

Biodiversity Development Assessment Report

52 Hilltop Road Avalon Beach, NSW 2107

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Prepared for: Remo Adoncello
Draft Report: May 2024



DOCUMENT CONTROL

Project Title: Biodiversity Development Assessment Report –
52 Hilltop Road, Avalon Beach NSW 2107

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Version	Author	Reviewer	Date
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EXECUTIVE SUMMARY

East Coast Ecology Pty Ltd was commissioned by Remo Adoncello (the proponent) to prepare a Biodiversity Development Assessment Report (BDAR) to accompany a Development Application (DA2023/1329) for alterations and additions to a dwelling house at 52 Hilltop Road, Avalon Beach NSW 2107 (Lot 17/DP 29517 & Lot D/ DP 413722). The proposed development includes:

- Construction of a studio at the low end of the site
- Construction of a covered outdoor seating and BBQ area under the northwestern end of the existing deck
- Construction of a split-level addition on the eastern side of the house containing two new bedrooms with ensuites, and one new living area
- Construction of new carport in northeastern corner of the site
- Construction of new carport on the southwestern corner to service the main dwelling, and
- Landscape works.

This BDAR will assess the biodiversity impacts of the proposed development in accordance with the requirements of the *Biodiversity Conservation Act 2016* (NSW) and *Biodiversity Conservation Regulation 2017* (NSW). This BDAR is required as the proposed development will impact upon land that is mapped as having Biodiversity Values on the Biodiversity Values Map.

The Decision-Making Key set out in D.1 of the BAM has been applied to vegetation to be impacted by the development that could not be assigned to a Plant Community Type (PCT), as such the Streamlined Assessment Module – Planted Native Vegetation has been applied. As the proposed development will not impact any PCTs, the purchase and retirement of ecosystem credits is not required. Due to a lack of available habitat constraints, geographic limitations (NSW DCCEEW, 2024b), or due to the habitat being substantially degraded per section 5.2.2 and section 6.4.1.17 of the BAM respectively, no species credits are required to be offset as a result of the proposed development.

Consideration has been given to avoiding and minimising impacts to biodiversity where possible in the preliminary design. The proponent has wholly avoided impacts to Pittwater and Wagstaffe Spotted Gum Forest in the Sydney Basin Bioregion – endangered ecological community. The planted native vegetation to be impacted by the proposed development does not provide any form of suitable habitat for threatened fauna within the locality.

Mitigation measures to address direct, indirect, and prescribed impacts are provided in this assessment. The proposed development is not likely to result in a significant impact to species or communities listed under the *Environment Protection and Biodiversity Conservation Act 1999*. As such a referral to the Australian Government Minister for the Environment is not required.

TABLE OF CONTENTS

EXECUTIVE SUMMARY	3
DECLARATIONS	9
1. INTRODUCTION	12
1.1 Proposed Development	12
1.1.1 Development Overview	12
1.1.2 Proposed Development and the Subject Land	12
1.1.3 Location	12
1.2 Aim and Approach	12
1.3 Information Sources	13
1.4 Biodiversity Offsets Scheme Entry	15
1.4.1 Streamlined Assessment Module – Planted Native Vegetation	15
1.4.1.1 Justification for applying the Planted Native Vegetation Module	15
2. METHODS	19
2.1 Site Context Methods	19
2.1.1 Landscape Features	19
2.1.2 Native Vegetation Cover	Error! Bookmark not defined.
2.2 Native Vegetation, Threatened Ecological Communities and Vegetation Integrity Methods	19
2.3 Threatened Flora Survey	19
2.3.1 Review of Existing Information	19
2.3.2 Field Surveys	19
2.4 Threatened Fauna Survey	19
2.4.1 Review of Existing Information	19
2.4.2 Habitat Constraints	20
2.4.3 Field Surveys	20
2.5 Permits and Licences	20
2.6 Weather Conditions	20
2.7 Limitations	21
3. SITE CONTEXT	22
3.1 Landscape Features	22
3.1.1 IBRA Bioregions and IBRA Subregions	22
3.1.2 Rivers, streams, estuaries, and wetlands	22
3.1.3 Habitat Connectivity	22
3.1.4 Karst, Caves, Crevices, Cliffs, Rocks, or Other of Geological Features of Significance	22
3.1.5 Areas of Outstanding Biodiversity Value	22
3.1.6 NSW (Mitchell) Landscapes	22
3.1.7 Topography, Geology and Soils	23

4.	NATIVE VEGETATION, THREATENED ECOLOGICAL COMMUNITIES AND VEGETATION INTEGRITY	24
5.	HABITAT SUITABILITY FOR THREATENED SPECIES	25
5.1	Identification of Threatened Species for Assessment	25
5.1.1	Candidate Ecosystem Credit Species.....	25
5.2	Candidate Species Credit Species Summary	27
5.3	Surveys for Confirmed Species Credit Species and their Habitats.....	30
5.3.1	Fauna Species Credit Survey	30
5.3.2	Flora Species Credit Survey	30
5.4	Species Polygons.....	30
6.	PRESCRIBED IMPACTS.....	31
7.	AVOID AND MINIMISE IMPACTS	33
8.	IMPACT ASSESSMENT.....	34
8.1	Direct Impacts	34
8.1.1	Native Vegetation Clearing	34
8.1.2	Fauna Habitat.....	34
8.2	Prescribed Impacts	34
8.3	Indirect Impacts	34
8.4	Key Threatening Processes.....	36
8.5	Impacts to Groundwater Dependent Ecosystems (GDE)	36
8.6	Mitigating Residual Impacts – Management Measures and Implementation	37
9.	SERIOUS AND IRREVERSIBLE IMPACTS	39
9.1	Assessment for Serious and Irreversible Impacts (SAIL's) of Biodiversity Values	39
10.	IMPACT SUMMARY	40
10.1	Determine an Offset Requirement for Impacts.....	40
10.1.1	Offset Requirement for Species Credits	40
11.	LEGISLATION AND POLICY	41
11.1	<i>Biodiversity Conservation Act 2016</i>	41
11.2	<i>Environment Protection and Biodiversity Conservation Act 1999</i>	41
11.2.1	Matters of National Environmental Significance.....	42
11.3	Biosecurity Act 2015	43
11.4	State Environmental Planning Policy (Biodiversity and Conservation) 2021 – Chapter 4 Koala Habitat Protection 2021.....	43
11.5	State Environmental Planning Policy (Resilience and Hazards) 2021	43
11.6	Pittwater Local Environmental Plan (LEP) 2014	43
11.6.1	Biodiversity (Clause 7.6)	43
11.7	Pittwater Development Control Plan (DCP) 2003	44
11.7.1	Pittwater Spotted Gum Forest – Endangered Ecological Community (Part B4.7)	44
12.	REFERENCES.....	45

FIGURES

Figure 1. The Subject Land.	14
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TABLES

Table 1. Decision-making Key (DPE, 2022)	17
Table 2. Weather conditions taken from the nearest weather stations (Station number 066059) in the lead up and during the field survey (BOM, 2024b).....	20
Table 3. Candidate Ecosystem Credit species predicted to occur within the Subject Land.....	25
Table 4. Candidate Fauna Credit Species predicted to occur within the Subject Land.....	27
Table 5. Candidate Flora Credit Species predicted to occur within the Subject Land.	29
Table 6. Prescribed and uncertain impacts associated with the proposed development.	31
Table 7. Indirect impacts associated with the proposed development.	34
Table 8. Key Threatening Processes relevant to the proposed development.	36
Table 9. Recommended measures to be implemented before, during and after construction to avoid and minimise the impacts of the proposed development.	37
Table 10. EPBC Act Assessment of Significant Impact.	42

GLOSSARY

Acronym/ Term	Definition
Accredited Biodiversity Assessor	Individuals accredited by the Department of Planning and Environment to apply the Biodiversity Assessment Method
ASL	Above Sea Level
ASS	Acid Sulfate Soils
BAM	New South Wales Biodiversity Assessment Method
BAMC	New South Wales Biodiversity Assessment Method Calculator
BC Act	<i>Biodiversity Conservation Act 2016 (NSW)</i>
BC Reg	<i>Biodiversity Conservation Regulation 2017 (NSW)</i>
BDAR	Biodiversity Development Assessment Report
Biodiversity credit report	The report produced by the Credit Calculator that sets out the number and class of biodiversity credits required to offset the remaining adverse impacts on biodiversity values at a development site, or on land to be biodiversity certified
Biodiversity Offsets	Management actions that are undertaken to achieve a gain in biodiversity values on areas of land in order to compensate for losses to biodiversity from the impacts of development
Biodiversity values	The composition, structure and function of ecosystems, including threatened species, populations and ecological communities, and their habitats
BOS	New South Wales Biodiversity Offset Scheme
Development footprint	The area of land that is directly impacted by the proposed subdivision
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DPE	New South Wales Department of Planning and Environment
DPIE	New South Wales Department of Planning, Industry and Environment
Ecosystem credit	The class of biodiversity credit that relates to a vegetation type and the threatened species that are reliably predicted by that vegetation type (as a habitat surrogate)
EEC	Endangered Ecological Community
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
FM Act	<i>Fisheries Management Act 1994</i>
ha	Hectares
HTE	High Threat Exotic plants defined under BAM 2020
KFH	Key Fish Habitat

Acronym/ Term	Definition
km	Kilometres
LGA	Local Government Area
m	metres
MNES	Matters of National Environmental Significance
Native Vegetation	Means any of the following types of plants native to New South Wales: (a) trees (including any sapling or shrub), (b) understorey plants, (c) groundcover (being any type of herbaceous vegetation), (d) plants occurring in a wetland
PCT	New South Wales Plant Community Type
Proposal	The development, activity or action proposed
SAIL	Serious and Irreversible Impacts
SAIL entity	Species and ecological communities that are likely to be the subject of serious and irreversible impacts (SAILs)
SEPP	State Environmental Planning Policy
Species credit	The class of biodiversity credit that relate to threatened species that cannot be reliably predicted to use an area of land based on habitat surrogates. Species that require species credits are listed in the Threatened Biodiversity Data Collection
Subject Land	The areas within or the combined areas of the development site, and any indirect and prescribed impacts, to which the BAM has been applied
TEC	Threatened Ecological Communities
Threatened species, populations and ecological communities	Species, populations and ecological communities specified in Schedules 1 and 2 of the BC Act 2016
VI	Vegetation Integrity
VIS Plot	Vegetation Integrity Survey Plot

DECLARATIONS

i. Certification under clause 6.15 *Biodiversity Conservation Act 2016*

I certify that this report has been prepared based on the requirements of, and information provided under, the Biodiversity Assessment Method and clause 6.15 of the *Biodiversity Conservation Act 2016* (BC Act).

Signature:



Date: 13 May 2024

BAM Assessor Accreditation no.: BAAS19040

This BDAR has been prepared to meet the requirements of Appendix K in the BAM 2020.

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ii. Details and Experience of Author/s and Contributors

Name	BAM Assessor Accreditation no.	Position/ Role	Tasks Performed	Relevant Qualifications
Samantha Everett	-	Ecologist	Report preparation, figure preparation	<i>BZoology</i>
Alex Graham	BAAS19040	Principal Ecologist	Report preparation, BAM-C data entry and analysis, document review	<i>BSc (Biology), Grad. Dip. (Bushfire Protection)</i>
Jack Tatler	BAAS21006	Principal Ecologist	Document review	<i>BSc (Zoology & Entomology), Hons (Zoology), PhD (Ecology)</i>

iii. Conflict of Interest

I declare that I have considered the circumstances and there is no actual, perceived or potential conflict of interest.

This declaration has been made in the interests of full disclosure to the decision-maker. Full disclosure has also been provided to the client.

Signature: 

Date: 13 May 2024

BAM Assessor Accreditation no.: BAAS19040

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1. INTRODUCTION

1.1 Proposed Development

1.1.1 Development Overview

East Coast Ecology Pty Ltd (ECE) was commissioned by Remo Adoncello (the proponent) to prepare a Biodiversity Development Assessment Report (BDAR) to accompany a Development Application (DA) for alterations and additions to the existing dwelling at 52 Hilltop Road, Avalon Beach NSW 2107 (Lot 17/DP 29517 & Lot D/ DP 413722).

This BDAR will assess the biodiversity impacts of the proposed development in accordance with the requirements of the *Biodiversity Conservation Act 2016* (NSW) (BC Act), *Biodiversity Conservation Regulation 2017* (NSW) (BC Reg) and Biodiversity Assessment Method 2020 (BAM). East Coast Ecology have produced this report in order to assess any potential impacts associated with the proposed development and recommend appropriate measures to mitigate any potential ecological impacts in line with the requirements of the Consent Authority, Northern Beaches Council.

1.1.2 Proposed Development and the Subject Land

The proposed development will involve the following works:

- Construction of a studio at the low end of the site
- Construction of a covered outdoor seating and BBQ area under the northwestern end of the existing deck
- Construction of a split-level addition on the eastern side of the house containing two new bedrooms with ensuites, and one new living area
- Construction of new carport in northeastern corner of the site
- Construction of new carport in the southwestern corner to service the main dwelling, and
- Landscape works.

All works associated with the proposed development are hereafter referred to as the 'Subject Land', which encompasses an area of approximately 0.03ha (**Figure 1**).

1.1.3 Location

The Subject Land is located within the suburb of Avalon Beach, situated within the Northern Beaches Local Government Area. The Subject Land is occupied by a single private dwelling surrounded by ornamental gardens, with occasional remnant native trees. The Subject Land is situated within an urban landscape, surrounded by residential landholdings, and is located on land zoned as C4 – Environmental Living under the Pittwater Local Environmental Plan (LEP) 2014.

1.2 Aim and Approach

This report has been prepared in accordance with the BAM (DPE, 2020a) and aims to:

- Describe the biodiversity values present within the Subject Land, including the extent of native vegetation, vegetation integrity and the presence of Threatened Ecological Communities (TECs)

- Determine the habitat suitability within the Subject Land for candidate threatened species
- Prepare an impact assessment in regard to potential impacts of the proposed DA on biodiversity values, including potential prescribed impacts and SAILs within the Subject Land
- Discuss and recommend efforts to avoid and minimise impacts on biodiversity values, and
- Calculate the biodiversity credits (i.e., ecosystem credits and species credits) that measure potential impacts of the DA on biodiversity values. This calculation will inform the decision maker as to the number and class of offset credits required to be purchased and retired as a result of the proposed development.

1.3 Information Sources

A thorough literature review of local information relevant to the Subject Land 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. These data were used to assist in establishing the presence or likelihood of any ecological values as occurring on or adjacent to the Subject Land and helped inform our ecologists on what to look for during the site assessment.

Soil landscape and geological mapping, as well as existing vegetation mapping, were examined to assist in determining whether any threatened flora or ecological communities could be present. The following technical resources were comprised in the preparation of this report:

- 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, 2024)
 - NSW Government Spatial Services: Six Maps Clip & Ship (Spatial Services, 2024a)
 - BAM Important Habitat Maps
 - Key Fish Habitat Maps – Sydney Metro (DPI, 2024b)
- Vegetation and Soil Mapping:
 - The NSW State Vegetation Type Map (NSW DCCEEW, 2024d)
 - eSPADE v2.2.0 (NSW DCCEEW, 2024e)
- NSW State Guidelines:
 - Biodiversity Development Assessment Method (DPE, 2020a)
 - Guidance to assist a decision-maker to determine a serious and irreversible impact (DPIE, 2019)
 - Biodiversity Assessment Method Calculator Version 1.4.0.00 (NSW DCCEEW, 2024d)
 - Surveying threatened plants and their habitats - NSW survey guide for the Biodiversity Assessment Method (DPE, 2020b)
 - Threatened Species Survey and Assessment: Guidelines for developments and activities. Working Draft (DEC, 2004b)

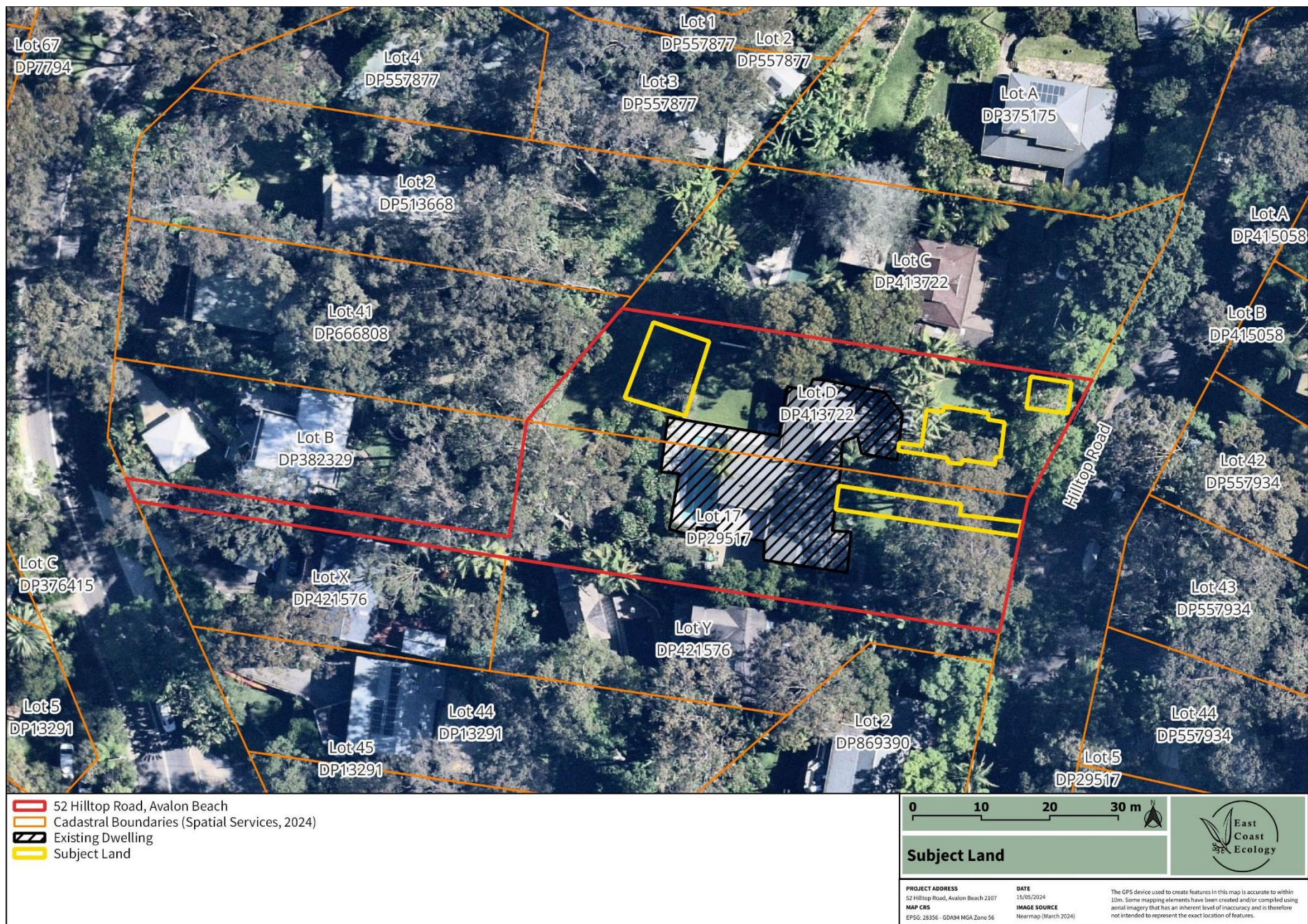


Figure 1. The Subject Land.

1.4 Biodiversity Offsets Scheme Entry

1.4.1 Streamlined Assessment Module – Planted Native Vegetation

This BDAR is required as the proposed works will impact upon land that is mapped as having Biodiversity Values on the Biodiversity Values Map (NSW DCCEEW, 2024d). The Streamlined Assessment Module – Planted Native Vegetation, Appendix C of the BAM has been applied to vegetation that could not be assigned to a PCT (i.e. Planted Native Vegetation) based on the Decision-Making Key set out in D.1 of the BAM (DPE, 2020a).

1.4.1.1 Justification for applying the Planted Native Vegetation Module

The Subject Land was cleared of vegetation prior to 1965 (Spatial Services, 2024a).

Ornamental tree and garden species have since been planted within defined garden beds, including, *Archontophoenix cunninghamiana* (Bangalow Palm), *Waterhousea floribundum* (Weeping Lilly Pilly) and *Corymbia ficifolia* (Red-flowering Gum). These trees occur in distinct patches, and can be easily distinguished from locally native trees that are diagnostic of a PCT.

The vegetation is assumed to have been planted, based on the following reasons:

- The Subject Land was largely cleared prior to 1965 (Spatial Services, 2024a)
- The tree species proposed for removal are not indigenous to the Sydney Basin, include:
 - T1: *Jacaranda mimosaeifolia*
 - T12a: *Waterhousia floribunda*
 - T29: *Corymbia ficifolia*
 - T30: *Corymbia ficifolia*
 - T36: *Plumeria actinophylla*
 - T37: *Archontophoenix cunninghamiana*
- All mid-stratum and groundcover species are exotic, other than two *Cyathea spp.* (**Plate 1**) and two *Asplenium nidus*. Both are small in size and located amongst ornamental garden species where they have been planted within defined garden beds. Both species are readily translocated, and do not (by themselves) characterise a PCT in this urban landscape.
- Remnant vegetation that would have been distributed throughout the property (e.g. *Corymbia maculata*, *Eucalyptus paniculata* etc.), would have reflected PCT 3234: Hunter Coast Lowland Spotted Gum Moist Forest (NSW DCCEEW, 2024c), and
- The tree species are widely cultivated in the Sydney Basin and are known (anecdotally) to have been planted by the current owner.



Plate 1. *Cyathea* spp. to be removed, planted amongst garden ornamentals in rear of property.



Plate 2. Bangalow Palms (exempt) to be removed at front of property.

Table 1. Decision-making Key (DPE, 2022)

Question	Response
1. Does the planted native vegetation occur within an area that contains a mosaic of planted and remnant native vegetation and which can be reasonably assigned to a PCT known to occur in the same IBRA subregion as the proposal?	No. Go to 2 No, the extent of Planted Native Vegetation to be impacted by the proposed development is distinct from the landscape remnant trees that represent PCT 3234 within the property.
2. Is the planted native vegetation:	No. Go to 3 a. No conservation obligations are known within the property b. The species that are assessed as Planted Native Vegetation including <i>Waterhousea floribundum</i> and <i>Corymbia ficifolia</i> occur outside their natural distributions in Central Eastern Queensland and South-west of Western Australia. <i>Archontophoenix cunninghamiana</i> naturally occurs along the coastline of Eastern NSW and is listed as a 'Widely Cultivated Native Species'.
3. Is the planted/translocated native vegetation individuals of a threatened species or other native species planted/translocated for the purpose of providing threatened species habitat under one of the following:	No. Go to 4 a. a species recovery project b. Saving our Species project c. other types of government funded restoration project d. condition of consent for a development approval that required those species to be planted or translocated for the purpose of providing threatened species habitat e. legal obligation as part of a condition or ruling of court. This includes regulatory directed or ordered remedial plantings (e.g. Remediation Order for clearing without consent issued under the BC Act or the Native Vegetation Act) f. ecological rehabilitation to re-establish a PCT or TEC that was, or is carried a. None known b. None known c. None known d. None known to owner or on title e. None known to owner or on title f. Not applicable g. None known, and the site is not located within 150m of a mapped watercourse.

Question	Response
out under a mine operations plan, or g. approved vegetation management plan (e.g. as required as part of a Controlled Activity Approval for works on waterfront land under the NSW Water Management Act 2000)?	
4. Was the planted native vegetation (including individuals of a threatened flora species) undertaken voluntarily for revegetation, environmental rehabilitation or restoration without a legal obligation to secure or provide for management of the native vegetation?	No. Go to 5 The purpose of the tree planting was for aesthetic purposes, which is supported by the following evidence: 1. The species are not endemic to the locality and/or the Sydney Basin 2. The species do not positively contribute to the ecological integrity of the surrounding vegetation community (PCT 3234), which is represented by occasional remnant trees (no midstorey and groundcover). 3. All vegetation to be removed is known (anecdotally) to have been planted by the current owner for aesthetic purposes.
5. Is the native vegetation (including individuals of a threatened flora species) planted for functional, aesthetic, horticultural or plantation forestry purposes? This includes examples such as: windbreaks in agricultural landscapes, roadside plantings (including street trees, median strips, roadside batters), landscaping in parks, gardens and sport fields/complexes, macadamia plantations or teatree farms?	Yes. Go to D.2 Assessment of planted native vegetation for threatened species habitat (the use of Chapters 4 and 5 of the BAM are not required to be applied). As supported by the above evidence, the vegetation within the Subject Land has been planted for aesthetic purposes.

2. METHODS

2.1 Site Context Methods

2.1.1 Landscape Features

An investigation of the Subject Land and surrounds (1,500m) was undertaken to provide context for the landscape features detailed in **Section 3.1**.

2.2 Native Vegetation, Threatened Ecological Communities and Vegetation Integrity Methods

In accordance with Appendix D.1 Q5.i of the BAMC, this streamlined assessment module does not require the vegetation within the Subject Land to be assigned to a PCT, TEC or for vegetation integrity to be assessed.

2.3 Threatened Flora Survey

2.3.1 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. A desktop review of existing information was undertaken prior to the site assessment. The review included database searches within a 10 km radius of the Subject Land (NSW DCCEEW 2024a, NSW DCCEEW 2024b, NSW DCCEEW 2024c).

The BAM Calculator (NSW DCCEEW, 2024d) was run using benchmark data from the lineage PCT 3234: Hunter Coast Lowland Spotted Gum Moist Forest to create a list of ecosystem and species credit flora species (**Table 3** and **Table 5**) for consideration as part of this assessment.

2.3.2 Field Surveys

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

2.4 Threatened Fauna Survey

2.4.1 Review of Existing Information

Threatened fauna with potential to occur within the Subject Land and immediate surrounds were identified following review of BioNet using a 10km x 10km search area centred on the Subject Land. Soil mapping (NSW DCCEEW, 2024e) and topography (Google Earth) were also used to provide further context on habitat constraints for threatened fauna. A desktop review of existing information was undertaken prior to the site assessment. The review included database searches within a 10 km radius of the Subject Land (NSW DCCEEW 2024a, NSW DCCEEW 2024b, NSW DCCEEW 2024c).

The BAM Calculator (NSW DCCEEW, 2024d) was run using benchmark data from the lineage PCT 3234: Hunter Coast Lowland Spotted Gum Moist Forest to create a list of ecosystem and species credit fauna species (**Table 4**) for consideration as part of this assessment.

2.4.2 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 (1,500m buffer) were assessed using Google Earth, soil landscape mapping (NSW DCCEEW, 2024e) and recent vegetation mapping (NSW DCCEEW, 2024d).

2.4.3 Field Surveys

Threatened fauna were recorded opportunistically however, their habitats were targeted during the parallel field traverses.

2.5 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.

2.6 Weather Conditions

Surveys were undertaken on 1st March 2024 within the Subject Land. Weather conditions taken from the nearest weather station (Terrey Hills AWS [station 066059]) in the lead up and during the field survey are outlined in **Table 2**. Pre-survey weather conditions were generally conducive for identifying threatened species should they occur within the Subject Land. Rainfall in the month prior to the survey provided good conditions for the flowering and/ or emergence of the flora species. Such rainfall also allowed for optimal conditions for the emergence of groundcovers within the Subject Land, which ensured reliable species diversity was observed during the site visit.

Table 2. Weather conditions taken from the nearest weather stations (Station number 066059) in the lead up and during the field survey (BOM, 2024b).

Timing/activities	Date	Day	Temperature		Rainfall (mm)
			Min	Max	
Lead up to the survey	23/02/2024	Friday	20.9	36.2	0
	24/02/2024	Saturday	17.9	19.6	9
	25/02/2024	Sunday	14.4	26	1
	26/02/2024	Monday	18.1	28.8	0
	27/02/2024	Tuesday	18.9	23.6	0
	28/02/2024	Wednesday	19.1	26.5	0.6
	29/02/2024	Thursday	21.2	37.4	0
Site Assessment & Habitat Survey	01/03/2024	Friday	20.9	26.3	0

Dark border indicates survey date.

2.7 Limitations

Not all flora and fauna species could be directly surveyed for during the site assessment. These species include nocturnal fauna and cryptic flora with flowering times outside of the survey period. The presence of nocturnal and cryptic species was assessed based on habitat constraints and historical records.

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3. SITE CONTEXT

3.1 Landscape Features

3.1.1 IBRA Bioregions and IBRA Subregions

The Subject Land occurs within the 'Pittwater' Interim Biogeographic Regionalisation for Australia (IBRA) Subregion, which is part of the 'Sydney Basin' IBRA Bioregion.

3.1.2 Rivers, streams, estuaries, and wetlands

No watercourses are located within the Subject Land. Several 1st order watercourses and estuaries along with their associated riparian buffers, are located within the 1,500m buffer.

3.1.3 Habitat Connectivity

The development footprint is situated within a highly urbanised residential area. Much of the native vegetation within the surrounding landscape is highly fragmented, with some remnants likely to exist within surrounding residential properties. An assessment of aerial imagery within the assessment area shows there is negligible habitat connectivity with the Subject Land.

3.1.4 Karst, Caves, Crevices, Cliffs, Rocks, or Other of Geological Features of Significance

The Subject Land did not contain any areas of geological significance, such as karsts, caves, cliffs, or crevices. There are no areas of geological significance within the 1,500m buffer area. The Subject Land was not mapped as occurring on acid sulfate soils nor mapped as having risk/probability of exhibiting occurrence of Acid Sulfate Soils. However, areas mapped as high probability of occurring on acid sulfate soils do occur within the 1,500m buffer. These areas are not anticipated to be affected by the development footprint.

3.1.5 Areas of Outstanding Biodiversity Value

No Areas of Outstanding Biodiversity Value occur on the Subject Land or surrounding 1,500m buffer area.

3.1.6 NSW (Mitchell) Landscapes

NSW (Mitchell) Landscapes (Mitchell, 2002) groups ecosystems into meso-ecosystems representing larger natural entities based on topography and geology. The naming of ecosystems and meso-ecosystems was standardised so that each name provided location information and a meaningful descriptive landscape term.

The Subject Land occurs within the 'Belrose Coastal Slopes' Mitchell Landscape Ecosystem. This landscape is described as benched hill slopes and deep valleys of the coastal fall on horizontal Triassic quartz sandstone, lithic sandstone, and shales. High proportion of rock outcrop with discontinuous cliffs to 5m high. General elevation 0 to 180m, local relief 80m. Shallow uniform or gradational sands and earthy sands on ridges, deeper sands, loamy sands, and organic sands on wet benches and in hanging swamps, grey or yellow texture-contrast soils on shale benches. Accumulations of deeper sand and occasional podsols in depositional sites and along streams. Low woodland of Scribbly Gum (*Eucalyptus haemostoma*), Red

Bloodwood (*Corymbia gummifera*), Yellow-top Ash (*Eucalyptus leuhmanniana*), and Narrow-leaved Apple (*Angophora bakeri*) in deeper soils on ridges. Scrub and heath of She-oak (*Allocasuarina distyla*) and Heath Banksia (*Banksia ericifolia*), with other Hakea, Grevillea, and Baeckea sp., on ridges and upper benches. Wet heath and swamps with Gahnia sp. and Swamp Banksia (*Banksia robur*) in hanging valleys. Coastal forest in sheltered areas on better quality shale soil with; Sydney Blue Gum (*Eucalyptus saligna*), Blackbutt (*Eucalyptus pilularis*), Turpentine (*Syncarpia glomulifera*), Grey Ironbark (*Eucalyptus paniculata*), Spotted Gum (*Corymbia maculata*), Southern Mahogany (*Eucalyptus botryoides*), Cabbage-tree Palm (*Livistona australis*) and Burrawang (*Macrozamia* sp.). Coastal headlands with scrub of *Allocasuarina distyla*, Coast Rosemary (*Westringea fruticosa*), and Dwarf Kangaroo Grass (*Themeda triandra*).

3.1.7 Topography, Geology and Soils

The Subject Land is mapped as occurring on the 'Watagan' soil landscape (NSW DCCEEW, 2024e). This soil landscape is typically characterised by rolling to very steep hills on fine-grained Narrabeen Group sediments and is associated with coastal headlands and bluffs along the Hawkesbury River and its lower tributaries. Likewise, the Watagan soil landscape is comprised of narrow, convex crests and ridges, steep colluvial sideslopes, occasional sandstone boulders and benches. The Subject Land occurs on a steep west-facing slope, grading from 48m above sea level (ASL) in the eastern extent to 23m ASL in the western extent (Google Earth).

4. NATIVE VEGETATION, THREATENED ECOLOGICAL COMMUNITIES AND VEGETATION INTEGRITY

In accordance with Question 5i. of Appendix D and Appendix L Table 28 of the BAM (DPE, 2020a) this section is not required to be applied.

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5. HABITAT SUITABILITY FOR THREATENED SPECIES

In accordance with Question 5i. of Appendix D and Appendix L Table 28 of the BAM (DPE, 2020a), this section is not required to be applied. Instead, Appendix D.2 of the BAM applies; therefore, the assessor must assess the suitability of the planted native vegetation for use by threatened species and record any incidental sightings or evidence (e.g. scats, stick nests) of threatened species credit species (flora and fauna) using, inhabiting or being part of the planted native vegetation.

5.1 Identification of Threatened Species for Assessment

5.1.1 Candidate Ecosystem Credit Species

Two predicted Ecosystem Credit species were excluded from the BAM-C, Glossy Black-Cockatoo and Black Bittern due to an absence of habitat constraints. All other Ecosystem Credit species associated with the Subject Land were included within the assessment (**Table 3**).

Table 3. Candidate Ecosystem Credit species predicted to occur within the Subject Land.

Scientific Name (<i>italics</i>) and common name	BC Act Status	Excluded from Assessment	Reason for Exclusion from Assessment
<i>Anthochaera phrygia</i> Regent Honeyeater (Foraging)	Critically Endangered	No	-
<i>Artamus cyanopterus cyanopterus</i> Dusky Woodswallow	Vulnerable	No	-
<i>Callocephalon fimbriatum</i> Gang-gang Cockatoo (Foraging)	Vulnerable	No	-
<i>Calyptorhynchus lathamii</i> Glossy Black-Cockatoo (Foraging)	Vulnerable	Yes	No presence of <i>Allocasuarina</i> and <i>Casuarina</i> species.
<i>Climacteris picumnus victoriae</i> Brown Treecreeper (eastern subspecies)	Vulnerable	No	-
<i>Daphoenositta chrysoptera</i> Varied Sittella	Vulnerable	No	-
<i>Dasyurus maculatus</i> Spotted-tailed Quoll	Endangered	No	-
<i>Glossopsitta pusilla</i> Little Lorikeet	Vulnerable	No	-
<i>Haliaeetus leucogaster</i> White-bellied Sea-Eagle (Foraging)	Vulnerable	No	-
<i>Hieraaetus morphnoides</i> Little Eagle (Foraging)	Vulnerable	No	-

Scientific Name (<i>italics</i>) and common name	BC Act Status	Excluded from Assessment	Reason for Exclusion from Assessment
<i>Hirundapus caudacutus</i> White-throated Needletail	Not Listed (EPBC Act only)	No	-
<i>Ixobrychus flavicollis</i> Black Bittern	Vulnerable	Yes	No presence of Waterbodies or Land within 40m of freshwater and estuarine wetlands.
<i>Lathamus discolor</i> Swift Parrot (Foraging)	Endangered	No	-
<i>Lophoictinia isura</i> Square-tailed Kite (Foraging)	Vulnerable	No	-
<i>Micronomus norfolcensis</i> Eastern Coastal Free-tailed Bat	Vulnerable	No	-
<i>Miniopterus australis</i> Little Bent-winged Bat (Foraging)	Vulnerable	No	-
<i>Miniopterus orianae oceanensis</i> Large Bent-winged Bat (Foraging)	Vulnerable	No	-
<i>Pandion cristatus</i> Eastern Osprey (Foraging)	Vulnerable	No	-
<i>Petroica boodang</i> Scarlet Robin	Vulnerable	No	-
<i>Petroica phoenicea</i> Flame Robin	Vulnerable	No	-
<i>Phoniscus papuensis</i> Golden-tipped Bat	Vulnerable	No	-
<i>Pseudomys novaehollandiae</i> New Holland Mouse	Not Listed (EPBC Act only)	No	-
<i>Pteropus poliocephalus</i> Grey-headed Flying-fox (Foraging)	Vulnerable	No	-
<i>Ptilinopus regina</i> Rose-crowned Fruit-Dove	Vulnerable	No	-
<i>Ptilinopus superbus</i> Superb Fruit-Dove	Vulnerable	No	-
<i>Saccolaimus flaviventris</i> Yellow-bellied Sheath-tail-bat	Vulnerable	No	-

5.2 Candidate Species Credit Species Summary

This section provides a summary of the Candidate Species Credit fauna and flora species for the Subject Land derived from BAM-C (DPE, 2020a) (**Table 4**). A summary of the targeted survey effort applied to each species is provided along with the results of the survey effort, specifically whether the species credit needs to be offset through retiring of Biodiversity Offset Credits.

Habitat constraints are essential habitat features that must be present for the species to occupy or periodically use the Subject Land. Habitat constraints include, but are not limited to, caves, rocky areas, hollow bearing trees, swamps (DPE, 2020a). Habitat constraints are determined by the Threatened Biodiversity Database Collection (NSW DCCEEW, 2024b)

Table 4. Candidate Fauna Credit Species predicted to occur within the Subject Land.

Scientific Name (italics) and common name	Included in Assessment?	Targeted Survey conducted?	Present within Subject Land?	Biodiversity Risk Weighting	Biodiversity Offset Credits Required?
<i>Anthochaera phrygia</i> Regent Honeyeater (Breeding)	No. Habitat Constraints absent. Habitat Constraint: Important Habitat Map.	No	N/A	Very High	No
<i>Chalinolobus dwyeri</i> Large-eared Pied Bat	No. Habitat Constraints absent. Habitat Constraint: Within two kilometres of rocky areas containing caves, overhangs, escarpments, outcrops, or crevices, or within two kilometres of old mines or tunnels	No	N/A	Very High	No
<i>Lathamus discolor</i> Swift Parrot (Breeding)	No. Habitat Constraints absent. Habitat Constraint: Important Habitat Map.	No	N/A	Moderate	No

Scientific Name (italics) and common name	Included in Assessment?	Targeted Survey conducted?	Present within Subject Land?	Biodiversity Risk Weighting	Biodiversity Offset Credits Required?
<i>Miniopterus australis</i> Little Bent-winged Bat (Breeding)	No. There are no Cave, tunnel, mine, culvert, or other structure known or suspected to be used for breeding within the Subject Land. Habitat Constraint: Cave, tunnel, mine, culvert, or other structure known or suspected to be used for breeding including species records in BioNet with microhabitat code 'IC – in cave'	No	N/A	Very High	No
<i>Miniopterus orianae oceanensis</i> Large Bent-winged Bat (Breeding)	No. Habitat Constraints absent. There are no Cave, tunnel, mine, culvert, or other structure known or suspected to be used for breeding within the Subject Land. Habitat Constraint: Cave, tunnel, mine, culvert, or other structure known or suspected to be used for breeding including species records with microhabitat code "IC - in cave"	No	N/A	Very High	No

Table 5. Candidate Flora Credit Species predicted to occur within the Subject Land.

Scientific Name (<i>italics</i>) and common name	Included in Assessment?	Targeted Survey conducted?	Present within Subject Land?	Biodiversity Risk Weighting	Biodiversity Offset Credits Required?
<i>Rhizanthella slateria</i> Eastern Australian Underground Orchid	No. The Subject Land is located on disturbed terrain consistent with its use as an ornamental garden. Excluding the occasional remnant trees within the landscape, the natural mid-storey and groundcover are now absent within the Subject Land and surrounds. The available habitat within and adjoining the Subject Land was determined to be substantially degraded in accordance with section 6.4.1.17 of the BAM.	No	NA	High	No
<i>Rhodamnia rubescens</i> Scrub Turpentine		No	NA	High	No
<i>Rhodomyrtus psidiodes</i> Native Guava		No	NA	High	No

5.3 Surveys for Confirmed Species Credit Species and their Habitats

Surveys for Species Credit species and their habitats were undertaken for species considered likely to have suitable habitat within the Subject Land (**Table 4**). These surveys were implemented in accordance with Section 5.3 of the BAM and all relevant DCCEW threatened species survey guidelines.

5.3.1 Fauna Species Credit Survey

A total of five threatened fauna species were identified within the BAM-C (DPE, 2020a) as having the potential to occur within the Subject Land.

All five species were excluded from the assessment due to the following:

- Species are considered unlikely to occur and no further assessment is required for that species if it is determined that no habitat constraints are present on the entire Subject Land for the threatened species (as per Section 5.2.2 of the BAM; DPE, 2020a).

5.3.2 Flora Species Credit Survey

Three threatened flora species were identified within the BAM-C (DPE, 2020a) as having the potential to occur within the Subject Land. All species were excluded from the assessment due to the following:

- After carrying out a field assessment of the microhabitats on the Subject Land, the assessor determined that the habitat is substantially degraded such that the species are unlikely to utilise the Subject Land (or specific vegetation zones) (as per Section 6.4.1.17 of the BAM; DPE, 2020a).

5.4 Species Polygons

No species credit species were present or assumed present within the Subject Land. Therefore, no species polygons were assigned.

6. PRESCRIBED IMPACTS

Certain projects may have impacts on biodiversity values in addition to, or instead of, impacts from clearing vegetation and/ or loss of habitat. For many of these impacts, the biodiversity values may be difficult to quantify, replace or offset, making avoiding and minimising impacts critical. Prescribed biodiversity impacts require an assessment of the impacts of the project on the habitat of threatened species or ecological communities. This is discussed in **Table 6**.

Table 6. Prescribed and uncertain impacts associated with the proposed development.

Will there be impacts on any of the following?	Yes/No	If Yes, Address all of the assessment questions from section 6 of the BAM
Habitat of threatened entities including: - karst, caves, crevices, cliffs, rocks, and other geological features of significance, or - human-made structures, or - non-native vegetation	No	There are no karsts, caves, crevices, cliffs, and other features of geological significance on or near the Subject Land. Human-made structures present within the development footprint includes residential dwellings and structures associated with the current occupation of the land. Existing building structures were determined to be unlikely to be utilised as habitat for threatened species. Non-native vegetation was present within the Subject Land in the form of common ornamental garden species. No threatened species predicted to occur within the Subject Land are likely to be reliant on this non-native vegetation as a part of their life cycle.
On areas connecting threatened species habitat, such as movement corridors	No	The development footprint is situated within a highly urbanised residential area. Much of the native vegetation within the surrounding landscape is highly fragmented, with some remnants likely to exist within residential properties. An assessment of aerial imagery within the assessment area shows there is negligible habitat connectivity to the development footprint. The proposed works are therefore unlikely to significantly impact on habitat connectivity for fauna residing within the locality.

Will there be impacts on any of the following?	Yes/No	If Yes, Address all of the assessment questions from section 6 of the BAM
That affect water quality, water bodies and hydrological processes that sustain threatened entities (including from subsidence or upsidence from underground mining)	No	The development footprint does not contain any water bodies or hydrological features.
On threatened and protected animals from turbine strikes from a wind farm	No	No wind farms are associated with the proposed development.
On threatened species or fauna that are part of a TEC from vehicle strikes.	No	The proposed development does not include any changes to the road conditions that would result in an increase in impacts to threatened species or TEC from vehicle strikes.

7. AVOID AND MINIMISE IMPACTS

This section demonstrates the efforts to avoid and minimise impacts on biodiversity values (including prescribed impacts) associated with the proposed development in accordance with the BAM, including:

- Modes or technologies that would avoid or minimise impacts on biodiversity values and justification for selecting the proposed mode or technology
- Routes that would avoid or minimise impacts on biodiversity values and justification for selecting the proposed route
- Alternative locations that would avoid or minimise impacts on biodiversity values and justification for selecting the proposed location
- Alternative sites within a property on which the proposed development is located that would avoid or minimise impacts on biodiversity values and justification for selecting the proposed site
- Efforts to avoid and minimise impacts (including prescribed impacts) to biodiversity values through Concept design, and
- Other site constraints that the proponent has considered in determining the location and design of the proposed development.

The principal means to reduce impacts on biodiversity values within the development site is to avoid and/or minimise the removal of native vegetation and fauna habitat. Facilitation of the proposed development does not require removal of any vegetation associated with PCT 3234, regardless of its presence within other areas of the Subject Land. It is therefore unlikely the proposed development will constitute any significant environmental impacts.

8. IMPACT ASSESSMENT

8.1 Direct Impacts

8.1.1 Native Vegetation Clearing

The proposed development will require the removal of approximately 0.03ha of planted native vegetation to accommodate the proposed development. This vegetation is located within a fragmented landscape, that makes potential use by threatened species unlikely.

8.1.2 Fauna Habitat

All vegetation proposed for removal provides minor foraging habitat for a suite of protected fauna species. Potential, minor foraging habitats that may be directly impacted by the development include:

- Fruit-bearing trees (*Waterhouse floribunda*, *Archontophoenix cunninghamiana*), and
- Nectar-bearing trees (*Corymbia ficifolia*).

Within the context of the surrounding landscape, these habitat types are unlikely to offer suitable habitat for threatened fauna owing to the proximity of the ongoing indirect impacts created by surrounding residential development.

8.2 Prescribed Impacts

There will be no prescribed impacts on threatened entities associated with the proposed development. Consideration of prescribed impacts resulting from the proposed development are discussed in **Section 6.1**.

8.3 Indirect Impacts

Indirect impacts occur when the proposal or activities relating to the construction or operation of the proposal affect native vegetation, threatened ecological communities and threatened species habitat beyond the Subject Land. Indirect impacts may also result from changes to land-use patterns, such as an increase in vehicular access and human activity on native vegetation, threatened ecological communities and threatened species habitat. The indirect impacts relevant to the proposed development are outlined in **Table 7**.

Table 7. Indirect impacts associated with the proposed development.

Potential Indirect Impact	Nature, extent and duration
Inadvertent impacts on adjacent habitat or vegetation	Impacts to adjacent vegetation can be prevented or minimised through appropriate exclusion fencing, implementation of a site-specific Construction Environmental Management Plan detailing best practice environmental protection measures, strict water quality practices and stormwater controls, and by ensuring any lighting is directed towards the developed area, rather than towards the adjacent vegetation.

Potential Indirect Impact	Nature, extent and duration
Reduced viability of adjacent habitat due to edge effects	Adjacent habitats are currently subject to a high degree of edge effects due to prior clearing and surrounding existing land use. Surrounding properties are largely devoid of native vegetation (and habitats) and will therefore not be impacted. Subject to appropriate controls, further spread of weeds can be prevented. Edge effects to adjacent habitats are unlikely to be exacerbated by the proposed development.
Reduced viability of adjacent habitat due to noise, dust or light spill	It is predicted that adjacent habitat outside the Subject Land is likely to experience a negligible increase to indirect impacts created by noise, dust and light spill, during construction and operation of the future development of the Subject Land. Site lighting will be designed to minimise glare and light spillage into adjoining properties and vegetation and be consistent with the requirements of Australian Standards and Guidelines 4282-2019: Control of the obtrusive effects of outdoor lighting. Additional control measures can be installed to minimise glare and light spillage into adjoining vegetation to minimise potential impacts to fauna species and lighting can be installed in a direction oriented away from sensitive habitats. These indirect impacts will be managed via best practices outlined in an approved Construction Environmental Management Plan. These impacts are not likely to substantially increase due to the proposed future development. Any potential impacts are not considered significant as it is highly unlikely that species abundance would be diminished.
Transport of weeds and pathogens from the site to adjacent vegetation	No priority or environmental weeds were identified within the Subject Land. Should they occur, an increased transport of pathogens and weeds is unlikely, however this would be managed by biosecurity measures outlined in the Construction Environmental Management Plan.
Increased risk of starvation, exposure and loss of shade or shelter	It is highly unlikely that any threatened fauna would be exposed to increased risks from starvation, exposure, and loss of shade and shelter beyond the Subject Land as a result of the proposed development. No habitat was identified within the Subject Land, although disturbances from noise during construction and utilisation may deem such habitats unsuitable for certain species. However, due to the relatively urbanised nature of the vegetation adjacent to the Subject Land, it is unlikely that this impact will be significant.
Loss of breeding habitats	No breeding habitat features (e.g., hollows, nests, caves) were identified within the Subject Land. It is therefore considered unlikely that the proposed development would result in a loss of breeding habitats.
Trampling of threatened flora species	No impacts to threatened flora as a result of trampling are expected as a result of the proposed development. No threatened flora have been identified within the Subject Land, nor is suitable habitat considered to exist.

Potential Indirect Impact	Nature, extent and duration
Increase in predatory species populations	It is likely that predatory species, such as <i>Vulpes vulpes</i> (Red Fox) and <i>Felis catus</i> (Domestic Cat), already inhabit areas surrounding the Subject Land. The vegetation clearance proposed by the development, is unlikely to increase predatory species populations within the broader locality.
Increase in pest animal populations	The Subject Land occurs in a peri-urban landscape with impacts including introduced domestic pets such as cats currently occurring within the locality. Pest animals such as <i>Rattus rattus</i> (Black rat) are also widely spread within the region and are likely to occur across the locality. The proposed development would not result in an increase in available habitat for these species and is unlikely to lead to an increase in pest animal populations. Suitable waste disposal implemented during, and post construction would further reduce the resources available for pest species.
Disturbance to specialist breeding and foraging habitat, e.g., beach nesting for shorebirds.	No specialist breeding and foraging habitat was identified within the Subject Land. It is therefore not expected that the proposed development will disturb any specialist breeding and foraging habitat.

8.4 Key Threatening Processes

There are currently 39 Key Threatening Processes (KTPs) listed under the BC Act, 21 KTPs under the EPBC Act, and eight listed under the FM Act. Several KTPs are listed under more than one Act. KTPs relevant to the proposed development are discussed in **Table 8**. Mitigation measures to limit the impacts of these KTPs are detailed in **Section 8.6**.

Table 8. Key Threatening Processes relevant to the proposed development.

Key Threatening Process	Status	Potential Impacts from the Proposed Development
Native Vegetation and Terrestrial Habitat Impacts		
Land clearance/ Clearing of native vegetation	EPBC Act BC Act	Clearing of planted native vegetation would occur as a result of the proposed development. A total of <0.01ha of planted native vegetation is proposed to be cleared within the Subject Land.

8.5 Impacts to Groundwater Dependent Ecosystems (GDE)

Assessment of the potential for the Subject Land to support groundwater dependent ecosystems was carried out using the Commonwealth's Bureau of Meteorology Groundwater Dependent Ecosystems Atlas (BOM, 2024a). No vegetation within or directly adjoining the Subject Land has been mapped as a Groundwater Dependent Ecosystem.

8.6 Mitigating Residual Impacts – Management Measures and Implementation

This section details the measures to be implemented before, during and post construction to avoid and minimise the impacts of the proposed development (Table 9)

Table 9. Recommended measures to be implemented before, during and after construction to avoid and minimise the impacts of the proposed development.

Measure	Action	Outcome	Timing	Responsibility
FF1	Preparation of a Construction Environmental Management Plan (CEMP)	A CEMP will be required for the construction phase of the project and will be prepared prior to issue of the Construction Certificate. The CEMP would include, as a minimum, industry-standard measures for the management of soil, surface water, weeds, pathogens, and pollutants, as well as site-specific measures, including the procedures outlined below. The proposed mitigation measures would include environmental safeguards for protection of neighbouring properties in accordance with relevant policy documentation and Government guidelines. In order to address the potential impacts of the proposal on biodiversity, the mitigation and management measures outlined within this table would be implemented as part of the CEMP. The CEMP would contain an adaptive management component. Adaptive management strategies would be receptive to any new and relevant data that may arise through ongoing assessment and monitoring and are key to the successful implementation of crucial objectives yet also allow flexibility to changing dynamics and ongoing feedback and results.	Pre-construction phase	Proponent
FF2	Erosion and Sedimentation	Appropriate erosion and sediment control must be erected and maintained at all times prior to, and 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).	Pre-construction phase, construction phase	Proponent

Measure	Action	Outcome	Timing	Responsibility
FF3	Tree Protection	Tree protection fencing should be consistent with the recommendations set out in the official Arborist Report (The Ents Tree Consultancy, 2024). Tree protection fencing should consist of temporary chain wire panels 1.8m in height, supported by steel stakes fastened together and supported to prevent sideways movement using corner braces. The fence shall be erected prior to the commencement of any work on-site and shall be maintained in good condition for the duration of construction. Where tree protection zones merge together, a single fence encompassing the area is deemed to be adequate. Existing site boundary fences may form part of the enclosure.	Pre-construction phase, construction phase	Proponent
FF4	Storage and Stockpiling (Soil and Materials)	Allocate all storage, stockpile, and laydown sites away from any native vegetation that is planned to be retained. Avoid importing any soil from outside the site as this can introduce weeds and pathogens to the site in order to avoid the potential of incurring indirect impacts on biodiversity values.	Construction phase	Proponent

9. SERIOUS AND IRREVERSIBLE IMPACTS

9.1 Assessment for Serious and Irreversible Impacts (SII's) of Biodiversity Values

No entities at risk of SII were identified within the Subject Land and none are likely to be impacted by the proposed development.

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10. IMPACT SUMMARY

10.1 Determine an Offset Requirement for Impacts

The preferred approach to offset the residual impacts of the proposal is to purchase and retire the appropriate species credits from registered Biodiversity Stewardship Sites that comply with the trading rules of the NSW BOS in accordance with the 'like for like' report generated by the BAM-C. If such credits are unavailable, credits would be sourced in accordance with the 'variation report' generated by the BAM-C.

A payment to the Biodiversity Conservation Trust (BCT) would be considered as a contingency option if a suitable number and type of biodiversity credits cannot be secured.

10.1.1 Offset Requirement for Species Credits

No candidate species credit species will require offsetting through the retiring of biodiversity offset species credits under the BOS as a result of the proposed development. This is due to all other candidate species credit species being excluded from occurring on the Subject Land based on available habitat constraints or the habitat being substantially degraded such that the species is unlikely to utilise the Subject Land in accordance with section 6.4.1.17 of the BAM.

11. LEGISLATION AND POLICY

11.1 *Biodiversity Conservation Act 2016*

The purpose of the *Biodiversity Conservation Act 2016* (NSW) (BC Act) is to maintain a healthy, productive and resilient environment for the greatest well-being of the community, now and into the future, consistent with the principles of ecologically sustainable development.

The BC Act seeks to establish a framework for assessment and offsetting of development impacts as well as investment in biodiversity conservation, specifically:

- The NSW Biodiversity Offsets Scheme, established under Part 6 of the BC Act
- The BAM, established under Section 6.7 of the BC Act. The purpose of the BAM is to assess certain impacts on threatened species and threatened ecological communities (TECs), and their habitats, and the impact on biodiversity values, where required under the BC Act.

This report has been prepared to address all requirements set out under the BAM (DPE, 2020a).

11.2 *Environment Protection and Biodiversity Conservation Act 1999*

Under the EPBC Act, a proponent must not take an action if that action will have, or is likely to have, a significant impact on matters protected under the EPBC Act, referred to as Matters of National Environmental Significance (MNES). The EPBC Act identifies eight 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
8. Nuclear actions

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

- 27 Threatened Ecological Communities
- 59 threatened species
- 16 Migratory species

MNES relevant to the proposed development are summarised in **Table 10**.

Table 10. EPBC Act Assessment of Significant Impact.

MNES	Proposed Development Specifics	Impact
Threatened species	No EPBC Act listed threatened species have the potential to be impacted by the proposed development.	No significant impact likely.
Threatened ecological communities (TEC)	No EPBC Act listed threatened ecological communities have the potential to be impacted by the proposed development.	No significant impact likely.
Migratory species	Based on the results of the Protected Matters Search Tool (Appendix D), 16 listed migratory species may occur in the broader locality. Migratory species are unlikely to occur within the Subject Land given the location in the landscape and historical land use.	Some EPBC Act listed threatened and migratory wader birds including the Eastern Curlew, Grey Plover, Oriental Cuckoo, Crested Tern, and Short-tailed Shearwater may occur in the proximal riparian habitats associated with the Clareville Beach Reserve. The habitats in the Subject Land are not important habitats for migratory birds. The proposed development would not substantially modify, destroy, or isolate an area of important habitat for the migratory species, and it would not seriously disrupt the lifecycle of an ecologically significant proportion of a population of migratory birds.
National Heritage Places	The Subject Land does not contain any National Heritage Places.	Not applicable.
Wetlands of international importance (Ramsar sites)	The Subject Land does not contain any wetlands of international or national importance.	Not applicable.

11.2.1 Matters of National Environmental Significance

The proposed development is not likely to significantly impact any EPBC Act listed threatened species or communities, or any Matters of National Environmental Significance. Therefore, it will not need a referral under the EPBC Act.

11.3 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 the Act, any non-conformance by an individual is defined as guilty of an offence.

No priority weeds were identified within the Subject Land. Should an infestation occur, priority weeds must be managed in accordance with the *Biosecurity Act 2015* (NSW).

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

This Policy 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 SEPP applies to LGAs that are listed in Schedule 1 ‘Local government areas’ of the SEPP. The Northern Beaches LGA is included in Schedule 1, however, the development control provisions of Part 2, Clause 11 of the SEPP do not apply to the proposed development as the land does not have an area of at least 1 hectare (including adjoining land within the same ownership). As such, the Koala Habitat Protection SEPP 2021 does not apply to the proposed development.

11.5 State Environmental Planning Policy (Resilience and Hazards) 2021

State Environmental Planning Policy (Resilience and Hazards) 2021: Chapter 2 – Coastal Management applies to land within the coastal zone. The coastal zone means the area of land comprised of the following coastal management areas:

- The coastal wetlands and littoral rainforests area;
- The coastal vulnerability area;
- The coastal environment area; or
- The coastal use area.

As the Subject Land does not occur within any of these listed areas, this SEPP does not apply.

11.6 Pittwater Local Environmental Plan (LEP) 2014

11.6.1 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 impacts on biodiversity values as much as possible. Due to the vegetated nature of the property, there are limited alternate locations for the proposed development.

11.7 Pittwater Development Control Plan (DCP) 2003

11.7.1 Pittwater Spotted Gum Forest – Endangered Ecological Community (Part B4.7)

The Subject Land contains Pittwater and Wagstaffe Spotted Gum Forest in the Sydney Basin Bioregion (formerly Pittwater Spotted Gum Forest), an EEC. As the proposed development involves the clearing of this EEC, part B4.7 of the Pittwater DCP applies. The following controls apply to the proposed development:

- Development shall not have an adverse impact on Pittwater Spotted Gum Endangered Ecological Community;
- Development shall restore and/or regenerate Pittwater Spotted Gum Endangered Ecological Community and provide links between remnants;
- Development shall be in accordance with any Pittwater Spotted Gum Forest Recovery Plan;
- Development shall result in no significant onsite loss of canopy cover or a net loss in native canopy trees;
- Development shall retain and enhance habitat and wildlife corridors for locally native species, threatened species and endangered populations;
- Caretakers of domestic animals shall prevent them from entering wildlife habitat;
- Fencing shall allow the safe passage of native wildlife;
- Development shall ensure that at least 80% of any new planting incorporates native vegetation (as per species found on the site or listed in Pittwater Spotted Gum Endangered Ecological Community); and
- Development shall ensure any landscaping works are outside areas of existing Pittwater Spotted Gum Endangered Ecological Community and do not include Environmental Weeds.

The proposed development has been designed to avoid impacts to the EEC.

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