Flora and Fauna Assessment

5 Cabarita Road, Avalon Beach

Prepared for: Fiona and Ian Richards
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East Coast Ecology

Document Control

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GLOSSARY

Abbreviation	Definition
BAM	Biodiversity Assessment Method 2020
BC Act	*Biodiversity Conservation Act 2016* (NSW)
BDAR	Biodiversity Development Assessment Report
DA	Development Application
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DCP	Development Control Plan
DPE	Department of Planning and Environment
DPI	Department of Primary Industries
DPIE	Department of Planning, Industry and Environment
ECE	East Coast Ecology
EP&A Act	*Environmental Planning & Assessment Act 1979* (NSW)
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
FFA	Flora and Fauna Assessment
ha	Hectares
km	Kilometres
LEP	Local Environment Plan
LGA	Local Government Area
Locality	The area within a 5km radius of the Subject Land. The same meaning when describing a local population of a species or local occurrence of an ecological community.
NSW	New South Wales
OEH	Office of Environment and Heritage
PCT	Plant Community Type
SEPP	State Environmental Planning Policy
Subject Land	5 Cabarita Road, Avalon Beach NSW (Lot 3/-/DP226537)
TEC	Threatened Ecological Community

TABLE OF CONTENTS

FIGURES

TABLES

1. INTRODUCTION

1.1 Project Overview

Danny and Pam Nemeny engaged East Coast Ecology (ECE) to undertake a Flora and Fauna Assessment (FFA) to accompany a Development Application (DA) for a proposed development at 5 Cabarita Road, Avalon Beach NSW 2107 (Lot 3/-/DP226537), hereafter referred to as the 'Subject Land' (**Figure 1**).

The proposed development includes additions and alterations to an existing dwelling, however, does not require the removal of any native vegetation. The proposed development is assessable under Part 4 of the *Environmental Planning and Assessment Act 1979* (NSW) (EP&A Act) and is subject to the local planning provisions of Northern Beaches Council.

The overarching objective of this report was to evaluate the ecological values that occur within the site and identify how the proposed development satisfies the relevant planning framework. This report discerns the likelihood of occurrence of any threatened entities (i.e. ecological communities and species) listed under the *Biodiversity Conservation Act 2016* (NSW) (BC Act) and the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act).

1.2 Site Context

The Subject Land is located within the suburb of Avalon Beach, in the Northern Beaches Local Government Area (LGA). It encompasses an area of approximately 0.12ha and is currently occupied by one tenanted, multi-storey dwelling and associated landscaped gardens. The Subject Land is surrounded by privately-owned dwellings to the north, south and west, and Cabarita Road to the east.

1.2.1 Topography, Geology and Soils

The Subject Land is located on a steep north-facing aspect, falling from 34m in the southwest to 28m in the northeast. The Subject Land is situated on the Watagan soil landscape (NSW DCCEEW, 2024e). The Watagan soil landscape is characterised by very steep hills and coastal headlands on fine-grained Narrabeen Group sediments.

1.2.2 Hydrology

The Subject Land does not contain any mapped watercourses. The closest waterbody, Pittwater, is located 74m to the east of the Subject Land, therefore the riparian buffer does not intersect with the area proposed to be impacted.

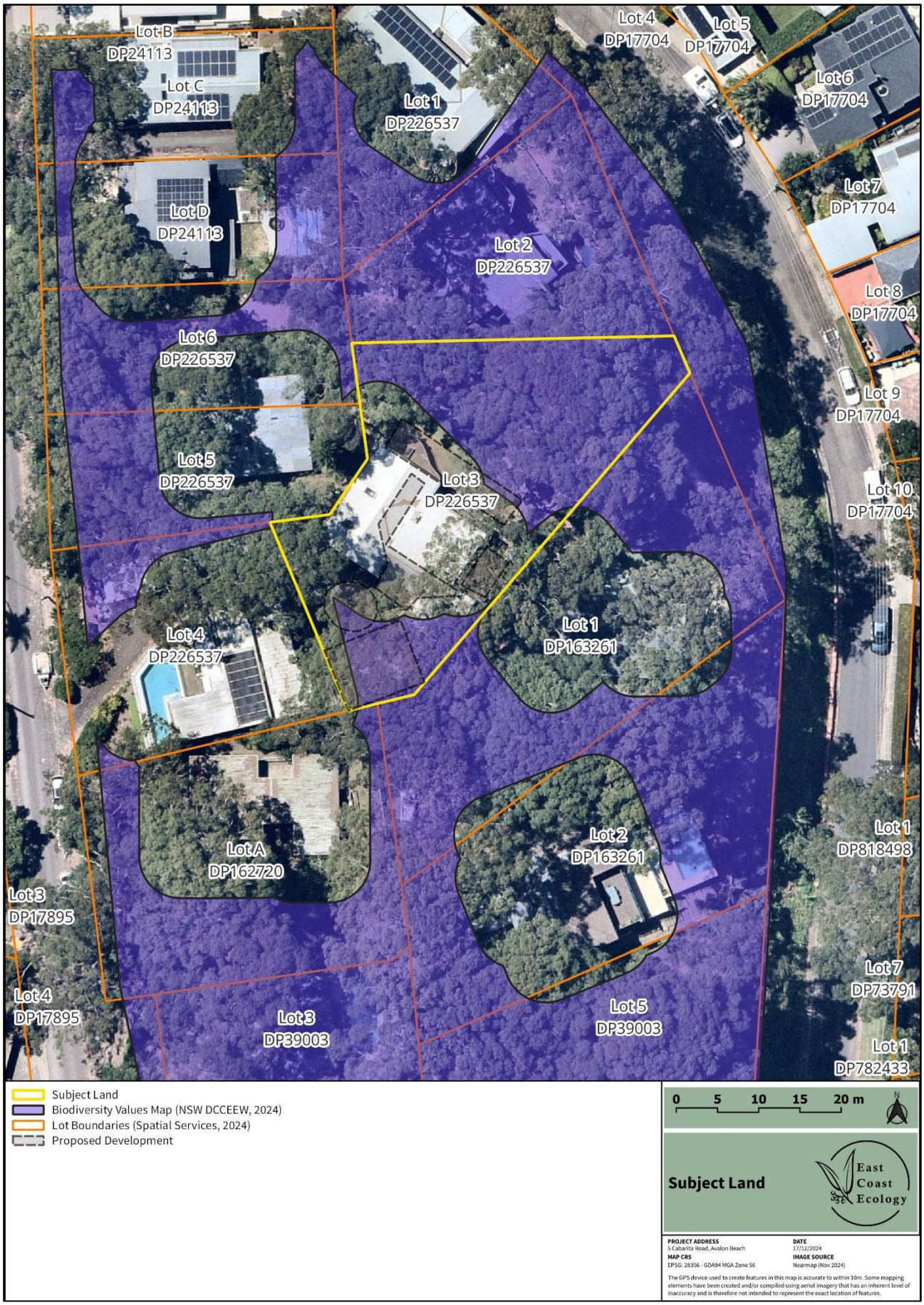

Figure 1. Location of the Subject Land.

1.3 Scope of Assessment

The primary aim of this report was to assess impacts to native vegetation and threatened species and determine whether the proposed development satisfies the relevant sections of Northern Beaches Council's (Pittwater) Local Environment Plan 2014 and the Pittwater 21 Development Control Plan. The ecological assessment and recommendations in this report are pursuant to the local planning provisions of Northern Beaches Council, the BC Act and the EPBC Act. The full scope of the assessment included:

- Background research to determine the likelihood for NSW and/or Commonwealth threatened biota to occur within the Subject Land during any point of their lifecycles
- Assess any potential impacts to species and/or communities listed under the BC Act and EPBC Act
- Establishing the likelihood of occurrence of migratory species and threatened ecological communities as listed under the BC Act and/or the EPBC Act
- Identifying and mapping the distribution of vegetation communities within the Subject Land
- Recording presence and the extent of any known or potential fauna habitat features such as nests, dreys, caves, crevices, culverts, pools, soaks, flowering trees, fruiting trees or hollow-bearing trees and provide recommendations for on-going management of these habitat features and any fauna present
- Recording presence and the extent of any priority weed infestations that require management by law
- Determining potential ecological impacts or risks that may result due to the proposed works, and
- Recommendation of any controls or additional actions to be taken to protect or improve environmental outcomes of the proposed works.

The FFA has been compiled in consultation with the site plans (**Appendix A**).

1.4 Study Limitations

This study was not intended to provide a complete inventory of all flora and fauna species with potential to occur within the Subject Land. The timing of the survey may not have coincided with emergence times of some species of flora and fauna, such as seasonally flowering herbs, seasonal migratory fauna or nocturnal fauna. To account for those species that could not be identified during the site assessment, detailed habitat assessments were combined with desktop research and local ecological knowledge to establish an accurate prediction of the potential for such species to occur on or adjacent the Subject Land.

2. LEGISLATIVE CONTEXT

2.1 *Environment Protection and Biodiversity Conservation Act 1999*

The Commonwealth EPBC Act provides a legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places which are considered Matters of National Environmental Significance (MNES). The EPBC Act identifies eight (8) MNES:

1. World Heritage properties
2. National Heritage places
3. Wetlands of international importance (those listed under the Ramsar Convention)
4. Listed threatened species and communities
5. Migratory species listed under international agreements
6. Great Barrier Reef Marine Park
7. Commonwealth marine areas, and
8. Nuclear actions.

The Protected Matters Search Tool identified the following as potentially occurring within the Subject Land (or within the area):

- 8 Threatened Ecological Communities
- 112 threatened species, and
- 58 Migratory species.

No EPBC Act listed threatened species or threatened ecological communities (TEC) were recorded within the Subject Land or are likely to be impacted. The proposed development will not result in a 'significant impact' on any MNES and a referral to the Australian Government Minister for the Environment is not required.

2.2 *Environmental Planning and Assessment Act 1979*

The *Environmental Planning and Assessment Act 1979* (NSW) (EP&A Act) is the principal planning legislation for NSW, providing a framework for the overall environmental planning and assessment of development proposals. The EP&A Act places a duty on the determining authority to adequately address a range of environmental matters including maintenance of biodiversity and the likely impact to threatened species, populations or ecological communities (under the BC Act).

2.3 *Biodiversity Conservation Act 2016*

The BC Act (NSW) seeks to conserve biological diversity and promote ecologically sustainable development, to prevent extinction and promote recovery of threatened species, populations and ecological communities and to protect areas of outstanding biodiversity value. Impacts to threatened species and threatened ecological communities listed under the BC Act are required to be assessed in accordance with Section 7.3 of the BC Act.

For assessments under Part 4 of the EP&A Act, the Biodiversity Offsets Scheme (BOS) threshold applies, as specified in section 7.2 (1b). As stated in the *Biodiversity Conservation Regulation 2017*, the threshold triggers for entry into the BOS are:

- Clearing of native vegetation of an area declared by clause 7.2 as exceeding the threshold, or
- The clearing of native vegetation, or other action prescribed by clause 6.1, on land included on the Biodiversity Values Map published under clause 7.3

For a Part 4 assessment, if the conclusion of the Test of Significance is that there is potential for a significant impact on a threatened species or ecological community, then the proponent has to prepare a Biodiversity Development Assessment Report (BDAR).

2.3.1 Biodiversity Assessment Pathway

The requirements of the BC Act and *Biodiversity Conservation Regulation 2017* are mandatory for all Development Applications (DA) assessed pursuant to Part 4 of the EP&A Act submitted in the Northern Beaches LGA.

The BC Act and its regulations stipulate clearing 'area threshold' values (**Table 1**) that determine whether a development is required to be assessed in accordance with the BOS. Minimum entry thresholds for vegetation clearing depend on the minimum lot size (i.e. 0.07ha in this case). Therefore, to avoid triggering the BOS, the proponent must avoid the clearing/ management of native vegetation in excess of 0.25ha. The proposed development will require impact to 0ha of native vegetation, therefore the area clearing threshold will not be exceeded.

Table 1. Entry thresholds for the Biodiversity Offset Scheme.

Minimum lot size associated with the property	Threshold for clearing
Less than 1ha	0.25ha or more
1ha to less than 40ha	0.5ha or more
40ha to less than 1000ha	1ha or more
1000ha or more	2ha or more

Dark border indicates relevant threshold.

In addition to the clearing area threshold, the Biodiversity Values (BV) Map (NSW DCCEEW, 2024d) identifies land with high biodiversity values that are particularly sensitive to impacts from development and clearing. The Subject Land contains land mapped as containing 'Biodiversity Values' on the BV Map at the time of writing this report, however, as the proposed development does not involve the removal of any vegetation or prescribed impacts within the BV Map, the BOS is not triggered.

2.4 Areas of Outstanding Biodiversity Value

No Areas of Outstanding Biodiversity Values (AOBV) occur within proximity to the Subject Land. The endangered *Eudyptula minor* (Little Penguin) population on North head is a declared Area of Outstanding Biodiversity Value (AOBV) under the *BC Act 2017*, which occurs approximately 20km south of the Subject Land. The Subject Land does not occur within areas mapped as AOBV nor does it contain any appropriate foraging or breeding habitat appropriate for Little Penguins. No further assessment is required.

2.5 *Biosecurity Act 2015*

The *Biosecurity Act 2015* (NSW) provides a framework for the prevention, elimination and minimisation of biosecurity risks posed by an activity as a matter of biosecurity. As defined in Part 3, section 23 of this Act, any non-conformance by an individual is defined as guilty of an offence.

No priority weeds were identified within the Subject Land. Any priority weeds identified at a later date must be managed in accordance with the *Biosecurity Act 2015* (NSW). Suitable mitigation measures to appropriately manage weeds can be found on the NSW Weed Wise website.

2.6 *Fisheries Management Act 1994*

The *Fisheries Management Act 1994* (NSW) (FM Act) aims to conserve, develop and share the fishery resources of NSW for the benefit of present and future generations including conserving fish stocks and key fish habitats and promoting ecologically sustainable development. The Subject Land is not mapped as Key Fish Habitat (KFH).

2.7 *Water Management Act 2000*

The main objective of the *Water Management Act 2000* (NSW) (WM Act) is to manage NSW water in a sustainable and integrated manner that will benefit today's generations without compromising future generations' ability to meet their needs. Section 91E of the Act establishes an approval regime for controlled activities within waterfront land.

The proposed development does not require works within any watercourses, therefore approval under the WM Act is not required.

2.8 State Environmental Planning Policies

2.8.1 State Environmental Planning Policy (Resilience and Hazards) 2021

The State Environmental Planning Policy (Resilience and Hazards) 2021 (Resilience and Hazards SEPP) commenced on the 1st of March 2022 and replaces the following former SEPPs:

- State Environmental Planning Policy (Coastal Management) 2018
- State Environmental Planning Policy 33 – Hazardous and Offensive Development, and
- State Environmental Planning Policy 55 – Remediation of Land.

The Subject Land is situated within the 'Coastal Use Area', and 'Coastal Environment Area' and is therefore subject to the relevant controls.

2.8.1.1 Development on land within the coastal use area

(1) Development consent must not be granted to development on land that is within the coastal use area unless the consent authority:
   (a) has considered whether the proposed development is likely to cause an adverse impact on the following:

      (i) existing, safe access to and along the foreshore, beach, headland or rock platform for members of the public, including persons with a disability,

(ii) overshadowing, wind funnelling and the loss of views from public places to foreshores,

(iii) the visual amenity and scenic qualities of the coast, including coastal headlands

(iv) Aboriginal cultural heritage, practices and places

(v) cultural and built environment heritage, and

(b) is satisfied that:

(i) the development is designed, sited and will be managed to avoid an adverse impact referred to in paragraph (a), or

(ii) if that impact cannot be reasonably avoided—the development is designed, sited and will be managed to minimise that impact, or

(iii) if that impact cannot be minimised—the development will be managed to mitigate that impact, and

(c) has taken into account the surrounding coastal and built environment, and the bulk, scale and size of the proposed development.

The Subject Land does not contain any existing public access routes to the foreshore nor does the proposed design negatively influence the visual amenity of the coastline. The proposal has been designed in a way that considers the surrounding coastal and built environment, satisfying the requirements for developments within these mapped areas.

2.8.1.2 Development on land within the coastal environment area

(1) Development consent must not be granted to development on land that is within the coastal environment area unless the consent authority has considered whether the proposed development is likely to cause an adverse impact on the following:

(a) the integrity and resilience of the biophysical, hydrological (surface and groundwater) and ecological environment

(b) coastal environmental values and natural coastal processes

(c) the water quality of the marine estate (within the meaning of the Marine Estate Management Act 2014), in particular, the cumulative impacts of the proposed development on any of the sensitive coastal lakes identified in Schedule 1,

(d) marine vegetation, native vegetation and fauna and their habitats, undeveloped headlands and rock platforms,

(e) existing public open space and safe access to and along the foreshore, beach, headland or rock platform for members of the public, including persons with a disability,

(f) Aboriginal cultural heritage, practices and places,

(g) the use of the surf zone

(2) Development consent must not be granted to development on land to which this clause applies unless the consent authority is satisfied that:

(a) the development is designed, sited and will be managed to avoid an adverse impact referred to in subclause (1), or

(b) if that impact cannot be reasonably avoided—the development is designed, sited and will be managed to minimise that impact, or

(c) if that impact cannot be minimised—the development will be managed to mitigate that impact

Items 1.c, 1.f and 1.g are not applicable. The proposed development does not involve any works within or around the coastline therefore an adverse impact to the hydrological or ecological processes of the coastline is unlikely. In addition, the vegetation within the Subject Land is highly modified, comprised of mostly planted urban native and exotic flora species. As such, no negative impacts are anticipated as a result of the proposal subject to the implementation of the below mitigation measures.

2.8.2 State Environmental Planning Policy (Biodiversity and Conservation) 2021 – Chapter 4: Koala Habitat Protection 2021

This Chapter aims to encourage the conservation and management of areas of natural vegetation that provide habitat for koalas to support a permanent free-living population over their present range and reverse the current trend of koala population decline. This chapter of the SEPP applies to LGAs that are listed in Schedule 2 'Local government areas' of the SEPP. As the Northern Beaches LGA is included in Schedule 2, this SEPP applies to the proposed development. The LGA forms part of the Central Coast Koala Management Area. As such, the development control provisions of the SEPP apply to development applications relating to the land:

- Where there is an approved Koala Plan of Management (KPoM) for the land:
    - The development application must be consistent with the approved Koala Plan of Management that applies to the land.
- Where there is no approved Koala Plan of Management for the land, if the land:
    - Is identified on the Koala Development Application Map; and
    - Has an area of more than 1 hectare; or
    - Has, together with any adjoining land in the same ownership, an area of more than 1 hectare, whether or not the development application applies to the whole, or only part, of the land.

The Subject Land is situated within an area specified in Schedule 2 of the SEPP, however, does not have an area of at least 1 hectare (including adjoining land within the same ownership), therefore this chapter does not apply.

2.9 Pittwater Local Environmental Plan (LEP) 2014

2.9.1 Biodiversity (Clause 7.6)

The Subject Land is located within land mapped as 'Biodiversity' on the Pittwater LEP Biodiversity Map. As such, clause 7.6 of the Pittwater LEP applied to the proposed development. The objective of this clause is to maintain terrestrial, riparian and aquatic biodiversity by:

- Protecting native fauna and flora
- Protecting the ecological processes necessary for their continued existence, and
- Encouraging the conservation and recovery of native fauna and flora and their habitats.

Before determining a development application, the consent authority must consider:

- Whether the development is likely to have:
    - Any adverse impact on the condition, ecological value and significance of the fauna and flora on the land
    - Any adverse impact on the importance of the vegetation on the land to the habitat and survival of native fauna
    - Any potential to fragment, disturb or diminish the biodiversity structure, function and composition of the land, and
    - Any adverse impact on the habitat elements providing connectivity on the land.
- Any appropriate measures proposed to avoid, minimise or mitigate the impacts of the development.

Development consent must not be granted unless the consent authority is satisfied that:

- The development is designed, sited and will be managed to avoid any significant adverse environmental impact
- If that impact cannot be reasonably avoided by adopting feasible alternatives—the development is designed, sited and will be managed to minimise that impact, or
- If that impact cannot be minimised—the development will be managed to mitigate that impact.

The proposed development has been purposefully designed to minimise any impacts on the environment. Even so, no significant biodiversity features were identified within the Subject Land at the time of the assessment. As such, the proposed development has been sited in a manner that does not require removal of any native vegetation therefore impacts to biodiversity are limited.

3. METHODOLOGY

3.1 Desktop Review

A thorough literature review of local information relevant to the Northern Beaches LGA was undertaken. Searches using NSW Wildlife Atlas (BioNet) (NSW DCCEEW, 2024a) and the Commonwealth Protected Matters Search Tool (PMST) (DCCEEW, 2024) were conducted to identify all current threatened flora and fauna, as well as migratory fauna records within a 5km radius of the Subject Land. This data was used to assist in establishing the presence or likelihood of any ecological values as occurring on or adjacent the Subject Land and helped inform our Ecologist on what to look for during the site assessment.

Soil landscape and geological mapping, as well as existing vegetation mapping was examined to assist in determining whether any threatened flora or ecological communities could be present. Databases and vegetation mapping that were searched and/or reviewed included:

- State and Commonwealth datasets:
    - EPBC Protected Matters Search Tool (DCCEEW, 2024)
    - NSW BioNet. The website of the Atlas of NSW Wildlife (NSW DCCEEW, 2024a)
    - NSW BioNet. Threatened Biodiversity Data Collection (NSW DCCEEW, 2024b)
    - NSW BioNet. Vegetation Classification System (NSW DCCEEW, 2024c)
    - NSW Government Spatial Services: Search and Discovery - Historical, Aerial and Satellite Imagery (Spatial Services, 2024a)
    - NSW Government Spatial Services: Six Maps Clip & Ship (Spatial Services, 2024b)
- Vegetation and soil mapping:
    - The NSW State Vegetation Type Map (NSW DCCEEW, 2024d)
    - eSPADE v2.2.0 (NSW DCCEEW, 2024f)
- NSW State guidelines:
    - Biodiversity Assessment Method (DPIE, 2020)
    - Surveying threatened plants and their habitats - NSW survey guide for the Biodiversity Assessment Method (DPIE, 2020a)
    - Threatened Species Survey and Assessment: Guidelines for developments and activities. Working Draft (DEC, 2004)

3.2 Ecological Site Assessment

A site assessment was undertaken by Ecologist, Samantha Everett, on the 12th of December 2024. During the site assessment, the following activities were undertaken:

- Identification of the vegetation communities present on the Subject Land, with a focus on identifying any Threatened Ecological Communities (TEC)
- Recording a list of flora species encountered on the Subject Land, with a focus on species diagnostic of TECs and priority weeds
- Recording opportunistic sightings of any fauna species seen or heard on or within the immediate surrounds of the Subject Land

- Identification of the locations of notable fauna habitat such as important nesting, roosting or foraging microhabitats
- Assessment of the connectivity and quality of the vegetation within the Subject Land and surrounding area, and
- Identification of the habitat of any threatened and regionally significant fauna including:
    - Tree hollows (habitat for threatened forest owls, parrots and mammals)
    - Fruiting and flowering trees (food for threatened birds and mammals)
    - Trees and shrubs supporting nest structures (habitat for threatened birds and arboreal mammals)
    - Logs, bark and debris (habitat for threatened frogs, reptiles and snails).

3.3 Native Vegetation, Threatened Ecological Communities and Vegetation Integrity Methods

3.3.1 Existing Information

A review of the State Vegetation Type Map (NSW DCCEEW, 2024d) was used to assist in the identification of Plant Community Types (PCTs) within and surrounding the Subject Land. The PCT of 'best-fit' was determined based on the floristic descriptions within the Vegetation Classification System database (NSW DCCEEW, 2024c).

3.3.2 Mapping Native Vegetation Extent

The extent of native vegetation within the Subject Land was determined through a field assessment with the aid of a GPS-enabled tablet.

3.4 Threatened Flora Survey Methods

3.4.1 Review of Existing Information

Threatened flora with potential to occur within the Subject Land and immediate surrounds were identified following review of BioNet and the PMST. Soil mapping (NSW DCCEEW, 2024e) and topography (Google Earth) were also used to provide further context on habitat constraints for threatened flora.

3.4.2 Field Surveys

To determine whether any suitable habitat for threatened flora species was present, parallel field traverses in accordance with the 'Surveying threatened plants and their habitats - NSW survey guide for the Biodiversity Assessment Method' (DPIE, 2020b) were undertaken.

3.5 Threatened Fauna Survey Methods

3.5.1 Review of Existing Information

Threatened fauna with potential to occur within the Subject Land and immediate surrounds were identified following review of BioNet and the PMST. Soil mapping (NSW DCCEEW, 2024e) and topography (Google Earth) were also used to provide further context on habitat constraints for threatened fauna.

3.5.2 Habitat Constraints

A field survey was undertaken to identify any habitat constraints (e.g. waterbodies, rocky areas, tree hollows), including microhabitat, present within the Subject Land and immediate surrounds. Potential habitat constraints within the broader area (500m buffer) were assessed using Google Earth, historical aerial imagery (Spatial Services, 2024a), soil landscape mapping (NSW DCCEEW, 2024e) and recent vegetation mapping (NSW DCCEEW, 2024b).

3.5.3 Field Surveys

No targeted surveys for fauna were undertaken. Threatened fauna habitats were surveyed opportunistically during parallel field traverses.

3.5.4 Weather Conditions

Weather conditions recorded at the nearest weather station (Terrey Hills) prior to and during the general flora and fauna survey period are provided in **Table 2** (BOM, 2024). The data reveal mild temperatures and low rainfall leading up to the survey.

Table 2. Weather observations recorded from Terrey Hills AWS 066059.

Date	Day	Min. temp. (°C)	Max. Temp (°C)	Rainfall (mm)
6/12/2024	Friday	20.3	30.4	0
7/12/2024	Saturday	21.3	28.5	11.2
8/12/2024	Sunday	20.2	29.4	8.2
9/12/2024	Monday	17.1	21.2	0.8
10/12/2024	Tuesday	18.6	24.0	0
11/12/2024	Wednesday	18.0	23.8	0
12/12/2024	Thursday	15.7	28.5	0

Dark border indicates date of survey.

3.6 Permits and Licences

The biodiversity assessment was conducted under the terms of ECE's Scientific Licence issued by the NSW Department of Planning and Environment (SL102667). Fauna survey was conducted under approval RVF22/2367 from the NSW Animal Care and Ethics Committee.

4. RESULTS: NATIVE VEGETATION

4.1 Plant Community Types

4.1.1 Historically Mapped Vegetation Communities

One PCT has been historically mapped within and/or surrounding the Subject Land (NSW DCCEEW, 2024d):

- PCT 3234: Hunter Coast Lowland Spotted Gum Moist Forest.

This PCT is associated with the below threatened ecological community (TEC):

- Pittwater and Wagstaffe Spotted Gum Forest in the Sydney Basin Bioregion (BC Act Listed; Endangered).

The State Vegetation Type Map is presented in **Figure 2**.

4.1.2 Field-validated Vegetation Communities

Site assessment confirmed the presence of one PCT within the Subject Land:

- PCT 3234: Hunter Coast Lowland Spotted Gum Moist Forest.

The vegetation within the Subject Land is detailed in **Table 3** and displayed in **Figure 3**.

Figure 2. Vegetation Mapping within and surrounding the Subject Land.

Table 3. Description of vegetation within the Subject Land.

PCT 3234: Hunter Coast Lowland Spotted Gum Moist Forest	
	
Extent to be impacted (approximate)	0ha
Description of the Vegetation within the Subject Land	
Vegetation within the Subject Land is disturbed, particularly the understory which was dominated by exotic ornamentals in proximity to the dwelling. The canopy layer was dominated by *Corymbia maculata*, and understory included scattered natives including *Doryanthes excelsa*, *Macrozamia communis, Lomandra longifolia*, *Commelina cyanea* and *Pseuderanthemum variabile*.	
BC Act 2016 Status	Pittwater and Wagstaffe Spotted Gum Forest in the Sydney Basin Bioregion (Endangered).
EPBC Act 1999 Status	Not listed

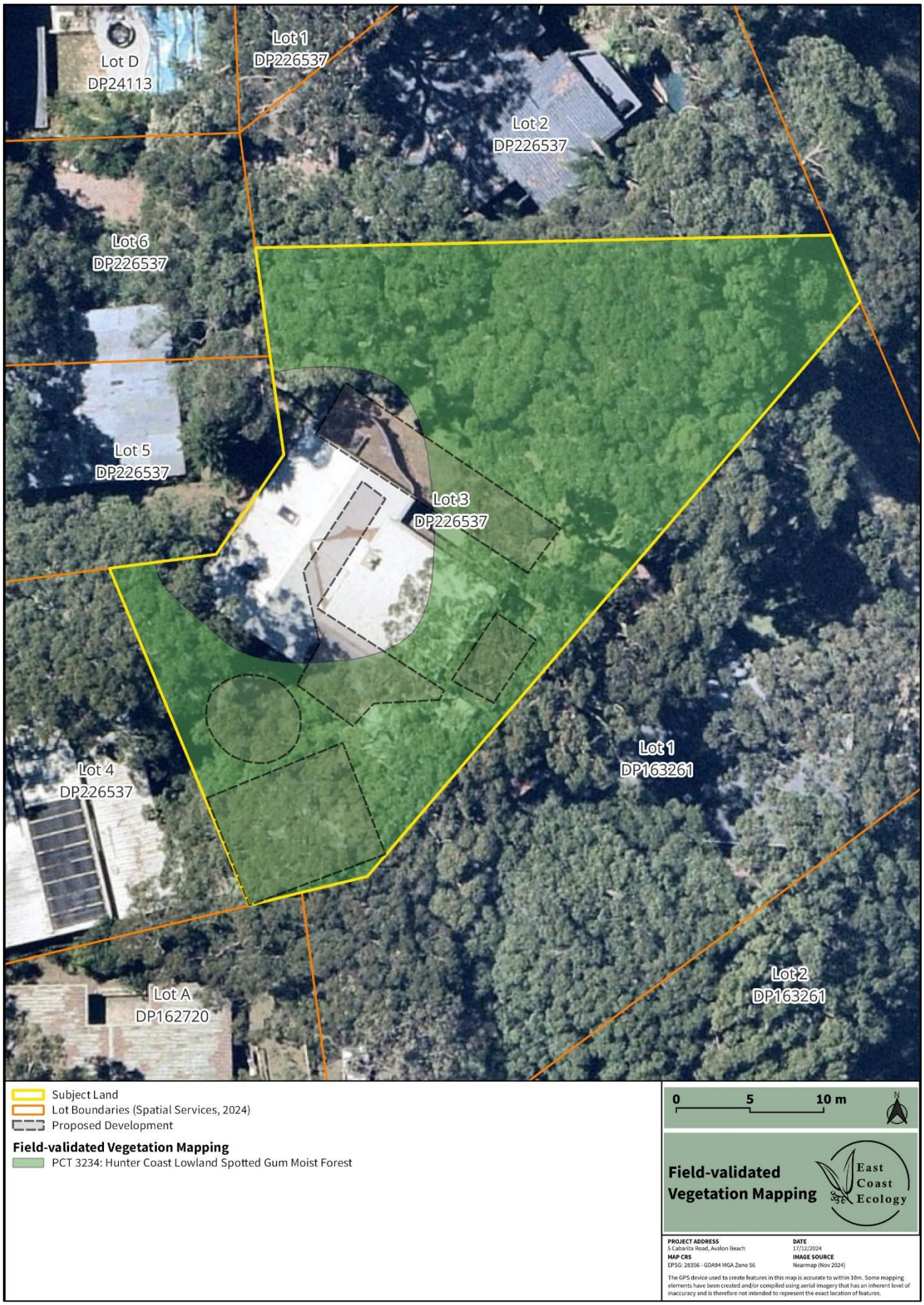

Figure 3. Field-validated vegetation mapping.

5. RESULTS: THREATENED SPECIES

5.1 Threatened Flora

Database searches revealed 19 threatened flora occur, or have potential to occur, within a 5km radius of the Subject Land (**Table 4**).

Table 4. Threatened flora with potential to occur within the Subject Land.

Scientific Name	Common Name	BC Act	EPBC Act	Records within 5km
Boronia umbellata	Orara Boronia	V	V	1
Callistemon linearifolius	Netted Bottle Brush	V	-	4
Chamaesyce psammogeton	Sand Spurge	E	-	10
Cryptostylis hunteriana	Leafless Tongue Orchid	V	V	1
Epacris purpurascens var. purpurascens	-	V	-	1
Eucalyptus camfieldii	Camfield's Stringybark	V	V	7
Eucalyptus nicholii	Narrow-leaved Black Peppermint	V	V	4
Genoplesium baueri	Bauer's Midge Orchid	E	E	1
Grevillea caleyi	Caley's Grevillea	E	CE	59
Kunzea rupestris	-	V	V	1
Lasiopetalum joyceae	-	V	V	1
Macadamia integrifolia	Macadamia Nut	-	V	5
Melaleuca deanei	Deane's Paperbark	V	V	1
Microtis angusii	Angus's Onion Orchid	E	E	52
Persoonia hirsuta	Hairy Geebung	E	E	5
Pimelea curviflora var. curviflora	-	V	V	1
Rhodamnia rubescens	Scrub Turpentine	E	CE	32
Syzygium paniculatum	Magenta Lilly Pilly	E	V	20
Tetratheca glandulosa	-	V	-	18

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

No threatened flora species were identified within the Subject Land. However, given the existing disturbed state of the site, no threatened flora species were considered likely to occur within the Subject Land.

5.2 Threatened Fauna

Database searches revealed 59 threatened fauna occur, or have potential to occur, within a ~5km radius of the Subject Land (**Table 5**).

Table 5. Threatened fauna with potential to occur within the Subject Land.

Scientific Name	Common Name	BC Act	EPBC Act	Records within 5km
Anthochaera phrygia	Regent Honeyeater	E	CE	41
Ardenna carneipes	Flesh-footed Shearwater	V	-	1
Artamus cyanopterus cyanopterus	Dusky Woodswallow	V	-	3
Burhinus grallarius	Bush Stone-curlew	E	-	56
Callocephalon fimbriatum	Gang-gang Cockatoo	V	E	3
Calyptorhynchus lathami lathami	South-eastern Glossy Black-Cockatoo	V	V	89
Cercartetus nanus	Eastern Pygmy-possum	V	-	412
Chalinolobus dwyeri	Large-eared Pied Bat	V	E	19
Climacteris picumnus victoriae	Brown Treecreeper (eastern subspecies)	V	V	1
Daphoenositta chrysoptera	Varied Sittella	V	-	22
Dasyurus maculatus	Spotted-tailed Quoll	V	E	9
Diomedea exulans	Wandering Albatross	E	V	2
Esacus magnirostris	Beach Stone-curlew	E	-	1
Falsistrellus tasmaniensis	Eastern False Pipistrelle	V	-	3
Gallinago hardwickii	Latham's Snipe	V	V	3
Glossopsitta pusilla	Little Lorikeet	V	-	12
Haematopus fuliginosus	Sooty Oystercatcher	V	-	8
Haliaeetus leucogaster	White-bellied Sea-Eagle	V	-	63
Heleioporus australiacus	Giant Burrowing Frog	V	V	25

Scientific Name	Common Name	BC Act	EPBC Act	Records within 5km
Hieraaetus morphnoides	Little Eagle	V	-	10
Hirundapus caudacutus	White-throated Needletail	V	V	35
Isoodon obesulus obesulus	Southern Brown Bandicoot (eastern)	E	E	20
Ixobrychus flavicollis	Black Bittern	V	-	8
Lathamus discolor	Swift Parrot	E	CE	21
Litoria aurea	Green and Golden Bell Frog	E	V	2
Lophoictinia isura	Square-tailed Kite	V	-	9
Macronectes halli	Northern Giant-Petrel	V	V	1
Melithreptus gularis gularis	Black-chinned Honeyeater (eastern subspecies)	V	-	1
Micronomus norfolkensis	Eastern Coastal Free-tailed Bat	V	-	21
Miniopterus australis	Little Bent-winged Bat	V	-	63
Miniopterus orianae oceanensis	Large Bent-winged Bat	V	-	92
Myotis macropus	Southern Myotis	V	-	32
Neophema pulchella	Turquoise Parrot	V	-	1
Ninox connivens	Barking Owl	V	-	34
Ninox strenua	Powerful Owl	V	-	909
Numenius madagascariensis	Eastern Curlew	-	CE	9
Pandion cristatus	Eastern Osprey	V	-	39
Petaurus norfolcensis	Squirrel Glider on Barrenjoey Peninsula, north of Bushrangers Hill	V	-	1
Petaurus norfolcensis	Squirrel Glider	V	-	8
Petroica boodang	Scarlet Robin	V	-	2
Petroica phoenicea	Flame Robin	V	-	1
Phascolarctos cinereus	Koala	E	E	76

Scientific Name	Common Name	BC Act	EPBC Act	Records within 5km
Pseudomys novaehollandiae	New Holland Mouse	-	V	9
Pseudophryne australis	Red-crowned Toadlet	V	-	75
Pteropus poliocephalus	Grey-headed Flying-fox	V	V	192
Ptilinopus regina	Rose-crowned Fruit-Dove	V	-	4
Ptilinopus superbus	Superb Fruit-Dove	V	-	7
Rostratula australis	Australian Painted Snipe	E	E	3
Saccolaimus flaviventris	Yellow-bellied Sheathtail-bat	V	-	2
Scoteanax rueppellii	Greater Broad-nosed Bat	V	-	8
Stictonetta naevosa	Freckled Duck	V	-	2
Thalassarche cauta	Shy Albatross	E	E	4
Thalassarche chrysostoma	Grey-headed Albatross	-	E	1
Thalassarche melanophris	Black-browed Albatross	V	V	1
Tyto novaehollandiae	Masked Owl	V	-	5
Tyto tenebricosa	Sooty Owl	V	-	2
Varanus rosenbergi	Rosenberg's Goanna	V	-	30
Vespadelus troughtoni	Eastern Cave Bat	V	-	3

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

No threatened fauna species were identified within the Subject Land however, this does not rule out the potential for threatened species to still exist within the Subject Land, particularly given no targeted surveys were undertaken. Given the minor level of impact, and the level of human-made disturbance within and directly adjoining the Subject Land as well as the large areas of potential habitat in the surrounding locality, it was determined that the proposed works are not likely to significantly impact any threatened fauna. Further details pertaining to threatened fauna habitat recorded within the Subject Land are included in **Table 6.**

Table 6. Fauna habitat values identified within the Subject Land.

Habitat component	Subject Land
Coarse woody debris	Absent
Rock outcrops and bush rock	Absent
Caves, crevices and overhangs	Absent

Habitat component	Subject Land
Culverts, bridges, mine shafts, or abandoned structures	Absent
Nectar/lerp-bearing Trees	Present
Nectar-bearing shrubs	Present
Koala Use Trees	Present
Large stick nests	Absent
Sap and gum sources	Present
She-oak fruit (Glossy Black Cockatoo feed)	Absent
Seed-bearing trees and shrubs	Present
Soft-fruit-bearing trees/shrubs	Present
Dense shrubbery and leaf litter	Absent
Tree hollows	Absent
Decorticating bark	Absent
Wetlands, soaks, and streams	Absent
Open water bodies	Absent
Estuarine, beach, mudflats, and rocky foreshores	Absent

5.3 Migratory Species

Database searches revealed seven migratory terrestrial species, or their habitat, are known to occur within the Subject Land (**Table 7**). These species do not breed in Australia.

Table 7. Migratory terrestrial species with potential to occur in the Subject Land.

Species	EPBC Act Status
Cuculus optatus (Oriental Cuckoo)	Migratory, CAMBA, JAMBA, ROKAMBA
Hirundapus caudacutus (White-throated Needletail)	Vulnerable, Migratory, CAMBA, JAMBA, ROKAMBA
Monarcha melanopsis (Black-faced Monarch)	Migratory, Bonn
Monarcha trivirgatus (Spectacled Monarch)	Migratory, Bonn
Motacilla flava (Yellow Wagtail)	Migratory, CAMBA, JAMBA, ROKAMBA
Myiagra cyanoleuca (Satin Flycatcher)	Migratory, Bonn
Rhipidura rufifrons (Rufous Fantail)	Migratory, Bonn

CAMBA = China-Australia Migratory Bird Agreement, JAMBA = Japan-Australia Migratory Bird Agreement, ROKAMBA = Republic of Korea-Australia Migratory Bird Agreement and Bonn = Convention on the Conservation of Migratory Species of Wild Animals.

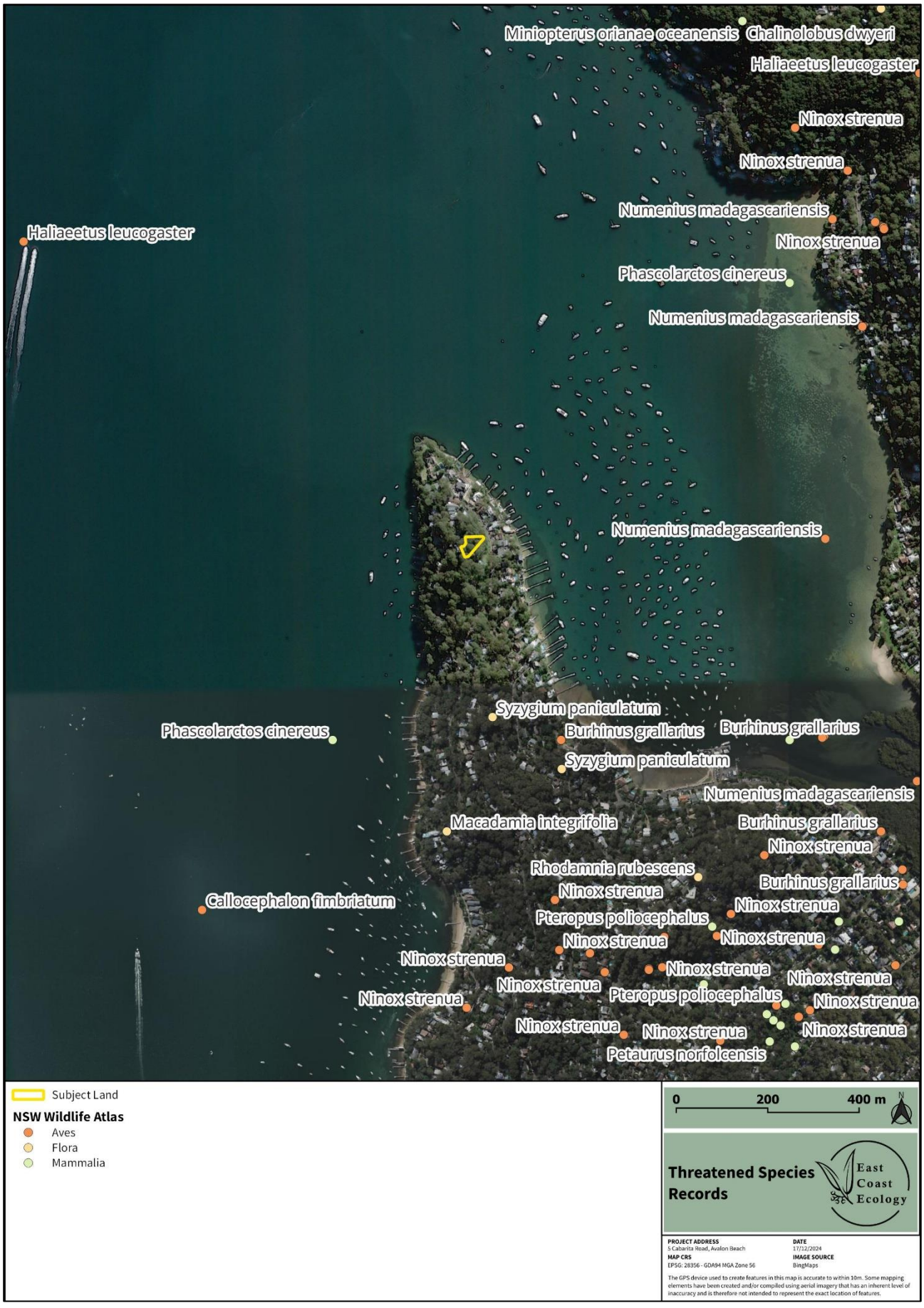

Figure 4. Threatened species records within proximity to the Subject Land.

6. IMPACT SUMMARY

6.1 Impacts to Vegetation and Flora

No impacts to PCTs are expected as a result of the proposed development. Subject to implementation of mitigation measures (**Section 7**), no indirect impacts are anticipated.

Given the degraded nature of the littoral rainforest in the west of the Subject Land, there are opportunities to improve vegetation condition, including through weed management, further erosion measures, and replanting.

6.2 Impacts to Protected Fauna

No impacts to protected fauna habitats are expected as a result of the proposed development. Subject to implementation of mitigation measures (**Section 7**), no indirect impacts are anticipated.

No sensitive and/or specialist habitats (e.g. hollows) were identified within the broader Subject Land, or adjoining areas.

6.3 Impact to Threatened Species and Communities

No TECs will be impacted by the proposed development. A likelihood of occurrence table for threatened flora and fauna species within the Subject Land is presented in **Appendix B**.

Based on habitat constraints, no other threatened fauna was considered likely to occur, or potential impacts were considered negligible, and no further assessment was required. The proposed development will not result in a 'significant impact' on any threatened entities and therefore the Biodiversity Offset Scheme is not triggered. As such, an SIS or a BDAR is not required.

7. AVOIDANCE, MINIMISATION & MITIGATION

7.1 Avoidance and Minimisation

When assessing the biodiversity impacts of a proposed development there are three key considerations. These three approaches are listed in a descending order of best biodiversity outcomes:

- Avoid: measures taken by a proponent such as careful site selection, or actions taken through the design, planning, construction and operational phases of the development to completely prevent impacts on biodiversity values, or certain areas of biodiversity
- Minimise: a process applied throughout the development planning and design life cycle that seeks to reduce the residual impacts of development on biodiversity values
- Compensate: measures in a proposed development to compensate for the biodiversity values lost. This can be achieved through offsets (financial or not).

The design has been specifically sited outside of native vegetation, such that there will be no impacts to threatened species, populations or communities.

7.2 Impact Mitigation and Minimisation Recommendations

This section of the report details recommended efforts to avoid and minimise impacts on biodiversity values associated with the proposed development. Measures to be implemented before, during, and post construction are detailed in **Table 8**.

Table 8. Measures to be implemented before, during, and after construction to avoid and minimise the impacts of the proposed development.

Action	Outcome	Timing	Responsibility
Tree Protections	Australian Standard 4970 (2009) Protection of Trees on Development Sites (AS-4970) outlines that a Tree Protection Zone (TPZ) is the principal means of protecting trees on construction sites. It is an area isolated from construction disturbance so that the tree remains viable. Ideally, works should be avoided within the TPZ. A Minor Encroachment is less than 10% of the TPZ and is outside the structural root zone (SRZ). A Minor Encroachment is considered acceptable by AS-4970 when it is compensated for elsewhere and contiguous within the TPZ. A Major Encroachment is greater than 10% of the TPZ or inside the SRZ. Major Encroachments generally require root investigations undertaken by non-destructive methods or the use of tree sensitive construction methods. Temporary tree protection fencing should be installed prior to the commencement of works.	Pre-construction phase	Proponent Arborist
Erosion and Sedimentation	Appropriate erosion and sediment control should be erected and maintained at all times during construction in order to avoid the potential of incurring indirect impacts on biodiversity values. As a minimum, such measures should comply with the relevant industry guidelines such as 'the Blue Book' (Landcom, 2004).	During Construction	Proponent Construction Contractor
Storage and Stockpiling (Soil and Materials)	Allocate all storage, stockpile, and laydown sites away from any vegetation that is planned to be retained. Avoid importing any soil from outside the site in order to avoid the potential of incurring indirect impacts on biodiversity values as this can introduce weeds and pathogens to the site. If materials are required to be imported for landscaping works, they are to be sterilised according to industry standards prior to importation to site.	During Construction	Construction Contractors
No Weeds imported on to the Subject Land	No priority or environmental weeds (as specified in the Northern Beaches Local Weed Management Plan 2019 – 2023) are to be imported on to the site prior to or during construction works.	During Construction	Proponent Landscape Architect

8. CONCLUSION

The proposed development will not require the removal or impact to any native vegetation, protected fauna habitats or threatened ecological communities. Subject to implementation of mitigation measures (**Section 7**), no indirect impacts to any of these biodiversity values are anticipated.

This assessment demonstrates that the relevant provisions of the *Environmental Planning and Assessment Act 1979, Biodiversity Conservation Act 2016,* the Pittwater Local Environmental Plan 2014 and the Pittwater Development Control Plan 2019 have been addressed. If the appropriate recommendations in this report are followed, the proposed development will have a non-significant impact to protected biodiversity and is unlikely to significantly impact any threatened ecological community or species.

9. REFERENCES

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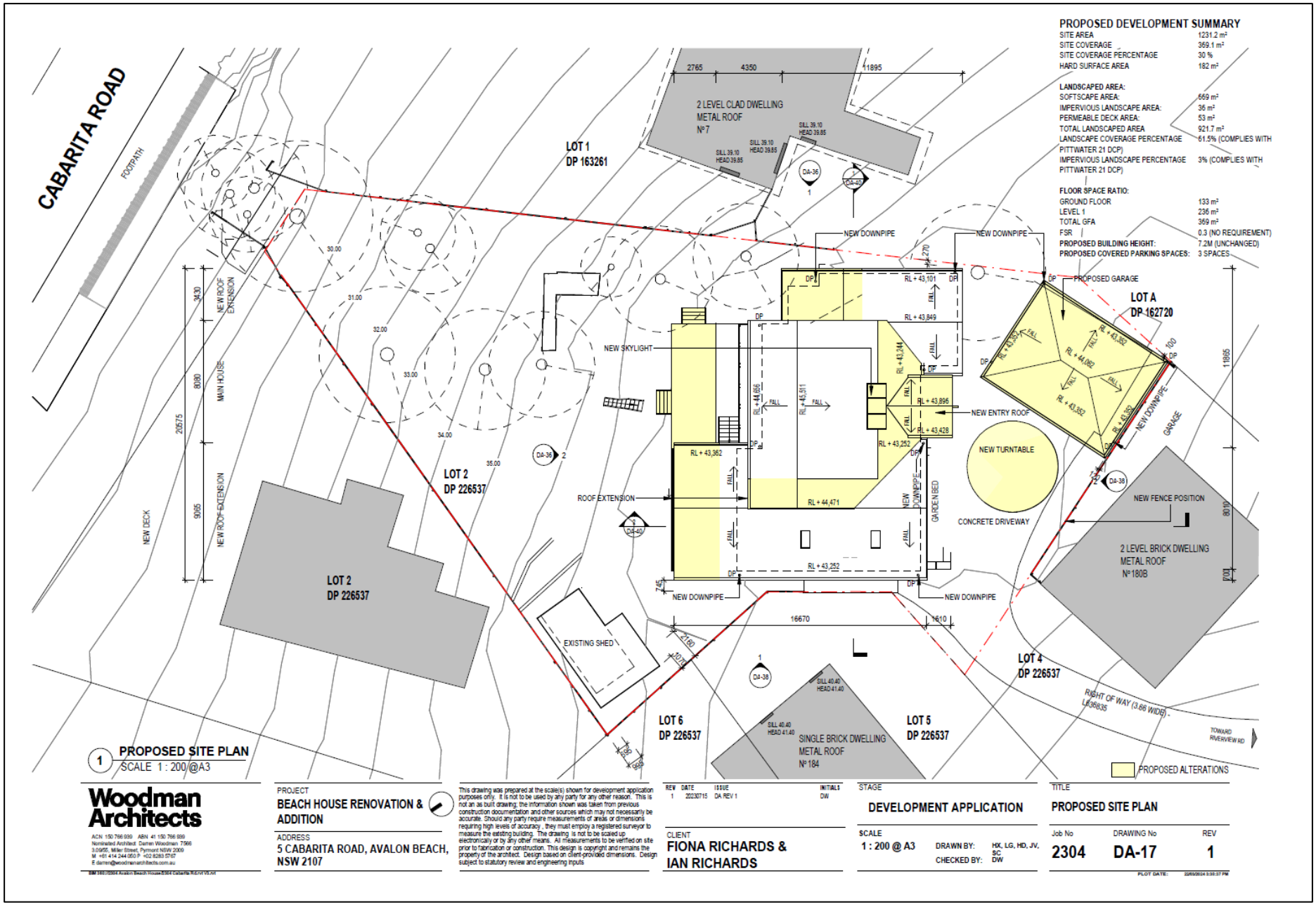
10. APPENDICES

Appendix A. Proposed Site Plan (Woodman Architects, 2024)

Appendix B. Assessment of likelihood of occurrence for threatened species within the Subject Land

Appendix A. Proposed Site Plan (Woodman Architects, 2024)


CABARITA ROAD
FOOTPATH
LOT 1
DP 163261
2 LEVEL CLAD DWELLING
METAL ROOF
Nº7
LOT 2
DP 226537
LOT A
DP 162720
PROPOSED GARAGE
NEW DOWNPIPE
NEW SKYLIGHT
NEW ROOF EXTENSION
MAIN HOUSE
NEW DECK
NEW ROOF EXTENSION
ROOF EXTENSION
NEW ENTRY ROOF
NEW TURNTABLE
CONCRETE DRIVEWAY
GARDEN BED
GARAGE
NEW FENCE POSITION
2 LEVEL BRICK DWELLING
METAL ROOF
Nº180B
EXISTING SHED
SINGLE BRICK DWELLING
METAL ROOF
Nº184
LOT 6
DP 226537
LOT 5
DP 226537
LOT 4
DP 226537
RIGHT OF WAY (3.66 WIDE) -
LK36835
TOWARD
RIVERVIEW RD
PROPOSED ALTERATIONS
PROPOSED DEVELOPMENT SUMMARY
SITE AREA 1231.2 m²
SITE COVERAGE 369.1 m²
SITE COVERAGE PERCENTAGE 30 %
HARD SURFACE AREA 182 m²
LANDSCAPED AREA:
SOFTSCAPE AREA: 669 m²
IMPERVIOUS LANDSCAPE AREA: 36 m²
PERMEABLE DECK AREA: 53 m²
TOTAL LANDSCAPED AREA 921.7 m²
LANDSCAPE COVERAGE PERCENTAGE 61.5% (COMPLIES WITH PITTWATER 21 DCP)
IMPERVIOUS LANDSCAPE PERCENTAGE 3% (COMPLIES WITH PITTWATER 21 DCP)
FLOOR SPACE RATIO:
GROUND FLOOR 133 m²
LEVEL 1 236 m²
TOTAL GFA 369 m²
FSR 0.3 (NO REQUIREMENT)
PROPOSED BUILDING HEIGHT: 7.2M (UNCHANGED)
PROPOSED COVERED PARKING SPACES: 3 SPACES
1 PROPOSED SITE PLAN
SCALE 1 : 200 @A3
Woodman Architects
ACN 150 766 939 ABN 41 150 766 939
Nominated Architect Darren Woodman 7566
3.09/95, Miller Street, Pyrmont NSW 2009
M +61 414 244 050 P +02 8263 5767
E darren@woodmanarchitects.com.au
PROJECT
BEACH HOUSE RENOVATION & ADDITION
ADDRESS
5 CABARITA ROAD, AVALON BEACH, NSW 2107
This drawing was prepared at the scale(s) shown for development application purposes only. It is not to be used by any party for any other reason. This is not an as built drawing; the information shown was taken from previous construction documentation and other sources which may not necessarily be accurate. Should any party require measurements of areas or dimensions requiring high levels of accuracy, they must employ a registered surveyor to measure the existing building. The drawing is not to be scaled up electronically or by any other means. All measurements to be verified on site prior to fabrication or construction. This design is copyright and remains the property of the architect. Design based on client-provided dimensions. Design subject to statutory review and engineering inputs
REV DATE ISSUE INITIALS
1 20230715 DA REV 1 DW
CLIENT
FIONA RICHARDS & IAN RICHARDS
STAGE
DEVELOPMENT APPLICATION
SCALE
1 : 200 @ A3
DRAWN BY: HX, LG, HD, JV, SC
CHECKED BY: DW
TITLE
PROPOSED SITE PLAN
Job No 2304
DRAWING No DA-17
REV 1
PLOT DATE:

Appendix B. Assessment of likelihood of occurrence for threatened species within the Subject Land

Scientific name	Status		Distribution and habitat	Number of records (BioNet)	Likelihood of occurrence
	BC Act	EPBC Act			
Boronia umbellata	V	V	Grows as an understorey shrub in and around gullies in wet open forest.	1	Unlikely. Appropriate habitat for this species was absent from within the Subject Land. No further assessment is required.
Callistemon linearifolius	V	-	Recorded from the Georges River to Hawkesbury River in the Sydney area, and north to the Nelson Bay area of NSW. Recorded in 2000 at Coalcliff in the northern Illawarra. For the Sydney area, recent records are limited to the Hornsby Plateau area near the Hawkesbury River. Grows in dry sclerophyll forest on the coast and adjacent ranges.	4	Low. A targeted survey was undertaken during the recognised survey period and this species was absent from the Subject Land. Furthermore, owing to the urban nature of the property, the Subject Land is highly unlikely to provide suitable habitat for this species. No further assessment is required.
Chamaesyce psammogeton	E	-	Found sparsely along the coast from south of Jervis Bay (at Currarong, Culburra and Seven Mile Beach National Park) to Queensland (and Lord Howe Island). Populations have been recorded in Wamberal Lagoon Nature Reserve, Myall Lakes National Park and Bundjalung National Park. Grows on fore-dunes and exposed headlands, often with Spinifex sericeus.	10	Unlikely. Appropriate habitat for this species was absent from within the Subject Land. No further assessment is required.

Scientific name	Status		Distribution and habitat	Number of records (BioNet)	Likelihood of occurrence
	BC Act	EPBC Act			
Cryptostylis hunteriana	V	V	Does not appear to have well defined habitat preferences and is known from a range of communities, including swamp-heath and woodland. The larger populations typically occur in woodland dominated by Scribbly Gum (Eucalyptus sclerophylla), Silvertop Ash (E. sieberi), Red Bloodwood (Corymbia gummifera) and Black Sheoak (Allocasuarina littoralis); appears to prefer open areas in the understorey of this community and is often found in association with the Large Tongue Orchid (C. subulata) and the Tartan Tongue Orchid (C. erecta).	1	Unlikely. Appropriate habitat for this species was absent from within the Subject Land. This species has not been recorded in proximity to the Subject Land, and very few records occur within 5km. No further assessment is required.
Eucalyptus camfieldii	V	V	Restricted distribution in a narrow band with the most northerly records in the Raymond Terrace Area south to Waterfall. Localised and scattered distribution includes sites at Norah Head (Tuggerah Lakes), Peats Ridge, Mt Colah, Elvina Bay Trail (West Head), Terrey Hills, Killara, North Head, Menai, Wattamolla and a few other sites in Royal National Park. Poor coastal country in shallow sandy soils overlying Hawkesbury sandstone. Coastal heath mostly on exposed sandy ridges. Occurs mostly in small scattered stands near the boundary of tall coastal heaths and low	7	Low. A targeted survey was undertaken during the recognised survey period and this species was absent from the Subject Land. Furthermore, owing to the urban nature of the property, the Subject Land is highly unlikely to provide suitable habitat for this species. No further assessment is required.

Scientific name	Status		Distribution and habitat	Number of records (BioNet)	Likelihood of occurrence
	BC Act	EPBC Act			
			open woodland of the slightly more fertile inland areas.		
Eucalyptus nicholii	V	V	Typically grows in dry grassy woodland, on shallow soils of slopes and ridges. Found primarily on infertile soils derived from granite or metasedimentary rock. Seedling recruitment is common, even in disturbed soils, if protected from grazing and fire.	4	Low. A targeted survey was undertaken during the recognised survey period and this species was absent from the Subject Land. Furthermore, owing to the urban nature of the property, the Subject Land is highly unlikely to provide suitable habitat for this species. No further assessment is required.
Genoplesium baueri	E	E	Grows in dry sclerophyll forest and moss gardens over sandstone. Flowers February to March. Has been recorded between Ulladulla and Port Stephens. Currently the species is known from just over 200 plants across 13 sites. The species has been recorded in Berowra Valley Regional Park, Royal National Park and Lane Cove National Park and may also occur in the Woronora, O'Hares, Metropolitan and Warragamba Catchments.	1	Unlikely. Appropriate habitat for this species was absent from within the Subject Land. This species has not been recorded in close proximity to the Subject Land, and very few records occur within 5km. No further assessment is required.
Grevillea caleyi	CE	CE	Restricted to an 8 km square area around Terrey Hills, approximately 20 km north of Sydney. Occurs in three major areas of suitable habitat, namely Belrose, Ingleside and Terrey Hills-Duffys forest within the Ku-ring-gai, Pittwater and Warringah Local	59	Low. A targeted survey was undertaken during the recognised survey period and this species was absent from the Subject Land. Furthermore, owing to the urban nature of the property, the Subject Land is highly unlikely to provide suitable habitat for this species.

Scientific name	Status		Distribution and habitat	Number of records (BioNet)	Likelihood of occurrence
	BC Act	EPBC Act			
			Government Areas. All sites occur on the ridgetop between elevations of 170 to 240m asl, in association with laterite soils and a vegetation community of open forest, generally dominated by Eucalyptus sieberi and Corymbia gummifera. Commonly found in the endangered Duffys forest ecological community.		No further assessment is required.
Kunzea rupestris	V	V	Grows in shallow depressions on large flat sandstone rock outcrops. Characteristically found in short to tall shrubland or heathland.	1	Low. A targeted survey was undertaken during the recognised survey period and this species was absent from the Subject Land. Furthermore, owing to the urban nature of the property, the Subject Land is highly unlikely to provide suitable habitat for this species. No further assessment is required.
Lasiopetalum joyceae	V	V	Grows in heath on sandstone.	1	Low. A targeted survey was undertaken during the recognised survey period and this species was absent from the Subject Land. Furthermore, owing to the urban nature of the property, the Subject Land is highly unlikely to provide suitable habitat for this species. No further assessment is required.
Macadamia integrifolia	-	V	Macadamia Nut occurs from Mt Bauple, near Gympie, to Currumbin Valley in the Gold Coast hinterland, south-east Queensland. The	5	Low. A targeted survey was undertaken during the recognised survey period and this species was absent from the Subject Land. Furthermore, owing to the urban

Scientific name	Status		Distribution and habitat	Number of records (BioNet)	Likelihood of occurrence
	BC Act	EPBC Act			
			species was known to occur in north-east New South Wales; was described from 1850-60 specimens collected from Camden Haven, and there are specimens also from Lismore. This species grows in remnant rainforest, including complex mixed notophyll forest, and prefers partially open areas such as rainforest edges.		nature of the property, the Subject Land is highly unlikely to provide suitable habitat for this species. No further assessment is required.
Melaleuca deanei	V	V	Grows in wet heath on sandstone in coastal districts from Berowra to Nowra.	1	Low. A targeted survey was undertaken during the recognised survey period and this species was absent from the Subject Land. Furthermore, owing to the urban nature of the property, the Subject Land is highly unlikely to provide suitable habitat for this species. No further assessment is required.
Microtis angusii	E	E	It is not easy to define the preferred natural habitat of this orchid as the Ingleside location is highly disturbed. The dominant species occurring on the site are introduced weeds Coolatai grass and Acacia saligna. The Ingleside population occurs on soils that have been modified but were originally those of the restricted ridgetop lateritic soils in the Duffys forest - Terrey Hills - Ingleside and Belrose areas. These soils support a specific and distinct vegetation type, the Duffys forest	52	Low. A targeted survey was undertaken during the recognised survey period and this species was absent from the Subject Land. Furthermore, owing to the urban nature of the property, the Subject Land is highly unlikely to provide suitable habitat for this species. No further assessment is required.

Scientific name	Status		Distribution and habitat	Number of records (BioNet)	Likelihood of occurrence
	BC Act	EPBC Act			
			Vegetation Community which is listed as an EEC under the TSC Act and ranges from open forest to low open forest and rarely woodland.		
Persoonia hirsuta	E	E	Distributed from Singleton in the north, along the east coast to Bargo in the south and the Blue Mountains to the west. A large area of occurrence, but occurs in small populations, increasing the species's fragmentation in the landscape. Found in sandy soils in dry sclerophyll open forest, woodland and heath on sandstone. Usually present as isolated individuals or very small populations. Probably killed by fire (as other Persoonia spp. are) but will regenerate from seed.	5	Low. A targeted survey was undertaken during the recognised survey period and this species was absent from the Subject Land. Furthermore, owing to the urban nature of the property, the Subject Land is highly unlikely to provide suitable habitat for this species. No further assessment is required.
Pimelea curviflora var. curviflora	V	V	Confined to the coastal area of Sydney between northern Sydney in the south and Maroota in the north-west. Former range extended south to the Parramatta River and Port Jackson region including Five Dock, Bellevue Hill and Manly. Occurs on shaley-lateritic soils over sandstone and shale-sandstone transition soils on ridgetops and upper slopes amongst woodlands.	1	Low. A targeted survey was undertaken during the recognised survey period and this species was absent from the Subject Land. Furthermore, owing to the urban nature of the property, the Subject Land is highly unlikely to provide suitable habitat for this species. No further assessment is required.

Scientific name	Status		Distribution and habitat	Number of records (BioNet)	Likelihood of occurrence
	BC Act	EPBC Act			
Rhodamnia rubescens	CE	CE	Found in littoral, warm temperate and subtropical rainforest and wet sclerophyll forest usually on volcanic and sedimentary soils. This species is characterised as highly to extremely susceptible to infection by Myrtle Rust. Myrtle Rust affects all plant parts.	32	Low. A targeted survey was undertaken during the recognised survey period and this species was absent from the Subject Land. Furthermore, owing to the urban nature of the property, the Subject Land is highly unlikely to provide suitable habitat for this species. No further assessment is required.
Syzygium paniculatum	E	V	Found only in NSW, in a narrow, linear coastal strip from Bulahdelah to Conjola State forest. On the south coast the species occurs on grey soils over sandstone, restricted mainly to remnant stands of littoral rainforest. On the central coast it occurs on gravels, sands, silts and clays in riverside gallery rainforests and remnant littoral rainforest communities	20	Low. A survey during the site assessment did not identify this species. If present, this species would have been easily identified during the October 2024 survey (at least to genus level). Furthermore, owing to the urban nature of the property, the Subject Land is highly unlikely to provide suitable habitat for this species. No further assessment is required.
Tetratheca glandulosa	V	-	Associated with shale-sandstone transition habitat where shale-cappings occur over sandstone, with associated soil landscapes such as Lucas Heights, Gymea, Lambert and Faulconbridge. Topographically, the plant occupies ridgetops, upper-slopes and to a lesser extent mid-slope sandstone benches. Soils are generally shallow, consisting of a yellow, clayey-sandy loam. Stony lateritic fragments are also common in the soil profile on many of these ridgetops. Vegetation	18	Low. A targeted survey was undertaken during the recognised survey period and this species was absent from the Subject Land. Furthermore, owing to the urban nature of the property, the Subject Land is highly unlikely to provide suitable habitat for this species. No further assessment is required.

Scientific name	Status		Distribution and habitat	Number of records (BioNet)	Likelihood of occurrence
	BC Act	EPBC Act			
			structure varies from heaths and scrub to woodlands-open woodlands, and open forest.		
Anthochaera phrygia	CE	CE	The Regent Honeyeater mainly inhabits temperate woodlands and open forests of the inland slopes of south-east Australia. Birds are also found in drier coastal woodlands and forests in some years. The distribution of the species has contracted dramatically in the last 30 years to between north-eastern Victoria and south-eastern Queensland. There are only three known key breeding regions remaining: north-east Victoria (Chiltern-Albury), and in NSW at Capertee Valley and the Bundarra-Barraba region. In NSW the distribution is very patchy and mainly confined to the two main breeding areas and surrounding fragmented woodlands. In some years flocks converge on flowering coastal woodlands and forests.	41	Low. This highly mobile species may be an occasional visitor, but habitat similar to the Subject Land is widely distributed in the locality, meaning that the species is not dependent (i.e., for breeding or important life cycle periods such as winter flowering resources) on habitats in the Subject Land. This species has not been recorded within the locality in the last 10-years. No further assessment is required.
Ardenna carneipes	V	-	The Flesh-footed Shearwater mainly occurs in the subtropics over continental shelves and slopes and occasionally inshore waters	1	Low. This highly mobile species may be an occasional visitor, but habitat similar to the Subject Land is widely distributed in the locality, meaning that the species is not dependent (i.e., for breeding or important life cycle

Scientific name	Status		Distribution and habitat	Number of records (BioNet)	Likelihood of occurrence
	BC Act	EPBC Act			
					periods such as winter flowering resources) on habitats in the Subject Land. No further assessment is required.
Artamus cyanopterus cyanopterus	V	-	The Dusky Woodswallow is widespread in eastern, southern and southwestern Australia. In New South Wales it is widespread from coast to inland, including the western slopes of the Great Dividing Range and farther west. It is sparsely scattered in, or largely absent from, much of the Upper Western region. The Dusky Woodswallow is often reported in woodlands and dry open sclerophyll forests, usually dominated by eucalypts, including mallee associations. It has also been recorded in shrublands and heathlands and various modified habitats, including regenerating forests; very occasionally in moist forests or rainforests. At sites where Dusky Woodswallows are recorded the understorey is typically open with sparse eucalypt saplings, acacias and other shrubs, including heath. The ground cover may consist of grasses, sedges or open ground, often with coarse woody debris (Higgins and Peter 2002). Birds are also often	3	Low. This highly mobile species may be an occasional visitor, but habitat similar to the Subject Land is widely distributed in the locality, meaning that the species is not dependent (i.e., for breeding or important life cycle periods such as winter flowering resources) on habitats in the Subject Land. No further assessment is required.

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			observed in farm land, usually at the edges of forest or woodland or in roadside remnants or wind breaks with dead timber.		
Burhinus grallarius	E	-	The Bush Stone-curlew is found throughout Australia except for the central southern coast and inland, the far south-east corner, and Tasmania. Only in northern Australia is it still common however and in the south-east it is either rare or extinct throughout its former range. Inhabits open forests and woodlands with a sparse grassy groundlayer and fallen timber. Largely nocturnal, being especially active on moonlit nights.	56	Low. This highly mobile species may be an occasional visitor, but habitat similar to the Subject Land is widely distributed in the locality, meaning that the species is not dependent (i.e., for breeding or important life cycle periods such as winter flowering resources) on habitats in the Subject Land. This species has not been recorded within the locality in the last 10-years. No further assessment is required.
Callocephalon fimbriatum	E	E	In summer, occupies tall montane forests and woodlands, particularly in heavily timbered and mature wet sclerophyll forests. Also occur in subalpine snow gum woodland and occasionally in temperate or regenerating forest. In winter, occurs at lower altitudes in drier, more open eucalypt forests and woodlands, particularly in box-ironbark assemblages, or in dry forest in coastal areas. It requires tree hollows in which to breed.	3	Low. This highly mobile species may be an occasional visitor, but habitat constraints required for this species are absent within the Subject Land. No further assessment is required.

Scientific name	Status		Distribution and habitat	Number of records (BioNet)	Likelihood of occurrence
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Calyptorhynchus lathami lathami	V	V	Inhabits forest with low nutrients, characteristically with key Allocasuarina spp. Tends to prefer drier forest types with a middle stratum of Allocasuarina below Eucalyptus or Angophora. Often confined to remnant patches in hills and gullies. Breed in hollows stumps or limbs, either living or dead. Endangered population in the Riverina.	89	Low. This highly mobile species may be an occasional visitor, but habitat constraints required for this species are absent within the Subject Land. No further assessment is required.
Cercartetus nanus	V	-	Inhabits rainforest through to sclerophyll forest and tree heath. Banksias and myrtaceous shrubs and trees are a favoured food source. Will often nest in tree hollows, but can also construct its own nest . Because of its small size it is able to utilise a range of hollow sizes including very small hollows. Individuals will use a number of different hollows and an individual has been recorded using up to 9 nest sites within a 0.5ha area over a 5 month period .	412	Unlikely. Suitable habitat for the species is absent from the Subject Land. No further assessment is required.
Chalinolobus dwyeri	V	V	Located in a variety of drier habitats, including the dry sclerophyll forests and woodlands to the east and west of the Great Dividing Range. Can also be found on the edges of rainforests and in wet sclerophyll forests. This species roosts in caves and	19	Low. This highly mobile species may be an occasional visitor, but habitat constraints required for this species are absent within the Subject Land. No further assessment is required.

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			mines in groups of between 3 and 37 individuals.		
Climacteris picumnus victoriae	V	-	Found in eucalypt woodlands (including box-gum woodland) and dry open forest of the inland slopes and plains inland of the Great Dividing Range; mainly inhabits woodlands dominated by stringybarks or other rough-barked eucalypts, usually with an open grassy understorey, sometimes with one or more shrub species; also found in mallee and river red gum forest bordering wetlands with an open understorey of acacias, saltbush, lignum, cumbungi and grasses; usually not found in woodlands with a dense shrub layer; fallen timber is an important habitat component for foraging; also recorded, though less commonly, in similar woodland habitats on the coastal ranges and plains.	1	Low. This highly mobile species may be an occasional visitor, but habitat similar to the Subject Land is widely distributed in the locality, meaning that the species is not dependent (i.e., for breeding or important life cycle periods such as winter flowering resources) on habitats in the Subject Land. This species has not been recorded within the locality in the last 10-years. No further assessment is required.
Daphoenositta chrysoptera	V	-	Inhabits wide variety of dry eucalypt forests and woodlands, usually with either shrubby under storey or grassy ground cover or both, in all climatic zones of Australia. Usually in areas with rough-barked trees, such as stringybarks or ironbarks, but also in	22	Low. This highly mobile species may be an occasional visitor, but habitat similar to the Subject Land is widely distributed in the locality, meaning that the species is not dependent (i.e., for breeding or important life cycle periods such as winter flowering resources) on habitats in the Subject Land.

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	BC Act	EPBC Act			
			paperbarks or mature Eucalypts with hollows.		No further assessment is required.
Dasyurus maculatus	V	E	Spotted-tailed Quoll are found on the east coast of NSW, Tasmania, eastern Victoria and north-eastern Queensland. Only in Tasmania is it still considered common. Recorded across a range of habitat types, including rainforest, open forest, woodland, coastal heath and inland riparian forest, from the sub-alpine zone to the coastline.	9	Low. Suitable breeding habitat is absent from the Subject Land. This species may occasionally forage within the Subject Land, however, are unlikely to rely upon these areas given the more appropriate foraging habitat available within the broader locality. No further assessment is required.
Diomedea exulans	E	E	The Wandering Albatross is marine, pelagic and aerial.	2	Low. This highly mobile species may be an occasional visitor, but habitat similar to the Subject Land is widely distributed in the locality, meaning that the species is not dependent (i.e., for breeding or important life cycle periods such as winter flowering resources) on habitats in the Subject Land. This species has not been recorded within the locality in the last 20-years. No further assessment is required.
Esacus magnirostris	CE	-	Beach Stone-curlews are found exclusively along the coast, on a wide range of beaches, islands, reefs and in estuaries, and may often be seen at the edges of or near mangroves.	1	Low. This highly mobile species may be an occasional visitor, but habitat similar to the Subject Land is widely distributed in the locality, meaning that the species is not dependent (i.e., for breeding or important life cycle

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			They forage in the intertidal zone of beaches and estuaries, on islands, flats, banks and spits of sand, mud, gravel or rock, and among mangroves. Beach Stone-curlews breed above the littoral zone, at the backs of beaches, or on sandbanks and islands, among low vegetation of grass, scattered shrubs or low trees; also among open mangroves.		periods such as winter flowering resources) on habitats in the Subject Land. No further assessment is required.
Falsistrellus tasmaniensis	V	-	Inhabit sclerophyll forests, preferring wet habitats where trees are more than 20 m high. Two observations have been made of roosts in stem holes of living eucalypts. There is debate about whether or not this species moves to lower altitudes during winter, or whether they remain sedentary but enter torpor. This species also appears to be highly mobile and records showing movements of up to 12 km between roosting and foraging sites.	1	Unlikely. Suitable habitat for the species is absent from the Subject Land. No further assessment is required.
Gallinago hardwickii	V	V	Latham's Snipe is a non-breeding migrant to the south east of Australia including Tasmania, passing through the north and New Guinea on passage. Latham's Snipe breed in Japan and on the east Asian	3	Unlikely. Suitable habitat for the species is absent from the Subject Land. This species has not been recorded within the locality in the last 10-years.

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			mainland. seen in small groups or singly in freshwater wetlands on or near the coast, generally among dense cover. They are found in any vegetation around wetlands, in sedges, grasses, lignum, reeds and rushes and also in saltmarsh and creek edges on migration.		No further assessment is required.
Glossopsitta pusilla	V	-	Distributed in forests and woodlands from the coast to the western slopes of the Great Dividing Range in NSW, extending westwards to the vicinity of Albury, Parkes, Dubbo and Narrabri. Mostly occur in dry, open eucalypt forests and woodlands. They feed primarily on nectar and pollen in the tree canopy. Nest hollows are located at heights of between 2 m and 15 m, mostly in living, smooth-barked eucalypts. Most breeding records come from the western slopes.	12	Low. This highly mobile species may be an occasional visitor, but habitat similar to the Subject Land is widely distributed in the locality, meaning that the species is not dependent (i.e., for breeding or important life cycle periods such as winter flowering resources) on habitats in the Subject Land. No further assessment is required.
Haematopus fuliginosus	V	-	In NSW the Sooty Oystercatcher occupies rocky headlands, reefs and offshore islands along the entire coast, apparently as a single continuous population.	8	Unlikely. Suitable habitat for the species is absent from the Subject Land. This species has not been recorded within the locality in the last 10-years. No further assessment is required.

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Haliaeetus leucogaster	V	-	Inhabits coastal and near coastal areas, building large stick nests, and feeding mostly on marine and estuarine fish and aquatic fauna.	63	Mod. This highly mobile species may be an occasional visitor, but habitat similar to the Subject Land is widely distributed in the locality, meaning that the species is not dependent (i.e., for breeding or important life cycle periods such as winter flowering resources) on habitats in the Subject Land. No further assessment is required.
Heleioporus australiacus	V	V	The Giant Burrowing Frog has been recorded breeding in a range of water bodies associated with more sandy environments of the coast and adjacent ranges from the Sydney Basin south the eastern Victoria. It breeds in hanging swamps, perennial non-flooding creeks and occasionally permanent pools, but permanent water must be present to allow its large tadpoles time to reach metamorphosis.	25	Unlikely. Suitable habitat for the species is absent from the Subject Land. No further assessment is required.
Hieraaetus morphnoides	V	-	Most abundant in lightly timbered areas with open areas nearby. Often recorded foraging in grasslands, crops, treeless dune fields, and recently logged areas. May nest in farmland, woodland and forest in tall trees.	10	Low. This highly mobile species may be an occasional visitor, but habitat similar to the Subject Land is widely distributed in the locality, meaning that the species is not dependent (i.e., for breeding or important life cycle periods such as winter flowering resources) on habitats in the Subject Land.

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					No further assessment is required.
Hirundapus caudacutus	-	V	An aerial species found in feeding concentrations over cities, hilltops and timbered ranges.	35	Low. This highly mobile species may be an occasional visitor, but habitat similar to the Subject Land is widely distributed in the locality, meaning that the species is not dependent (i.e., for breeding or important life cycle periods such as winter flowering resources) on habitats in the Subject Land. No further assessment is required.
Isoodon obesulus obesulus	E	E	Prefers sandy soils with scrubby vegetation and-or areas with low ground cover that are burn from time to time. A mosaic of post fire vegetation is important for this species.	20	Low. Suitable breeding habitat is absent from the Subject Land. This species may occasionally forage within the Subject Land, however, are unlikely to rely upon these areas given the more appropriate foraging habitat available within the broader locality. No further assessment is required.
Ixobrychus flavicollis	V	-	Usually found on coastal plains below 200 m. Often found along timbered watercourses, in wetlands with fringing trees and shrub vegetation. The sites where they occur are characterized by dense waterside vegetation.	8	Unlikely. Suitable habitat for the species is absent from the Subject Land. No further assessment is required.
Lathamus discolor	E	CE	The Swift Parrot occurs in woodlands and forests of NSW from May to August, where it feeds on eucalypt nectar, pollen and associated insects. The Swift Parrot is	21	Unlikely. Suitable habitat for the species is absent from the Subject Land.

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			dependent on flowering resources across a wide range of habitats in its wintering grounds in NSW. This species is migratory, breeding in Tasmania and also nomadic, moving about in response to changing food availability.		No further assessment is required.
Litoria aurea	E	V	Inhabits a very wide range of water bodies including marshes, dams and streams, particularly those containing emergent vegetation such as bullrushes or spikerushes. It also inhabits numerous types of man-made water bodies including quarries and sand extraction sites. Optimum habitat includes water-bodies that are un-shaded, free of predatory fish such as Plague Minnow, have a grassy area nearby and diurnal sheltering sites available.	2	Unlikely. Suitable habitat for the species is absent from the Subject Land. This species has not been recorded within the locality in the last 20-years. No further assessment is required.
Lophoictinia isura	V	-	Typically inhabits coastal forested and wooded lands of tropical and temperate Australia. In NSW it is often associated with ridge and gully forests dominated by Eucalyptus longifolia, Corymbia maculata, E. elata or E. smithii. Individuals appear to occupy large hunting ranges of more than 100km2. They require large living trees for	9	Unlikely. Suitable habitat for the species is absent from the Subject Land. No further assessment is required.

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			breeding, particularly near water with surrounding woodland -forest close by for foraging habitat. Nest sites are generally located along or near watercourses, in a tree fork or on large horizontal limbs.		
Macronectes halli	V	V	Breeding in Australian territory is limited to Macquarie Island and occurs during spring and summer.	1	Unlikely. Suitable habitat for the species is absent from the Subject Land. No further assessment is required.
Melithreptus gularis gularis	V	-	Eucalypt woodlands within an approximate annual rainfall range of 400-700mm	1	Low. This highly mobile species may be an occasional visitor, but habitat similar to the Subject Land is widely distributed in the locality, meaning that the species is not dependent (i.e., for breeding or important life cycle periods such as winter flowering resources) on habitats in the Subject Land. No further assessment is required.
Micronomus norfolkensis	V	-	Most records are from dry eucalypt forests and woodlands to the east of the Great Dividing Range. Appears to roost in trees, but little is known of this species' habits.	21	Low. This highly mobile species may be an occasional visitor, but habitat constraints required for this species are absent within the Subject Land. No further assessment is required.

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Miniopterus australis	V	-	Coastal north-eastern NSW and eastern Queensland. Little Bent-wing Bat is an insectivorous bat that roost in caves, in old mines, in tunnels, under bridges, or in similar structures. They breed in large aggregations in a small number of known caves and may travel 100s km from feeding home ranges to breeding sites. Little Bent-wing Bat has a preference for moist eucalypt forest, rainforest or dense coastal banksia scrub where it forages below the canopy for insects.	63	Low. This highly mobile species may be an occasional visitor, but habitat constraints required for this species are absent within the Subject Land. No further assessment is required.
Miniopterus orianae oceanensis	V	-	Eastern Bent-wing Bats occur along the east and north-west coasts of Australia. Caves are the primary roosting habitat, but also use derelict mines, storm-water tunnels, buildings and other man-made structures. Form discrete populations centred on a maternity cave that is used annually in spring and summer for the birth and rearing of young.	92	Low. This highly mobile species may be an occasional visitor, but habitat constraints required for this species are absent within the Subject Land. No further assessment is required.
Myotis macropus	V	-	The Large-footed Myotis is found in the coastal band from the north-west of Australia, across the top-end and south to western Victoria. Generally roost in groups of 10 – 15 close to water in caves, mine shafts, hollow-	32	Low. This highly mobile species may be an occasional visitor, but habitat constraints required for this species are absent within the Subject Land. No further assessment is required.

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			bearing trees, storm water channels, buildings, under bridges and in dense foliage.		
Neophema pulchella	V	-	The Turquoise Parrot's range extends from southern Queensland through to northern Victoria, from the coastal plains to the western slopes of the Great Dividing Range. Lives on the edges of eucalypt woodland adjoining clearings, timbered ridges and creeks in farmland. Nests in tree hollows, logs or posts, from August to December. It lays four or five white, rounded eggs on a nest of decayed wood dust.	1	Low. This highly mobile species may be an occasional visitor, but habitat similar to the Subject Land is widely distributed in the locality, meaning that the species is not dependent (i.e., for breeding or important life cycle periods such as winter flowering resources) on habitats in the Subject Land. No further assessment is required.
Ninox connivens	V	-	Generally found in open forests, woodlands, swamp woodlands and dense scrub. Can also be found in the foothills and timber along watercourses in otherwise open country.	34	Low. This highly mobile species may be an occasional visitor, but habitat similar to the Subject Land is widely distributed in the locality, meaning that the species is not dependent (i.e., for breeding) on habitats in the Subject Land. No hollows suitable for breeding were identified within the Subject Land. No further assessment is required.
Ninox strenua	V	-	Occupies wet and dry eucalypt forests and rainforests. Can occupy both un-logged and lightly logged forests as well as undisturbed forests where it usually roosts on the limbs of dense trees in gully areas. It is most	909	Low. This highly mobile species may be an occasional visitor, but habitat similar to the Subject Land is widely distributed in the locality, meaning that the species is not dependent (i.e., for breeding) on habitats in the

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			commonly recorded within red turpentine in tall open forests and black she-oak within open forests. Large mature trees with hollows at least 0.5 m deep are required for nesting. Tree hollows are particularly important for the Powerful Owl because a large proportion of the diet is made up of hollow-dependent arboreal marsupials. Nest trees for this species are usually emergent with a diameter at breast height of at least 100 cm.		Subject Land. No hollows suitable for breeding were identified within the Subject Land. No further assessment is required.
Numenius madagascariensis	-	CE	The Eastern curlew spends its breeding season in northeastern Asia, including Siberia to Kamchatka, and Mongolia. Its breeding habitat is composed of marshy and swampy wetlands and lakeshores. Most individuals winter in coastal Australia, with a few heading to South Korea, Thailand, Philippines and New Zealand, where they stay at estuaries, beaches, and salt marshes. It uses its long, decurved bill to probe for invertebrates in the mud. It may feed in solitary but it generally congregates in large flocks to migrate or roost. Its call is a sharp, clear whistle, cuuue-reee, often repeated.	9	Low. This highly mobile species may be an occasional visitor, but habitat constraints required for this species are absent within the Subject Land. This species has not been recorded within the locality in the last 10-years No further assessment is required.

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Pandion cristatus	V	-	Ospreys are found right around the Australian coast line, except for Victoria and Tasmania. They are common around the northern coast, especially on rocky shorelines, islands and reefs. The species is uncommon to rare or absent from closely settled parts of south-eastern Australia. Favour coastal areas, especially the mouths of large rivers, lagoons and lakes. Feed on fish over clear, open water.	39	Mod. This highly mobile species may be an occasional visitor, but habitat similar to the Subject Land is widely distributed in the locality, meaning that the species is not dependent (i.e., for breeding or important life cycle periods such as winter flowering resources) on habitats in the Subject Land. No further assessment is required.
Petaurus norfolcensis (Endangered population on Barrenjoey Peninsula)	E	-	Generally occurs in dry sclerophyll forests and woodlands but is absent from dense coastal ranges in the southern part of its range . Requires abundant hollow bearing trees and a mix of eucalypts, banksias and acacias . There is only limited information available on den tree use by Squirrel gliders, but it has been observed using both living and dead trees as well as hollow stumps. Within a suitable vegetation community at least one species should flower heavily in winter and one species of eucalypt should be smooth barked. Endangered population in the Wagga Wagga LGA.	1	Unlikely. Suitable habitat for the species is absent from the Subject Land. No further assessment is required.

Scientific name	Status		Distribution and habitat	Number of records (BioNet)	Likelihood of occurrence
	BC Act	EPBC Act			
Petaurus norfolcensis	V	-	Generally occurs in dry sclerophyll forests and woodlands but is absent from dense coastal ranges in the southern part of its range. Requires abundant hollow bearing trees and a mix of eucalypts, banksias and acacias. There is only limited information available on den tree use by Squirrel gliders, but it has been observed using both living and dead trees as well as hollow stumps. Within a suitable vegetation community at least one species should flower heavily in winter and one species of eucalypt should be smooth barked. Endangered population in the Wagga Wagga LGA.	8	Unlikely. Suitable habitat for the species is absent from the Subject Land. No further assessment is required.
Petroica boodang	V	-	The Scarlet Robin is found from SE Queensland to SE South Australia and also in Tasmania and SW Western Australia. In NSW, it occurs from the coast to the inland slopes. The Scarlet Robin lives in dry eucalypt forests and woodlands. The understorey is usually open and grassy with few scattered shrubs.	2	Low. This highly mobile species may be an occasional visitor, but habitat similar to the Subject Land is widely distributed in the locality, meaning that the species is not dependent (i.e., for breeding or important life cycle periods such as winter flowering resources) on habitats in the Subject Land. No further assessment is required.
Petroica phoenicea	V	-	Flame Robins are found in a broad coastal band from southern Queensland to just west of the South Australian border. The species is also found in Tasmania. The preferred habitat	1	Low. This highly mobile species may be an occasional visitor, but habitat similar to the Subject Land is widely distributed in the locality, meaning that the species is not dependent (i.e., for breeding or important life cycle

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			in summer includes eucalyptus forests and woodland, whilst in winter prefers open woodlands and farmlands. It is considered migratory. The Flame Robin breeds from about August to January.		periods such as winter flowering resources) on habitats in the Subject Land. This species has not been recorded within the locality in the last 20-years. No further assessment is required.
Phascolarctos cinereus	E	E	Inhabits eucalypt forests and woodlands. The suitability of these forests for habitation depends on the size and species of trees present, soil nutrients, climate and rainfall.	76	Unlikely. Suitable habitat for the species is absent from the Subject Land due to the nearby urban interface, and relatively fragmented nature of the habitat. No further assessment is required.
Pseudomys novaehollandiae	-	v	The New Holland Mouse currently has a disjunct, fragmented distribution across Tasmania, Victoria, New South Wales and Queensland. Across the species' range the New Holland Mouse is known to inhabit open heathlands, open woodlands with a heathland understorey, and vegetated sand dunes.	9	Low. This highly mobile species may be an occasional visitor, but habitat constraints required for this species are absent within the Subject Land. No further assessment is required.
Pseudophryne australis	V	-	Occurs on wetter ridge tops and upper slopes of sandstone formations on which the predominant vegetation is dry open forests and heaths. This species typically breeds within small ephemeral creeks that feed into larger semi-perennial streams. After rain	75	Unlikely. Suitable habitat for the species is absent from the Subject Land. No further assessment is required.

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			these creeks are characterised by a series of shallow pools lined by dense grasses, ferns and low shrubs and usually contain leaf litter for shelter. Eggs are terrestrial and laid under litter, vegetation or rocks where the tadpoles inside will reach a relatively late stage of development before waiting for flooding waters before hatching will occur.		
Pteropus poliocephalus	V	V	This species is a canopy-feeding frugivore and nectarivore of rainforests, open forests, woodlands, melaleuca swamps and banksia woodlands. Bats commute daily to foraging areas, usually within 15 km of the day roost although some individuals may travel up to 70 km.	192	Moderate. This highly mobile species may be an occasional visitor, but habitat similar to the Subject Land is widely distributed in the locality, meaning that the species is not dependent (i.e., for breeding or important life cycle periods such as winter flowering resources) on habitats in the Subject Land. No further assessment is required.
Ptilinopus regina	V	-	Coast and ranges of eastern NSW and Queensland, from Newcastle to Cape York. Vagrants are occasionally found further south to Victoria. Rose-crowned Fruit-doves occur mainly in sub-tropical and dry rainforest and occasionally in moist eucalypt forest and swamp forest, where fruit is plentiful.	4	Low. This highly mobile species may be an occasional visitor, but habitat similar to the Subject Land is widely distributed in the locality, meaning that the species is not dependent (i.e., for breeding or important life cycle periods such as winter flowering resources) on habitats in the Subject Land. No further assessment is required.

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Ptilinopus superbus	V	-	The Superb Fruit-dove occurs principally from north-eastern in Queensland to north-eastern NSW. It is much less common further south, where it is largely confined to pockets of suitable habitat as far south as Moruya. There are records of vagrants as far south as eastern Victoria and Tasmania. Inhabits rainforest and similar closed forests where it forages high in the canopy, eating the fruits of many tree species such as figs and palms. It may also forage in eucalypt or acacia woodland where there are fruit-bearing trees.	7	Low. This highly mobile species may be an occasional visitor, but habitat similar to the Subject Land is widely distributed in the locality, meaning that the species is not dependent (i.e., for breeding or important life cycle periods such as winter flowering resources) on habitats in the Subject Land. No further assessment is required.
Rostratula australis	E	E	In NSW, this species has been recorded at the Paroo wetlands, Lake Cowell, Macquarie Marshes and Hexham Swamp. Most common in the Murray-Darling Basin. Prefers fringes of swamps, dams and nearby marshy areas where there is a cover of grasses, lignum, low scrub or open timber. Nests on the ground amongst tall vegetation, such as grasses, tussocks or reeds.	3	Unlikely. Suitable habitat for the species is absent from the Subject Land. This species has not been recorded within the locality in the last 10-years No further assessment is required.
Saccolaimus flaviventris	V	-	Roosts singly or in groups of up to six, in tree hollows and buildings; in treeless areas they are known to utilise mammal burrows. When foraging for insects, flies high and fast over	2	Low. This highly mobile species may be an occasional visitor, but habitat constraints required for this species are absent within the Subject Land.

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	BC Act	EPBC Act			
			the forest canopy, but lower in more open country. Forages in most habitats across its very wide range, with and without trees; appears to defend an aerial territory.		No further assessment is required.
Scoteanax rueppellii	V	-	Prefer moist gullies in mature coastal forests and rainforests, between the Great Dividing Range and the coast. They are only found at low altitudes below 500 m. In dense environments they utilise natural and human-made opening in the forest for flight paths. Creeks and small rivers are favoured foraging habitat. This species roosts in hollow tree trunks and branches.	8	Low. This highly mobile species may be an occasional visitor, but habitat constraints required for this species are absent within the Subject Land. No further assessment is required
Stictonetta naevosa	V	-	The freckled duck breeds in permanent fresh swamps that are heavily vegetated. Found in fresh or salty permanent open lakes, especially during drought. Often seen in groups on fallen trees and sand spits.	2	Low. This highly mobile species may be an occasional visitor, but habitat similar to the Subject Land is widely distributed in the locality, meaning that the species is not dependent (i.e., for breeding or important life cycle periods such as winter flowering resources) on habitats in the Subject Land. No further assessment is required.
Thalassarche cauta	E	E	Marine species occurring in subantarctic and subtropical waters, reaching the tropics in the cool Humboldt Current off South America.	4	Low. This highly mobile species may be an occasional visitor, but habitat constraints required for this species are absent within the Subject Land.

Scientific name	Status		Distribution and habitat	Number of records (BioNet)	Likelihood of occurrence
	BC Act	EPBC Act			
					No further assessment is required.
Thalassarche chrysostoma	-	E	The Grey-headed Albatross is marine, pelagic and migratory. Its habitat includes subantarctic, subtropical, and occasionally Antarctic waters in the Pacific, Indian, Atlantic and Southern Oceans.	1	Low. This highly mobile species may be an occasional visitor, but habitat constraints required for this species are absent within the Subject Land. This species has not been recorded within the locality in the last 20-years No further assessment is required.
Thalassarche melanophris	V	V	Uses wide range of marine habitats from inshore shallows, bays and channels to the edge of the continental shelf and beyond to pelagic ocean environs.	1	Low. This highly mobile species may be an occasional visitor, but habitat constraints required for this species are absent within the Subject Land. This species has not been recorded within the locality in the last 20-years. No further assessment is required.
Tyto novaehollandiae	V	-	Inhabits a diverse range of wooded habitat that provide tall or dense mature trees with hollows suitable for nesting and roosting. Mostly recorded in open forest and woodlands adjacent to cleared lands. Nest in hollows, in trunks and in near vertical spouts or large trees, usually living but sometimes dead. Nest hollows are usually located within dense forests or woodlands. Masked owls	5	Low. This highly mobile species may be an occasional visitor, but habitat similar to the Subject Land is widely distributed in the locality, meaning that the species is not dependent (i.e., for breeding or important life cycle periods such as winter flowering resources) on habitats in the Subject Land. No further assessment is required.

Scientific name	Status		Distribution and habitat	Number of records (BioNet)	Likelihood of occurrence
	BC Act	EPBC Act			
			prey upon hollow-dependent arboreal marsupials, but terrestrial mammals make up the largest proportion of the diet.		
Tyto tenebricosa	V	-	Often found in tall old-growth forests, including temperate and subtropical rainforests. In NSW mostly found on escarpments with a mean altitude less than 500 metres. Nests and roosts in hollows of tall emergent trees, mainly eucalypts often located in gullies. Nests have been located in trees 125 to 161 centimetres in diameter.	2	Low. This highly mobile species may be an occasional visitor, but habitat similar to the Subject Land is widely distributed in the locality, meaning that the species is not dependent (i.e., for breeding or important life cycle periods such as winter flowering resources) on habitats in the Subject Land. No further assessment is required.
Varanus rosenbergi	V	-	This species is a Hawkesbury-Narrabeen sandstone outcrop specialist. Occurs in coastal heaths, humid woodlands and both wet and dry sclerophyll forests.	30	Unlikely. Suitable habitat for the species is absent from the Subject Land. No further assessment is required
Vespadelus troughtoni	V	-	The Eastern Cave Bat is found in a broad band on both sides of the Great Dividing Range from Cape York to Kempsey, with records from the New England Tablelands and the upper north coast of NSW. The western limit appears to be the Warrumbungle Range, and there is a single record from southern NSW, east of the ACT. A cave-roosting species that is usually found in dry open forest and woodland, near cliffs or rocky overhangs; has	3	Low. This highly mobile species may be an occasional visitor, but habitat constraints required for this species are absent within the Subject Land. No further assessment is required.

Scientific name	Status		Distribution and habitat	Number of records (BioNet)	Likelihood of occurrence
	BC Act	EPBC Act			
			been recorded roosting in disused mine workings, occasionally in colonies of up to 500 individuals.		

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