate for the loss of preferred koala food trees and preferred koala habitat.

5.5.2 Site assessment

Koala habitat mapping for the site shows no areas mapped as Primary or Secondary koala habitat. No Koala feed trees were recorded. The proposed development is unlikely to impact access to the nearby Forest red gum or any other Koala feed trees or otherwise affect Koala movement within or around the site.

No Koala habitat compensation is required.

6 SUMMARY AND CONCLUSIONS

Blackwood Ecological Services has been engaged by Social Futures to complete a Biodiversity assessment for a proposed unit development of land 1 Phillip Street and 5-7 McDermott Avenue, Goonellabah. The proposed development includes 18 units with common areas, car parking and associated infrastructure.

A site assessment was completed on the 24th of August 2023.

The objectives of the site assessment were:

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

The Subject site is located on the south-western side of the intersection of Phillip Street and McDermott Avenue in Goonellabah. The site currently includes two unit blocks with a parking area and other infrastructure and supports a mix of native and exotic planted vegetation typical of the locality. Tree species on the site and adjacent nature strips include Lemon-scented gum, Weeping bottlebrush, Golden rain tree, Prickly-leaved tea-tree, Mango, Jacaranda and African tulip tree.

Shrubs and groundcovers include Lilly pillys, Bauhinia, Weeping fig, Fishbone fern, Chinese celtis, Paw paw, Magnolia, Agapanthus and Hibiscus. Several weed species were recorded including Winter senna, English ivy, Fishbone fern, Cocos palm, Lantana, Ochna, Sow thistle, Cobblers pegs and Carpet grass. No Threatened flora species listed on the NSW BC Act (2016) or Commonwealth EPBC Act (1999) were recorded on the site.

Vegetation communities on the Subject site were compared with descriptions of vegetation communities listed as Threatened Ecological Communities under the NSW Biodiversity Conservation Act (2016) and the EPBC Act (1999). Vegetation on the Subject site is not considered to be part of any Threatened Ecological Community.

No Threatened (NSW BC Act 2016, EPBC Act 1999) fauna species were recorded during the site assessment. The site survey did not record any evidence of Koalas on the site. Lemon-scented gum is not a preferred Koala feed tree species and no preferred Koala feed tree species were recorded on the site. A Forest red gum is located adjacent to the site.

A search of the Lismore Council Intramaps was completed to examine online environmental mapping for the site. There are no areas of *High Conservation Value*, *Key habitats for priority vertebrate assemblages*, *Rainforest* or *Land containing Threatened species* mapped for the site.

Koala Habitat mapping for the site shows an area of *Primary koala habitat* is located to the north of McDermott Avenue. No areas of Koala habitat are mapped on the Subject site.

Two large Lemon-scented gums (a non-local native species) and a Prickly tea-tree on the site will be retained. The proposed development will require the removal of understorey consisting of largely exotic landscape plantings and weeds with native vegetation including landscape specimens of bottlebrush, tea-trees, lilly-pillys and a small number of other species.

Vegetation to be removed is considered to be of limited conservation or habitat value. There is little potential for native fauna to be killed or injured as a result of tree removal activities or other construction works as trees to be removed are relatively small and do not provide tree hollows or other specific habitat resources.

The Biodiversity Offsets Scheme Entry Threshold Tool was accessed in August 2023. The site does not contain any mapped Biodiversity Values. Native vegetation will consist of the removal of a small number of small planted native trees on the site. Based on the likely extent of native vegetation removal the Biodiversity Assessment Method (BAM) will not need to be applied. A BDAR report is not required.

No Commonwealth EPBC Act (1999) Threatened flora or fauna were recorded or are considered likely to occur within or immediately adjacent to the proposed development. The proposed development is unlikely to result in a significant impact on any matters of National Environmental Significance (NES) as listed under the EPBC Act 1999.

The Subject site is located within the planning area for the Comprehensive Koala Plan of Management for South-East Lismore. Koala habitat has not been mapped on the site. No Koala feed trees were recorded. The proposed development is unlikely to impact access to the nearby Forest red gum or any other Koala feed trees or otherwise affect Koala movement within or around the site. No Koala habitat compensation is required.

7 REFERENCES

Harden, G., McDonald, B., & Williams, J (2009) Rainforest Trees and Shrubs: A field guide to the identification. Gwen Harden Publishing, Nambucca Heads, NSW.

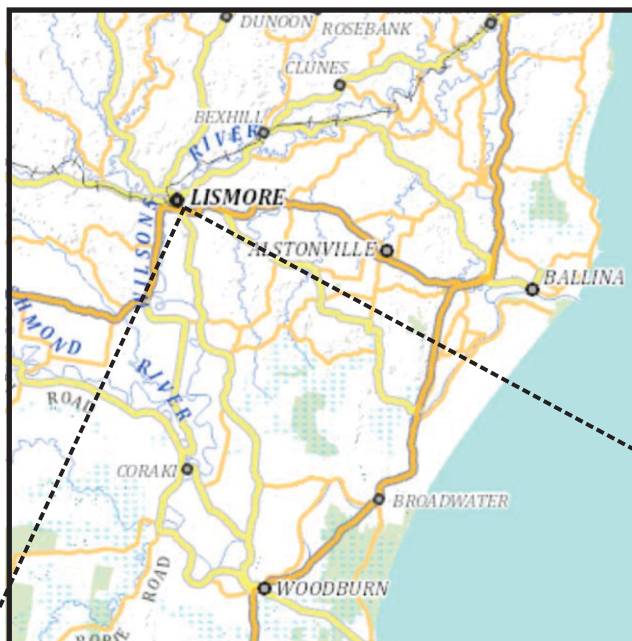
NPWS (2002) Threatened Species of the Upper North Coast of NSW – Flora. NPWS Northern Directorate, Coffs Harbour.

NSW Government Legislation website <http://www.legislation.nsw.gov.au/>

Office of Environment and Heritage (2013). **Threatened species, populations and ecological communities.**
<http://www.environment.nsw.gov.au/threatenedspecies/index.htm>

Sheringham and Westaway (1995). **Significant vascular plants of northern NSW.** A report to the NSW NPWS and Northern Region Audit Council.

FIGURES

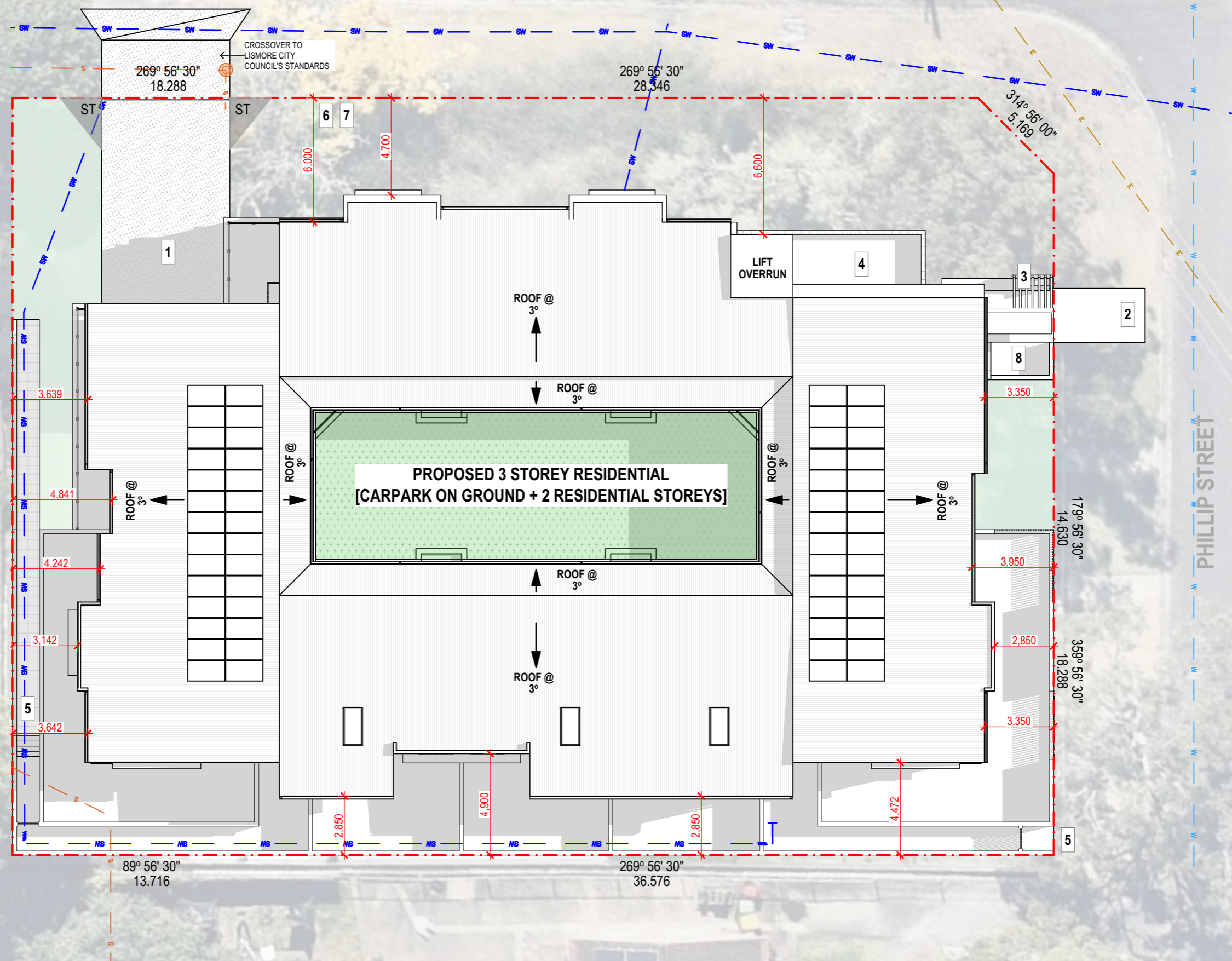


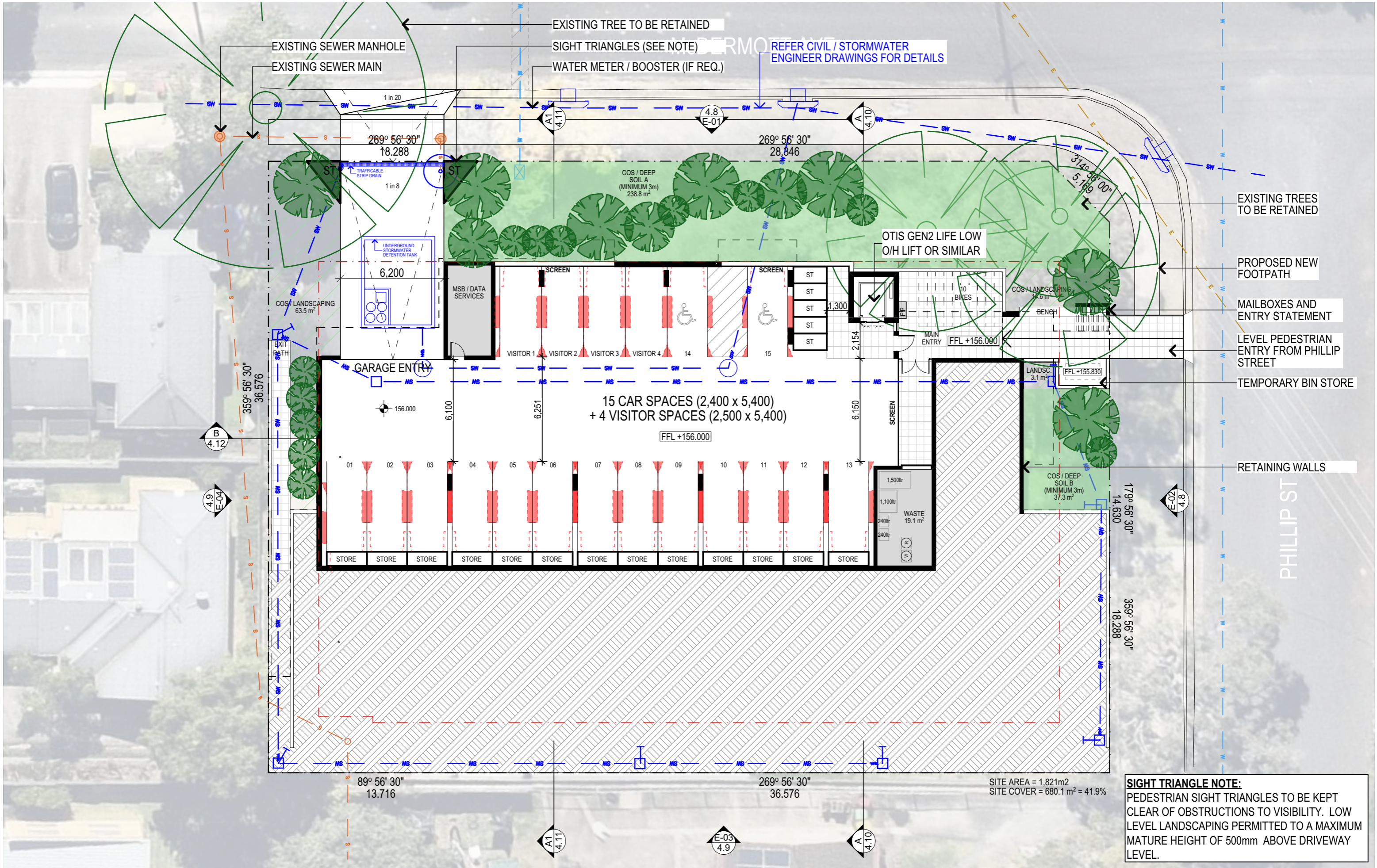
APPENDIX A PROPOSED DEVELOPMENT

SITE AREA.	1,821m ²
FSR.	0.62:1

SITE PLAN LEGEND

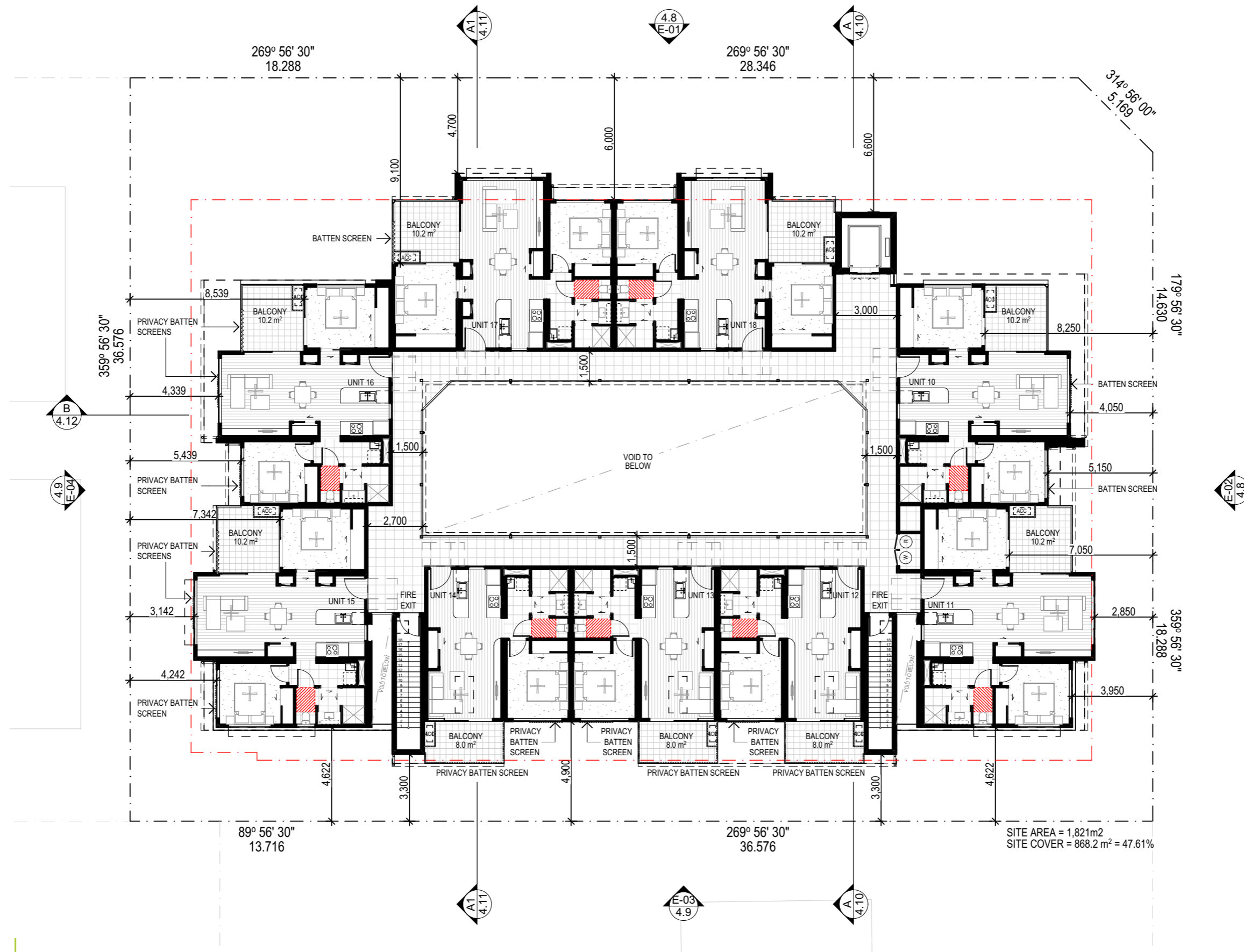
- 1 VEHICULAR ENTRY
- 2 PEDESTRIAN ENTRY
- 3 MAILBOXES
- 4 BIKE PARKING
- 5 FIRE EGRESS
- 6 WATER METER
- 7 BOOSTER
- 8 TEMP. BIN STORE







LEVEL 2





APPENDIX B

EPBC PROTECTED MATTERS DATABASE SEARCH RESULTS



EPBC Act Protected Matters Report

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

Report created: 12-Jul-2023

[Summary](#)

[Details](#)

[Matters of NES](#)

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

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)

Summary

Matters of National Environment Significance

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

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar)	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	5
Listed Threatened Species:	62
Listed Migratory Species:	17

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:	17
Commonwealth Heritage Places:	None
Listed Marine Species:	24
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:	2
Regional Forest Agreements:	1
Nationally Important Wetlands:	None
EPBC Act Referrals:	4
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 likely to 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	Foraging, feeding or related behaviour likely to occur within area	In feature area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Calidris 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 known to occur within area	In feature area
Climacteris picumnus victoriae Brown Treecreeper (south-eastern) [67062]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Cyclopsitta diophthalma coxeni Coxen's Fig-Parrot [59714]	Critically Endangered	Species or species habitat may occur within area	In feature area
Dasyornis brachypterus Eastern Bristlebird [533]	Endangered	Species or species habitat may occur within area	In feature area
Erythroriorchis radiatus Red Goshawk [942]	Endangered	Species or species habitat likely to occur within area	In feature area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to 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
Melanodryas cucullata cucullata South-eastern Hooded Robin, Hooded Robin (south-eastern) [67093]	Endangered	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area	In feature area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area	In feature area
Stagonopleura guttata Diamond Firetail [59398]	Vulnerable	Species or species habitat may occur within area	In feature area
Turnix melanogaster Black-breasted Button-quail [923]	Vulnerable	Species or species habitat may occur within area	In feature area
FISH			
Maccullochella ikei Clarence River Cod, Eastern Freshwater Cod [26170]	Endangered	Species or species habitat may occur within area	In feature area
FROG			
Mixophyes fleayi Fleay's Frog [25960]	Endangered	Species or species habitat may occur within area	In feature area
Mixophyes iteratus Giant Barred Frog, Southern Barred Frog [1944]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
INSECT			
Argynnis hyperbius inconstans Australian Fritillary [88056]	Critically Endangered	Species or species habitat may occur within area	In feature area
Phyllodes imperialis smithersi Pink Underwing Moth [86084]	Endangered	Species or species habitat known to occur within area	In feature area
MAMMAL			
Chalinolobus dwyeri Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
<u>Dasyurus maculatus maculatus (SE mainland population)</u>			
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
<u>Petauroides volans</u>			
Greater Glider (southern and central) [254]	Endangered	Species or species habitat likely to occur within area	In feature area
<u>Petaurus australis australis</u>			
Yellow-bellied Glider (south-eastern) [87600]	Vulnerable	Species or species habitat likely to occur within area	In feature area
<u>Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)</u>			
Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Endangered	Species or species habitat known to occur within area	In feature area
<u>Potorous tridactylus tridactylus</u>			
Long-nosed Potoroo (northern) [66645]	Vulnerable	Species or species habitat likely to occur within area	In feature area
<u>Pteropus poliocephalus</u>			
Grey-headed Flying-fox [186]	Vulnerable	Roosting known to occur within area	In feature area
PLANT			
<u>Amyema plicatula</u>			
[81879]	Endangered	Species or species habitat may occur within area	In buffer area only
<u>Arthraxon hispidus</u>			
Hairy-joint Grass [9338]	Vulnerable	Species or species habitat known to occur within area	In feature area
<u>Baloghia marmorata</u>			
Marbled Baloghia, Jointed Baloghia [8463]	Vulnerable	Species or species habitat may occur within area	In buffer area only
<u>Bosistoa transversa</u>			
Three-leaved Bosistoa, Yellow Satinheart [16091]	Vulnerable	Species or species habitat may occur within area	In feature area
<u>Bulbophyllum globuliforme</u>			
Miniature Moss-orchid, Hoop Pine Orchid [6649]	Vulnerable	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Clematis fawcettii Stream Clematis [4311]	Vulnerable	Species or species habitat known to occur within area	In feature area
Corchorus cunninghamii Native Jute [14659]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Cryptostylis hunteriana Leafless Tongue-orchid [19533]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Cynanchum elegans White-flowered Wax Plant [12533]	Endangered	Species or species habitat likely to occur within area	In feature area
Endiandra floydii Floyd's Walnut, Crystal Creek Walnut [52955]	Endangered	Species or species habitat may occur within area	In feature area
Endiandra hayesii Rusty Rose Walnut, Velvet Laurel [13866]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Eucalyptus glaucina Slaty Red Gum [5670]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Floydia praealta Ball Nut, Possum Nut, Big Nut, Beefwood [15762]	Vulnerable	Species or species habitat known 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
Leichhardtia longiloba listed as Marsdenia longiloba Clear Milkvine [91911]	Vulnerable	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
<u>Macadamia integrifolia</u> 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
<u>Macadamia tetraphylla</u> Rough-shelled Bush Nut, Macadamia Nut, Rough-shelled Macadamia, Rough-leaved Queensland Nut [6581]	Vulnerable	Species or species habitat likely to occur within area	In feature area
<u>Myrsine richmondensis</u> Purple-leaf Muttonwood, Lismore Muttonwood [83888]	Endangered	Species or species habitat known to occur within area	In buffer area only
<u>Ochrosia moorei</u> Southern Ochrosia [11350]	Endangered	Species or species habitat known to occur within area	In feature area
<u>Owenia cepiodora</u> Onionwood, Bog Onion, Onion Cedar [11344]	Vulnerable	Species or species habitat known to occur within area	In feature area
<u>Pedleya acanthoclada listed as Desmodium acanthocladum</u> Thorny Pea [93275]	Vulnerable	Species or species habitat known to occur within area	In feature area
<u>Persicaria elatior</u> Knotweed, Tall Knotweed [5831]	Vulnerable	Species or species habitat likely to occur within area	In feature area
<u>Phaius australis</u> Lesser Swamp-orchid [5872]	Endangered	Species or species habitat may occur within area	In feature area
<u>Plectranthus nitidus</u> Nightcap Plectranthus, Silver Plectranthus [55742]	Endangered	Species or species habitat may occur within area	In buffer area only
<u>Randia moorei</u> Spiny Gardenia [10577]	Endangered	Species or species habitat known to occur within area	In feature area
<u>Rhodamnia rubescens</u> Scrub Turpentine, Brown Malletwood [15763]	Critically Endangered	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Rhodomyrtus psidioides Native Guava [19162]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Sophora fraseri [8836]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Syzygium hodgkinsoniae Smooth-bark Rose Apple, Red Lilly Pilly [3539]	Vulnerable	Species or species habitat known to occur within area	In feature area
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat known to occur within area	In feature area
Vincetoxicum woollsii listed as Tylophora woollsii [40080]	Endangered	Species or species habitat may occur within area	In feature area

REPTILE

Coeranoscincus reticulatus Three-toed Snake-tooth Skink [59628]	Vulnerable	Species or species habitat likely to occur within area	In feature area
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Listed Migratory Species

[[Resource Information](#)]

Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
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 may occur within area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat likely 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 may 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 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 may occur within area	In feature area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat known to occur within area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Pandion haliaetus			
Osprey [952]		Species or species habitat known to occur within area	In buffer area only
Tringa nebularia			
Common Greenshank, Greenshank [832]		Species or species habitat may 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
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Commonwealth Bank of Australia

Commonwealth Land - Commonwealth Bank of Australia [11276]	NSW	In buffer area only
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Commonwealth Trading Bank of Australia

Commonwealth Land - Commonwealth Trading Bank of Australia [11269]	NSW	In buffer area only
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Commonwealth Land - Commonwealth Trading Bank of Australia [11271]	NSW	In buffer area only
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Communications, Information Technology and the Arts - Australian Broadcasting Corporation

Commonwealth Land - Australian Broadcasting Corporation [15759]	NSW	In buffer area only
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Commonwealth Land - Australian Broadcasting Corporation [15758]	NSW	In buffer area only
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Commonwealth Land - Australian Broadcasting Corporation [15760]	NSW	In buffer area only
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Communications, Information Technology and the Arts - Telstra Corporation Limited

Commonwealth Land - Australian Telecommunications Commission [11277]	NSW	In buffer area only
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Commonwealth Land - Australian Telecommunications Commission [11274]	NSW	In buffer area only
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Commonwealth Land - Australian Telecommunications Commission [11270]	NSW	In buffer area only
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Commonwealth Land - Australian Telecommunications Commission [11273]	NSW	In feature area
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Defence

Commonwealth Land - Defence Service Homes Corporation [16162]	NSW	In buffer area only
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Commonwealth Land - Defence Service Homes Corporation [11280]	NSW	In buffer area only
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Commonwealth Land Name	State	Buffer Status
Commonwealth Land - Defence Service Homes Corporation [11281]	NSW	In buffer area only
Defence - LISMORE GRES DEPOT ; 41 RNSWR LISMORE [10061]	NSW	In buffer area only
Defence - Defence Housing Authority		
Commonwealth Land - Defence Housing Authority [12056]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [15446]	NSW	In buffer area only
Commonwealth Land - Director of War Service Homes [15943]	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 may occur within area	In feature area
Anseranas semipalmata Magpie Goose [978]		Species or species habitat may occur within area overfly marine area	In feature area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area	In feature area
Calidris 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 may occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat known to occur within area overfly marine area	In feature area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area overfly marine area	In feature area
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 may occur within area overfly marine area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat likely 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

Scientific Name	Threatened Category	Presence Text	Buffer Status
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area	In buffer area only
Pterodroma cervicalis White-necked Petrel [59642]		Species or species habitat may occur within area	In feature area
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 likely to occur within area overfly marine area	In feature area
Sterna striata White-fronted Tern [799]		Migration route may occur within 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
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat may occur within area overfly marine area	In buffer area only

Extra Information

State and Territory Reserves			[Resource Information]
Protected Area Name	Reserve Type	State	Buffer Status
Boatharbour	Nature Reserve	NSW	In buffer area only
Wilson	Nature Reserve	NSW	In buffer area only

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

Note that all areas with completed RFAs have been included. Please see the associated resource information for specific caveats and use limitations associated with RFA boundary information.

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
Controlled action				
330 kV Transmission Line, 205km in Length	2010/5326	Controlled Action	Completed	In buffer area only
Relocation of Grey-headed Flying Foxes	2006/2985	Controlled Action	Completed	In buffer area only
Not controlled action				
220 Lot Residential Subdivision and Development	2009/4705	Not Controlled Action	Completed	In buffer area only
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area
Bioregional Assessments				
SubRegion	BioRegion	Website		Buffer Status
Clarence-Moreton	Clarence-Moreton	BA website		In feature area

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

Flora species list

The following table presents a list of all flora species recorded within the site during the survey. Where uncertainty exists due to the unavailability of reproductive material, the taxon is preceded by a question mark, or plants are identified to genus level only. Botanical nomenclature follows G.J. Harden (ed) (1990-2002) Flora of New South Wales, UNSW Press, except where recent changes have occurred.

Notes:

- * Denotes an introduced species as well as non-local native species.
- ? Where uncertainty exists due to the unavailability of reproductive material, the taxon is preceded by a question mark, or plants are identified to genus level only
- BOLD** Species of conservation significance are bolded.

Family	Botanical Name	Common Name
Gymnosperms		
Juniperus	<i>Juniperus communis</i> *	Common Juniper
Ferns and Fern Allies		
Davalliaceae	<i>Nephrolepis cordifolia</i> *	Fishbone fern
Monocotyledons		
Alliaceae	<i>Agapanthus</i> sp.*	
Arecaceae	<i>Syagrus romanzoffiana</i> *	Cocos palm
Poaceae	<i>Axonopus compressus</i> *	Broad-leaf carpet grass
	<i>Cynodon dactylon</i>	Couch grass
	<i>Paspalum mandiocanum</i> *	Broad Leaf Paspalum
Dicotyledons		
Anacardiaceae	<i>Mangifera indica</i> *	Mango
Araliaceae	<i>Hedera helix</i> *	English Ivy
Asteraceae	<i>Actites megalocarpus</i> *	Coastal sowthistle
	<i>Bidens pilosa</i> *	Cobblers pegs
Bignoniaceae	<i>Spathodea campanulata</i> *	African tulip tree
Caesalpinioideae	<i>Bauhinia</i> sp.*	
	<i>Senna pendula</i> var. <i>glabrata</i> *	Senna
Caricaceae	<i>Carica papaya</i> *	Paw paw
Ochnaceae	<i>Ochna serrulata</i> *	Ochna
Magnoliaceae	<i>Magnolia</i> sp.*	
Malvaceae	<i>Hibiscus</i> sp.*	Hibiscus (exotic)
Moraceae	<i>Ficus benjamina</i> *	Weeping Fig
Myrtaceae	<i>Acmena smithii</i>	Lilly pilly
	<i>Callistemon viminalis</i>	Weeping bottlebrush
	<i>Corymbia citriodora</i> *	Lemon scented gum
	<i>Melaleuca styphelioides</i>	Prickly-leaved teatree
Sapindaceae	<i>Koelreuteria paniculata</i> *	Golden rain tree
Ulmaceae	<i>Celtis sinensis</i> *	Chinese celtis
Verbenaceae	<i>Lantana camara</i> *	Lantana