ECOLOGICAL ASSESSMENT REPORT

PLANNING PROPOSAL

310 TERRIGAL DRIVE
TERRIGAL

JUNE 2023
REF:318

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TERRIGAL

Integrated Site Planning

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PREFACE

This Ecological Assessment Report has been prepared by *Integrated Site Planning* to accompany a planning proposal for development at 310 Terrigal Drive, Terrigal.

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

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Integrated Site Planning

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SECTION 1

INTRODUCTION AND BACKGROUND

1.1 INTRODUCTION

Integrated Site Planning has been engaged by LoftusLane Capital Partners to prepare an Ecological Assessment Report to accompany a planning proposal for a proposed development within the subject site.

This Report has been prepared to assess relevant matters of biodiversity and to determine whether the proposed development is likely to significantly affect threatened species in accordance with 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. The location of the site is shown in Figure 1 while site details are provided in Figure 2.

TABLE 1.1 SITE DETAILS	
Location	310 Terrigal Drive Terrigal Lot 27 DP 1223375
Allotment Area	4262m²
Local Government Area	Central Coast Council
Existing Land Use	Vacant lot

1.3 PLANNING PROPOSAL

The planning proposal assessed in this Report comprises a seven storey residential flat development with three underground basement car parking levels. Bushfire asset protection zones and upgraded access facilities will also be incorporated into the development. Detailed plans of the proposal are provided with the planning proposal as separate documentation to this report. Assessments within this report have taken into account the potential future construction of the building, vehicle access, landscaping and the provision of services and implementation of bushfire asset protection measures.

The Planning Proposal seeks to amend the Central Coast LEP 2022 by increasing the maximum permissible height of buildings to 32m, and the maximum floor space ratio to 1.4:1. The Planning Proposal will enable the site to be redeveloped from a vacant land parcel to an eight-storey residential flat building. The concept drawings prepared by CKDS Architects demonstrate the potential for the site to accommodate 42 residential apartments and 75 car parking spaces across three basement levels.

The following documents were provided to determine the details of the proposed development:

i) Site survey and tree location plan by Bannister & Hunter Pty Ltd.
ii) Preliminary Ecological Constraints Report (Fraser Ecological Consulting 2022).
iii) Arboricultural Impact Assessment Report (Michael Shaw Arborist).

1.4 SUMMARY OF BIODIVERSITY ASSESSMENTS COMPLETED

Summary details of biodiversity assessments undertaken within this Report and the outcomes of these assessments are provided in Table 1.2.

TABLE 1.2
SUMMARY OF BIODIVERSITY ASSESSMENTS

Assessment	Relevant Report Section	Conclusion
Biodiversity Offset Scheme Threshold (BOSET)	4.1, Appendix 1	BDAR not required, clearing < 0.25 ha
BC Act Assessment of Significance	4.2, Appendix 2	Not likely to significantly impact threatened habitats or their habitats
SEPP (Biodiversity and Conservation) 2021	4.3, Appendix 3	No core koala habitat present.
EPBC Significance Assessment	4.4, Appendix 4	Not likely to significantly impact matters of national environmental significance.

1.5 SUMMARY OF IMPACT AVOIDANCE AND MITIGATION MEASURES

Avoid and Minimise (Biodiversity Conservation) Outcomes
Ongoing consideration of the avoid and minimise direct and indirect impacts on biodiversity has been undertaken during the initial planning and ecological assessment. The current areas considered for avoidance of direct impacts through vegetation clearing are shown in Figure 3. These areas include:

- Areas of Swamp possible Sclerophyll Forest Endangered Ecological Community in the southern parts of the site.
- Areas in the southern part of the site containing the patch of *Melaleuca biconvexa.*

Impact minimisation and habitat amelioration to be implemented are identified in Table 1.2.:
.
Proposed impact mitigation and management measures are identified below.

Biodiversity Measure 1:

Preparation of a stage specific Construction Environment Management Plan for implementation during site clearing and development works.

Biodiversity Measure 2:

Preparation of a site specific Wildlife Management Plan to cover fauna welfare issues during site clearing, as per Councils Flora and Fauna Guidelines.

Biodiversity Measure 3:

Preparation of a Vegetation Management Plan for areas of retained vegetation, as per Councils Flora and Fauna Guidelines.

Biodiversity Measure 4:

Implementation of temporary tree and vegetation protection fences around areas of vegetation to be retained and protected.

Biodiversity Measure 5:

Staff training and site briefing to communicate environmental features to be protected and measures to be implemented for environmental protection.

Biodiversity Measure 6:

Pre-clearing surveys to evacuate the site of ground and hollow dwelling fauna species by a suitably qualified and experienced wildlife handler/ecologist.

Biodiversity Measure 7

Implementation and maintenance of suitable erosion and sediment controls in accordance with a site-specific erosion and sediment control plan.

Biodiversity Measure 8

Adherence to Council noise and dust generation management measures and controls.

Biodiversity Measure 9

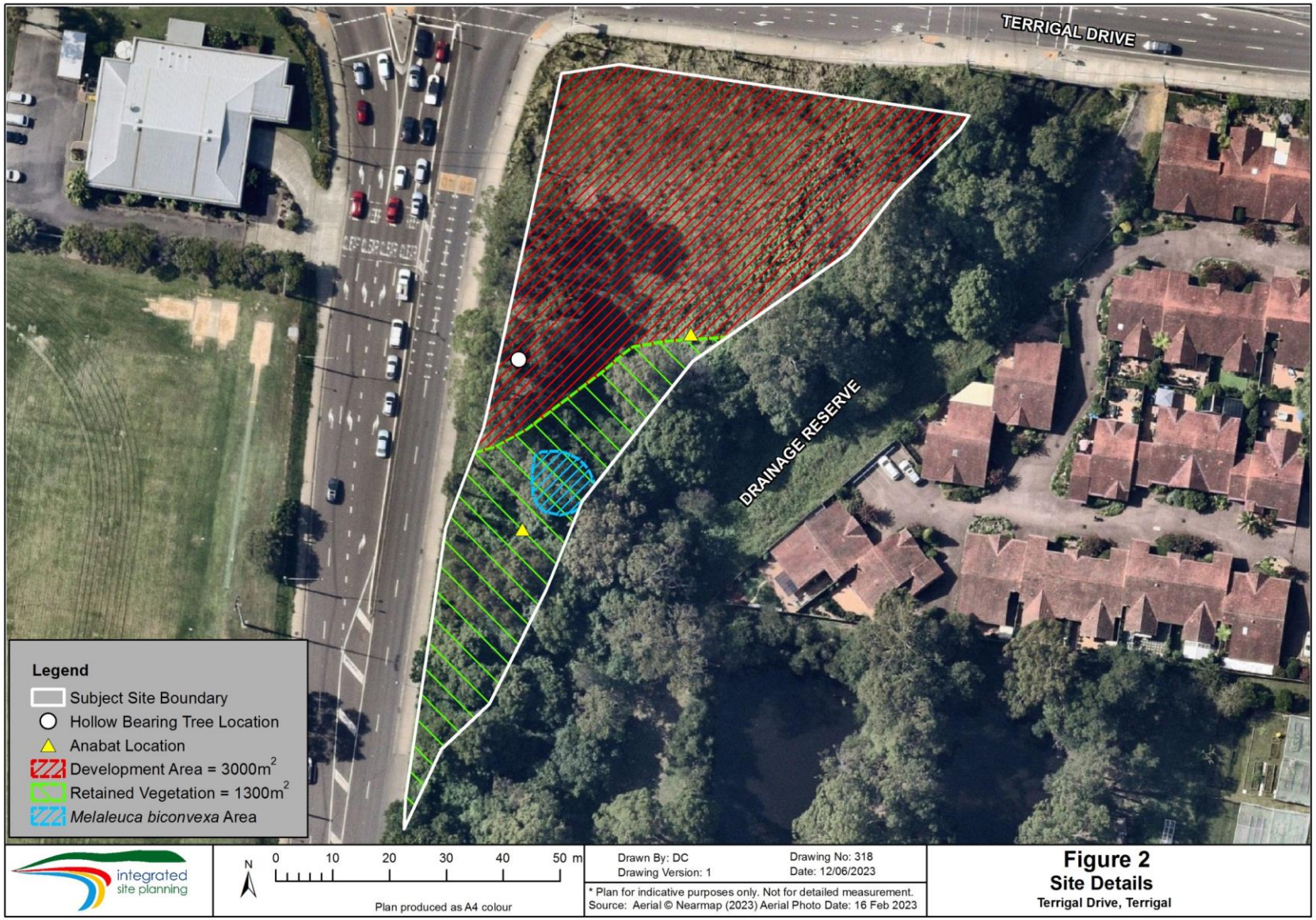
Implement management protocols to prevent the spread of weeds and pathogens between the site and offsite areas.

Biodiversity Measure 10

The use and maintenance of native flora species in site landscaping, including endemic species.

Further details on the impact avoidance and mitigation and ongoing management measures can be developed either at the development stage or through consent conditions.

Figure 1
Site Location
Terrigal Drive, Terrigal


TERRIGAL DRIVE
DRAINAGE RESERVE
Legend
Subject Site Boundary
Hollow Bearing Tree Location
Anabat Location
Development Area = 3000m2
Retained Vegetation = 1300m2
Melaleuca biconvexa Area
integrated site planning
N
0 10 20 30 40 50 m
Plan produced as A4 colour
Drawn By: DC
Drawing Version: 1
Drawing No: 318
Date: 12/06/2023
* Plan for indicative purposes only. Not for detailed measurement.
Source: Aerial © Nearmap (2023) Aerial Photo Date: 16 Feb 2023
Figure 2
Site Details
Terrigal Drive, Terrigal

SECTION 2

FLORA DETAILS

2.1 FLORA DATABASE REVIEW

A search of the Bionet Atlas (NSW E&H 2023) for threatened flora species listed within the *Biodiversity Conservation Act* (2016) and *Environment Protection and Biodiversity Conservation Act* (1999), was undertaken to identify records within a 5km radius of the site (10x10 km search area).

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. These matters are addressed in the following sections.

2.2 THREATENED ECOLOGICAL COMMUNITIES

The threatened ecological communities known from the local area are detailed on Table 2.1.

TABLE 2.1
THREATENED ECOLOGICAL COMMUNITIES OF THE AREA

Name	TSC Act	EPBC Act	Habitat Requirements	Comments
Coastal Saltmarsh in the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	EEC	VEC	**Geology / Soils:** Estuarine mud flats. **Topography:** Intertidal zone on the shores of estuaries and lagoons. **Characteristic Species:** *Sarcocornia quinqueflora, Sporobolus virginicus, Juncus krausii and Baumea juncea*.	No suitable habitat present.
Coastal Upland Swamp in the Sydney Basin Bioregion	EEC	EEC	**Geology / Soils:** Periodically waterlogged acidic soils on Hawkesbury Sandstone. **Topography:** Impermeable sandstone plateaus in headwater valleys of streams and on sandstone benches with abundant moisture. **Characteristic Species:** Highly diverse and variable, includes scrubs, heaths, sedgelands and fernlands.	No suitable habitat present.
Freshwater Wetlands on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	EEC	-	**Geology / Soils:** Silts, muds or humic loams. **Topography:** Depressions, flats, drainage lines, backswamps, lagoons and lakes associated with coastal floodplains. **Characteristic Species:** Composition is variable and dependent on water regime. May include amphibious grasses and sedges, emergent floating herbs and emergent tall sedges and floating and submerged aquatic herbs.	No suitable habitat present.

TABLE 2.1 THREATENED ECOLOGICAL COMMUNITIES OF THE AREA				
Name	**TSC Act**	**EPBC Act**	**Habitat Requirements**	**Comments**
Kincumber Scribbly Gum Forest in the Sydney Basin Bioregion	CEEC	-	**Geology / Soils:** Terrigal Formation of the Narrabeen Group. Soils are characterised by Yellow Podzolic Soils and Yellow Earths of the Erina Soil Landscape. **Topography:** Footslopes, gently inclined crests and ridges. **Characteristic Species:** *Eucalyptus racemosa, Angophora costata, Corymbia gummifera, Syncarpia glomulifera, Eucalyptus piperita* and *Allocasuarina littoralis.*	No suitable habitat present.
Littoral Rainforest in the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	E	CE	**Geology / Soils:** Sand dunes and on soils derived from underlying rocks **Topography:** Located near the seaoin coastal dunes, headland or riparian habitats. **Characteristic Species:** Comprises the *Cupaniopsis anacardioides - Acmena* spp. alliance of Floyd (1990).	No suitable habitat present.
Lowland Rainforest in the NSW North Coast and Sydney Basin Bioregions	E	CE	**Geology / Soils**: High nutrient geological substrates, notably basalts and fine-grained sedimentary rocks. **Topography:** Coastal plains and plateaux, footslopes and foothills up to 600m ASL and within the Sydney basin below 350m ALS **Characteristic Species:** Principally encompasses the following groupings of Floyd (1990): *Argyrodendron trifoliatum* alliance (suballiances 1, 5 & 6); *Dendrocnide excelsa - Ficus* spp. alliance (suballiances 14 & 15); and *Drypetes australasica – Araucaria cunninghamii* alliance (suballiances 21 & 22).	No suitable habitat present.
Pittwater and Wagstaffe Spotted Gum Forest in the Sydney Basin Bioregion	E	-	**Geology / Soils:** Shale-derived soils from Narrabeen series geology **Topography:** Undulating to rolling hills. **Characteristic Species:** *Corymbia maculata* and *Eucalyptus paniculata.*	No suitable habitat present.

TABLE 2.1 THREATENED ECOLOGICAL COMMUNITIES OF THE AREA				
Name	**TSC Act**	**EPBC Act**	**Habitat Requirements**	**Comments**
River-Flat Eucalypt Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	E	-	**Geology / Soils:** Silts, clay-loams and sandy loams. **Topography:** Periodically inundated alluvial flats, drainage lines and river terraces associated with coastal floodplains. **Characteristic Species:** Eucalypt canopy with species belonging to the genus Angophora or the sections Exsertaria or Transversaria of the genus Eucalyptus. Has low abundance of *E. robusta*, Casuarina and Melaleuca species and a groundcover of soft-leaved forbs and grasses.	No suitable habitat present.
Swamp Oak Floodplain Forest of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	E	-	**Geology / Soils:** Waterlogged or periodically inundated grey-black clay-loams and sandy loams, where the groundwater is saline or sub-saline. **Topography:** Flats, drainage lines, lake margins and estuarine fringes associated with coastal floodplains. **Characteristic Species:** *Casuarina glauca.*	No suitable habitat present.
Swamp Sclerophyll Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	E	-	**Geology / Soils:** Waterlogged or periodically inundated humic clay loams and sandy loams. **Topography:** Alluvial flats and drainage lines associated with coastal floodplains. **Characteristic Species:** *Eucalyptus robusta, E. longifolia, E. botryoides, Melaleuca quinquenervia* and *M. ericifolia.*	Suitable habitat present in south part of site. Possible site occurance.
Sydney Freshwater Wetlands in the Sydney Basin Bioregion	E	-	**Geology / Soils:** Generally on the Warriewood and Tuggerah Soil Landscapes. **Topography:** Freshwater swamps in swales and depressions on sand dunes and low nutrient sand plain sites in coastal areas. **Characteristic Species:** *Eleocharis sphacelata, Baumea juncea, B. rubiginosa, B. articulata, Gahnia sieberiana, Ludwigia peploides* and *Persicaria* sp.	No suitable habitat present.

TABLE 2.1 THREATENED ECOLOGICAL COMMUNITIES OF THE AREA				
Name	**TSC Act**	**EPBC Act**	**Habitat Requirements**	**Comments**
Themeda grassland on seacliffs and coastal headlands in the NSW North Coast, Sydney Basin and South East Corner Bioregions	E	-	**Geology / Soils:** Found on a range of substrates including old sand dunes above cliffs and on basalt headlands, and less frequently on sandstone. **Topography:** Sea cliffs and coastal headlands. **Characteristic Species:** *Themeda australis.*	No suitable habitat present.
Umina Coastal Sandplain Woodland in the Sydney Basin Bioregion	E	-	**Geology / Soils:** Holocene sediments of coastal sand. Iron podzols on the Woy Woy Soil Landscape. **Topography:** Sand plains on the Woy Woy Peninsula at Umina and Pearl Beach. **Characteristic Species:** *Eucalyptus botryoides* and *Angophora floribunda* with a diverse understorey of sclerophyllous shrubs.	No suitable habitat present.
Key to TSC Act and EP&BC Act Status Ext = Extinct - P. Ext = Presumed Extinct - CE = Critically Endangered – E = Endangered - V = Vulnerable Species				

No threatened ecological communities listed within the *EPBC Act* (1999) or the *BC Act* (2016) were observed within the development area. A small patch of Swamp Sclerophyl Forest on Coastal Floodplain EEC may be present in the southern part of the site, outside of the development area.

2.3 THREATENED FLORA SPECIES

The threatened flora species recorded within the Bionet Atlas search (NSW E&H 2023) within 5 km were subject to an initial assessment to determine candidate species with suitable habitat present within the subject site. Details on the habitats for these species has been obtained from the threatened species profiles prepared by the former NSW Office of Environment and Heritage and the current NSW Department of Planning, as identified in Table 2.2, and were subject to further assessment.

TABLE 2.2 THREATENED FLORA SPECIES				
Name	**BC Act Status**	**EPBC Act Status**	**Habitat Preference**	**Comments**
Epacris purpurascens var. purpurascens	V	-	Occurs in Sydney Sandstone Gully Forest and scrub with periodically poorly drained clay soil on sandstone or shale.	Not Observed
Eucalyptus camfieldii	V	V	Grows in coastal shrub heath and woodlands on sandy soils derived from alluviums and Hawkesbury sandstone.	Not Observed

TABLE 2.2 THREATENED FLORA SPECIES				
Name	**BC Act Status**	**EPBC Act Status**	**Habitat Preference**	**Comments**
Acacia pubescens	V	V	Grassy and shrubby woodland on clay and alluvial soils.	Not Observed
Chamaesyce psammogeton	E	-	Coastal Dunes	Not Observed
Pultenaea maritima	V	-	Heath on skeletal sandy soils on coastal headlands	Not Observed
Senecio spathulatus	E	-	Coastal dunes	Not Observed
Wilsonia back housei	E	-	Margins of coastal lakes and salt marshes	Not Observed
Melaleuca biconvexa	V	V	Wet and moist low sites near streams in association with swamp and alluvial soils	Observed on site
Macadamia tetraphylla	V	V	Subtropical rainforest usually near the coast	Not Observed
Prostanthera askania	E	E	Moist sclerophyll forest and warm temperate rainforest ecolone communities.	Not Observed
Rhodamnia rubescens	CE	-	Grows in rainforest and wet sclerophyll forest.	Not Observed
Rhodomyrtus psidioides	CE	-	Occurs in rainforest and moist forest habitats from the Gosford district north to Queensland.	Not observed.
Syzygium paniculatum Magenta Lilly Pilly	E	V	Subtropical and littoral rainforest on sandy soil.	Not observed.
Tetratheca juncea	V	V	Low woodland on low nutrient sandy soils	Not Observed

The threatened species, *M. biconvexa* was observed as a single patch of 18 trees in the southern section of the site, (outside of the development area), as shown in Figure 2.

2.4 FLORA SURVEY METHODS

The flora survey undertaken involved:

i) Walkover surveys of the development area and adjoining areas.

ii) Identification of native trees present for koala habitat assessment purposes

iii) Structural and species composition of the vegetation community present.

Flora surveys for one hour duration each were conducted in the afternoon on the following dates:
- April 5, 2023
- April 11, 2023
- May 3, 2023.

Flora surveys were limited to short duration surveys in April and May due to project completion constraints. The survey methods utilized were general foot traverses concentrating on the main trees, shrubs and groundcovers, and any seasonally flowering groundcover species, including exotic species. Additional flora surveys will need to be completed in accordance with Councils Flora and Fauna Survey Guidelines for any future development application. These surveys will need to be undertaken during the spring and summer months for the range of threatened flora species which have suitable habitat present.

2.5 FLORA SPECIES AND PLANT COMMUNITY TYPES

The native vegetation present consists of a highly disturbed area of Plant Community Type (PCT 1579) Narrabeen Coastal Blackbutt Forest (Bell 2019). This plant community is mostly located along the eastern and southern areas the site.

The plant species observed are listed in Table 2.3 with a brief description provided below.

DISTURBED OPEN FOREST
Structure:

Upper Stratum:	To 30-35 metres high, with 60% Projected Foliage Cover (PFC).
Mid Stratum (Lower layer):	To 15 metres high, with 30% PFC.
Lower Stratum:	To 0.5 metres high, with 80% PFC.

Floristics:
(Characteristic Species)

Upper Stratum:	*Eucalyptus pilularis*, *Eucalyptus piperita, Eucalyptus deanei.*
Mid Stratum	*Glochidion ferdinandii, Breynia oblongifolia, Pittosporum undulatum.*
Lower Stratum:	*Pteridium esculentum Lomandra longifolia, Pratia purpurascens (Whiteroot), Imperata cylindrica var. major, Entolasia marginata.*

Disturbance:
This vegetation type has been disturbed by historical clearing and weed invasion. Mostly cleared areas in the north and central parts of the site.

Weed Invasion:
High levels of the weed species *Cinnamomum camphora, Ligustrum sinense* and *Lantana camara* were observed within the mid and understorey layers of this vegetation community.

Location and Distribution:
This community occupies approximately 0.2 hectares of the subject site and occurs in the sections of the site east and south of the cleared land.

Threatened Species/ Ecological Community

The vegetation in the south of the site has elements characteristic of the Alluvial Paperbark Sedge Forest (Bell 2019). A more detailed botanical survey and species analysis would be required to determine if this small patch of vegetation, located outside of the development and impact area, could be classified as an endangered ecological community

TABLE 2.3
FLORA SPECIES OBSERVED ON THE SUBJECT SITE

Family Name	Scientific Name	Common Name
Trees		
Casuarinaceae	*Casuarina glauca*	
Lauraceae	*Cinnamomum camphora**	Camphor Laurel
Moraceae	*Ficus species*	Rusty Fig?
Myrtaceae		
	Eucalyptus pilularis	Blackbutt
	Eucalyptus piperita	Sydney Peppermint
	Eucalyptus deanei	Mountain Gum
	Eucalyptus robusta	Swamp Mahogony
Phyllanthaceae	*Glochidion ferdinandi var.*	Cheese Tree

TABLE 2.3 FLORA SPECIES OBSERVED ON THE SUBJECT SITE		
Family Name	**Scientific Name**	**Common Name**
	ferdinandi	
Shrubs		
Asteraceae	*Chrysanthemoides monilifera subsp. rotundata**	Bitou Bush
Fabaceae (Mimosoideae)	*Acacia irrorata subsp. irrorata*	Green Wattle
Monimiaceae	*Wilkiea huegeliana*	Veiny Wilkiea
Ochnaceae	*Ochna serrulata**	Mickey Mouse Plant
Oleaceae	*Ligustrum lucidum**	Large-leaved Privet
	*Ligustrum sinense**	Small-leaved Privet
Phyllanthaceae	*Breynia oblongifolia*	Coffee Bush
Pittosporaceae	*Pittosporum undulatum*	Sweet Pittosporum
Solanaceae	*Solanum mauritianum**	Wild Tobacco Bush
Theaceae	*Camellia sasanqua**	Sasanqua Camellia
Verbenaceae	*Lantana camara**	Lantana
Groundcovers		
Asteraceae	*Ageratina adenophora**	Crofton Weed
	*Bidens pilosa**	Cobbler's Pegs
	Cassinia uncata	Sticky Cassinia
	*Cirsium vulgare**	Spear Thistle
	*Senecio madagascariensis**	Fireweed
Davalliaceae	*Nephrolepis cordifolia*	Fishbone Fern
	Pteridium esculentum	Bracken
Lobeliaceae	*Pratia purpurascens*	Whiteroot
Lomandraceae	*Lomandra longifolia*	Spiny-headed Mat-rush
Phormiaceae	*Dianella caerulea var. caerulea*	Blue Flax-lily
Plantaginaceae	*Plantago lanceolata**	Lamb's Tongues
Poaceae	*Cymbopogon refractus*	Barbed Wire Grass
	Cynodon dactylon	Couch
	*Ehrharta erecta**	Panic Veldt-grass
	Entolasia marginata	Bordered Panic
	Imperata cylindrica	Blady Grass
	*Paspalum dilatatum**	Paspalum
	*Paspalum urvillei**	Vasey Grass
	*Pennisetum clandestinum**	Kikuyu Grass
	Sporobolus elongatus	Slender Rat's Tail Grass
Solanaceae	*Solanum nigrum**	Black-berry Nightshade
Tropaeolaceae	*Tropaeolum majus**	Nasturtium
Verbenaceae	*Verbena bonariensis**	Purpletop
Violaceae	*Viola hederacea*	
Climbers		
Asparagaceae	*Asparagus aethiopicus**	Asparagus Fern
Rosaceae	*Rubus anglocandicans**	Blackberry
Smilacaceae	*Smilax australis*	
Vitaceae	*Cissus antarctica*	

Key
Species name^{TS} = Threatened Species * = Introduced Species

SECTION 3

FAUNA DETAILS

3.1 FAUNA DATABASE REVIEW

A search of the Bionet Atlas (NSW Planning E&H 2023) for threatened fauna species listed within the *Biodiversity Conservation Act* (2016) and *Environment Protection and Biodiversity Conservation Act* (1999), was undertaken to identify records within a 5km radius of the site (10x10 km search area). These species are assessed in the following sections. Species occurring in Shoreline and Oceanic areas have not been assessed in this Report.

3.2 THREATENED FAUNA SPECIES

Details on the habitats for threatened fauna species of the locality have been obtained from the threatened species profiles prepared by the former NSW Office of Environment and Heritage and the current NSW Department of Planning, Environment and Heritage. as identified in Table 3.1, and were subject to further assessment.

The proposed development is to be limited to the existing disturbed and managed areas of the site. The assessment of the suitability of the habitat for threatened fauna species is based on the consideration of the development impacts to be limited to the areas already disturbed and edges of retained vegetation. The assessment area does not include the adjoining drainage line.

TABLE 3.1
THREATENED FAUNA SPECIES

THREATENED FAUNA	BC ACT	EPBC ACT	HABITAT	COMMENTS
Green and Golden Bell Frog *Litoria aurea*	E	V	Breeds in shallow (<1m) ponds or slowly moving waterways which undergo changing regimes such as fluctuating water flow or inflow of saline water with both areas of open water and dense low vegetation.	Suitable habitat. Species not observed.
Green-thighed Frog *Litoria brevipalmata*	V	-	Rainforests, open forests and disturbed areas with streams, swamps, lagoons, dams or ponds.	Suitable habitat. Species not observed.
Stephen's Banded Snake *Hoplocephalus stephensii*	V	-	Open and closed forest communities, shelters under bark, in hollows and rock outcrops.	Suitable habitat Species not observed.
Red-crowned Toadlet *Pseudophryne australis*	V	-	Grass, debris and rock outcrops near ephemeral watercourses on sandstone.	No suitable habitat.
Rosenberg's Goanna *Varanus rosenbergi*	V	-	Woodlands, dry open forests and heathland habitats on Hawkesbury sandstone. Shelters in burrows, hollow logs, rock crevices and outcrops.	No suitable habitat present.
White-bellied Sea-Eagle *Haliaeetus leucogaster*	V	-	Forages in rivers, estuaries and coastal waters, nests in large trees	No suitable habitat.

TABLE 3.1 THREATENED FAUNA SPECIES				
Little Eagle *Hieraaetus morphnoides*	V	-	Forests, woodlands and farmlands, does not tolerate disturbance around nest sites.	Suitable habitat. Species not observed.
Square-tailed Kite *Lophoictinia isura*	V	-	Coastal and sub-coastal open forest, woodland or lightly timbered habitats and inland habitats along watercourses and Mallee that are rich in passerine birds.	Suitable habitat. Species not observed.
Eastern Osprey *Pandion cristatus*	V	-	Utilises waterbodies including coastal waters, inlets, lakes, estuaries and offshore islands with a dead tree for perching and feeding.	No suitable habitat.
Black Bittern *Ixobrychus flavicollis*	V	-	Permanent freshwater wetlands with tall, dense vegetation.	No suitable habitat.
Black-necked Stork *Ephippiorhynchus asiaticus*	E	-	Shallow freshwater terrestrial wetlands, floodplains, watercourses, dams and paddocks.	No suitable habitat present.
Bush Stone-curlew *Burhinus grallarius*	E	-	Cleared areas and natural habitats with sparse understorey. Known locally from around Brisbane Water Estuary	No suitable habitat.
Gang-gang Cockatoo *Callocephalon fimbriatum*	V	-	Open forests, woodlands, and urban areas.	Suitable habitat present.
Glossy Black-Cockatoo *Calyptorhynchus lathami*	V	-	Forages on Allocasuarina, nests in large tree hollows	No suitable habitat present.
Regent Honeyeater *Anthochaera phrygia*	CE	CE	Box ironbark, river she-oak, coastal swamp and spotted gum forest	Suitable habitat present. Species not observed.
Varied Sittella *Daphoenositta chrysoptera*	V	-	Eucalypt forest and scrub	No suitable habitat present.
Superb Fruit-Dove	V	-	Rainforests, adjacent mangroves, wet sclerophyll eucalypt forests, scrublands with native fruits.	Suitable habitat present. Species not observed.
Wompoo Fruit-Dove *Ptilinopus magnificus*	V		Large undisturbed patches of rainforest, adjacent moist eucalypt forests and isolated remnant trees feeding on fruit.	Suitable habitat present. Species not observed.
Little Lorikeet *Glossopsitta pusilla*	V	-	Forages on flowering eucalypts	Suitable habitat present. Species not observed.
Swift Parrot *Lathamus discolor*	E	CE	Winter flowering eucalypt forest	Suitable habitat present. Species not observed.

TABLE 3.1 THREATENED FAUNA SPECIES				
Barking Owl *Ninox connivens*	V	-	Mature and remnant forest with large hollows for breeding	Suitable habitat present. Species not observed.
Powerful Owl *Ninox strenua*	V	-	Mature and remnant forest with large hollows for breeding	Suitable habitat present. Species not observed.
Masked Owl *Tyto novaehollandiae*	V	-	Open forest and woodland with cleared grassland for hunting. Roost in large hollows.	Suitable habitat present. Species not observed.
Sooty Owl *Tyto tenebricosa*	V	-	Rainforest and wet sclerophyll forest with large hollows for nesting	Suitable habitat present. Species not observed.
Eastern Pygmy-possum *Cercartetus nanus*	V	-	Occurs in sandstone heath and adjoining rainforest habitats.	No suitable habitat.
Spotted-tailed Quoll *Dasyurus maculatus*	V	E	Large tracts of forest with suitable den sites	No suitable habitat.
Eastern Chestnut Mouse *Pseudomys gracilicaudatus*	V	-	Recently burnt (1.5-4yrs) dense, wet heath and swamps	No suitable habitat.
Yellow-bellied Glider *Petaurus australis*	V	-	Tall productive mature eucalypt forests with high nectar producing species. Shelters in large hollow bearing trees.	No suitable habitat.
Koala *Phascolarctos cinereus*	V	V	Eucalypt forest with preferred feed trees	Suitable habitat. Species not observed.
Long-nosed Potoroo *Potorous tridactylus*	V	V	Coastal heath and dry and wet sclerophyll forests with a dense understorey.	No suitable habitat.
Parma Wallaby *Macropus parma*	V	-	Rainforests and wet and dry sclerophyll forests with a dense understorey and associated grassy patches.	No suitable habitat.
Grey-headed Flying-fox *Pteropus poliocephalus*	V	V	Forages on flowering and fruiting trees. Roosts communally. Locally present.	Suitable habitat. Species not observed.
Yellow-bellied Sheathtail-bat *Saccolaimus flaviventris*	V	-	Foraging habitat generalist, roosts in caves and man-made structures	Suitable habitat present. Species not observed.
Little Bent-winged Bat *Miniopterus australis*	V	-	Coastal forests, roosts in caves and man-made structures	Suitable habitat present. Species observed.
Large Bent-winged Bat *Miniopterus orianae oceanensis*	V	-	Coastal forests, roosts in caves and man-made structures	Suitable habitat present. Species not observed.

TABLE 3.1 THREATENED FAUNA SPECIES				
Eastern Coastal Free-tailed Bat *Micronomus norfolkensis*	V	-	Coastal forests, roosts in caves and man-made structures	Suitable habitat present. Species not observed.
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.	Suitable habitat. Species not observed.
Southern Myotis *Myotis macropus*	V	-	Riparian areas. Roosts in hollows, caves and man-made structures.	Suitable habitat.
Greater Broad-nosed Bat *Scoteanax rueppellii*	V	-	Forests in coastal gullies with tree hollows for roosting.	Suitable habitat. Species not observed.
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 suitable habitat.

3.3 FAUNA SURVEY METHODS

Details of the initial fauna surveys undertaken are provided below.
Diurnal fauna surveys were conducted in association with the flora surveys completed on:

- 5, 11April 2023 (dry days 19-22°C)
- 3 May 2023 dry, sunny day, 23°C)

Nocturnal surveys involving spotlight searches and fauna call observations were completed on April 2023 between 7pm and 8.30 pm – heavy rainfall (approx 70mm) occurred on the two nights prior to survey resulting in ideal frog survey conditions.

Two Anabat call detection recorders were set up within the study area over the nights of 16 April to 20 April 2023 (5 nights). Overnight temperatures ranged between 10 -18°C. Additional fauna surveys should be completed in appropriate seasonal conditions during spring and summer to meet the Councils Flora and Fauna Survey requirements. This would include surveys for the Green and Golden Bell Frog during the appropriate weather, rainfall and flooding events.

3.4 SITE HABITAT DETAILS

The fauna habitats present around the existing and proposed development are highly modified and are not likely to be utilized by resident threatened fauna species.

The fauna habitats present consist of Disturbed Open Forest, with patches of Regrowth Vegetation and Cleared Land.

One possible hollow bearing tree (small possible hollow entrance) was observed within the proposed development area in the central western part of the site.

Amphibians
Vegetated areas, small drainage line and the dense ground cover and accumulated tree debris provide suitable shelter and foraging habitat for amphibian species.

Reptiles
The site provides suitable foraging and shelter habitat for reptile species. Microhabitats present include areas of accumulated leaf litter and debris including fallen timber. The site does not contain areas of extensive rock outcrops.

Birds
The flower, nectar, fruit and seed producing tree and shrub species provide a seasonal foraging resource for bird species. No tree hollows suitable for large forest owl breeding were observed within the subject site.

Mammals
The flower, nectar, fruit and seed producing tree and shrub species provide a seasonal foraging resource for arboreal mammals and bat species. Understorey habitats for mammals consist of cleared, weed dominated land as well as native and exotic vegetation within the forested sections of the site.

3.5 FAUNA SURVEY RESULTS

Details of the fauna observed during the surveys are provided in Table 3.2. No threatened microbat species were detected on the site but it is expected that some of these species would forage in the site occasionally.

TABLE 3.2
FAUNA OBSERVED AND RECORDED WITHIN THE SUBJECT SITE

Common Name	Scientific Name	Observation Type
Amphibians		
Bleating Tree Frog	*Litoria dentata*	W
Eastern Dwarf Tree Frog	*Litoria fallax*	OW
Birds		
Brown Cuckoo-Dove	*Macropygia amboinensis*	OW
Rainbow Lorikeet	*Trichoglossus haematodus*	OW
Sulphur-crested Cockatoo	*Cacatua galerita*	OW
Laughing Kookaburra	*Dacelo novaeguineae*	OW
Grey Fantail	*Rhipidura albiscapa*	OW
Superb Fairy-wren	*Malurus cyaneus*	OW
Noisy Miner	*Manorina melanocephala*	OW
Noisy Friarbird	*Philemon corniculatus*	W
Red-browed Finch	*Neochmia temporalis*	OW
Grey Butcherbird	*Cracticus torquatus*	OW
Mammals		
Brushtail Possum	*Trichosurus vulpecula*	O
Little Bent-winged Bat	*Miniopterus australis*	U
Eastern Forest Bat	*Vespadelus pumilus*	U
Gould's Wattled Bat	*Chalinolobus gouldii*	U

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 listed threatened species

SECTION 4

ASSESSMENTS AND CONCLUSIONS

4.1 BIODIVERSITY OFFSET SCHEME THRESHOLD ASSESSMENT

The following considerations are provided in relation to the Biodiversity Offset Scheme Threshold and Biodiversity Development Assessment Report:

- A BOSET Report is provided in Appendix 1;
- The proposed development footprint will be mostly limited to the existing areas of cleared and managed land. This is less than the 0.25 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;
- The proposed development will not be carried out in a declared area of outstanding biodiversity value.

It is considered that the proposed development is not required to be accompanied by a Biodiversity Development Assessment Report as determined by the BOSET Report.

4.2 BIODIVERSITY CONSERVATION ACT (2016) ASSESSMENT OF SIGNIFICANCE

A Threatened Species Assessment of Significance has been undertaken for those threatened species, populations and ecological communities observed during surveys or identified as having suitable habitat contained within the site. Full details of this Assessment of Significance are provided in Appendix 2.

The Assessment of Significance has concluded that the proposed development is not likely to have a significant effect on threatened species, ecological communities or their habitats. Therefore, a Biodiversity Development Assessment Report is not required for a development application for this proposal on this basis.

4.3 KOALA HABITAT ASSESSMENT

The site is located within a local government area listed in Schedule 2 of State Environmental Planning Policy (Biodiversity and Conservation) 2021.

An assessment of koala habitat in accordance with Chapter 4 of this SEPP is provided in Appendix 3.

This assessment has concluded that the site does not contain core koala habitat and no impact on koalas or their habitat will result from the proposed development.

4.4 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 Climate Change, Energy, Environment and Water.

An assessment in accordance with the EPBC Significant Impact Guidelines is provided in Appendix 4. This assessment has concluded 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”. Therefore a referral of the project to the Department of Climate Change, Energy, Environment and Water is not required.

4.5 CONCLUSIONS

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

1. The threatened flora species *Melaleuca biconvexa*, and the threatened fauna species Little Bent-winged Bat were observed on the site, in a patch of vegetation to be retained.
2. The proposed development does not trigger the Biodiversity Offset Scheme Threshold identified in Part 7 of the Biodiversity Conservation Regulation (2017).
3. No threatened flora or fauna species listed within the *BC Act* or the *EPBC Act* were observed within the proposed development area.
4. No threatened ecological communities listed within the *BC Act* (2016) or the *EPBC Act* (1999) were observed within the development area during surveys.
5. The initial threatened species assessment proposed development is not likely to significantly affect threatened species or their habitats as assessed under Section 7.2 of the Biodiversity Conservation Act (2016).
6. The site does not contain core koala habitat and no impact on koala habitat will occur.
7. A referral to the Australian Government Department of Climate Change, Energy, Environment and Water is considered unnecessary.
8. A Biodiversity Development Assessment Report is not required for the proposed development.
9. Additional seasonal flora and fauna surveys will need to be completed to meet the Councils Flora and Fauna Guidelines for a future development application.
10. Final design and construction of the future development is to be undertaken to avoid negative impacts on the adjoining area of *M.biconvexa* and its associated patch of vegetation through shading, altered hydrological regimes and root disturbance from excavations or soil placement.

REFERENCES

Australian Government Department of the Environment (2013) *EPBC Act Policy Statement 1.1 Significant Impact Guidelines, Matters of National Environmental Significance*, Commonwealth of Australia.

Australian Government Department of Climate Change, Energy, Environment and Water. (2023) Protected Matters Search Tool. [Online].

Bell, SAJ (2019) A Revised Interim Vegetation Classification of the Central Coast Local Government Area. Unpublished Report to Central Coast Council.

Biodiversity Conservation Act (2016), New South Wales Government.

Central Coast Council (2019) Flora and Fauna Guidelines. Central Coast Council.

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NSW Planning - Environment and Heritage 2023, NSW Bionet, [Online] Available from: http://www.bionet.nsw.gov.au/

NSW Office of Environment and Heritage 2018, Threatened Species Test of Significance Guidelines, Office of Environment and Heritage, Sydney.

APPENDIX 1

BIODIVERSITY OFFSET SCHEME ENTRY THRESHOLD REPORT

A1.1 BIODIVERSITY OFFSET SCHEME ENTRY THRESHOLD MAP

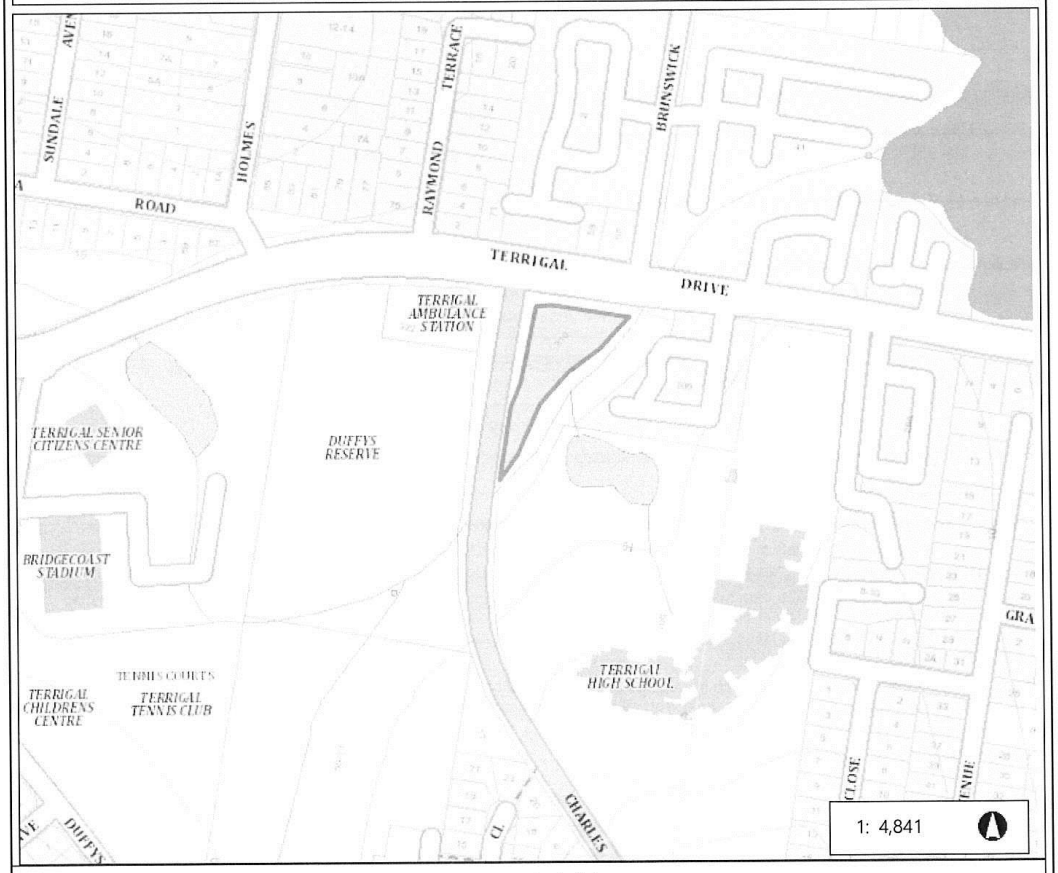
The following print out from the Biodiversity Offset Scheme Entry Threshold Map Tool is provided for the purposes of establishing that the site is not located on the biodiversity values map and and determining the area clearing threshold which applies to the site.

The site does not contain areas mapped as having biodiversity values. The area clearing threshold for native vegetation is 2500 sqaure metres. The development will not require clearing of native vegetation exceeding the threshold limit.

Therefore the proposed development does not trigger the requirement to prepare a Biodiversity Development Assessment Report or enter into the Biodiversity Offset Scheme.

NSW GOVERNMENT

Biodiversity Values 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	09/03/2023 5:05 PM	**BDAR Required***
Total Digitised Area	4,112.1 sqm	
Minimum Lot Size Method	Lot size	
Minimum Lot Size 10,000sqm = 1ha	2,988 sqm	
Area Clearing Threshold 10,000sqm = 1ha	2,500 sqm	
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 BMAT 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 Department of Planning and Environment 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: 09/03/2023 05:05 PM

APPENDIX 2

BIODIVERSITY CONSERVATION ACT (2016) TEST OF SIGNIFICANCE

APPENDIX 2 - 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 on threatened species and habitat suitability of the site in the preceding sections of this Report is to be read and used 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,

This section has been addressed for the following threatened species with suitable habitat within the subject site which were either observed during surveys or have potential to occur within the site on occasion.

THREATENED FLORA SPECIES

A patch of *Melaleuca biconvexa* containing thirteen trees and several saplings/regrowth plants was observed to the south of the exit/access driveway. This area is not part of the development area. All specimens of *M. biconvexa* will be retained within undeveloped areas of the site.

No other threatened flora species were observed on the site. The site has a low suitability as habitat for other threatened flora species. It is considered that the action proposed is not likely to have an adverse effect on the life cycle of any threatened flora species such that a viable local population is likely to be placed at risk of extinction.

THREATENED FAUNA SPECIES

The following threatened bat species are known to occur in the locality and could occur due to suitable foraging habitat within the site.

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

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. This species in known to forage in the nearby forest areas.

Potential Impacts
The proposal may result in the removal or modification of approximately 0.01 ha of suitable habitat for this species. The proposal is not likely to directly impact an area of known habitat for this species.

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.

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

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.

Potential Impacts
The proposal may result in the removal or modification of approximately 0.01 ha of suitable habitat for this species. The proposal is not likely to directly impact an area of known habitat for this species.

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*)
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.

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.

Potential Impacts
The proposal may result in the removal or modification of approximately 0.01 ha of suitable habitat for this species. The proposal is not likely to directly impact an area of known habitat for this species.

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*)
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.

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.

Potential Impacts

The proposal may result in the removal or modification of approximately 0.01 ha of suitable habitat for this species. The proposal is not likely to directly impact an area of known habitat for this species.

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*)
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.

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.

Potential Impacts
The proposal may result in the removal or modification of approximately 0.01 ha of suitable habitat for this species. The proposal is not likely to directly impact an area of known habitat for this species.

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.

Site Occurrence
This species was observed by Anabat Recorder within the subject site during surveys on 15 & 16 April 2023. The site contains suitable foraging and roosting habitat for this species which may be utilised occasionally as part of a larger home range.

Potential Impacts
The proposal may result in the removal or modification of approximately 0.01 ha of suitable habitat for this species. The proposal is not likely to directly impact an area of known habitat for this species.

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*)
Preferred habitats for this species include rainforest, wet and dry sclerophyll forest, open woodland, Melaleuca forests and open grassland. The Large Bent-winged 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. Large Bent-winged Bats are cave dwellers, but will also roost in man-made structures such as road culverts and mines.

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.

Potential Impacts
The proposal may result in the removal or modification of approximately 0.01 ha of suitable habitat for this species. The proposal is not likely to directly impact an area of known habitat for this species.

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

No critically endangered or endangered ecological communities were observed within the development area during surveys. Therefore the proposed action 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.

No critically endangered or endangered ecological communities were observed within the development area during surveys. Therefore 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

Approximately 0.01 hectare of habitat for threatened bat species will be removed or modified as a result of the proposed development.

One hollow bearing tree is proposed for removal.

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 adjoins a patch of native vegetation to the east and south-east and cleared developed areas to all other aspects.

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 of less than 0.5 ha and is highly disturbed.

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,

It is considered that the proposal is unlikely to increase the operation of any 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 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). Therefore a Biodiversity Development Assessment Report is not required for the proposal.

APPENDIX 3

KOALA HABITAT ASSESSMENT

KOALA HABITAT ASSESSMENT

310 TERRIGAL DRIVE
TERRIGAL

MAY 2023
REF: 318

KOALA HABITAT ASSESSMENT

310 TERRIGAL DRIVE
TERRIGAL

Integrated Site Planning

Environmental and Land Management Consultants

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PREFACE

This Assessment Report has been prepared by Integrated Site Planning for a proposed development of land at the subject site.

This Report provides details of the flora characteristics of the site in relation to the application of Chapter 4 of State Environmental Planning Policy (Biodiversity and Conservation) 2021.

Site Assessment and Report completed by:

PHILLIP ANTHONY CONACHER B.Sc.(Hons), Dip.Urb Reg Planning, M.Nat.Res.
Project Director

1. INTRODUCTION

This Report is an assessment of the proposal in relation to Koala Habitat Protection under Chapter 4 of State Environmental Planning Policy (Biodiversity and Conservation) 2021 which is referred to in the following sections of this report as the SEPP. The study area has an area of less than 1 hectare in size and is located in a local government area listed in Schedule 2 of the SEPP, therefore this SEPP applies. Details of the subject site are provided in Table 1.

TABLE 1 SITE DETAILS	
Location	310 Terrigal Drive, Terrigal
Development Area	<1 ha
Local Government Area	Central Coast Council
Proposed Development	Construction of Residential Units.

For the purposes of this Report the following definitions, as provided in the SEPP, have been used.

Highly suitable Koala habitat – Highly suitable koala habitat is where 15% or greater of the total number of trees within any Plant Community Type (PCT) are the regionally relevant species of those listed in Schedule 3 of the SEPP (NSW Government 2021).

Core koala habitat –
(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.

Suitably qualified and experienced person means a person who has:

- *a) a tertiary qualification in ecology, environmental management, forestry or other equivalent qualifications, and*
- *b) experience in flora and fauna identification, survey and management, including experience in conducting koala surveys.*

Koala Use Tree Species
Trees listed in Schedule 3 of the SEPP for the Central Coast Koala Management Area, are provided in Table 2. The tree species present in the study area are highlighted.

TABLE 2 KOALA USE TREE SPECIES Central Coast Koala Management Area – Schedule 3 Koala use trees species	
Scientific name	**Common name(s)**
Allocasuarina littoralis	Black She-oak
Allocasuarina torulosa	Forest Oak
Angophora bakeri	Narrow-leaved Apple
Angophora costata	Smooth-barked Apple
Angophora floribunda	Rough-barked Apple
Casuarina glauca	Swamp Oak
Corymbia eximia	Yellow Bloodwood
Corymbia gummifera	Red Bloodwood
Corymbia maculata	Spotted Gum
Eucalyptus acmenoides	White Mahogany
Eucalyptus agglomerata	Blue-leaved Stringybark

Eucalyptus albens	White Box
Eucalyptus amplifolia	Cabbage Gum
Eucalyptus beyeriana	Beyer's Ironbark
Eucalyptus blakelyi	Blakely's Red Gum
Eucalyptus bosistoana	Coast Grey Box
Eucalyptus botryoides	Bangalay
Eucalyptus camaldulensis	River Red Gum
Eucalyptus camfieldii	Camfield's Stringybark
Eucalyptus canaliculata	Large-fruited Grey Gum
Eucalyptus capitellata	Brown Stringybark
Eucalyptus carnea	Thick-leaved Mahogany
Eucalyptus consideniana	Yertchuk
Eucalyptus crebra	Narrow-leaved Ironbark
Eucalyptus cypellocarpa	Monkey Gum
Eucalyptus deanei	Mountain Blue Gum
Eucalyptus eugenioides	Narrow-leaved Stringybark
Eucalyptus fibrosa	Broad-leaved Red Ironbark
Eucalyptus glaucina	Slaty Red Gum
Eucalyptus globoidea	White Stringybark
Eucalyptus grandis	Flooded Gum
Eucalyptus haemastoma	Broad-leaved Scribbly Gum
Eucalyptus imitans	Eucalyptus imitans
Eucalyptus largeana	Craven Grey Box
Eucalyptus longifolia	Woollybutt
Eucalyptus macrorhyncha	Red Stringybark
Eucalyptus melliodora	Yellow Box
Eucalyptus michaeliana	Brittle Gum
Eucalyptus microcorys	Tallowwood
Eucalyptus moluccana	Grey Box
Eucalyptus oblonga	Stringybark
Eucalyptus paniculata	Grey Ironbark
Eucalyptus parramattensis	Parramatta Red Gum
Eucalyptus pilularis	Blackbutt
Eucalyptus piperita	Sydney Peppermint
Eucalyptus propinqua	Small-fruited Grey Gum
Eucalyptus punctata	Grey Gum
Eucalyptus quadrangulata	White-topped Box
Eucalyptus racemosa	Narrow-leaved Scribbly Gum
Eucalyptus resinifera	Red Mahogany
Eucalyptus robusta	Swamp Mahogany
Eucalyptus saligna	Sydney Blue Gum
Eucalyptus scias	Large-fruited Red Mahogany
Eucalyptus sclerophylla	Hard-leaved Scribbly Gum
Eucalyptus siderophloia	Grey Ironbark
Eucalyptus sideroxylon	Mugga Ironbark
Eucalyptus sieberi	Silvertop Ash
Eucalyptus signata	Scribbly Gum
Eucalyptus sparsifolia	Narrow-leaved Stringybark
Eucalyptus squamosa	Scaly Bark
Eucalyptus tereticornis	Forest Red Gum
Eucalyptus umbra	Bastard White Mahogany
Eucalyptus viminalis	Ribbon Gum
Melaleuca quinquenervia	Broad-leaved Paperbark
Syncarpia glomulifera	Turpentine

Note - Tree species present on site (highlighted).

2. SITE VEGETATION

The vegetation present on the site consists of:
- Cleared land with occasional remnant native trees,
- Areas of open forest and eucalypt dominated woodland.

The native vegetation present consists of Narrabeen Coastal Blackbutt Forest. The study area is partially cleared and under scrubbed and high levels of weeds are present in the understorey.

A description of the vegetation present and plant community types is included in the Ecological Assessment Report.

Species of koala use trees present are identified in Table 2.

3. KOALA HABITAT ASSESSMENT

The subject site was assessed for activity by koalas using the following methods:

i. A search of the BioNet Atlas of NSW Wildlife (NSW Planning E&H 2023) was undertaken to identify records of for the site or local area (within 2.5km);

ii. A general walkover inspection was completed with any species of koala use trees being inspected for signs of koala usage. Trees were inspected, identified and assessed for presence of koalas and koala use such as scratch and claw marks on the trunk and scats around the base of trees;

iii. Koalas were also searched for during daytime surveys;

iv. Identification and assessment of the species listed as Koala use trees in Schedule 3 of the SEPP was undertaken. Koala use tree species observed are identified in Table 2.

Presence of Highly Suitable Koala Habitat
The koala use tree species present on the site exceed more than 15% of the total native trees present. Therefore, on this basis, the site is classified as containing highly suitable koala habitat.

Koala Records
There are no on-site records for Koalas. There are no local area records for koalas in the locality.

Determination of Core Koala Habitat
The subject site has been determined as not containing core koala habitat for the following reasons:

1. No field evidence of prior koala use such as:
    - koala scratch marks on tree trunks
    - scats under the tree canopy
    - no koala sightings during visual surveys
2. No previous records of koalas within the site or local areas.
3. Low number of local area records in the Central Coast area.

Therefore the site does not meet the criteria of Section 4.2 of the SEPP for core koala habitat.

Potential Impacts

Section 4.9 of the SEPP identifies the following three levels of impact on Koalas or Koala Habitat:
- i) No impact
- ii) Low impact
- iii) Higher level of impact

Section 4.9 (3) of the SEPP identifies that..."if Council is satisfied that the development is likely to have low or no impact on Kolas or Koala habitat, the Council may grant consent to the development application.

The potential impact of the proposed development on a population of koala, if a population is present in the area, is considered low impact due to:

i) Extent of trees to be retained within the site
ii) Type of development proposed
iii) Absence of evidence of Koalas using the trees on the site
iv) Absence of records for the Koala on the site or in the locality.
v) Low number of Koala records in the local government area.

4. CONCLUSIONS

The site does not contain core koala habitat as defined by the SEPP. No koalas were observed during the koala survey and no evidence of koala habitation, such as scats, claw and scratch marks, were located on the site. Therefore, it is considered that:

i) The subject site does not form core koala habitat as defined by the SEPP.
ii) No impact on Koalas or their habitat will result from the proposed development.

It is concluded that a more detailed Koala Assessment Report under the provisions of Section 4.9.(4) of the SEPP is not required for this proposed development.

5. REFERENCES

NSW Environment and Heritage 2023(a), NSW Bionet, [Online] Available from: http://www.bionet.nsw.gov.au/

NSW Department of Planning, Industry and Environment 2021(b), Koala SEPP 2021 Fact Sheet – Development Applications.

State Environmental Planning Policy (Biodiversity and Conservation) 2021 NSW Government

APPENDIX 4

ENVIRONMENT PROTECTION & BIODIVERSITY CONSERVATION ACT (1999) ASSESSMENT

The following assessment in accordance with the EPBC 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 (DCCEEW 2023) was conducted for EPBC Listed threatened and migratory species recorded within 5 km of the subject site.

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

Threatened Flora Species

- *Melaleuca biconvexa*
- *Rhodamnia rubescens*
- *Rhodomyrtus psidioides*

A patch of *Melaleuca biconvexa* was observed in the southern part of the site outside of the development area.

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 fauna 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?

At the broadest scope and due to the small area of natural area modification (less than 0.2ha) the proposal will have a very low potential to impact on Matters of National Environmental Significance. The patch of *M.biconvexa* will not be disturbed by the proposed action.

A separate Significant Impact Assessment completed in accordance with the EP&BC Act Policy Statement 1.1 *Significant Impact Guidelines* (DOE 2013) for the nationally listed flora species, *Melaleuca biconvexa,* which was observed during surveys.

This separate assessment has concluded that the proposal is not likely to have a significant impact on this species and is not likely to require a referral to the Australian Government Department of Climate Change, Energy, Environment and Water.

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

Yes avoid or reduce measures are proposed in relation to Matters of National Significance. All impacts are to be restricted to existing disturbed or managed areas. The area of *M.biconvexa* will be avoided as part of the development proposal.

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. Therefore, a referral to the Department of Climate Change, Energy, Environment and Water is not required.

EPBC ACT (1999) SIGNIFICANT IMPACT ASSESSMENT FOR *MELALEUCA BICONVEXA*

The following significant impact assessment has been prepared for the nationally listed threatened flora species, Melaleuca biconvexa in accordance with the EP&BC Act Policy Statement 1.1 *Significant Impact Guidelines* (AGDE 2013), to determine whether a referral under the EPBC Act (1999) is required for this species.

Part A - Important Population Assessment
A 'population of a species' is defined under the *EPBC Act* as an occurrence of the species in a particular area. In relation to critically endangered, endangered or vulnerable threatened species, occurrences include but are not limited to:

- a geographically distinct regional population, or collection of local populations, or
- a population, or collection of local populations, that occurs within a particular bioregion.

For the purposes of assessment of a vulnerable species under the *EPBC Act* (1999) an assessment as to whether the species comprises an important population is required. An *"important population"* is one that is necessary for a species' long-term survival and recovery. Questions (in bold) to determine whether a population is an *"important population"* are as follows.

1. Whether the population has been identified within a recovery plan

There is no recovery plan prepared for this species under the provisions of either the *EPBC Act* (1999) or the *TSC Act* (1995).

The *M. biconvexa* plants within the subject site have not been identified as an important population within the Recovery Plan.

2. Whether the population constitutes a key source population either for breeding or dispersal

The *M. biconvexa* present within the site have not been identified as a key source population for breeding or dispersal, the patch within the site was overlooked in recent mapping undertaken by Bell (2019).

3. Whether the population constitutes a population necessary for maintaining genetic diversity

The *M. biconvexa* present have not been identified as a population necessary for maintaining genetic diversity.

4. Whether the population is near the limit of the species range

The *M. biconvexa* is not near the limit of its range within the subject site.

Important Population Assessment Conclusion
From the above information and details it is considered that the *M. biconvexa* plants observed within the subject site are not:

- Identified in a recovery plan for this species;
- A key source population for breeding or dispersal;
- A population necessary for maintaining genetic diversity; or
- A population which is near this species range.

Therefore it is considered that the threatened species observed does not satisfy the criteria of an important population as identified by the DOE (2013).

Notwithstanding the above conclusions if the precautionary approach is adopted, further consideration as to whether the proposed action is likely to have a significant impact on this species needs to assess the significant impact criteria (DOE 2013) for a vulnerable species.

Part B - Significant Impact Assessment
Criteria identified within the EPBC Act Policy Statement 1.1 *Significant Impact Guidelines* (Department of the Environment 2013), have been addressed below to determine whether there is a real chance or possibility that the proposed action is likely to have a significant impact on, *Melaleuca biconvexa*, a threatened flora species listed as vulnerable under the *EPBC Act* (1999).

Questions (**in bold**) to determine whether the proposal is likely to have a significant impact on this species have been addressed as follows.

An action is likely to have a significant impact on a vulnerable listed threatened species if there is a real chance or possibility that it will:

1. **Lead to a long-term decrease in the size of an important population of a species.**

   All *M. biconvexa* plants are observed are proposed for retention.

   It is considered that the proposal is not likely to lead to a long-term decrease in the size of an important population of this species.

2. **Reduce the area of occupancy of an important population;**

   All *M. biconvexa* plants within the subject site are proposed for retention.

   It is considered that the proposal is not likely to reduce the area of occupancy of an important population of this species.

3. **Fragment an existing important population into two or more populations;**

   All *M. biconvexa* plants within the subject site are proposed for retention. It is considered that the proposal is not likely to fragment an existing important population into two or more populations.

4. **Adversely affect habitat critical to the survival of a species;**

   All *M. biconvexa* plants within the subject site are proposed for retention. It is considered that the *M. biconvexa* plants within the site form part of a small local population of this species and the site is not likely to contain habitat critical to the survival of this species.

5. **Disrupt the breeding cycle of an important population;**

   All *M. biconvexa* plants within the subject site are proposed for retention.

   It is considered that the proposal is not a type of development which is likely to disrupt the breeding cycle of an important population of this species with the implementation of suitable mitigation measures.

6. **Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline;**

   It is considered that the proposal is not likely to modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that this species is likely to decline.

7. **Result in invasive species that are harmful to a threatened species becoming established in the threatened species' habitat;**
   It is considered that the proposal is not likely to result in invasive species that are harmful to this species becoming established in habitat for this species, through the implementation of suitable mitigation measures.

8. Introduce disease that may cause a species to decline; or

It is considered that the proposed action and the proposal is not a type of development likely to introduce disease that may cause this species to decline.

9. Interfere with the recovery of the species.

It is considered that the proposal is not likely to interfere with any recovery actions for this species.

Conclusion
It is considered that the proposed action is not likely to have a significant impact on *M. biconvexa* or its habitats and a referral to the Department of Climate Change, Energy, Environment and Water is not necessary.