THREATENED BIODIVERSITY ASSESSMENT REPORT

PROPOSED DEVELOPMENT

LOT 1 DP 880254
SUNNY BANK ROAD
LISAROW

APRIL 2021
REF: 21039

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Conacher Consulting Pty Ltd

Environmental and Land Management Consultants

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PREFACE

This Threatened Biodiversity Assessment Report has been prepared by *Conacher Consulting* for a proposed development within Lot 1 DP 880254, Sunny Bank Road, Lisarow.

This report provides an assessment of the proposed impacts to biodiversity in accordance with the *Biodiversity Conservation Act* (2016) and the *Environment Protection and Biodiversity Conservation Act* (1999).

PROJECT TEAM

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DOCUMENT DETAILS

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SECTION 1

INTRODUCTION AND BACKGROUND

1.1 INTRODUCTION

Conacher Consulting has been engaged to prepare a Threatened Biodiversity Assessment Report for a proposed development within Lot 1 DP 880254, Sunny Bank Road, Lisarow.

This second version of this Report has been prepared to provide an updated assessment of the revised development plans for the proposal.

This report has been prepared to determine whether the proposed development is likely to significantly affect threatened species or ecological communities, or their habitats, according to Part 7 of the *Biodiversity Conservation Act (2016)*.

This Report also provides an assessment of whether the proposal is likely to constitute a controlled action and require a referral under the *Environment Protection and Biodiversity Conservation Act* 1999 (EPBC Act).

1.2 SITE CHARACTERISTICS

The planning and cadastral details of the subject site are provided in Table 1.1.

TABLE 1.1
SITE DETAILS

Location	Lot 1 DP 880254, 27 Sunny Bank Road, Lisarow
Allotment Area	Approx. 3.15 ha
Development Footprint Area	Approx. 3.15 ha
Local Government Area	Central Coast Council
Existing Land Use	Vacant land / livestock grazing

1.3 PROPOSED DEVELOPMENT

The proposed development assessed within this Report is a light industrial park and associated infrastructure including access, provision of services, landscaping and bushfire asset protection zones. Suitable trees will be retained within the western section of the site which will be landscaped and managed as a bushfire asset protection zone.

Detailed plans of the proposed development have been provided as separate documentation to this Report.

1.4 IMPACT AVOIDANCE AND MITIGATION MEASURES

The following recommendations are made in relation to impact avoidance and mitigation measures:

- Retention of trees identified in the Arboricultural Impact Assessment prepared by Advanced Treescape Consulting (2021) using methods which comply with the Australian Standard 4970-2009 Protection of Trees on Development Sites;
- Use of native and local endemic flora species in site landscaping;
- Installation and maintenance of suitable erosion and sediment controls during construction works; and
- Installation of three nest boxes to compensate for the removal of one tree hollow.

1.5 BIODIVERSITY OFFSET SCHEME THRESHOLD ASSESSMENT

The Biodiversity Offset Scheme Entry Threshold Tool and the BOSET User Guide (NSW OEH 2017) were utilised to determine whether the proposal would impact areas located on the Biodiversity Values Map and the vegetation clearing threshold for the proposal. The extent of proposed native vegetation clearing proposed was determined in accordance with Option 3 of the BOSET User Guide (NSW OEH 2017). The proposed development footprint and extent of native vegetation present is mapped in Figure 1.1.
The following considerations are provided in relation to the Biodiversity Offset Scheme Threshold:

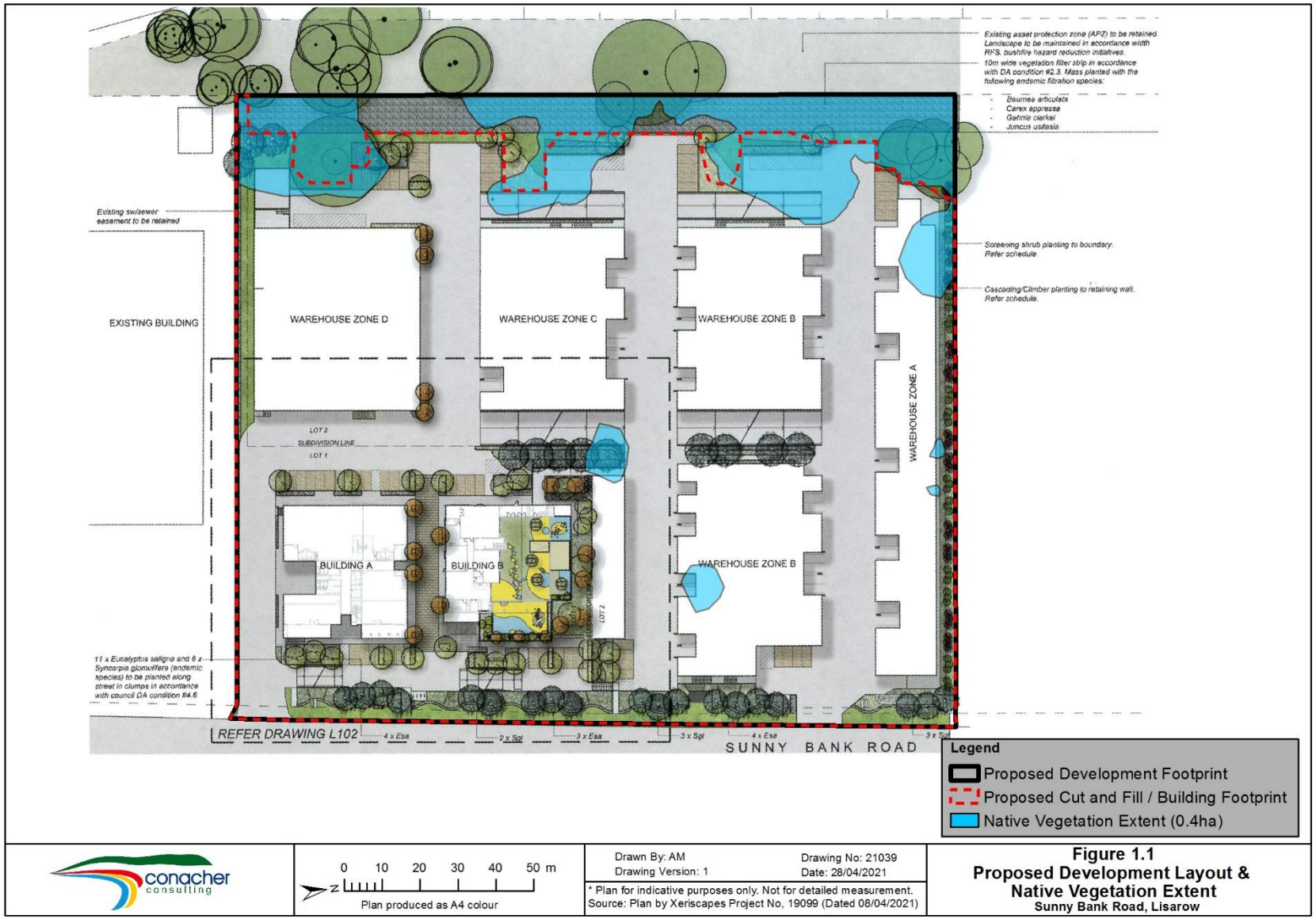
- The proposed development footprint assessed in this Report will impact approximately 0.4 ha of native vegetation, which is less than the 0.5 ha native vegetation area clearing threshold that exceeds the Biodiversity Offset Scheme Threshold for this site;

- The subject site is not located on the biodiversity values map. A BOSET Report is provided in Appendix 1;

- The proposed development is not likely to significantly affect threatened species or ecological communities, or their habitats, as determined by the Test of Significance completed in accordance with s7.3 of the *BC Act* (2016).

- The proposed development will not be carried out in a declared area of outstanding biodiversity value; and

- The proposed development is not required to be accompanied by a Biodiversity Development Assessment Report.


Existing asset protection zone (APZ) to be retained. Landscape to be maintained in accordance width RFS. bushfire hazard reduction initiatives.
10m wide vegetation filter strip in accordance with DA condition #2.3. Mass planted with the following endemic filtration species:
- Baumea articulata
- Carex appressa
- Gahnia clarkei
- Juncus usitasis
Existing sw/sewer easement to be retained
Screening shrub planting to boundary. Refer schedule.
Cascading/Climber planting to retaining wall. Refer schedule.
EXISTING BUILDING
WAREHOUSE ZONE D
WAREHOUSE ZONE C
WAREHOUSE ZONE B
WAREHOUSE ZONE A
LOT 2
SUBDIVISION LINE
LOT 1
BUILDING A
BUILDING B
WAREHOUSE ZONE B
LOT 2
11 x Eucalyptus saligna and 8 x Syncarpia glomulifera (endemic species) to be planted along street in clumps in accordance with council DA condition #4.6
REFER DRAWING L102
4 x Esa
2 x Sgl
3 x Esa
3 x Sgl
4 x Esa
3 x Sgl
SUNNY BANK ROAD
Legend
Proposed Development Footprint
Proposed Cut and Fill / Building Footprint
Native Vegetation Extent (0.4ha)
conacher consulting
0 10 20 30 40 50 m
Plan produced as A4 colour
Drawn By: AM
Drawing Version: 1
Drawing No: 21039
Date: 28/04/2021
* Plan for indicative purposes only. Not for detailed measurement.
Source: Plan by Xeriscapes Project No, 19099 (Dated 08/04/2021)
Figure 1.1
Proposed Development Layout & Native Vegetation Extent
Sunny Bank Road, Lisarow

SECTION 2

PLANT COMMUNITY AND SITE HABITAT DETAILS

2.1 PLANT COMMUNITY TYPES

i. Plant Community Type 1568 Blackbutt - Turpentine - Sydney Blue Gum Mesic Tall Open Forest on Ranges of the Central Coast

The native vegetation present consists of Plant Community Type (PCT) 1568 Blackbutt - Turpentine - Sydney Blue Gum Mesic Tall Open Forest on Ranges of the Central Coast (NSW DPIE 2021).

Details of the condition and characteristics of the PCT observed within the site are provided in Table 2.1 and a photograph is provided in Plate 1. A list of the flora species observed is provided in Appendix 2.

TABLE 2.1
DESCRIPTION OF
1568 BLACKBUTT - TURPENTINE - SYDNEY BLUE GUM MESIC TALL OPEN FOREST ON RANGES OF THE CENTRAL COAST

Vegetation Formation	Wet Sclerophyll Forests (Grassy sub-formation)
Vegetation Class	Northern Hinterland Wet Sclerophyll Forests
Name	PCT 1568 Blackbutt - Turpentine - Sydney Blue Gum mesic tall open forest on ranges of the Central Coast
Vegetation Zones	1
Area of PCT within Development Footprint	0.4 ha
Dominant Native Tree Species	*Eucalyptus saligna, Alphitonia excelsa*
Estimated Native Tree Height & Cover	25m with 60% cover
Dominant Native Shrub Species	*Acacia prominens*
Estimated Native Shrub Height & Cover	0.5m with <1 % cover
Dominant Native Groundcover Species	*Oplismenus aemulus, Oplismenus imbecillis, Sigesbeckia orientalis subsp. orientalis,* and *Geranium homeanum.*
Estimated Groundcover Height & Cover	0.4m with up to 15% cover
Dominant exotic species	*Tradescantia fluminensis, Ligustrum sinense, Cinnamomum camphora, Rubus anglocandicans* and *Lantana camara.*
Estimated exotic species cover	None observed in tree layer Up to 75% in shrub layer Up to 80% in ground layer.
Justification of PCT identification	-This PCT provides the best floristic match compared to other PCTs considered including: • PCT 1841 Smooth-barked Apple - Turpentine - Blackbutt tall open forest on enriched sandstone slopes and gullies of the Sydney region • PCT 1915 Blue Gum-Bangalay - Turpentine / Cheese Tree - Lilly Pilly tall moist forest on coastal flats of the northern Sydney basin
Threatened Ecological Community Status	No, see further details in Section 3.2.
Disturbances	High levels of historical clearing and weed invasion and a long history of cattle grazing.

Plate 1. Photograph from plot sampled within PCT 1568 Blackbutt - Turpentine - Sydney Blue Gum mesic tall open forest on ranges of the Central Coast

ii. Cleared Land

Areas of Cleared Land occupy approximately 2.75 ha of the site and are dominated by exotic grasses including *Cenchrus clandestinus*, *Paspalum dilatatum, Paspalum quadrifarium, Chloris virgata* and *Digitaria sanguinalis.*

One floristic plot was completed for the Cleared Land areas of the site, the results are provided in Appendix 2 and a photograph from within the plot is provided as Plate 2.

Plate 2. Photograph from plot sampled within Cleared Land.

2.2 SITE HABITAT DETAILS

The development footprint contains various habitats for fauna species. Details of the habitat features assessed and observed are provided in Table 2.2.

TABLE 2.2
FAUNA HABITATS PRESENT

Key habitat Type	Presence	Comments
Hollow bearing trees	Yes	One present with one small (<10cm aperture trunk hollow), proposed for removal. See Figure 2.1 for location. No occupying fauna observed during surveys.
Mature trees	No	Yes
Culverts	No	None present
Rock Shelters / Caves / Crevices	No	None present
Acacia shrubs	Yes	Yes low densities only
Banksia shrubs	No	None observed.
Native Grasses	Yes	Low densities
Man-made features	No	None observed
The native vegetation types present	Yes	See Section 2.1
Areas of cleared land and exotic vegetation	Yes	See Figure 2.1
Any exposed areas of bush rock including outcrops	No	None observed
Natural burrows	No	None present
Large trees with basal cavities	No	None present
Logs	Yes	Fallen logs present surrounding some native trees
Wetlands, streams, and waterbodies etc.	No	None observed
Nests and roosts	Yes	One stick nest observed in a paddock tree (Red Ash) <50cm diameter and not displaying characteristics of a potential raptor nest. Likely to be an Australian Raven or Australian Magpie nest.
Wombat burrows	No	None observed
Dens used by Petaurus gliders	No	None observed
Petaurus glider sap feed trees	No	No sap feed scars observed
Distinctive scats	No	None observed
Latrine den sites Spotted-tailed Quoll	No	None observed
Allocasuarina spp. trees	No	None observed
Flying-fox camps	No	None observed
Micro chiropteran bat subterranean roosts (culverts, tunnels and disused mineshafts	No	None observed
Regent Honeyeater feed or nest trees;	No	None observed
Swift Parrot feed trees;	No	None observed
Winter-flowering eucalypts	No	None observed
Mistletoes	No	None observed
Permanent soaks and seepages	No	None observed
Areas that can act as corridors for plant and animal species / Connectivity value of the site.	NA	The site forms a small part of a larger bushland patch. Limited canopy connectivity is provided through the site from the north to the south-west across Perratt Close. As part of the proposal selected native trees will be retained along the western site boundary to maintain connectivity through the site. Adjoining trees are also present off site, adjacent to the western site boundary

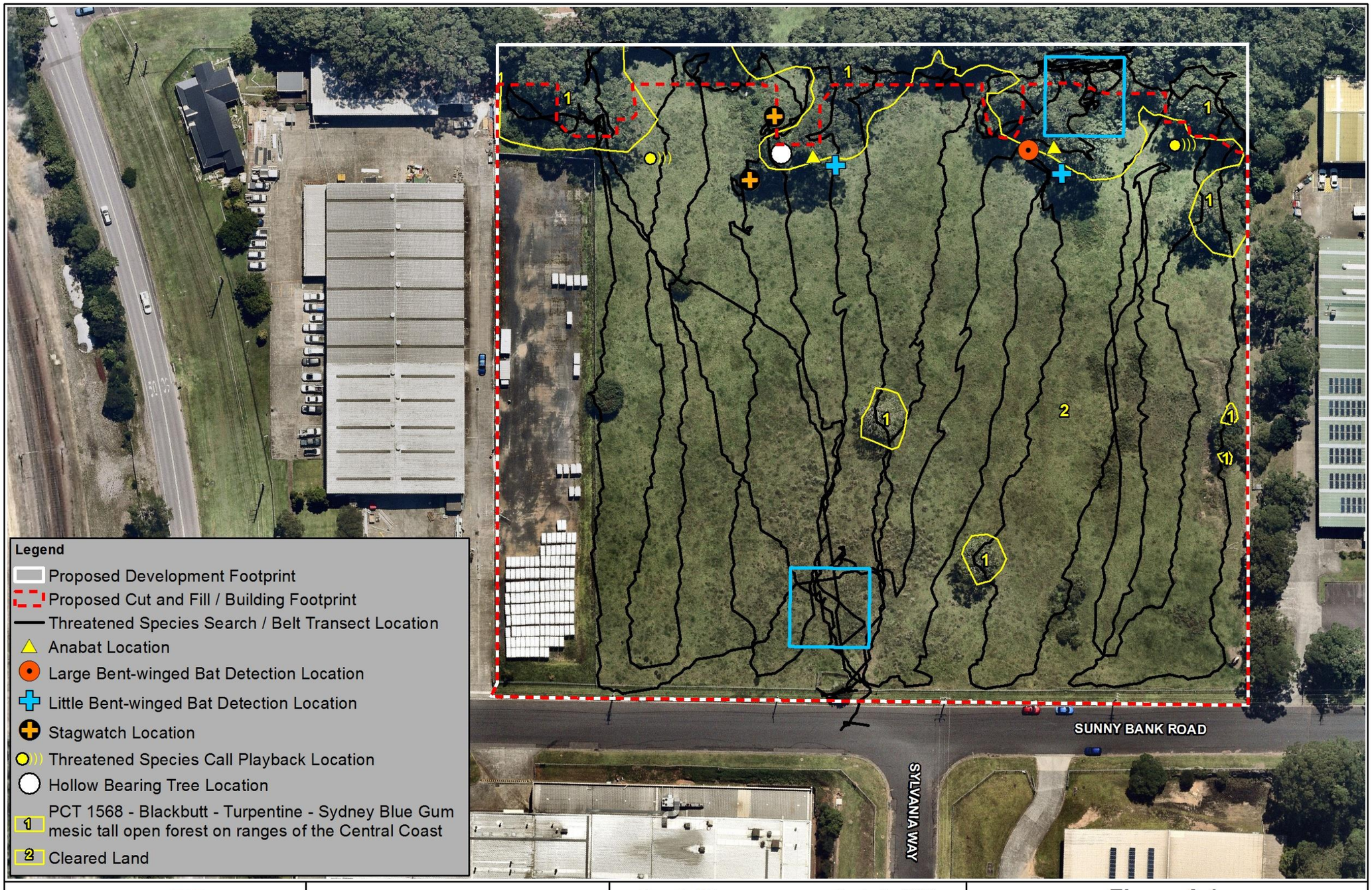


Figure 2.1
Flora & Fauna Characteristics
Sunny Bank Road, Lisarow

SECTION 3

THREATENED BIODIVERSITY DETAILS

3.1 LITERATURE AND DATABASE REVIEW

The Bionet Atlas (NSW DPIE 2021) was accessed to develop a comprehensive list of candidate threatened biodiversity listed under the *Biodiversity Conservation Act* (2016) and *Environment Protection and Biodiversity Conservation Act* (1999), with potential to occur on the site. This included a search for records of threatened species within 10 km of the site.

NSW Scientific Committee Final Determinations and the EPBC Act List of Threatened Ecological Communities were accessed and the NSW Vegetation Information System Database was checked to determine threatened ecological communities with potential to occur.

3.2 THREATENED ECOLOGICAL COMMUNITIES

The following threatened ecological communities are known from the local government area:

- Coastal Saltmarsh in the New South Wales North Coast, Sydney Basin and South East Corner Bioregions
- Coastal Upland Swamp in the Sydney Basin Bioregion
- Freshwater Wetlands on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions
- Kincumber Scribbly Gum Forest in the Sydney Basin Bioregion
- Littoral Rainforest in the New South Wales North Coast, Sydney Basin and South East Corner Bioregions
- Low woodland with heathland on indurated sand at Norah Head
- Lowland Rainforest in the NSW North Coast and Sydney Basin Bioregions
- Pittwater and Wagstaffe Spotted Gum Forest in the Sydney Basin Bioregion
- River-Flat Eucalypt Forest on Coastal Floodplains 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
- Swamp Sclerophyll Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions
- Sydney Freshwater Wetlands in the Sydney Basin Bioregion
- Themeda grassland on seacliffs and coastal headlands in the NSW North Coast, Sydney Basin and South East Corner Bioregions
- Umina Coastal Sandplain Woodland in the Sydney Basin Bioregion

No threatened ecological community listed within the *EPBC Act* (1999) or the *BC Act* (2016) was observed within the subject site.

3.3 DETERMINATION OF CANDIDATE THREATENED SPECIES & POPULATIONS

The threatened species recorded with 10 km of the site were subject to an initial assessment to determine candidate species with suitable habitat present. These species are listed in Table 3.1 and were subject to targeted surveys.

TABLE 3.1
LIST OF CANDIDATE THREATENED SPECIES

Species Name	BC Act Status	EPBC Act Status	Preferred Habitat	Candidate Species Determination	Comments
Acacia pubescens	V	V	Occurs on the Cumberland Plain in woodland habitats.	No	No habitat present.
Baloskion longipes	V	V	Swamps or depressions in sandy alluvium.	No	No habitat present.
Callistemon linearifolius	V	-	Sclerophyll Forest in moist gullies on coast and adjacent ranges (Fairley and Moore 1995).	Yes	Suitable habitat present
Chamaesyce psammogeton	E	-	Coastal dunes (NSW DPIE 2021).	No	No habitat present.
Cryptostylis hunteriana	V	V	Moist sandy soil in heath and sedgeland and coastal forest communities of Scribbly Gum, Bloodwood, Brown Stringy Bark and Smooth-barked Apple in moist to dry clay loam (Bell 2001).	No	No habitat present.
Darwinia glaucophylla	V	-	Heath and woodlands associated with sandstone rock platforms (NSW DPIE 2021).	No	No habitat present.
Dendrobium melaleucaphilum	E	-	Epiphytic orchid growing frequently on *Melaleuca styphelioides*, rainforest trees and rocks in coastal districts (NSW DPIE 2021).	No	No habitat present.
Diuris bracteata	E	Ext	Known only from the original collection near Gladesville, on the Parramatta R., before 1889. Mistakenly recorded on the NSW Central Coast (NSW RBG 2021).	No	No habitat present.

TABLE 3.1 LIST OF CANDIDATE THREATENED SPECIES					
Species Name	**BC Act Status**	**EPBC Act Status**	**Preferred Habitat**	**Candidate Species Determination**	**Comments**
Epacris purpurascens var. purpurascens	V	-	Moist habitats with strong shale influence (NSW DPIE 2021).	No	No habitat present.
Eucalyptus camfieldii	V	V	Coastal shrub heath at exposed sandy locations over Hawkesbury Sandstone (NSW DPIE 2021).	No	No habitat present.
Eucalyptus glaucina	V	V	Stony hillsides and valley floors in grassy and shrubby woodland on clay and alluvial soils.	No	No habitat present.
Grevillea shiressii	V	V	Grows along creek banks in wet sclerophyll forest in sandy soil on Hawkesbury sandstone.	No	No habitat present.
Hibbertia procumbens	E	-	Heath on skeletal sandy soils on the Somersby Plateau. May also be found associated with 'hanging swamp' vegetation communities on sandy deposits.	No	No habitat present.
Lindsaea fraseri	E	-	Swamp forest or open forest. Known primarily from the Far North Coast of NSW (NSW DPIE 2021).	No	No habitat present.
Maundia triglochinoides	V	-	Swamp, creek and wetland habitats on deep heavy low nutrient clays soils.	No	No habitat present.
Melaleuca biconvexa	V	V	Wet and moist low sites near streams in association with swamp and alluvial soils (NSW DPIE 2021).	Yes	No habitat present.
Melaleuca deanei	V	V	Flat broad ridgetops and saddles in Coastal Sandstone Ridgetop Woodland vegetation (NSW DPIE 2021).	No	No habitat present.

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Species Name	**BC Act Status**	**EPBC Act Status**	**Preferred Habitat**	**Candidate Species Determination**	**Comments**
Persoonia hirsuta	E	E	Sandy soils in dry sclerophyll open forest, woodland and heath on sandstone (NSW DPIE 2021).	No	No habitat present.
Prostanthera askania	E	E	Moist sclerophyll forest and warm temperate rainforest communities, as well as the ecotone between them.	Yes	Sub-optimal habitat present.
Prostanthera junonis	E	E	Sclerophyll forest and heath in shallow soil on sandstone on the Somersby Plateau (NSW DPIE 2021).	No	No habitat present.
Pultenaea maritima	V	-	Grasslands, shrublands and heath on exposed coastal headlands from Newcastle to Bryon Bay less than 1km from the coast. It occurs on clay, sandy loam and clay loam soils over sandstone at altitude 5–30 m (NSW DPIE 2021).	No	No habitat present.
Senecio spathulatus	E	-	Frontal coastal dune habitats (NSW DPIE 2021).	No	No habitat present.
Senna acclinis	E	-	Subtropical and dry rainforest.	No	No habitat present.
Rhodamnia rubescens	CE	-	Wet sclerophyll forest and rainforest.	Yes	Suitable habitat present
Rhodomyrtus psidioides	CE	-	Wet sclerophyll forest and rainforest.	Yes	Suitable habitat present
Syzygium paniculatum	E	V	Subtropical and littoral rainforest on sandy soil (Fairley and Moore 1995).	No	No habitat present.
Tetratheca glandulosa	V	-	Strongly associated with areas of shale-sandstone transition habitat (NSW DPIE 2021).	No	No habitat present.

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Species Name	**BC Act Status**	**EPBC Act Status**	**Preferred Habitat**	**Candidate Species Determination**	**Comments**
Tetratheca juncea	V	V	Low open forest and woodland habitats on low nutrient soils associated with the Awaba Soil Landscape. Occasionally found in heath and moist forest (NSW DPIE 2021).	Yes	No habitat present.
Wilsonia backhousei	V	-	Typically grows at the margins of saltmarshes and lakes (NSW DPIE 2021).	No	No habitat present.
Eucalyptus oblonga population at Bateau Bay, Forresters Beach and Tumbi Umbi in the Wyong local government area	EPop	-	Bateau Bay, Forresters Beach and Tumbi Umbi in the Wyong local government area	No	No habitat present.
Green and Golden Bell Frog *Litoria aurea*	E	V	Breeds in slow moving or still water without Gambusia.	No	No habitat present
Green-thighed Frog *Litoria brevipalmata*	V	-	Associated with flood prone areas of rainforests and sclerophyll forests.	No	No habitat present
Littlejohn's Tree Frog *Litoria littlejohni*	V	V	Upper reaches of permanent rocky streams and perched swamps.	No	No habitat present
Wallum Froglet *Crinia tinnula*	V	-	Acidic paperbark swamps and wallum habitats with dense groundcover.	No	No habitat present
Giant Burrowing Frog *Heleioporus australiacus*	V	V	Small streams, soaks and swamps on plateaus and upland gullies.	No	No habitat present
Stuttering Frog *Mixophyes balbus*	E	V	Freshwater streams in undisturbed rainforest and wet sclerophyll forest.	No	No habitat present
Giant Barred Frog *Mixophyes iteratus*	E	E	Freshwater streams in wet sclerophyll and rainforest habitats	No	No habitat present
Red-crowned Toadlet *Pseudophryne australis*	V	-	Ephemeral sandstone watercourses.	No	No habitat present

TABLE 3.1 LIST OF CANDIDATE THREATENED SPECIES					
Species Name	**BC Act Status**	**EPBC Act Status**	**Preferred Habitat**	**Candidate Species Determination**	**Comments**
Rosenberg's Goanna *Varanus rosenbergi*	V	-	Sandstone habitats.	No	No habitat present
Pale-headed Snake *Hoplocephalus bitorquatus*	V	-	Dry eucalypt forests particularly near riparian habitats with tree hollows.	No	Site is too disturbed.
Broad-headed Snake *Hoplocephalus bungaroides*	E	V	Rocky outcrops and adjacent sclerophyll forest and woodland. Shelters in rock crevices and tree hollows.	No	Site is too disturbed.
Stephens' Banded Snake *Hoplocephalus stephensii*	V	-	Large wet eucalypt forest and rainforest patches with suitable shelter sites.	No	Site is too disturbed.
Superb Fruit-Dove *Ptilinopus superbus*	V	-	Rainforests with fruiting trees.	Yes	Potential for infrequent occurrence.
Wompoo Fruit-Dove *Ptilinopus magnificus*	V	-	Rainforests with fruiting trees.	Yes	Potential for infrequent occurrence.
Red-backed Button-quail *Turnix maculosus*	V	-	Grasses, sedges near water, grassy woodlands.	No	No habitat present.
Comb-crested Jacana *Irediparra gallinacea*	V	-	Deep and permanent vegetation-choked wetlands.	No	No habitat present.
Bush Stone-curlew *Burhinus grallarius*	E	-	Inhabits a variety of habitats. Occurs mostly in areas surrounding the Brisbane Water Estuary on the NSW Central Coast.	No	No habitat present.
Magpie Goose *Anseranas semipalmata*	V	-	Freshwater waterbodies and wet areas.	No	No habitat present.
Freckled Duck *Stictonetta naevosa*	V	-	Freshwater waterbodies.	No	No habitat present.
Black-necked Stork *Ephippiorhynchus asiaticus*	E	-	Freshwater waterbodies and wet areas.	No	No habitat present.
Australasian Bittern *Botaurus poiciloptilus*	E	E	Shallow freshwater or brackish wetlands with tall dense vegetation.	No	No habitat present.
Black Bittern *Ixobrychus flavicollis*	V	-	Permanent freshwater wetlands with tall, dense vegetation.	No	No habitat present.

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Species Name	**BC Act Status**	**EPBC Act Status**	**Preferred Habitat**	**Candidate Species Determination**	**Comments**
Black Falcon *Falco subniger*	V	-	Occurs mostly west of the Great Dividing Range.	No	No habitat present.
Black-breasted Buzzard *Hamirostra melanosternon*	V	-	Occurs mostly west of the Great Dividing Range.	No	No habitat present.
Square-tailed Kite *Lophoictinia isura*	V	-	Various habitats including forested and open urbanised areas with remnant trees.	Yes	Potential for occasional occurrence.
Little Eagle *Hieraaetus morphnoides*	V	-	Various habitats including forested and partially cleared areas.	Yes	Potential for occasional occurrence.
Eastern Osprey *Pandion cristatus*	V	-	Utilises coastal waterbodies for foraging, nests in dead trees and on suitable man-made structures.	No	No habitat present.
White-bellied Sea-Eagle *Haliaeetus leucogaster*	V	-	Coastal areas and inland rivers and wetlands. Nests in large emergent eucalypts.	No	No habitat present.
Little Lorikeet *Glossopsitta pusilla*	V	-	Forests and woodlands with flowering eucalypts.	Yes	Potential for seasonal occurrence.
Glossy Black-Cockatoo *Calyptorhynchus lathami*	V	-	Forests with *Allocasuarina* species for foraging and hollows for nesting.	Yes	Suitable roost habitat present.
Gang-gang Cockatoo *Callocephalon fimbriatum*	V	-	Open forests, woodlands, and urban areas.	Yes	Potential for infrequent occurrence
Barking Owl *Ninox connivens*	V	-	Woodlands, open forests and partially cleared land where prey is available. Nests in tree hollows.	Yes	Site contains disturbed suitable foraging habitat.
Powerful Owl *Ninox strenua*	V	-	Mature forests containing large hollows for breeding & densely vegetated gullies for roosting.	Yes	Site contains disturbed suitable foraging habitat.

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Species Name	**BC Act Status**	**EPBC Act Status**	**Preferred Habitat**	**Candidate Species Determination**	**Comments**
Masked Owl Tyto novaehollandiae	V	-	Open forest & woodlands with cleared areas for hunting and hollow trees or dense vegetation for roosting.	Yes	Site contains disturbed suitable foraging habitat.
Sooty Owl *Tyto tenebricosa*	V	-	Tall, dense, wet forests containing trees with very large hollows for roosting and breeding.	Yes	Site contains disturbed suitable foraging habitat.
Turquoise Parrot *Neophema pulchella*	V	-	Inhabits the edges of eucalypt woodland and adjoining clearings and creek lines.	No	No habitat present.
Swift Parrot *Lathamus discolor*	E	CE	Forests and woodlands with winter flowering eucalypts.	Yes	Site contains disturbed suitable lerp foraging habitat.
Scarlet Robin *Petroica boodang*	V	-	Dry eucalypt forest and woodlands during breeding season, dispersing during autumn–winter into open habitats.	Yes	Potential for infrequent occurrence
White-fronted Chat *Epthianura albifrons*	V	-	Estuarine and damp open grassland habitats.	No	No habitat present.
Painted Honeyeater *Grantiella picta*	V	V	Open forest, woodland and scrubland with mistletoe fruits.	No	No habitat present.
Regent Honeyeater *Anthochaera phrygia*	CE	CE	Box-Ironbark dry open forest and woodland and riparian River Sheoak forests. Also Coastal Swamp Forest and Spotted Gum Forest during winter.	Yes	Site contains disturbed suitable foraging habitat.
Dusky Woodswallow *Artamus cyanopterus cyanopterus*	V	-	Habitat generalist.	Yes	Potential for occasional occurrence

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Species Name	**BC Act Status**	**EPBC Act Status**	**Preferred Habitat**	**Candidate Species Determination**	**Comments**
Speckled Warbler *Chthonicola sagittata*	V	-	Temperate eucalypt woodland and open forest including forest edges, wooded farmland and urban areas with mature eucalypts (Higgins and Peter 2002).	No	No habitat present / no populations present within the locality.
Varied Sittella *Daphoenositta chrysoptera*	V	-	Open eucalypt woodlands forests and scrubs.	Yes	Potential for occasional occurrence
Grey-crowned Babbler (eastern subspecies) *Pomatostomus temporalis temporalis*	V	-	Found in dry open forests, woodland scrubland, and farmland with isolated trees.	No	No habitat present / no populations present within the locality.
Flame Robin *Petroica phoenicea*	V	-	Upland moist Eucalypt forests and woodlands during breeding season, disperses to open lowland habitats during winter.	Yes	Potential for infrequent occurrence
Eastern Pygmy-possum *Cercartetus nanus*	V	-	Forages on nectar and pollen producing plants, particularly in sandstone heath and rainforest habitats.	No	No habitat present / site is too disturbed
Spotted-tailed Quoll *Dasyurus maculatus*	V	E	Forested habitats, requires large home ranges.	No	No habitat present / site is too disturbed
Parma Wallaby *Macropus parma*	V	-	Rainforests and wet and dry sclerophyll forests with a dense understorey and associated grassy patches.	No	No habitat present / site is too disturbed
New Holland Mouse *Pseudomys novaehollandiae*	-	V	Heathland and woodland, dry sclerophyll forest with a dense shrub layer and on vegetated sand dunes.	No	No habitat present
Eastern Chestnut Mouse *Pseudomys gracilicaudatus*	V	-	Recently burnt (1.5-4yrs) dense, wet heath and swamps.	No	No habitat present

TABLE 3.1 LIST OF CANDIDATE THREATENED SPECIES					
Species Name	**BC Act Status**	**EPBC Act Status**	**Preferred Habitat**	**Candidate Species Determination**	**Comments**
Yellow-bellied Glider *Petaurus australis*	V	-	Tall productive mature eucalypt forests with high nectar producing species. Shelters in hollow bearing trees.	Yes	Suitable foraging habitat present.
Squirrel Glider *Petaurus norfolcensis*	V	-	Forest with heath understorey. Shelters in tree hollows.	No	No habitat present
Koala *Phascolarctos cinereus*	V	V	Forested habitats with suitable feed trees.	No	No local populations present / site is too disturbed.
Greater Glider *Petauroides volans*	-	V	Inhabits eucalypt forests and shelters in large hollow sections of eucalypt trees.	Yes	No habitat present / site is too disturbed.
Long-nosed Potoroo *Potorous tridactylus*	V	V	Coastal heath and dry and wet sclerophyll forests with a dense understorey.	No	No habitat present / site is too disturbed.
Grey-headed Flying-fox *Pteropus poliocephalus*	V	V	Forested, urbanised and cultivated areas with suitable trees for foraging. Roosts in trees in gullies, riparian habitats and urban areas.	Yes	Site contains suitable foraging habitat.
Yellow-bellied Sheathtail-bat *Saccolaimus flaviventris*	V	-	Sclerophyll forest, open woodland, shrubland, mallee, grassland and desert. Roosts in tree hollows.	Yes	Site contains suitable foraging habitat.
Eastern Coastal Free-tailed Bat *Micronomus norfolkensis*	V	-	Eucalypt forest and woodland on the coastal side of the Great Dividing Range. Roosts in tree hollows, under bark and in various man-made structures.	Yes	Site contains suitable foraging habitat.
Large-eared Pied Bat *Chalinolobus dwyeri*	V	V	Warm-temperate to subtropical dry sclerophyll forest and woodland. Roosts in caves, tunnels and tree hollows in colonies.	No	No habitat present.

TABLE 3.1 LIST OF CANDIDATE THREATENED SPECIES					
Species Name	**BC Act Status**	**EPBC Act Status**	**Preferred Habitat**	**Candidate Species Determination**	**Comments**
Eastern False Pipistrelle *Falsistrellus tasmaniensis*	V	-	Wet sclerophyll forest, open forest, rainforest and coastal mallee. Roosts in hollow trunks of eucalypts, caves and man-made structures.	Yes	Site contains suitable foraging habitat.
Golden-tipped Bat *Phoniscus papuensis*	V	-	Rainforest and adjoining moist open forest habitats. Roosts in tree hollows, dense vegetation and Scrub Wren and Gerygone nests.	No	No habitat present.
Little Bent-winged Bat *Miniopterus australis*	V	-	Coastal forests, vine thickets and adjoining cleared areas. Roosts in caves, tree hollows and man-made structures.	Yes	Site contains suitable foraging habitat.
Large Bent-winged Bat *Miniopterus orianae oceanensis*	V	-	Coastal forests, vine thickets and adjoining cleared areas. Roosts in caves and man-made structures.	Yes	Site contains suitable foraging habitat.
Southern Myotis *Myotis macropus*	V	-	Roosts in caves, mines, tunnels, buildings, tree hollows and under bridges. Forages over open water.	No	No habitat present.
Greater Broad-nosed Bat *Scoteanax rueppellii*	V	-	Moist gullies in mature coastal forest, rainforest, open woodland, sclerophyll forest and cleared areas with remnant trees. Roosts in tree hollows, under bark and in man-made structures.	Yes	Site contains suitable foraging habitat.
Eastern Cave Bat V*espadelus troughtoni*	V	-	Inhabits woodland and wet and dry sclerophyll forest in areas with rock outcrops and caves for roosting.	No	No habitat present.

3.4 CANDIDATE THREATENED SPECIES SURVEY & OBSERVATION DETAILS

3.4.1 *Flora Survey Methods*

- Flora inventory surveys were undertaken on 23 April 2020 (2.5hrs). Two 20x20m floristic plots were sampled with recording of all flora species.

- Searches for candidate threatened flora species were completed on 9 May 2019 and 23 April 2020, in accordance with requirements of NSW DPIE (2020). The locations of targeted threatened flora belt transect searches are shown in Figure 2.1.

- Exotic species were included in the flora species list where know, however the surveys concentrated on the areas of native vegetation present.

- Native species of plants not readily identified in the field were collected for identification.

- Specimens of plants tentatively identified as threatened species are sent to the Sydney Royal Botanic Gardens for confirmation of the identification.

- All vascular plants were identified by previous knowledge and by using keys, nomenclature and information in NSW Flora Online (The Royal Botanic Gardens and Domain Trust 2021), Harden *et al*., (2014) and Richardson *et al*., (2016). Wherever they were known, changes to nomenclature and classification have been incorporated into the results.

3.4.2 *Fauna Survey Methods*

Targeted fauna surveys were completed for candidate threatened fauna species, the details of these surveys are provided in Table 3.2 and fauna survey locations are shown in Figure 2.1. Camera trapping was not undertaken as the site is highly disturbed and it was not considered warranted for the candidate threatened species identified.

TABLE 3.2
FAUNA SURVEY DETAILS

Survey Type	Date	Weather Conditions	Survey Method	Survey Effort/Time
Diurnal Surveys	7 May 2019	0/8 cloud, light NNW breeze, 20°C	Diurnal Fauna Census	0.5hrs (1500-1530)
	8 April 2020	0/8 cloud, calm wind, light rain, 17°C	Diurnal Fauna Census	0.75hrs (0900-0945)
	23 April 2020	0/8 cloud, calm wind, 20°C	Diurnal Fauna Census	2.5hrs (0900-1130)
Nocturnal Surveys	22 April 2020	0/8 cloud, calm wind, 20°C	Targeted nocturnal stagwatch / spotlight survey Threatened fauna call playback	1hr (1730-1830)
	23 April 2020	0/8 cloud, calm wind, 20°C	Targeted nocturnal stagwatch / spotlight survey Threatened fauna call playback	1hr (1700-1800)
Remote Detection Surveys	10 April – 12 April 2020	Variable	Ultrasonic microbat call recording (overnight recording)	6 nights (2unit)

3.4.3 *Candidate Threatened Species Survey Results*

No threatened flora species were observed during surveys. Two threatened bat species, the Little Bent-wing bat and the Large Bent-wing bat were observed during surveys. All other flora and fauna species observed are considered to be relatively common within the locality. A list of all flora and fauna species observed is provided in Appendix 2.

Identification of the targeted surveys completed, likelihood of occurrence and determination of whether an assessment of significance is required for each candidate threatened species is provided in Table 3.3. Threatened species identified in Table 3.3 as requiring an assessment of significance have been further assessed under:

- The EPBC Act Significant Impact Guidelines contained in Section 4.1 of this Report (for species listed within the EPBC Act); and/or
- The Test of Significance in Appendix 4, accordance with Section 7.3 of the *BC Act* (2016) (for species listed within Schedule 1 the BC Act).

TABLE 3.3
THREATENED SPECIES SURVEY DETAILS

Species Name	Suitable Habitat Values	Survey Period Required	Survey Period Achieved	Survey Method	Survey Result / Likelihood of Occurrence	Assessment of Significance Required?
Callistemon linearifolius	NA	All Year (Flowers Sept. – Jan)	Yes	Belt transect search	Not observed / Not likely to occur	No
Melaleuca biconvexa	NA	All year	Yes	Belt transect search	Not observed / Not likely to occur	No
Prostanthera askania	NA	All Year	Yes	Belt transect search	Not observed / Not likely to occur	No
Rhodamnia rubescens	NA	All year	Yes	Belt transect search	Not observed / Not likely to occur	No
Rhodomyrtus psidioides	NA	All year	Yes	Belt transect search	Not observed / Not likely to occur	No
Tetratheca juncea	NA	All year	Yes	Belt transect search	Not observed / Not likely to occur	No
Superb Fruit-Dove *Ptilinopus superbus*	Foraging habitat	All year	Yes	Diurnal census	Not observed / very low	Yes
Wompoo Fruit-Dove *Ptilinopus magnificus*	Foraging habitat	All year	Yes	Diurnal census	Not observed / very low	Yes
Square-tailed Kite *Lophoictinia isura*	Foraging habitat	All year	Yes	Diurnal census	Not observed / low	Yes
Little Eagle *Hieraaetus morphnoides*	Foraging habitat	All year	Yes	Diurnal census	Not observed / low	Yes

TABLE 3.3 THREATENED SPECIES SURVEY DETAILS						
Species Name	**Suitable Habitat Values**	**Survey Period Required**	**Survey Period Achieved**	**Survey Method**	**Survey Result / Likelihood of Occurrence**	**Assessment of Significance Required?**
Little Lorikeet *Glossopsitta pusilla*	Foraging habitat	All year	Yes	Diurnal census	Not observed / moderate	Yes
Glossy Black-Cockatoo *Calyptorhynchus lathami*	Foraging habitat	All year	Yes	Diurnal census	Not observed / low	Yes
Gang-gang Cockatoo *Callocephalon fimbriatum*	Foraging habitat	All year	Yes	Diurnal census	Not observed / low	Yes
Barking Owl *Ninox connivens*	Foraging habitat	All year	Yes	Diurnal & nocturnal census	Not observed / low	Yes
Powerful Owl *Ninox strenua*	Foraging habitat	All year	Yes	Diurnal & nocturnal census	Not observed / low to moderate	Yes
Masked Owl Tyto novaehollandiae	Foraging habitat	All year	Yes	Diurnal & nocturnal census	Not observed / low	Yes
Sooty Owl *Tyto tenebricosa*	Foraging habitat	All year	Yes	Diurnal & nocturnal census	Not observed / low	Yes
Swift Parrot *Lathamus discolor*	Foraging habitat	March to October	Yes	Diurnal census	Not observed / very low	Yes
Scarlet Robin *Petroica boodang*	Foraging habitat	All year	Yes	Diurnal census	Not observed / very low	Yes
Regent Honeyeater *Anthochaera phrygia*	Foraging habitat	All year	Yes	Diurnal census	Not observed / very low	Yes
Dusky Woodswallow *Artamus cyanopterus cyanopterus*	Foraging habitat	All year	Yes	Diurnal census	Not observed / low	Yes
Varied Sittella *Daphoenositta chrysoptera*	Foraging habitat	All year	Yes	Diurnal census	Not observed / low to moderate	Yes
Flame Robin *Petroica phoenicea*	Foraging habitat	All year	Yes	Diurnal census	Not observed / very low	Yes
Yellow-bellied Glider *Petaurus australis*	Foraging / den habitat	All year	Yes	Nocturnal census	Not observed / low	Yes
Greater Glider *Petauroides volans*	Foraging habitat	All year	Yes	Nocturnal census	Not observed / low	Yes (EPBC Only)

TABLE 3.3 THREATENED SPECIES SURVEY DETAILS						
Species Name	**Suitable Habitat Values**	**Survey Period Required**	**Survey Period Achieved**	**Survey Method**	**Survey Result / Likelihood of Occurrence**	**Assessment of Significance Required?**
Grey-headed Flying-fox *Pteropus poliocephalus*	Foraging habitat	All year	Yes	Diurnal & nocturnal census	Not observed / High	Yes
Yellow-bellied Sheathtail-bat *Saccolaimus flaviventris*	Foraging & roosting habitat	October to April	Yes	Ultrasonic call recording / stagwatch	Not observed / Moderate	Yes
Eastern Coastal Free-tailed Bat *Micronomus norfolkensis*	Foraging & roosting habitat	October to April	Yes	Ultrasonic call recording / stagwatch	Not observed / Moderate	Yes
Eastern False Pipistrelle *Falsistrellus tasmaniensis*	Foraging & roosting habitat	October to April	Yes	Ultrasonic call recording / stagwatch	Not observed / Moderate	Yes
Little Bent-winged Bat *Miniopterus australis*	Foraging & roosting habitat	October to April	Yes	Ultrasonic call recording / stagwatch	Observed	Yes
Large Bent-winged Bat *Miniopterus orianae oceanensis*	Foraging & roosting habitat	October to April	Yes	Ultrasonic call recording / stagwatch	Observed	Yes
Greater Broad-nosed Bat *Scoteanax rueppellii*	Foraging & roosting habitat	October to April	Yes	Ultrasonic call recording / stagwatch	Not observed / Moderate	Yes

SECTION 4

ASSESSMENTS AND CONCLUSIONS

4.1 ENVIRONMENTAL PROTECTION & BIODIVERSITY CONSERVATION ACT (1999) SIGNIFICANCE ASSESSMENT

The *Environment Protection and Biodiversity Conservation Act*, (1999) requires that Commonwealth approval be obtained for certain actions. The Act provides an assessment and approvals systems for actions that have a significant impact on matters of National Environment Significance (NES). These may include:

- Wetlands protected by international treaty (the Ramsar Convention);
- Nationally listed threatened species and ecological communities;
- Nationally listed migratory species.

Actions are projects, developments, undertakings, activities, series of activities or alteration of any of these. An action that needs Commonwealth approval is known as a controlled action. A controlled action needs approval where the Commonwealth decides the action would have a significant effect on a NES matter.

Where a proposed activity is located in an area identified to be of NES, or such that it is likely to significantly affect threatened species, ecological communities, migratory species or their habitats, the matter needs to be referred to the Australian Government Department of Agriculture, Water and the Environment (DAWE).

The following assessment in accordance with the EP&BC Act Policy Statement 1.1 *Significant Impact Guidelines* (DoE 2013) is provided:

i. Are there any Matters of National Environmental Significance located in the area of the proposed action?

A search of the Protected Matters Search Tool (DAWE 2021) was conducted for EPBC Listed threatened and migratory species recorded within 5 km of the subject site. The search results are provided in Appendix 3.

The following nationally listed species identified from the protected matters search have suitable habitat within the site:

Threatened Flora Species

- *Melaleuca biconvexa*

Threatened Fauna Species

- White-throated Needletail (*Hirundapus caudacutus)*
- Swift Parrot (*Lathamus discolor)*
- Regent Honeyeater (*Anthochaera phrygia*)
- Greater Glider (*Petauroides volans)*
- Grey-headed Flying-fox (*Pteropus poliocephalus)*

No nationally listed threatened species were observed during surveys.

Migratory Species

The site provides suitable habitat for the following nationally listed migratory species:

- Oriental Cuckoo (*Cuculus optatus*)
- White-throated Needle-tail (*Hirundapus caudacutus*)
- Satin Flycatcher (*Myiagra cyanoleuca*)
- Rufous Fantail (*Rhipidura rufifrons*)
- Black-faced Monarch (*Monarcha melanopsis*)

No nationally listed migratory species were observed within the subject site during surveys.

Threatened Ecological Communities
No nationally listed threatened ecological communities are present within the subject site.

ii. Considering the proposed action at its broadest scope, is there potential for impacts on Matters of National Environmental Significance?

The proposal will also require the removal or modification of approximately 0.4 hectares of PCT 1568 Blackbutt – Sydney Blue Gum Mesic Tall Open Forest on Ranges of The Central Coast and 2.75 ha of Cleared Land. These areas provide suitable forested habitats for nationally listed threatened and migratory species which were not observed during surveys.

iii. Are there any proposed measures to avoid or reduce impacts on Matters of National Environmental Significance?

Yes, these measures are outlined in Section 1.4 of this Report.

iv. Are any impacts of the proposed action on Matters of National Environmental Significance likely to be significant impacts?

The following significance assessments are provided for nationally listed threatened species and ecological communities and nationally listed migratory species which were not observed during surveys, which have suitable habitat present within the subject site.

Nationally Listed Threatened Species
Vulnerable Listed Threatened Species
With regard to nationally listed vulnerable species with suitable habitat present, it is considered that the proposal is not likely to:

- lead to a long-term decrease in the size of an important population of a species;
- reduce the area of occupancy of an important population;
- fragment an existing important population into two or more populations;
- adversely affect habitat critical to the survival of a species;
- disrupt the breeding cycle of an important population;
- modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline;
- result in invasive species that are harmful to a threatened species becoming established in the threatened species' habitat;
- introduce disease that may cause a species to decline; or
- interfere with the recovery of the species.

The following reasons are provided:

- No nationally listed species were observed within the site during surveys and no potentially important populations were observed;
- Suitable mitigation and impact avoidance measures are proposed; and
- The habitats within the site proposed to be removed are highly disturbed and larger areas of higher quality habitats are proposed for retention within the site.

Endangered and Critically Endangered Listed Threatened Species
With regard to nationally listed endangered and critically endangered species with suitable habitat present, it is considered that the proposal is not likely to:

- lead to a long-term decrease in the size of a population;
- reduce the area of occupancy of the species;
- fragment an existing population into two or more populations;
- adversely affect habitat critical to the survival of a species;
- disrupt the breeding cycle of a population;
- modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline;
- result in invasive species that are harmful to a critically endangered or endangered species becoming established in the critically endangered or endangered species' habitat;

- introduce disease that may cause the species to decline; or
- interfere with the recovery of the species.

The following reasons are provided:
- No nationally listed species were observed within the site during surveys;
- Suitable mitigation and impact avoidance measures are proposed; and
- The habitats within the site proposed to be removed are highly disturbed and larger areas of higher quality habitats are proposed for retention within the site.

Nationally Listed Migratory Species
With regard to nationally listed migratory species it is considered that the proposal is not likely to:
- substantially modify (including by fragmenting, altering fire regimes, altering nutrient cycles or altering hydrological cycles), destroy or isolate an area of important habitat for a migratory species;
- result in an invasive species that is harmful to the migratory species becoming established in an area of important habitat for the migratory species; or
- seriously disrupt the lifecycle (breeding, feeding, migration or resting behaviour) of an ecologically significant proportion of the population of a migratory species.

The following reasons are provided:
- The subject site does not contain important habitat for a nationally listed migratory species
- No nationally listed migratory species were observed during surveys

Nationally Listed Threatened Ecological Communities
It is considered that the proposal is not likely to have a significant impact on nationally listed endangered or critically ecological communities as the proposal is not likely to:
- reduce the extent of an ecological community
- fragment or increase fragmentation of an ecological community, for example by clearing vegetation for roads or transmission lines
- adversely affect habitat critical to the survival of an ecological community
- modify or destroy abiotic (non-living) factors (such as water, nutrients, or soil) necessary for an ecological community's survival, including reduction of groundwater levels, or substantial alteration of surface water drainage patterns
- cause a substantial change in the species composition of an occurrence of an ecological community, including causing a decline or loss of functionally important species, for example through regular burning or flora or fauna harvesting
- cause a substantial reduction in the quality or integrity of an occurrence of an ecological community, including, but not limited to:
  - assisting invasive species, that are harmful to the listed ecological community, to become established, or
  - causing regular mobilisation of fertilisers, herbicides or other chemicals or pollutants into the ecological community which kill or inhibit the growth of species in the ecological community, or
- interfere with the recovery of an ecological community.

The following reasons are provided:
- The vegetation within the subject site does not correspond to a nationally listed endangered or critically endangered ecological community.

CONCLUSION
It is considered that the proposed action is not likely to have a significant impact on nationally listed threatened or migratory species or nationally listed threatened ecological communities.

4.2 BIODIVERSITY CONSERVATION ACT (2016) ASSESSMENT OF SIGNIFICANCE

A Threatened Species Test of Significance has been undertaken for candidate threatened species, populations and ecological communities that occur within the local area, that have potential to use the habitats present on occasion, or that have potential to be influenced by off-site impacts, as identified in Section 3.2 and Table 3.3 of this Report.

This Test of Significance is provided in Appendix 4 and has concluded that the proposed development is not likely to have a significant effect on threatened species, ecological communities or their habitats.

4.3 STATE ENVIRONMENTAL PLANNING POLICIES

4.3.1 SEPP (Coastal Management) 2018

The subject site is not located within a Coastal Wetland Area, Littoral Rainforest Area, an associated Proximity Area or a Coastal Environment Area under this SEPP. Therefore further assessments under this SEPP do not apply to the site.

4.3.2 SEPP (Koala Habitat Protection) 2021

The site contains an area of more than one hectare, is not subject to a koala plan of management and is located within a local government area listed in Schedule 1 of this Policy.

Therefore Part 2 Section 11 of the Policy is required to be addressed. Part 2 Section 11 (5aii) of this Policy states:

However, despite subclauses (3) and (4), the council may grant development consent if the application provides to the Council –

(a) Information, prepared by a suitably qualified and experienced person, the council is satisfied demonstrates that the land subject to the development application –
(ii) is not core koala habitat.

Information which demonstrates that the site is not core koala habitat is provided in Appendix 5 of this Report. Therefore a Koala Assessment Report is not required and the Council is not prevented from granting consent to the proposal because of this Policy.

4.4 CONCLUSIONS

Based on the detailed field survey and information and assessments provided in this Report it is concluded that:

- No threatened flora species were observed during surveys;
- The threatened fauna species, the Little Bent-winged Bat and the Large Bent-winged Bat, were recorded flying over the site during surveys;
- No endangered or critically ecological communities were observed during surveys;
- A referral to the Australian Government Department of the Environment is considered not necessary;
- The proposed development is not likely to significantly affect threatened species, in accordance with Section 7.2 of the Biodiversity Conservation Act (2016);
- The proposed development is not likely to trigger the Biodiversity Offset Threshold identified in Part 7 of the Biodiversity Conservation Regulation (2017); and
- A Biodiversity Development Assessment Report is not required for the proposed development.
- It is recommended that the impact avoidance and mitigation measures outlined in Section 1.4 of this Report be implemented.

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APPENDIX 1

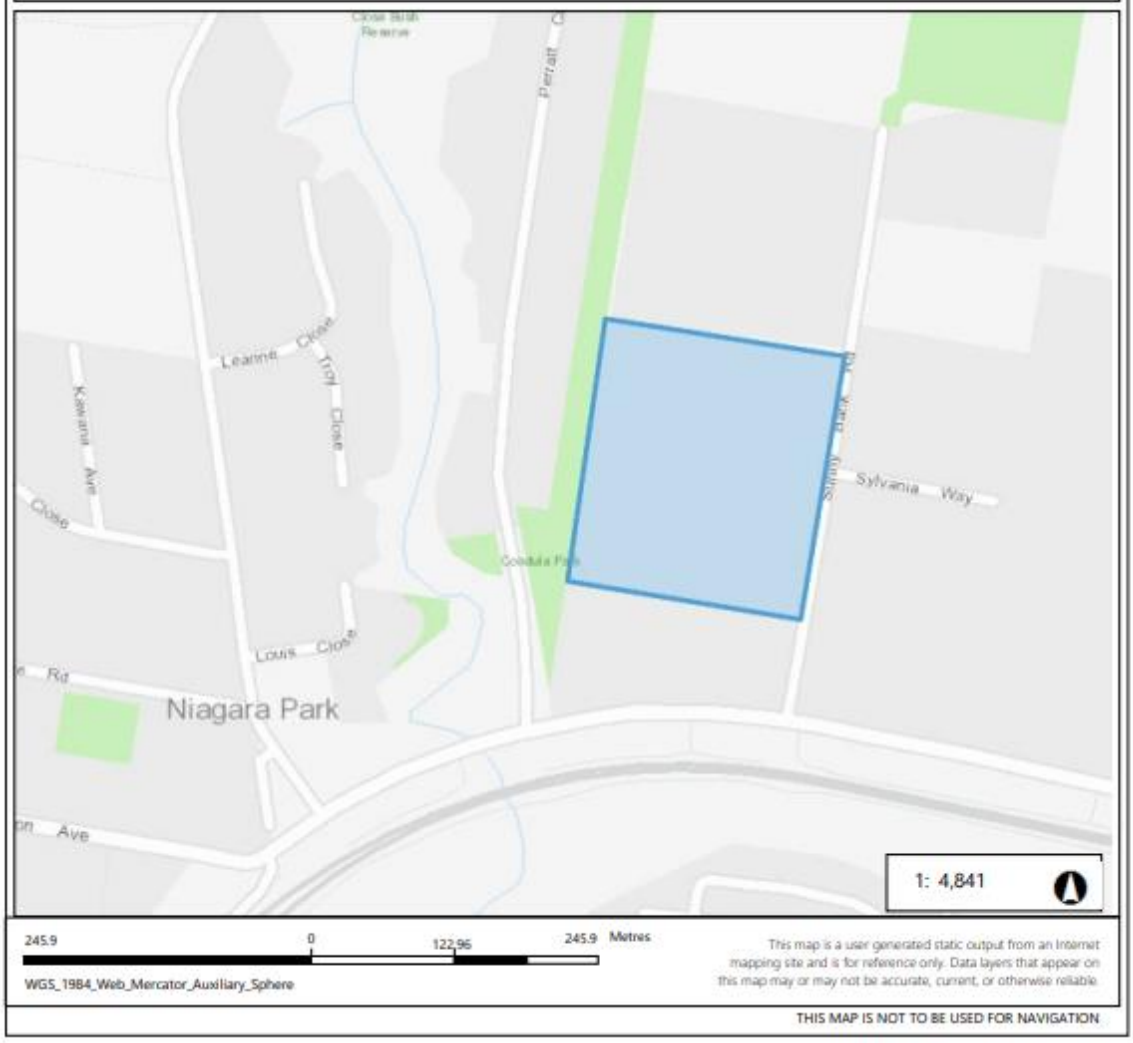
BIODIVERSITY OFFSET SCHEME ENTRY THRESHOLD REPORT

A1.1 BIODIVERSITY OFFSET SCHEME ENTRY THRESHOLD MAP

The following print out from the Biodiversity Offset Scheme Entry Threshold Map Tool is provided for the purposes of establishing that the site is not located on the biodiversity values map and and determining the area clearing threshold which applies to the site.

NSW GOVERNMENT

Biodiversity Offset Scheme (BOS) Entry Threshold Map



Legend

- Biodiversity Values that have been mapped for more than 90 days
- Biodiversity Values added within last 90 days

Notes

NSW GOVERNMENT

Biodiversity Values Map and Threshold Report

Results Summary

Date of Calculation	28/04/2021 12:04 PM	**BDAR Required***
Total Digitised Area	3.23 ha	
Minimum Lot Size Method	Lot size	
Minimum Lot Size	1.03 ha	
Area Clearing Threshold	0.5 ha	
Area clearing trigger Area of native vegetation cleared	Unknown #	Unknown #
Biodiversity values map trigger Impact on biodiversity values map(not including values added within the last 90 days)?	no	no
Date of the 90 day Expiry	N/A	

*If BDAR required has:

- at least one 'Yes': you have exceeded the BOS threshold. You are now required to submit a Biodiversity Development Assessment Report with your development application. Go to https://customer.lmbc.nsw.gov.au/assessment/AccreditedAssessor to access a list of assessors who are accredited to apply the Biodiversity Assessment Method and write a Biodiversity Development Assessment Report
- 'No': you have not exceeded the BOS threshold. You may still require a permit from local council. Review the development control plan and consult with council. You may still be required to assess whether the development is "likely to significantly affect threatened species' as determined under the test in s. 7.3 of the Biodiversity Conservation Act 2016. You may still be required to review the area where no vegetation mapping is available.

Where the area of impact occurs on land with no vegetation mapping available, the tool cannot determine the area of native vegetation cleared and if this exceeds the Area Threshold. You will need to work out the area of native vegetation cleared - refer to the BOSET user guide for how to do this.

On and after the 90 day expiry date a BDAR will be required.

Disclaimer

This results summary and map can be used as guidance material only. This results summary and map is not guaranteed to be free from error or omission. The State of NSW and Office of Environment and Heritage and its employees disclaim liability for any act done on the information in the results summary or map and any consequences of such acts or omissions. It remains the responsibility of the proponent to ensure that their development application complies will all aspects of the *Biodiversity Conservation Act 2016*.

The mapping provided in this tool has been done with the best available mapping and knowledge of species habitat requirements. This map is valid for a period of 30 days from the date of calculation (above).

Acknowledgement

I as the applicant for this development, submit that I have correctly depicted the area that will be impacted or likely to be impacted as a result of the proposed development.

Signature_____ Date: 28/04/2021 12:04 PM

APPENDIX 2

FLORA AND FAUNA SPECIES OBSERVED

A2.1 FLORA SPECIES OBSERVED

The flora species observed during surveys are listed in Table A2.1.

TABLE A2.1
FLORA SPECIES OBSERVED

Family Name	Scientific Name	Common Name	PCT 1568 Plot 1		Cleared Land Plot 2	
			Cover	Abundance	Cover	Abundance
Trees						
Fabaceae (Mimosoideae)	*Acacia prominens*	Gosford Wattle	0.5	1		
Myrtaceae	*Eucalyptus saligna*	Sydney Blue Gum	60	5		
Myrtaceae	*Syncarpia glomulifera*		X			
Rhamnaceae	*Alphitonia excelsa*	Red Ash	1	3		
Grass and Grass Like						
Cyperaceae	*Carex longebrachiata*		0.5	15		
Cyperaceae	*Cyperus imbecillis*		0.1	10		
Juncaceae	*Juncus usitatus*		0.5	15		
Poaceae	*Microlaena stipoides*	Weeping Grass	0.1	100		
Poaceae	*Oplismenus aemulus*		5	1000		
Poaceae	*Oplismenus imbecillis*		5	1000		
Forb						
Asteraceae	*Sigesbeckia orientalis* subsp. *orientalis*		0.5	10		
Geraniaceae	*Geranium homeanum*		0.1	50		
Lobeliaceae	*Lobelia purpurascens*	whiteroot	0.1	5		
Polygonaceae	*Rumex brownii*	Swamp Dock	0.1	10		
Ferns and Fern Allies						
Dennstaedtiaceae	*Hypolepis muelleri*	Harsh Ground Fern	0.1	2		
Other						
Vitaceae	*Cayratia clematidea*	Native Grape	0.1	1		

TABLE A2.1 FLORA SPECIES OBSERVED						
Family Name	**Scientific Name**	**Common Name**	**PCT 1568 Plot 1**		**Cleared Land Plot 2**	
			Cover	**Abundance**	**Cover**	**Abundance**
High Threat Exotic						
Asteraceae	*Senecio madagascariensis**	Fireweed	0.1	10	0.1	20
Caprifoliaceae	*Lonicera japonica**	Japanese Honeysuckle	0.1	5		
Commelinaceae	*Tradescantia fluminensis**	Trad	70	2000		
Lauraceae	*Cinnamomum camphora**	Camphor Laurel	0.1	10		
Oleaceae	*Ligustrum sinense**	Small-leaved Privet	65	1000		
Poaceae	*Cenchrus clandestinus**	Kikuyu Grass	1	50	5	500
Poaceae	*Ehrharta erecta**	Panic Veldt-grass	1	500		
Poaceae	*Paspalum dilatatum**	Paspalum	0.1	20	25	>1000
Poaceae	*Paspalum quadrifarium**	Tussock Paspalum			5	20
Verbenaceae	*Lantana camara**	Lantana	20	150		
Exotic						
Araceae	*Zantedeschia aethiopica**	Arum Lily	1	5		
Asteraceae	*Conyza bonariensis**	Flaxleaf Fleabane			0.1	10
Asteraceae	*Conyza sumatrensis**	Tall fleabane	0.1	10		
Asteraceae	*Gamochaeta americana**	Cudweed			0.1	5
Asteraceae	*Hypochaeris radicata**	Catsear	0.1	5	0.1	20
Asteraceae	*Sonchus oleraceus**	Common Sowthistle	3	0.1		
Cyperaceae	*Cyperus brevifolius**		0.1	10		
Fabaceae (Faboideae)	*Trifolium cernuum**	Drooping-flowered Clover	0.1	50		
Fabaceae (Faboideae)	*Vicia sativa subsp. nigra**	Narrow-leaved Vetch			0.1	20
Malaceae	*Pyrus calleryana**	Callery pear	x			
Malvaceae	*Sida rhombifolia**		0.5	100	0.1	200
Oxalidaceae	*Oxalis latifolia**		0.1	50		

TABLE A2.1 FLORA SPECIES OBSERVED						
Family Name	**Scientific Name**	**Common Name**	**PCT 1568 Plot 1**		**Cleared Land Plot 2**	
			Cover	**Abundance**	**Cover**	**Abundance**
Plantaginaceae	*Plantago lanceolata**	Lamb's Tongues			0.1	25
Poaceae	*Chloris virgata**	Feathertop Rhodes Grass		20	>1000	
Poaceae	*Digitaria sanguinalis**	Crab Grass			50	>1000
Poaceae	*Setaria parviflora**		30	>1000		
Poaceae	*Sporobolus africanus**	Parramatta Grass			0.1	100
Rosaceae	*Potentilla indica**	Indian Strawberry	0.1	20		
Rosaceae	*Rubus anglocandicans**	Blackberry	5	50		
Rubiaceae	*Richardia brasiliensis**	Mexican Clover			0.1	1
Solanaceae	*Solanum mauritianum**	Wild Tobacco Bush	5	5		
Verbenaceae	*Verbena bonariensis**	Purpletop			1	50

A2.2 FAUNA SPECIES OBSERVED

The fauna species observed during surveys are listed in Table A2.2.

TABLE A2.2
FAUNA OBSERVED AND RECORDED WITHIN THE SUBJECT SITE

Common Name	Scientific Name	Observation Type
Reptiles		
Dark-flecked Garden Sunskink	*Lampropholis delicata*	O
Birds		
Topknot Pigeon	*Lopholaimus antarcticus*	O
White-headed Pigeon	*Columba leucomela*	OW
Masked Lapwing	*Vanellus miles*	OW
Rainbow Lorikeet	*Trichoglossus haematodus*	OW
Welcome Swallow	*Hirundo neoxena*	OW
Willie Wagtail	*Rhipidura leucophrys*	OW
Australasian Figbird	*Sphecotheres vieilloti*	OW
Superb Fairy-wren	*Malurus cyaneus*	W
Lewin's Honeyeater	*Meliphaga lewinii*	OW
Bell Miner	*Manorina melanophrys*	OW
Noisy Miner	*Manorina melanocephala*	OW
Satin Bowerbird	*Ptilonorhynchus violaceus*	W
Grey Butcherbird	*Cracticus torquatus*	OW
Australian Magpie	*Cracticus tibicen*	OW
Australian Raven	*Corvus coronoides*	OW
Cattle Egret	*Ardea ibis*	O
Mammals		
Gould's Wattled Bat	*Chalinolobus gouldii*	U
Eastern Forest Bat	*Vespadelus pumilus*	U
Little Bent-winged Bat [TS]	*Miniopterus australis*	U
Large Bent-winged Bat [TS]	*Miniopterus orianae oceanensis*	U
European cattle *	*Bos taurus*	O

Key to Observation Type

E - Nest / Roost	O - Observed
F - Tracks / Scratchings / Chew Marks	OW - Observed and Heard Call
FB - Burrow	P - Scat
G - Crushed Cones	Q - Camera
H - Hair / Feathers / Skin	T - Trapped
K - Dead	U - Ultrasonic Recording
M - Miscellaneous Record	W - Heard

Note: * indicates introduced species. [TS] indicates threatened species *BC Act* (2016).

APPENDIX 3

ENVIRONMENT PROTECTION & BIODIVERSITY CONSERVATION ACT (1999)
PROTECTED MATTERS SEARCH REPORT

Australian Government
Department of Agriculture, Water and the Environment

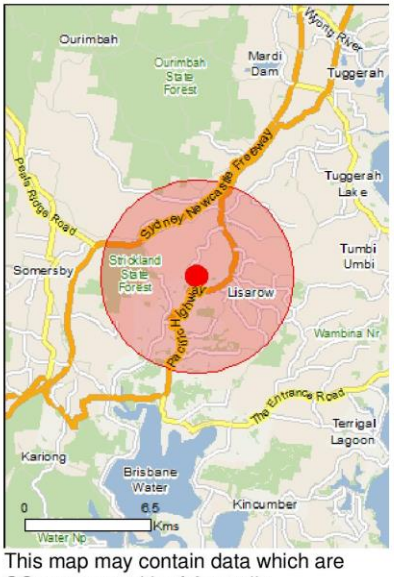
EPBC Act Protected Matters Report

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

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

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

Report created: 28/04/21 12:29:33



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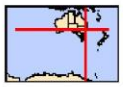
Coordinates
Buffer: 5.0Km



Summary

Matters of National Environmental Significance

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

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance:	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	3
Listed Threatened Species:	54
Listed Migratory Species:	18

Other Matters Protected by the EPBC Act

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

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

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

Commonwealth Land:	5
Commonwealth Heritage Places:	None
Listed Marine Species:	24
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None

Extra Information

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

State and Territory Reserves:	2
Regional Forest Agreements:	1
Invasive Species:	49
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

Listed Threatened Ecological Communities [Resource Information]

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

Name	Status	Type of Presence
Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community	Endangered	Community may occur within area
Coastal Upland Swamps in the Sydney Basin Bioregion	Endangered	Community may occur within area
River-flat eucalypt forest on coastal floodplains of southern New South Wales and eastern Victoria	Critically Endangered	Community likely to occur within area

Listed Threatened Species [Resource Information]

Name	Status	Type of Presence
Birds		
Anthochaera phrygia Regent Honeyeater [82338]	Critically Endangered	Species or species habitat known to occur within area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat may occur within area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat known to occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area
Limosa lapponica baueri Nunivak Bar-tailed Godwit, Western Alaskan Bar-tailed Godwit [86380]	Vulnerable	Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species

Name	Status	Type of Presence
		habitat likely to occur within area
Pachyptila turtur subantarctica Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat likely to occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Species or species habitat may occur within area
Thinornis cucullatus cucullatus Eastern Hooded Plover, Eastern Hooded Plover [90381]	Vulnerable	Species or species habitat may occur within area
Fish		
Macquaria australasica Macquarie Perch [66632]	Endangered	Species or species habitat may occur within area
Prototroctes maraena Australian Grayling [26179]	Vulnerable	Species or species habitat may occur within area
Frogs		
Heleioporus australiacus Giant Burrowing Frog [1973]	Vulnerable	Species or species habitat known to occur within area
Litoria aurea Green and Golden Bell Frog [1870]	Vulnerable	Species or species habitat known to occur within area
Litoria littlejohni Littlejohn's Tree Frog, Heath Frog [64733]	Vulnerable	Species or species habitat may occur within area
Mixophyes balbus Stuttering Frog, Southern Barred Frog (in Victoria) [1942]	Vulnerable	Species or species habitat known to occur within area
Mixophyes iteratus Giant Barred Frog, Southern Barred Frog [1944]	Endangered	Species or species habitat known to occur within area
Mammals		
Chalinolobus dwyeri Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat likely to occur within area
Dasyurus maculatus maculatus (SE mainland population) Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat known to occur within area
Petauroides volans Greater Glider [254]	Vulnerable	Species or species habitat known to occur within area
Petrogale penicillata Brush-tailed Rock-wallaby [225]	Vulnerable	Species or species habitat likely to occur within area
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT) Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Vulnerable	Species or species habitat known to occur within area
Potorous tridactylus tridactylus Long-nosed Potoroo (SE Mainland) [66645]	Vulnerable	Species or species habitat likely to occur within area

Name	Status	Type of Presence
Pseudomys novaehollandiae New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat likely to occur within area
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Roosting known to occur within area
Plants		
Acacia bynoeana Bynoe's Wattle, Tiny Wattle [8575]	Vulnerable	Species or species habitat may occur within area
Asterolasia elegans [56780]	Endangered	Species or species habitat may occur within area
Baloskion longipes Dense Cord-rush [68511]	Vulnerable	Species or species habitat may occur within area
Caladenia tessellata Thick-lipped Spider-orchid, Daddy Long-legs [2119]	Vulnerable	Species or species habitat likely to occur within area
Cryptostylis hunteriana Leafless Tongue-orchid [19533]	Vulnerable	Species or species habitat likely to occur within area
Cynanchum elegans White-flowered Wax Plant [12533]	Endangered	Species or species habitat likely to occur within area
Diuris praecox Newcastle Doubletail [55086]	Vulnerable	Species or species habitat likely to occur within area
Eucalyptus camfieldii Camfield's Stringybark [15460]	Vulnerable	Species or species habitat likely to occur within area
Genoplesium baueri Yellow Gnat-orchid, Bauer's Midge Orchid, Brittle Midge Orchid [7528]	Endangered	Species or species habitat likely to occur within area
Grevillea shiressii [19186]	Vulnerable	Species or species habitat likely to occur within area
Melaleuca biconvexa Biconvex Paperbark [5583]	Vulnerable	Species or species habitat known to occur within area
Melaleuca deanei Deane's Melaleuca [5818]	Vulnerable	Species or species habitat may occur within area
Persicaria elatior Knotweed, Tall Knotweed [5831]	Vulnerable	Species or species habitat may occur within area
Persoonia hirsuta Hairy Geebung, Hairy Persoonia [19006]	Endangered	Species or species habitat likely to occur within area
Pimelea curviflora var. curviflora [4182]	Vulnerable	Species or species habitat may occur within area
Prostanthera askania Tranquillity Mintbush, Tranquility Mintbush [64958]	Endangered	Species or species habitat known to occur within area

Name	Status	Type of Presence
Prostanthera junonis Somersby Mintbush [64960]	Endangered	Species or species habitat known to occur within area
Rhizanthella slateri Eastern Underground Orchid [11768]	Endangered	Species or species habitat may occur within area
Rhodamnia rubescens Scrub Turpentine, Brown Malletwood [15763]	Critically Endangered	Species or species habitat known to occur within area
Rhodomyrtus psidioides Native Guava [19162]	Critically Endangered	Species or species habitat known to occur within area
Rutidosis heterogama Heath Wrinklewort [13132]	Vulnerable	Species or species habitat may occur within area
Syzygium paniculatum Magenta Lilly Pilly, Magenta Cherry, Daguba, Scrub Cherry, Creek Lilly Pilly, Brush Cherry [20307]	Vulnerable	Species or species habitat known to occur within area
Tetratheca juncea Black-eyed Susan [21407]	Vulnerable	Species or species habitat known to occur within area
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat may occur within area
Reptiles		
Hoplocephalus bungaroides Broad-headed Snake [1182]	Vulnerable	Species or species habitat likely to occur within area

Listed Migratory Species [Resource Information]

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

Name	Threatened	Type of Presence
Migratory Marine Birds		
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Migratory Terrestrial Species		
Cuculus optatus Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat known to occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area
Monarcha trivirgatus Spectacled Monarch [610]		Species or species habitat may occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat likely to occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area

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

Other Matters Protected by the EPBC Act

Commonwealth Land [Resource Information]

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

Name
Commonwealth Land - Australian & Overseas Telecommunications Corporation
Commonwealth Land - Australian Postal Commission
Commonwealth Land - Australian Telecommunications Commission
Commonwealth Land - Defence Housing Authority
Commonwealth Land - Director of War Service Homes

Listed Marine Species [Resource Information]

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

Name	Threatened	Type of Presence
Birds		
Actitis hypoleucos		
Common Sandpiper [59309]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat likely to occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area
Monarcha trivirgatus Spectacled Monarch [610]		Species or species habitat may occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat likely to occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely to occur within area
Pachyptila turtur Fairy Prion [1066]		Species or species habitat likely to occur within area

Name	Threatened	Type of Presence
Pandion haliaetus		
Osprey [952]		Species or species habitat known to occur within area
Rhipidura rufifrons		
Rufous Fantail [592]		Species or species habitat known to occur within area
Rostratula benghalensis (sensu lato)		
Painted Snipe [889]	Endangered*	Species or species habitat likely to occur within area
Thinornis rubricollis rubricollis		
Hooded Plover (eastern) [66726]	Vulnerable*	Species or species habitat may occur within area
Tringa nebularia		
Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area

Extra Information

State and Territory Reserves [Resource Information]

Name	State
Jilliby	NSW
LNE Special Management Zone No1	NSW

Regional Forest Agreements [Resource Information]

Note that all areas with completed RFAs have been included.

Name	State
North East NSW RFA	New South Wales

Invasive Species [Resource Information]

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

Name	Status	Type of Presence
Birds		
Acridotheres tristis		
Common Myna, Indian Myna [387]		Species or species habitat likely to occur within area
Alauda arvensis		
Skylark [656]		Species or species habitat likely to occur within area
Anas platyrhynchos		
Mallard [974]		Species or species habitat likely to occur within area
Carduelis carduelis		
European Goldfinch [403]		Species or species habitat likely to occur within area
Columba livia		
Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area

Name	Status	Type of Presence
Lonchura punctulata Nutmeg Mannikin [399]		Species or species habitat likely to occur within area
Passer domesticus House Sparrow [405]		Species or species habitat likely to occur within area
Passer montanus Eurasian Tree Sparrow [406]		Species or species habitat likely to occur within area
Pycnonotus jocosus Red-whiskered Bulbul [631]		Species or species habitat likely to occur within area
Streptopelia chinensis Spotted Turtle-Dove [780]		Species or species habitat likely to occur within area
Sturnus vulgaris Common Starling [389]		Species or species habitat likely to occur within area
Turdus merula Common Blackbird, Eurasian Blackbird [596]		Species or species habitat likely to occur within area
Frogs		
Rhinella marina Cane Toad [83218]		Species or species habitat known to occur within area
Mammals		
Bos taurus Domestic Cattle [16]		Species or species habitat likely to occur within area
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Feral deer Feral deer species in Australia [85733]		Species or species habitat likely to occur within area
Lepus capensis Brown Hare [127]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Rattus norvegicus Brown Rat, Norway Rat [83]		Species or species habitat likely to occur within area
Rattus rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur

Name	Status	Type of Presence within area
Plants		
Alternanthera philoxeroides Alligator Weed [11620]		Species or species habitat likely to occur within area
Anredera cordifolia Madeira Vine, Jalap, Lamb's-tail, Mignonette Vine, Anredera, Gulf Madeiravine, Heartleaf Madeiravine, Potato Vine [2643]		Species or species habitat likely to occur within area
Asparagus aethiopicus Asparagus Fern, Ground Asparagus, Basket Fern, Sprengi's Fern, Bushy Asparagus, Emerald Asparagus [62425]		Species or species habitat likely to occur within area
Asparagus asparagoides Bridal Creeper, Bridal Veil Creeper, Smilax, Florist's Smilax, Smilax Asparagus [22473]		Species or species habitat likely to occur within area
Asparagus plumosus Climbing Asparagus-fern [48993]		Species or species habitat likely to occur within area
Asparagus scandens Asparagus Fern, Climbing Asparagus Fern [23255]		Species or species habitat likely to occur within area
Cabomba caroliniana Cabomba, Fanwort, Carolina Watershield, Fish Grass, Washington Grass, Watershield, Carolina Fanwort, Common Cabomba [5171]		Species or species habitat likely to occur within area
Chrysanthemoides monilifera Bitou Bush, Boneseed [18983]		Species or species habitat may occur within area
Chrysanthemoides monilifera subsp. monilifera Boneseed [16905]		Species or species habitat likely to occur within area
Chrysanthemoides monilifera subsp. rotundata Bitou Bush [16332]		Species or species habitat likely to occur within area
Cytisus scoparius Broom, English Broom, Scotch Broom, Common Broom, Scottish Broom, Spanish Broom [5934]		Species or species habitat likely to occur within area
Dolichandra unguis-cati Cat's Claw Vine, Yellow Trumpet Vine, Cat's Claw Creeper, Funnel Creeper [85119]		Species or species habitat likely to occur within area
Eichhornia crassipes Water Hyacinth, Water Orchid, Nile Lily [13466]		Species or species habitat likely to occur within area
Genista monspessulana Montpellier Broom, Cape Broom, Canary Broom, Common Broom, French Broom, Soft Broom [20126]		Species or species habitat likely to occur within area
Genista sp. X Genista monspessulana Broom [67538]		Species or species habitat may occur within area
Lantana camara Lantana, Common Lantana, Kamara Lantana, Large-leaf Lantana, Pink Flowered Lantana, Red Flowered Lantana, Red-Flowered Sage, White Sage, Wild Sage [10892]		Species or species habitat likely to occur within area
Lycium ferocissimum African Boxthorn, Boxthorn [19235]		Species or species habitat likely to occur within area
Nassella neesiana Chilean Needle grass [67699]		Species or species

Name	Status	Type of Presence
		habitat likely to occur within area
Opuntia spp. Prickly Pears [82753]		Species or species habitat likely to occur within area
Pinus radiata Radiata Pine Monterey Pine, Insignis Pine, Wilding Pine [20780]		Species or species habitat may occur within area
Rubus fruticosus aggregate Blackberry, European Blackberry [68406]		Species or species habitat likely to occur within area
Sagittaria platyphylla Delta Arrowhead, Arrowhead, Slender Arrowhead [68483]		Species or species habitat likely to occur within area
Salix spp. except S.babylonica, S.x calodendron & S.x reichardtii Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow [68497]		Species or species habitat likely to occur within area
Salvinia molesta Salvinia, Giant Salvinia, Aquarium Watermoss, Kariba Weed [13665]		Species or species habitat likely to occur within area
Senecio madagascariensis Fireweed, Madagascar Ragwort, Madagascar Groundsel [2624]		Species or species habitat likely to occur within area
Ulex europaeus Gorse, Furze [7693]		Species or species habitat likely to occur within area

Caveat

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

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

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

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

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

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

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

- migratory and
- marine

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

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

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

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

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

Coordinates

-33.3797 151.35797

Acknowledgements

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

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

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

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

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APPENDIX 4 BIODIVERSITY CONSERVATION ACT (2016) ASSESSMENT OF SIGNIFICANCE

APPENDIX 4 - BIODIVERSITY CONSERVATION ACT (2016) TEST OF SIGNIFICANCE

The following Test of Significance has been completed in accordance with Section 7.3 of the *Biodiversity Conservation Act* (2016) to determine whether the proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats. This Assessment has been completed in accordance with the Threatened Species Test of Significance Guidelines (NSW OEH 2018). The information in the preceding sections of this Report should be read in conjunction with the following assessments.

a) In the case of a threatened species, whether the action proposed is likely to have an adverse effect on the life cycle of the species such that a viable local population of this species is likely to be placed at risk of extinction,

SUPERB FRUIT-DOVE (*Ptilinopus superbus*)

Habitat Preference
This species inhabits mostly closed forests, occasionally near streams or lakes within rainforest. Breeding most commonly occurs within dense forests. They are a regular autumn and winter migrant to the Hunter, Sydney, Illawarra and South Coast regions. This species is frugivorous, taking fruits of many species of rainforest trees, vines and palms (Higgins & Davies 1996).

Site Occurrence
This species was not observed within the subject site during surveys. The site contains suitable habitat for this species which may be utilised occasionally as foraging habitat.

Proposed Impacts
The following impact considerations are provided:

- The proposed development footprint is shown in Figures 1.1 and 2.1.
- The proposal will result in the removal or modification of approximately 0.4 ha of suitable forested habitat for this species and the modification of approximately 2.75 ha of cleared land.
- The proposal is not likely to directly impact an area of known habitat for this species and suitable environmental protection controls will be implemented as part of the proposal to mitigate impacts to retained areas of suitable habitat.

Conclusion & Rationale
This species was not observed during surveys. The proposal will remove or modify a relatively small area of suitable habitats present for this species within the site. There are larger areas of suitable habitats present offsite within the locality which will not be impacted by the proposal.

It is considered that the proposed action will not have an adverse effect on the life cycle of this species such that a viable local population of this species is likely to be placed at risk of extinction.

WOMPOO FRUIT-DOVE (*Ptilinopus magnificus*)

Habitat Preference
The Wompoo Fruit-dove mainly inhabits large undisturbed patches of tall tropical or subtropical evergreen rainforest. It is an obligate frugivore, taking fruits of many species of rainforest trees, palms, vines and epiphytes, feeding mostly in the canopy (Higgins & Davies 1996).

Site Occurrence
This species was not observed within the subject site during surveys. The site contains suitable habitat for this species which may be utilised occasionally as foraging habitat.

Proposed Impacts
The following impact considerations are provided:

- The proposed development footprint is shown in Figures 1.1 and 2.1.
- The proposal will result in the removal or modification of approximately 0.4 ha of suitable forested habitat for this species.
- The proposal is not likely to directly impact an area of known habitat for this species and

suitable environmental protection controls will be implemented as part of the proposal to mitigate impacts to retained areas of suitable habitat.

Conclusion & Rationale
This species was not observed during surveys. The proposal will remove or modify a relatively small area of suitable habitats present for this species within the site. There are larger areas of suitable habitats present offsite within the locality which will not be impacted by the proposal.

It is considered that the proposed action will not have an adverse effect on the life cycle of this species such that a viable local population of this species is likely to be placed at risk of extinction.

SQUARE-TAILED KITE (*Lophoictinia isura*)

Habitat Preference
The Square-tailed Kite inhabits the coastal forested and wooded lands of tropical and temperate Australia. The Square-tailed Kite is a specialist hunter of passerines, especially honeyeaters, and insects in the tree canopy, picking most prey items from the outer foliage (Marchant & Higgins 1993).

Site Occurrence
This species was not observed within the subject site during surveys. The site contains suitable habitat for this species which may be utilised occasionally as part of a larger foraging range.

Proposed Impacts
The following impact considerations are provided:

- The proposed development footprint is shown in Figures 1.1 and 2.1.
- The proposal will result in the removal or modification of approximately 0.4 ha of suitable forested habitat for this species and the modification of approximately 2.7 ha of cleared land.
- The proposal is not likely to directly impact an area of known habitat for this species and suitable environmental protection controls will be implemented as part of the proposal to mitigate impacts to retained areas of suitable habitat.

Conclusion & Rationale
This species was not observed during surveys. The proposal will remove or modify a relatively small area of suitable habitats present for this species within the site. There are larger areas of suitable habitats present offsite within the locality which will not be impacted by the proposal.

It is considered that the proposed action will not have an adverse effect on the life cycle of this species such that a viable local population of this species is likely to be placed at risk of extinction.

LITTLE EAGLE (*Hieraaetus morphnoides*)

Habitat Preference
This species forages in a variety of habitats including woodland open forest, partially cleared areas, along watercourses and around wetlands, avoiding large areas of dense forest. This species nests in mature living trees in open forest, woodland and remnant areas including farmland and areas close to urban development (Marchant and Higgins 1993).

Site Occurrence
This species was not observed within the subject site during surveys. The site contains suitable habitat for this species which may be utilised occasionally as part of a larger foraging range.

Proposed Impacts
The following impact considerations are provided:

- The proposed development footprint is shown in Figures 1.1 and 2.1.
- The proposal will result in the removal or modification of approximately 0.4 ha of suitable forested habitat for this species and the modification of approximately 2.7 ha of cleared land.
- The proposal is not likely to directly impact an area of known habitat for this species and

suitable environmental protection controls will be implemented as part of the proposal to mitigate impacts to retained areas of suitable habitat.

Conclusion & Rationale
This species was not observed during surveys. The proposal will remove or modify a relatively small area of suitable habitats present for this species within the site. There are larger areas of suitable habitats present offsite within the locality which will not be impacted by the proposal.

It is considered that the proposed action will not have an adverse effect on the life cycle of this species such that a viable local population of this species is likely to be placed at risk of extinction.

LITTLE LORIKEET (*Glossopsitta pusilla*)

Habitat Preference
The Little Lorikeet feeds primarily on nectar and pollen in the tree canopy, particularly on profusely-flowering eucalypts, but also on a variety of other species including, melaleucas and mistletoes (Courtney & Debus 2006).

Site Occurrence
This species was not observed within the subject site during surveys. The site contains suitable foraging habitat for this species which may be utilised occasionally as part of a larger foraging range.

Proposed Impacts
The following impact considerations are provided:

- The proposed development footprint is shown in Figures 1.1 and 2.1.
- The proposal will result in the removal or modification of approximately 0.4 ha of suitable forested habitat for this species and the modification of approximately 2.75 ha of cleared land.
- The proposal is not likely to directly impact an area of known habitat for this species and suitable environmental protection controls will be implemented as part of the proposal to mitigate impacts to retained areas of suitable habitat.

Conclusion & Rationale
This species was not observed during surveys. The proposal will remove or modify a relatively small area of suitable habitats present for this species within the site. There are larger areas of suitable habitats present offsite within the locality which will not be impacted by the proposal.

It is considered that the proposed action will not have an adverse effect on the life cycle of this species such that a viable local population of this species is likely to be placed at risk of extinction.

GLOSSY BLACK-COCKATOO (*Calyptorhynchus lathami*)

Habitat Preference
The Glossy Black-Cockatoo inhabits woodlands and open sclerophyll forests dominated by or with a middle stratum of Allocasuarina. They choose trees with larger cone crops, concentrating foraging in trees with a high ratio of total seed weight to cone weight. They breed in hollow trees or stumps usually in Eucalypts (Higgins 1999).

Site Occurrence
This species was not observed within the subject site during surveys. The site contains suitable habitat for this species which may be utilised occasionally as part of a larger habitat range.

Proposed Impacts
The following impact considerations are provided:

- The proposed development footprint is shown in Figures 1.1 and 2.1.
- The proposal will result in the removal or modification of approximately 0.4 ha of suitable forested habitat for this species and the modification of approximately 2.75 ha of cleared land.
- The proposal is not likely to directly impact an area of known habitat for this species and

suitable environmental protection controls will be implemented as part of the proposal to mitigate impacts to retained areas of suitable habitat.

Conclusion & Rationale
This species was not observed during surveys. The proposal will remove or modify a relatively small area of suitable habitats present for this species within the site. There are larger areas of suitable habitats present offsite within the locality which will not be impacted by the proposal.

It is considered that the proposed action will not have an adverse effect on the life cycle of this species such that a viable local population of this species is likely to be placed at risk of extinction.

GANG-GANG COCKATOO (*Callocephalon fimbriatum*)

Habitat Preference
The Gang-gang Cockatoo is associated with a variety of woodland and forest habitats, and occasionally more open areas in south–eastern New South Wales and Victoria. This species utilises eucalypt forests and exotic trees, and is known to feed on the seeds of native shrubs and trees, in addition to some exotic species such as the Hawthorn and Cupressus species (Higgins 1999).

Site Occurrence
This species was not observed within the subject site during surveys. The site contains suitable foraging habitat for this species which may be utilised occasionally as part of a larger habitat range.

Proposed Impacts
The following impact considerations are provided:

- The proposed development footprint is shown in Figures 1.1 and 2.1.
- The proposal will result in the removal or modification of approximately 0.4 ha of suitable forested habitat for this species and the modification of approximately 2.75 ha of cleared land.
- The proposal is not likely to directly impact an area of known habitat for this species and suitable environmental protection controls will be implemented as part of the proposal to mitigate impacts to retained areas of suitable habitat.

Conclusion & Rationale
This species was not observed during surveys. The proposal will remove or modify a relatively small area of suitable habitats present for this species within the site. There are larger areas of suitable habitats present offsite within the locality which will not be impacted by the proposal.

It is considered that the proposed action will not have an adverse effect on the life cycle of this species such that a viable local population of this species is likely to be placed at risk of extinction.

BARKING OWL (*Ninox connivens*)

Habitat Preference
The Barking Owl utilises dry sclerophyll forests and woodlands of tropical, temperate and semi-arid zones, particularly those associated with watercourses, wetlands and forest edges. Nests in large hollows in live eucalypts, often near open country (Higgins 1999).

Site Occurrence
This species was not observed within the subject site during surveys. The site contains suitable foraging habitat for this species which may be utilised occasionally as part of a larger home range.

Proposed Impacts
The following impact considerations are provided:

- The proposed development footprint is shown in Figures 1.1 and 2.1.
- The proposal will result in the removal or modification of approximately 0.4 ha of suitable forested habitat for this species and the modification of approximately 2.75 ha of cleared land.

- The proposal is not likely to directly impact an area of known habitat for this species and suitable environmental protection controls will be implemented as part of the proposal to mitigate impacts to retained areas of suitable habitat.

Conclusion & Rationale
This species was not observed during surveys. The proposal will remove or modify a relatively small area of suitable habitats present for this species within the site. There are larger areas of suitable habitats present offsite within the locality which will not be impacted by the proposal.

It is considered that the proposed action will not have an adverse effect on the life cycle of this species such that a viable local population of this species is likely to be placed at risk of extinction.

POWERFUL OWL (*Ninox strenua*)

Habitat Preference
The Powerful Owl breeds in open or closed sclerophyll forests and woodlands, including wet sclerophyll forest and dry sclerophyll forest and woodlands. They nest in hollows in large old trees; usually living Eucalyptus, within or below canopy in stumps or broken-off trunks. Powerful Owls are sedentary within home ranges of about 1,000 hectares within open eucalypt, casuarina or Callitris pine forest and woodlands, though they often roost in denser vegetation, including rainforest or exotic pine plantations. Powerful Owls feed mainly on medium-sized arboreal marsupials (Higgins 1999).

Site Occurrence
This species was not observed within the subject site during surveys. The site contains suitable foraging habitat for this species which may be utilised occasionally as part of a larger home range.

Proposed Impacts
The following impact considerations are provided:
- The proposed development footprint is shown in Figures 1.1 and 2.1.
- The proposal will result in the removal or modification of approximately 0.4 ha of suitable forested habitat for this species and the modification of approximately 2.75 ha of cleared land.
- The proposal is not likely to directly impact an area of known habitat for this species and suitable environmental protection controls will be implemented as part of the proposal to mitigate impacts to retained areas of suitable habitat.

Conclusion & Rationale
This species was not observed during surveys. The proposal will remove or modify a relatively small area of suitable habitats present for this species within the site. There are larger areas of suitable habitats present offsite within the locality which will not be impacted by the proposal.

It is considered that the proposed action will not have an adverse effect on the life cycle of this species such that a viable local population of this species is likely to be placed at risk of extinction.

MASKED OWL (*Tyto novaehollandiae*)

Habitat Preference
The Masked Owl is widespread through forests and woodlands. The Masked Owl is known to utilise forest margins and isolated stands of trees within agricultural land. This species is often found in heavily disturbed forest where its prey of small and medium sized mammals can be readily obtained. The Masked Owl is dependent upon hollow bearing trees all year round requiring old mature trees with large hollows for breeding and as diurnal roosting sites (Higgins 1999).

Site Occurrence
This species was not observed within the subject site during surveys. The site contains suitable foraging habitat for this species which may be utilised occasionally as part of a larger home range.

Proposed Impacts
The following impact considerations are provided:

- The proposed development footprint is shown in Figures 1.1 and 2.1.
- The proposal will result in the removal or modification of approximately 0.4 ha of suitable forested habitat for this species and the modification of approximately 2.75 ha of cleared land.
- The proposal is not likely to directly impact an area of known habitat for this species and suitable environmental protection controls will be implemented as part of the proposal to mitigate impacts to retained areas of suitable habitat.

Conclusion & Rationale
This species was not observed during surveys. The proposal will remove or modify a relatively small area of suitable habitats present for this species within the site. There are larger areas of suitable habitats present offsite within the locality which will not be impacted by the proposal.

It is considered that the proposed action will not have an adverse effect on the life cycle of this species such that a viable local population of this species is likely to be placed at risk of extinction.

SOOTY OWL (*Tyto tenebricosa*)

Habitat Preference
The Sooty Owls habitat is often tall old-growth montane forests, including temperate and subtropical rainforest. This species occurs mostly in uplands in gullies and on slopes of valleys but rarely on ridges. Optimal habitat contains tall eucalypts with large hollows suitable for nesting and roosting, but also a range of hollows that provide shelter for prey. The same nest is used repeatedly, and the owls also roost and occasionally nest in caves. The Sooty Owl preys on arboreal and terrestrial mammals and occasionally birds (Higgins 1999).

Site Occurrence
This species was not observed within the subject site during surveys. The site contains suitable foraging habitat for this species which may be utilised occasionally as part of a larger home range.

Proposed Impacts
The following impact considerations are provided:
- The proposed development footprint is shown in Figures 1.1 and 2.1.
- The proposal will result in the removal or modification of approximately 0.4 ha of suitable forested habitat for this species and the modification of approximately 2.75 ha of cleared land.
- The proposal is not likely to directly impact an area of known habitat for this species and suitable environmental protection controls will be implemented as part of the proposal to mitigate impacts to retained areas of suitable habitat.

Conclusion & Rationale
This species was not observed during surveys. The proposal will remove or modify a relatively small area of suitable habitats present for this species within the site. There are larger areas of suitable habitats present offsite within the locality which will not be impacted by the proposal.

It is considered that the proposed action will not have an adverse effect on the life cycle of this species such that a viable local population of this species is likely to be placed at risk of extinction.

SWIFT PARROT (*Lathamus discolor*)
This species feeds mainly on nectar and lerp from eucalypt flowers, particularly Blue Gum (Eucalyptus globulus). On the mainland, the Swift Parrot congregates where winter flowering species such as Yellow Gum, Red Ironbark, Mugga Ironbark, Box Gums and Swamp Gum. This species also occurs within Blackbutt, Forest Red Gum, Swamp Mahogany and Spotted Gum dominated communities along the coast. The Swift Parrot is a migratory species that breeds in Tasmania and its offshore islands in summer. In late March almost the entire population migrates to mainland Australia spreading from Victoria through to central and coastal NSW and south east Queensland (Saunders and Tzaros 2011).

Site Occurrence
This species was not observed within the subject site during surveys. The site contains disturbed

suitable foraging habitat for this species which may be utilised occasionally as part of a larger home range.

Proposed Impacts
The following impact considerations are provided:

- The proposed development footprint is shown in Figures 1.1 and 2.1.
- The proposal will result in the removal or modification of approximately 0.4 ha of suitable forested habitat for this species and the modification of approximately 2.75 ha of cleared land.
- The proposal is not likely to directly impact an area of known habitat for this species and suitable environmental protection controls will be implemented as part of the proposal to mitigate impacts to retained areas of suitable habitat.

Conclusion & Rationale
This species was not observed during surveys. The proposal will remove or modify a relatively small area of suitable habitats present for this species within the site. There are larger areas of suitable habitats present offsite within the locality which will not be impacted by the proposal.

It is considered that the proposed action will not have an adverse effect on the life cycle of this species such that a viable local population of this species is likely to be placed at risk of extinction.

SCARLET ROBIN (*Petroica boodang*)

Habitat Preference
This species inhabits mainly dry eucalypt forest and woodlands with open shrubby and grassy understorey on ridges and slopes during the spring-summer breeding season, dispersing during autumn–winter into open habitats including urban areas (Higgins and Peter 2002).

Site Occurrence
This species was not observed within the subject site during surveys. The site contains suitable foraging habitat for this species which may be utilised occasionally as part of a larger habitat range.

Proposed Impacts
The following impact considerations are provided:

- The proposed development footprint is shown in Figures 1.1 and 2.1.
- The proposal will result in the removal or modification of approximately 0.4 ha of suitable forested habitat for this species and the modification of approximately 2.75 ha of cleared land.
- The proposal is not likely to directly impact an area of known habitat for this species and suitable environmental protection controls will be implemented as part of the proposal to mitigate impacts to retained areas of suitable habitat.

Conclusion & Rationale
This species was not observed during surveys. The proposal will remove or modify a relatively small area of suitable habitats present for this species within the site. There are larger areas of suitable habitats present offsite within the locality which will not be impacted by the proposal.

It is considered that the proposed action will not have an adverse effect on the life cycle of this species such that a viable local population of this species is likely to be placed at risk of extinction.

REGENT HONEYEATER (*Anthochaera phrygia*)
The Regent Honeyeater inhabits mostly dry eucalypt woodlands and forests dominated by box ironbark eucalypts; on inland slopes of Great Divide, especially associations in moister more fertile sites, along creeks, broad river valleys and on lower slopes of foothills. Nectar is the principle food but sugary exudates from insects are also used. The Regent Honeyeater is known to breed along the western Slopes of the Great Dividing Range in New South Wales (Higgins et al., 2001).

Site Occurrence
This species was not observed within the subject site during surveys. The site contains suitable

foraging habitat for this species which may be utilised occasionally as part of a larger home range.

Proposed Impacts
The following impact considerations are provided:

- The proposed development footprint is shown in Figures 1.1 and 2.1.
- The proposal will result in the removal or modification of approximately 0.4 ha of suitable forested habitat for this species and the modification of approximately 2.75 ha of cleared land.
- The proposal is not likely to directly impact an area of known habitat for this species and suitable environmental protection controls will be implemented as part of the proposal to mitigate impacts to retained areas of suitable habitat.

Conclusion & Rationale
This species was not observed during surveys. The proposal will remove or modify a relatively small area of suitable habitats present for this species within the site. There are larger areas of suitable habitats present offsite within the locality which will not be impacted by the proposal.

It is considered that the proposed action will not have an adverse effect on the life cycle of this species such that a viable local population of this species is likely to be placed at risk of extinction.

DUSKY WOODSWALLOW (*Artamus cyanopterus cyanopterus*)

Habitat Preference
This species inhabits a variety of habitats including forest, woodland, shrubland, heath and disturbed environments. Widespread species which inhabits inland and coastal areas (OEH 2017).

Site Occurrence
This species was not observed within the subject site during surveys. The site contains suitable foraging habitat for this species which may be utilised occasionally as part of a larger habitat range.

Proposed Impacts
The following impact considerations are provided:

- The proposed development footprint is shown in Figures 1.1 and 2.1.
- The proposal will result in the removal or modification of approximately 0.4 ha of suitable forested habitat for this species and the modification of approximately 2.75 ha of cleared land.
- The proposal is not likely to directly impact an area of known habitat for this species and suitable environmental protection controls will be implemented as part of the proposal to mitigate impacts to retained areas of suitable habitat.

Conclusion & Rationale
This species was not observed during surveys. The proposal will remove or modify a relatively small area of suitable habitats present for this species within the site. There are larger areas of suitable habitats present offsite within the locality which will not be impacted by the proposal.

It is considered that the proposed action will not have an adverse effect on the life cycle of this species such that a viable local population of this species is likely to be placed at risk of extinction.

VARIED SITTELLA (*Daphoenositta chrysoptera*)

Habitat Preference
This species inhabits eucalypt forests and woodlands, especially rough-barked species and mature smooth-barked gums with dead branches, mallee and Acacia woodland (Higgins & Peter 2002).

Site Occurrence
This species was not observed within the subject site during surveys. The site contains suitable foraging habitat for this species which may be utilised occasionally as part of a larger home range.

Proposed Impacts
The following impact considerations are provided:

- The proposed development footprint is shown in Figures 1.1 and 2.1.
- The proposal will result in the removal or modification of approximately 0.4 ha of suitable forested habitat for this species and the modification of approximately 2.75 ha of cleared land.
- The proposal is not likely to directly impact an area of known habitat for this species and suitable environmental protection controls will be implemented as part of the proposal to mitigate impacts to retained areas of suitable habitat.

Conclusion & Rationale
This species was not observed during surveys. The proposal will remove or modify a relatively small area of suitable habitats present for this species within the site. There are larger areas of suitable habitats present offsite within the locality which will not be impacted by the proposal.

It is considered that the proposed action will not have an adverse effect on the life cycle of this species such that a viable local population of this species is likely to be placed at risk of extinction.

FLAME ROBIN (*Petroica phoenicea*)

Habitat Preference
This species inhabits upland wet to moist eucalypt forests and woodlands with an open understorey, often on ridges and slopes to 1800m above sea level during the spring-summer breeding season. During the autumn to winter non breeding season this species disperses to open lowland habitats including grasslands, farmland dry sclerophyll forests and woodlands (Higgins and Peter 2002).

Site Occurrence
This species was not observed within the subject site during surveys. The site contains suitable foraging habitat for this species which may be utilised occasionally as part of a larger habitat range.

Proposed Impacts
The following impact considerations are provided:

- The proposed development footprint is shown in Figures 1.1 and 2.1.
- The proposal will result in the removal or modification of approximately 0.4 ha of suitable forested habitat for this species and the modification of approximately 2.75 ha of cleared land.
- The proposal is not likely to directly impact an area of known habitat for this species and suitable environmental protection controls will be implemented as part of the proposal to mitigate impacts to retained areas of suitable habitat.

Conclusion & Rationale
This species was not observed during surveys. The proposal will remove or modify a relatively small area of suitable habitats present for this species within the site. There are larger areas of suitable habitats present offsite within the locality which will not be impacted by the proposal.

It is considered that the proposed action will not have an adverse effect on the life cycle of this species such that a viable local population of this species is likely to be placed at risk of extinction.

YELLOW-BELLIED GLIDER (*Petaurus australis*)

Habitat Preference
The Yellow-bellied Glider is restricted to tall mature eucalypt forests within high rainfall regions. The bulk of its diet consists of plant and insect exudates including sap, nectar, honeydew and manna while arthropods and pollen are also eaten. Yellow-bellied Gliders occupy home ranges between 30 and 65 hectares in size and den in tree hollows (Goldingay & Kavanagh 1991).

Site Occurrence
This species was not observed within the subject site during surveys. The site contains suitable

foraging habitat for this species which may be utilised occasionally as part of a larger habitat range.

Proposed Impacts
The following impact considerations are provided:

- The proposed development footprint is shown in Figures 1.1 and 2.1.
- The proposal will result in the removal or modification of approximately 0.4 ha of suitable forested habitat for this species and the modification of approximately 2.75 ha of cleared land.
- The proposal is not likely to directly impact an area of known habitat for this species and suitable environmental protection controls will be implemented as part of the proposal to mitigate impacts to retained areas of suitable habitat.

Conclusion & Rationale
This species was not observed during surveys. The proposal will remove or modify a relatively small area of suitable habitats present for this species within the site. There are larger areas of suitable habitats present offsite within the locality which will not be impacted by the proposal.

It is considered that the proposed action will not have an adverse effect on the life cycle of this species such that a viable local population of this species is likely to be placed at risk of extinction.

GREY-HEADED FLYING-FOX (*Pteropus poliocephalus*)

Habitat Preference
Grey-headed Flying-foxes roost in camps during the day, which may contain tens of thousands of individuals, and then disperse to surrounding areas to forage at night. This species inhabits a wide range of habitats including rainforest, mangroves, paperbark forests, wet and dry sclerophyll forests and urbanised and agricultural areas. Camps are commonly formed in gullies, typically not far from water and usually in vegetation with a dense canopy. Camps may also be formed in urban parkland areas (Tidemann 1995).

This species generally occurs within 200km of the east and south-east coast of Australia between Rockhampton in Queensland and Adelaide in South Australia (OEH 2018).

Site Occurrence
This species was not observed within the subject site during surveys. The site contains suitable foraging habitat for this species which may be utilised occasionally as part of a larger foraging range.

Proposed Impacts
The following impact considerations are provided:

- The proposed development footprint is shown in Figures 1.1 and 2.1.
- The proposal will result in the removal or modification of approximately 0.4 ha of suitable forested habitat for this species and the modification of approximately 2.75 ha of cleared land.
- The proposal is not likely to directly impact an area of known habitat for this species and suitable environmental protection controls will be implemented as part of the proposal to mitigate impacts to retained areas of suitable habitat.

Conclusion & Rationale
This species was not observed during surveys. The proposal will remove or modify a relatively small area of suitable habitats present for this species within the site. There are larger areas of suitable habitats present offsite within the locality which will not be impacted by the proposal.

It is considered that the proposed action will not have an adverse effect on the life cycle of this species such that a viable local population of this species is likely to be placed at risk of extinction.

YELLOW-BELLIED SHEATHTAIL-BAT (*Saccolaimus flaviventris*)

Habitat Preference
The Yellow-bellied Sheathtail-bat inhabits a wide variety of habitats from wet and dry sclerophyll forest, to open woodland, shrubland, mallee, grassland and desert. They fly fast and straight usually over the canopy, and lower over open spaces and at forest edges. This species roosts in large tree hollows (Churchill 2008).

Site Occurrence
This species was not observed within the subject site during surveys. The site contains suitable foraging habitat for this species which may be utilised occasionally as part of a larger home range.

Proposed Impacts
The following impact considerations are provided:

- The proposed development footprint is shown in Figures 1.1 and 2.1.
- The proposal will result in the removal or modification of approximately 0.4 ha of suitable forested habitat for this species and the modification of approximately 2.75 ha of cleared land.
- The proposal is not likely to directly impact an area of known habitat for this species and suitable environmental protection controls will be implemented as part of the proposal to mitigate impacts to retained areas of suitable habitat.

Conclusion & Rationale
This species was not observed during surveys. The proposal will remove or modify a relatively small area of suitable habitats present for this species within the site. There are larger areas of suitable habitats present offsite within the locality which will not be impacted by the proposal.

It is considered that the proposed action will not have an adverse effect on the life cycle of this species such that a viable local population of this species is likely to be placed at risk of extinction.

EASTERN COASTAL FREE-TAILED BAT (*Micronomus norfolkensis*)

Habitat Preference
The Eastern Coastal Free-tail bat utilises dry eucalypt forest and woodland on the coastal side of the Great Dividing Range. They show a preference for open spaces in woodland or forest, and are more active in the upper slopes of forest areas rather than in riparian zones. They also forage over large waterways. This species roosts in hollow trees (usually in hollow spouts), under exfoliating bark and in various man-made structures (Churchill 2008).

Site Occurrence
This species was not observed within the subject site during surveys. The site contains suitable foraging habitat for this species which may be utilised occasionally as part of a larger home range.

Proposed Impacts
The following impact considerations are provided:

- The proposed development footprint is shown in Figures 1.1 and 2.1.
- The proposal will result in the removal or modification of approximately 0.4 ha of suitable forested habitat for this species and the modification of approximately 2.75 ha of cleared land.
- The proposal is not likely to directly impact an area of known habitat for this species and suitable environmental protection controls will be implemented as part of the proposal to mitigate impacts to retained areas of suitable habitat.

Conclusion & Rationale
This species was not observed during surveys. The proposal will remove or modify a relatively small area of suitable habitats present for this species within the site. There are larger areas of suitable habitats present offsite within the locality which will not be impacted by the proposal.

It is considered that the proposed action will not have an adverse effect on the life cycle of this species such that a viable local population of this species is likely to be placed at risk of extinction.

EASTERN FALSE PIPISTRELLE (*Falsistrellus tasmaniensis*)

Habitat Preference
The Eastern False Pipistrelle inhabits wet sclerophyll forest, open forest, rainforest and coastal mallee. They generally prefer tall and wet forests where the trees are more than 20 metres high and the understorey is dense. This species predominantly roosts in hollow trunks of eucalypts, however have also been reported to roost in caves and old buildings (Churchill 2008).

Site Occurrence
This species was not observed within the subject site during surveys. The site contains suitable foraging and roosting habitat for this species which may be utilised occasionally as part of a larger home range.

Proposed Impacts
The following impact considerations are provided:

- The proposed development footprint is shown in Figures 1.1 and 2.1.
- The proposal will result in the removal or modification of approximately 0.4 ha of suitable forested habitat for this species and the modification of approximately 2.75 ha of cleared land.
- The proposal is not likely to directly impact an area of known habitat for this species and suitable environmental protection controls will be implemented as part of the proposal to mitigate impacts to retained areas of suitable habitat.

Conclusion & Rationale
This species was not observed during surveys. The proposal will remove or modify a relatively small area of suitable habitats present for this species within the site. There are larger areas of suitable habitats present offsite within the locality which will not be impacted by the proposal.

It is considered that the proposed action will not have an adverse effect on the life cycle of this species such that a viable local population of this species is likely to be placed at risk of extinction.

LITTLE BENT-WINGED BAT (*Miniopterus australis*)

Habitat Preference
The Little Bentwing-bat forages below the canopy within well-timbered areas including rainforest, vine thicket, wet and dry melaleuca swamps and coastal forests. This species is a cave dweller with individuals congregating during the summer months in maternity colonies and disperse during the winter. Other roost sites used by this species include abandoned mines, tunnels, stormwater drains and occasionally in buildings, banana trees and tree hollows (Churchill 2008).

Site Occurrence
This species was not observed within the subject site during surveys. The site contains suitable foraging and roosting habitat for this species which may be utilised occasionally as part of a larger home range.

Proposed Impacts
The following impact considerations are provided:

- The proposed development footprint is shown in Figures 1.1 and 2.1.
- The proposal will result in the removal or modification of approximately 0.4 ha of suitable forested habitat for this species and the modification of approximately 2.75 ha of cleared land.
- The proposal is not likely to directly impact an area of known habitat for this species and suitable environmental protection controls will be implemented as part of the proposal to mitigate impacts to retained areas of suitable habitat.

Conclusion & Rationale
This species was not observed during surveys. The proposal will remove or modify a relatively small area of suitable habitats present for this species within the site. There are larger areas of suitable habitats present offsite within the locality which will not be impacted by the proposal.

It is considered that the proposed action will not have an adverse effect on the life cycle of this species such that a viable local population of this species is likely to be placed at risk of extinction.

LARGE BENT-WINGED BAT (*Miniopterus orianae oceanensis*)

Habitat Preference
Preferred habitats for this species include rainforest, wet and dry sclerophyll forest, open woodland, Melaleuca forests and open grassland. The Eastern Bentwing-bat forages high in forested areas from just above canopy height to many times canopy height. In more open areas such as grasslands, flight may be within a few metres of the ground. Eastern Bentwing-bats are cave dwellers, but will also roost in man-made structures such as road culverts and mines (Churchill 2008).

Site Occurrence
This species was not observed within the subject site during surveys. The site contains suitable foraging and roosting habitat for this species which may be utilised occasionally as part of a larger home range.

Proposed Impacts
The following impact considerations are provided:

- The proposed development footprint is shown in Figures 1.1 and 2.1.
- The proposal will result in the removal or modification of approximately 0.4 ha of suitable forested habitat for this species and the modification of approximately 2.75 ha of cleared land.
- The proposal is not likely to directly impact an area of known habitat for this species and suitable environmental protection controls will be implemented as part of the proposal to mitigate impacts to retained areas of suitable habitat.

Conclusion & Rationale
This species was not observed during surveys. The proposal will remove or modify a relatively small area of suitable habitats present for this species within the site. There are larger areas of suitable habitats present offsite within the locality which will not be impacted by the proposal.

It is considered that the proposed action will not have an adverse effect on the life cycle of this species such that a viable local population of this species is likely to be placed at risk of extinction.

GREATER BROAD-NOSED BAT (*Scoteanax rueppellii*)

Habitat Preference
A wide variety of habitats are utilised by this species including moist gullies in mature coastal forest, rainforest, open woodland, Melaleuca swamp woodland, wet and dry sclerophyll forest, cleared areas with remnant trees and tree-lined creeks in open areas. The Greater Broad-nosed Bat forages about 5m from the edge of isolated trees, forest remnants or along forest crowns with a slow direct flight pattern. This species is known to roost in tree hollows, cracks and fissures in trunks and dead branches, under exfoliating bark, as well as in man-made structures including roofs of old buildings (Churchill 2008).

Site Occurrence
This species was not observed within the subject site during surveys. The site contains suitable foraging and roosting habitat for this species which may be utilised occasionally as part of a larger home range.

Proposed Impacts
The following impact considerations are provided:

- The proposed development footprint is shown in Figures 1.1 and 2.1.
- The proposal will result in the removal or modification of approximately 0.4 ha of suitable forested habitat for this species and the modification of approximately 2.75 ha of cleared land.
- The proposal is not likely to directly impact an area of known habitat for this species and suitable environmental protection controls will be implemented as part of the proposal to

mitigate impacts to retained areas of suitable habitat.

Conclusion & Rationale
This species was not observed during surveys. The proposal will remove or modify a relatively small area of suitable habitats present for this species within the site. There are larger areas of suitable habitats present offsite within the locality which will not be impacted by the proposal.

It is considered that the proposed action will not have an adverse effect on the life cycle of this species such that a viable local population of this 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

The proposed development area does not contain any endangered or critically endangered ecological communities.

It is therefore considered that the proposed development is not likely to have an adverse effect on the extent of an ecological community such that its local occurrence is likely to be placed at risk of extinction.

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

The proposed development area does not contain any endangered or critically endangered ecological communities.

It is therefore considered that the proposed action is not likely to substantially and adversely modify the composition of an ecological community such that its local occurrence is likely to be placed at risk of extinction.

c) In relation to the habitat of a threatened species or ecological community:

i. The extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and

The proposed development footprint is shown in Figure 1.1. The proposal will result in the removal or modification of approximately 0.4 ha PCT 1568 Blackbutt - Turpentine - Sydney Blue Gum mesic tall open forest on ranges of the Central Coast. A total of five of the existing trees within this PCT will be retained within the western section of the site within an area to be managed as a landscaped bushfire asset protection zone. The proposal will also result in the removal or modification of approximately 2.75 ha of Cleared Land.

One hollow-bearing tree containing one hollow will also require removal. The hollow bearing tree to be removed will be replaced with three nest boxes installed within the retained trees within the site.

ii. Whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and

The site is located at the southern extent of a larger habitat patch which extends to the north. Selected native trees will be retained along the western site boundary in order to maintain existing levels of connectivity.

It is therefore considered that the proposal is not likely to result in an area of habitat becoming fragmented or isolated from other areas of habitat.

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 habitat proposed to be removed and modified is of a relatively small area, is highly disturbed and does not contain habitat for any endangered ecological communities.

It is considered that the habitats to be removed or modified are not likely to be of significant importance to the long-term survival of the threatened species, populations or ecological community within the locality.

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),

The subject site has not been listed as a declared area of outstanding biodiversity value. The proposed development is not likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly).

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,

The proposal is likely to increase the impact of the key threatening processes 'Clearing of native vegetation' and "Loss of hollow bearing trees". It is considered that the proposal is unlikely to increase the operation of these key threatening processes to the extent that a significant effect on threatened biodiversity will occur.

BC ACT (2016) TEST OF SIGNIFICANCE CONCLUSION

Based on the ecological surveys completed and assessments undertaken above it is concluded that the proposed development is not likely to have a significant effect on threatened species, ecological communities or their habitats as listed within the *BC Act* (2016).

APPENDIX 5 – SEPP (KOALA HABITAT PROTECTION) 2021
CORE KOALA HABITAT ASSESSMENT

APPENDIX 5
DETERMINATION OF CORE KOALA HABITAT

1. Definition of Core Koala Habitat

Core Koala Habitat is defined under SEPP (Koala Habitat Protection) 2021 as:

(a) an area of land which has been assessed by a suitably qualified and experienced person as being highly suitable koala habitat and where koalas are recorded as being present at the time of assessment of the land as highly suitable koala habitat; or

(b) an area of land which has been assessed by a suitably qualified and experienced person as being highly suitable koala habitat and where koalas have been recorded as being present in the previous 18 years.

2. Determination of Presence of Highly Suitable Koala Habitat

Highly suitable koala habitat is identified under the document 'Koala SEPP 2021 Factsheet – Development Application' as an area where 15% or greater of the total number of trees within any Plant Community Type are the regionally relevant species of those listed in Schedule 2 of the SEPP.

The plant community type present has been identified and is documented in Section 2.1 of this Report. A survey plot of 20x20m was utilised to determine the percentage of tree species present in the lower, mid and upper stratum. The results are presented in Table A5.1. The site contains greater than 15% composition of trees listed as Koala Feed Tree Species for Central Coast Koala Management Area, therefore the site contains highly suitable koala habitat.

TABLE A5.1
TREE SPECIES OBSERVED WITHIN FLORISTIC PLOT

Scientific Name	Common Name	Listed Koala Use Tree Species	Quantity within Survey Plot	Percentage within Survey Plot
Alphitonia excelsa	Red Ash	No	Juveniles only	NA
Cinnamomum camphora	Camphor Laurel	No	Juveniles only	NA
Eucalyptus saligna	Sydney Blue Gum	Yes	5	100%

3. Field Surveys for Koala Presence

Surveys for the Koala consistent have been completed including:

- One search for scats using the Scat Assessment Technique of Phillips and Callaghan (2011) with a standardised search time of 20 minutes completed on 23 April 2020.
- Spotlighting searches within the proposed development area and directly adjoining habitats over two nights as documented in Table 3.2 of this Report.

No Koalas were observed during the surveys undertaken.

4. Koala Records for the Previous 18 Years

An assessment of Koala records within 2.5 km of the site and the potential connectivity between any records and the site has been undertaken. Records greater than 18 years old were excluded. The locations of Koala records on the Bionet Atlas (DPIE 2021) is provided in Figure A5.1.

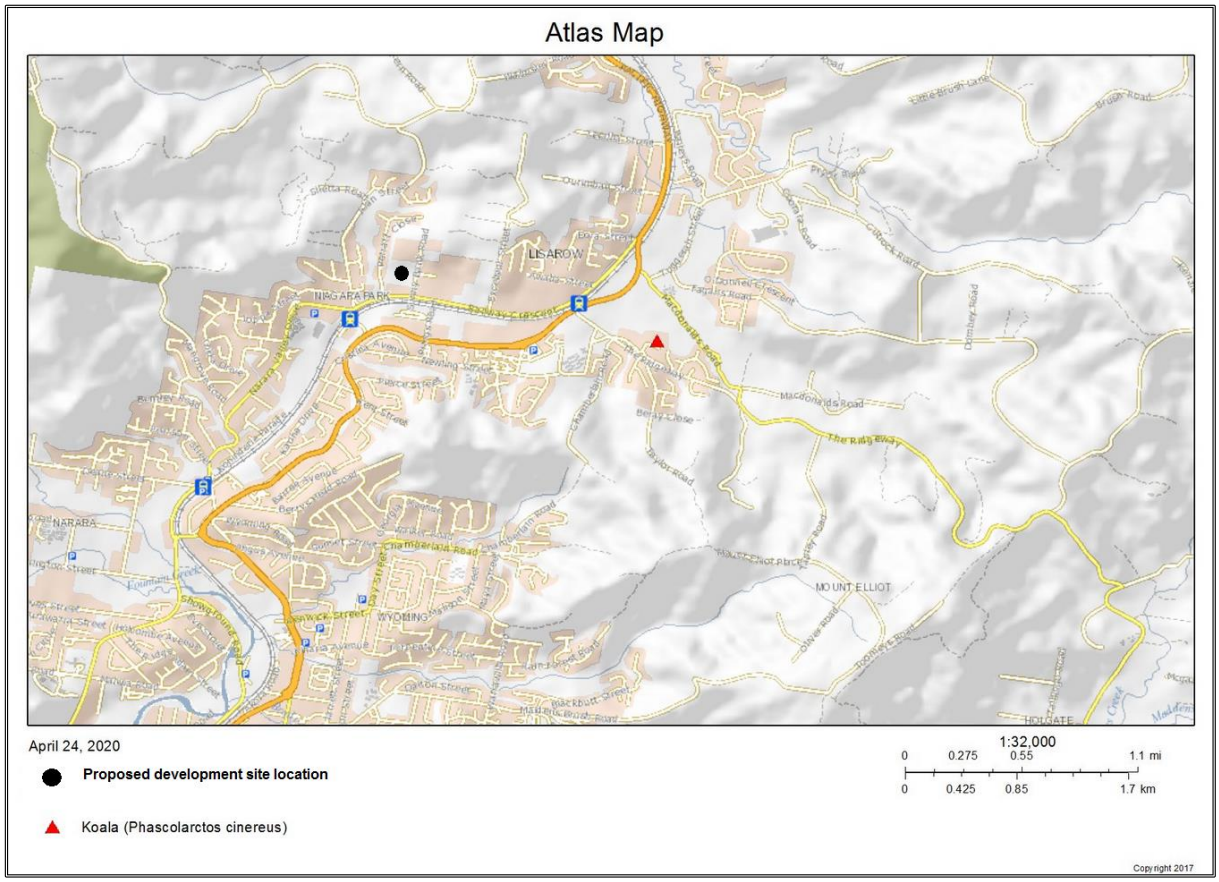

Figure A5.1 Koala records within 2.5km of the site (Bionet Atlas NSW DPIE 2021)

There is one record for koalas within 2.5km of the site on the Bionet Atlas, this record is listed as from the Wildlife Rehabilitation Database and is a wildlife rehabilitation record and not a record of a wild Koala sighting with a locational accuracy of >1000m and therefore is not classified as record in accordance with the 'Koala SEPP 2021 Factsheet – Development Application'.

5. Determination of Core Koala Habitat Presence

It is therefore concluded that the site does not contain land which meets the definition of Core Koala Habitat.