



# Streamlined Biodiversity Development Assessment Report

36 Cabbage Tree Road Bayview 2104

Report prepared by Narla Environmental Pty Ltd

For Opal Health Care

October 2025



# NARLA

*environmental*

<b>Report:</b>	Streamlined Biodiversity Development Assessment Report – 36 Cabbage Tree Road, Bayview
<b>Prepared for:</b>	Opal Health Care
<b>Prepared by:</b>	Narla Environmental Pty Ltd
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## Declarations

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).



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## Conflict of Interest

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



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# Glossary

Acronym/ Term	Definition
Accredited Biodiversity Assessor	Individuals accredited by the NSW Department of Climate Change, Energy the Environment and Water (NDCCEEW) to apply the Biodiversity Assessment Method.
APZ	Asset Protection Zone
BAM	The NSW Biodiversity Assessment Method (2020)
BAMC	The NSW Biodiversity Assessment Method Calculator
BC Act	New South Wales Biodiversity Conservation Act 2016
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	NSW Biodiversity Offset Scheme
DCCEEW	Department of Climate Change, Energy the Environment and Water
DPE	Department of Planning and Environment (now NDCCEEW)
DPIE	NSW Department of Planning, Industry and Environment (now NDCCEEW)
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	Environment Protection and Biodiversity Conservation Act 1999
ha	Hectares
HTE	High Threat Exotic
km	Kilometres
LALC	Local Aboriginal Land Council
LGA	Local Government Area
Locality	A 1,500m buffer area surrounding the Subject Land
m	metres
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.
NSW	The State of New South Wales
NDCCEEW	NSW Department of Climate Change, Energy the Environment and Water
OEH	Office of Environment and Heritage (now NDCCEEW)
PCT	NSW Plant Community Type
Proposal	The development, activity or action proposed
SAII	Serious and Irreversible Impacts

Acronym/ Term	Definition
SAll entity	Species and ecological communities that are likely to be the subject of serious and irreversible impacts (SAlls)
SBDAR	Streamlined Biodiversity Development Assessment Report
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.
SSDA	State Significant Development Application
Subject Land	The footprint of the proposed development
Subject Property	36 Cabbage Tree Road Bayview 2104 (Lot 121/DP789400)
TEC	Threatened Ecological Community
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

# Executive Summary

Narla Environmental Pty Ltd (Narla) was engaged by Principal Healthcare Finance Pty Limited (Opal Healthcare; 'the proponent') to prepare a Streamlined Biodiversity Development Assessment Report (SBDAR) to accompany a State Significant (SSDA) for the proposed development at 36 Cabbage Tree Road Bayview 2104 (Lot 121/DP789400; the Subject Property). The SBDAR will assess the biodiversity impacts of the proposed development in accordance with the requirements of the Biodiversity Conservation Act 2016 and Biodiversity Conservation Regulation 2017. The assessment has been completed as a streamlined assessment in accordance with Appendix L of the Biodiversity Assessment Method (BAM; DPIE 2020a).

The proposed development involves the demolition of existing structures to facilitate the construction of a new residential aged care facility. The project will also include associated soft and hard landscaping, driveways, and other ancillary works. All areas associated with the proposed development are hereafter referred to as the 'Subject Land'. The proposed development where possible has largely utilised existing dwellings, hardstand and landscaped garden beds containing both native and exotic vegetation. Owing to the proximity of locally native trees, to existing infrastructure however complete avoidance was not possible.

The proposed development is expected to impact one (1) Plant Community Type (PCT): 3234: Hunter Coast Lowland Spotted Gum Moist Forest. The following ecosystem credits are required to be offset in order to mitigate the impacts upon biodiversity as a result of the proposed development:

- Two (2) ecosystem credit for PCT 3234.

This PCT is associated with the Biodiversity Conservation Act listed Endangered Ecological Community (EEC) Pittwater Wagstaffe Spotted Gum Forest in the Sydney Basin Bioregion. This EEC is also listed as an 'SAll entity' within the BioNet Threatened Biodiversity Data Collection (NDCCEEW 2025e). Due to the potential sensitivity of this species to any impact, a determination of whether or not the impacts are serious and irreversible has been undertaken in accordance with Section 9.1 of the BAM (DPIE 2020a).

No threatened species were required to be offset as a result of the proposed development.

In order to avoid and minimise potential impacts of the proposal on local biodiversity values, a series of mitigation and management measures have been identified, which are to be implemented as part of any Construction Environmental Management Plan (CEMP) produced for the site. This includes carry out tree replacement planting for trees impacted by proposed works, which should be planted elsewhere on the Subject Property at a 2:1 ratio to compensate what is removed.

# 1. Introduction

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## 1.1 Overview

This Streamlined Biodiversity Development Assessment Report (SBDAR) is submitted to the Department of Planning, Housing and Infrastructure (DPHI) on behalf of Principal Healthcare Finance Pty Limited (Opal Healthcare) in support of a SSDA (SSD-77240466) for a 177 bed residential aged care facility (RACF) at 36-42 Cabbage Tree Road, Bayview (the Subject Property; **Figure 1**). This SBDAR will assess the biodiversity impacts of the proposed development in accordance with the requirements of the Biodiversity Conservation Act 2016, Biodiversity Conservation Regulation 2017 and BAM (DPIE 2020a).

This SBDAR assesses the biodiversity impacts of the development in accordance with the requirements of the Biodiversity Conservation Act 2016 (BC Act), Biodiversity Conservation Regulation 2017 and Biodiversity Assessment Method (BAM; DPIE 2020a). Narla have produced this report in order to assess any potential impacts associated with the DA and recommend appropriate measures to mitigate any potential ecological impacts in line with the requirements of the consent authority, Northern Beaches Council. The assessment has been completed in accordance with Appendix L of the BAM (DPIE 2020a).

## 1.2 The Proposed Development

The proposed development will comprise the following:

- Demolition of the existing aged care building and driveway on the site;
- Construction of a three-storey residential aged care facility, accommodating:
  - 177 beds,
  - Basement parking,
  - Ground floor ancillary facilities;
- Construction of a community room, to be located on the Aveo Bayview Gardens Retirement Living (**Aveo BGRL**) site;
- Construction of a new driveway, to be located on the Aveo BGRL site;
- Torrents Title subdivision of the Opal Healthcare Bayview site from Aveo BGRL;
- Associated amenities and landscaping works;
- Augmentation of, and connection to, existing utilities as required.
- For a detailed project description, refer to the Environmental Impact Statement prepared by Beam Planning.

The proposed development encompasses an area of approximately 0.71 ha. All areas associated within the proposed development will hereafter be referred to collectively as the 'Subject Land' (**Figure 1**).

## 1.3 Secretary's Environmental Assessment Requirements

This report has been prepared to respond to the SEARS for SSD-77240466. Specifically, this report has been prepared to respond to those SEARS summarised in **Table 1**.

**Table 1. SEARS requirements as they relate to biodiversity.**

Requirement	Response
<p><b>Biodiversity</b></p> <p>Assess any biodiversity impacts associated with the development in accordance with the Biodiversity Conservation Act 2016 and the Biodiversity Assessment Method 2020, including the preparation of a Biodiversity Development Assessment Report (BDAR), unless a waiver is granted, or the site is on biodiversity certified land.</p> <p>If the development is on biodiversity certified land, provide information to identify the site (using associated mapping) and demonstrate the proposed development is consistent with the relevant biodiversity measure conferred by the biodiversity certification.</p>	Streamlined BDAR Prepared.

## 1.4 Assessment Methods Applied

This SBDAR will be prepared as a site-based ‘Streamlined assessment module – small area development that requires consent’ as the proposed works do not exceed the area clearing threshold for small area developments as outlined in the BAM (DPIE 2020a). The minimum lot size for the Subject Property is 700m<sup>2</sup> and the total Subject Land is 0.71ha, however the area of impact to native vegetation is 0.16ha.

**Table 2. Area limits for application of small area development threshold. Bold indicates the threshold relevant to this report.**

Minimum lot size associated with the property	Maximum area limit for application of the small area development module
<b>Less than 1ha</b>	<b>≤1ha</b>
Less than 40ha but not less than 1ha	≤2ha
Less than 1000ha but not less than 40ha	≤5ha
1000ha or more	≤10ha

## 1.5 Site Location and Description

The Opal HealthCare Bayview site comprises a ~6,000sqm portion of the current Aveo BGRL site at 36-42 Cabbage Tree Road, legally described at Lot 121 in DP 789400. The Subject Property is irregular in shape, bound by Annam Road to the east, and the Aveo BGRL site to the north, west, and south.

The Subject Property is situated within a suburban landscape located within the suburb of Bayview in the Northern Beaches Local Government Area (LGA; **Figure 2**) and is located within the boundaries of the Metropolitan Local Aboriginal Land Council (LALC). It has an area of approximately 8.02ha and is neighboured by similar properties. The Subject Property contains cleared open areas as well as large areas of mixed native and exotic vegetation.

## 1.6 Sources of Information Used

A thorough literature review was undertaken to gain an insight into the ecology and applicable legislation within the locality and the Northern Beaches LGA, including:

- Relevant State Government Databases & Datasets:
  - NSW eSPADE v2.2 (NDCCEEW 2025b);
  - NSW BioNet. The website of the Atlas of NSW Wildlife (NDCCEEW 2025c);
  - NSW BioNet. Threatened Biodiversity Data Collection (NDCCEEW 2025d);
  - NSW BioNet. Vegetation Classification System (NDCCEEW 2025e); and
  - Six Maps Clip & Ship (NSW Government Spatial Services 2025).
- Vegetation and Soil Mapping:
  - NSW State Vegetation Type Map (DPE 2022); and
  - Soil Landscapes of the Sydney 1:100,000 Sheet (Chapman et al. 2009).
- NSW State Guidelines:
  - Biodiversity Assessment Method (DPIE 2020a);
  - Guidance to assist a decision-maker to determine a serious and irreversible impact (DPIE 2019);
  - Biodiversity Assessment Method Calculator Version 1.5.0.00 (NDCCEEW 2025f);
  - Biodiversity Offsets and Agreement Management System (BOAMS);
  - Surveying threatened plants and their habitats - NSW survey guide for the Biodiversity Assessment Method (DPIE 2020b); and
  - Threatened Species Survey and Assessment: Guidelines for developments and activities. Working Draft (DEC 2004).
- Council Documents:
  - Pittwater 21 Development Control Plan 2004 (DCP); and
  - Pittwater Local Environmental Plan 2014 (LEP).

Preparation of this SBDAR also involved the review of the following accompanying project documents:

- Site Plans (Opal HealthCare 2025); and
- Arboricultural Impact Assessment (Heartwood Tree Consulting, 2025).

These sources were used to gain an understanding of the natural environment and ecology of the Subject Land and its surrounds. Searches using NSW Wildlife Atlas (BioNet) (NDCCEEW 2025c) were conducted to identify current threatened flora and fauna records within and surrounding the Subject Land. These data were used to assist in establishing the presence or likelihood of any biodiversity values as occurring on, or adjacent to the Subject Land and helped inform our Ecologist on what to look for during the site assessment.

## 1.7 Aim and Approach

This report has been prepared in accordance with the BAM (DPIE 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 development on biodiversity values, including potential prescribed impacts and SALLs 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 development 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.

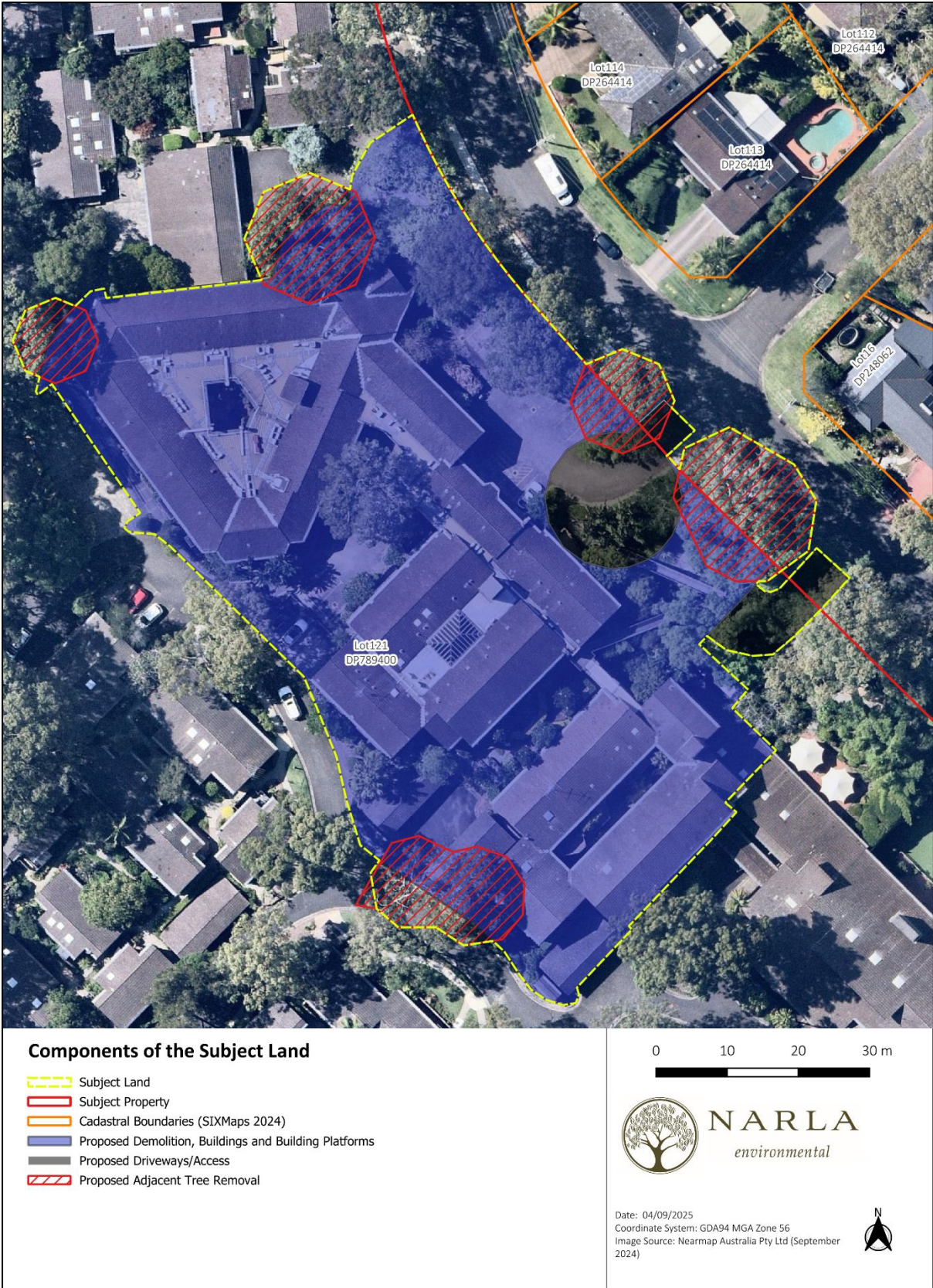


Figure 1. The components of the Subject Land.



Figure 2. The location of the Subject Land within the locality.

## 2. Landscape

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### 2.1 IBRA Bioregion and Subregion

The Subject Land occurs within the 'Pittwater' Interim Biogeographic Regionalisation for Australia 7 (IBRA7) Subregion, which is part of the 'Sydney Basin' IBRA7 Bioregion (**Figure 3**).

### 2.2 Mitchell Landscapes

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 information on location and a meaningful descriptive landscape term.

The Subject Land occurs on the 'Sydney – Newcastle Barriers and Beaches' Mitchell Landscape Ecosystems (**Figure 4**), which is describe as quaternary coastal sediments on long recurved quartz sand beaches between rocky headlands backed by sand dunes and intermittently closed and open lagoons. Includes areas of more extensive high dunes often located on top of the headlands. General elevation 0 to 30m, local relief 10m. Cliff top dunes may be found as high as 90m above sea level. Distinct zonation of vegetation and increasing soil development from the beach to the inland dunes. At the beach; Spinifex (*Spinifex hirsutus*), Spiky Mat-rush (*Lomandra longifolia*), Coast Wattle (*Acacia longifolia* ssp. *sophorae*) and Coast Tea-tree (*Leptospermum laevigatum*) colonise the frontal dune in which there is little soil development. Coast banksia (*Banksia integrifolia*) and Old Man Banksia (*Banksia serrata*) are found on the second dunes and these merge with more complex forest containing Blackbutt (*Eucalyptus pilularis*), Red Bloodwood (*Corymbia gummifera*), grass trees (*Xanthorrhoea* sp.) and numerous understorey shrubs on deep sands that have an organic rich A horizon, a bleached A2 horizon and the initial development of weak iron or organic pans in the sandy subsoil. Well-developed, deep podsol profiles are present in cliff top dunes with swampy swales indicating that these forms are probably older than the coastal dunes. Vegetation of *Banksia aemula* heathland and open scrub of Coast Banksia (*Banksia integrifolia*), Coast Rosemary (*Westringea fruticosa*), Coast Tea-tree and grass tree, with dwarfed Smooth-Barked Apple (*Angophora costata*) and Red Bloodwood. Freshwater sedge swamps in larger areas of sand. In the lagoons salinity varies depending on tidal flushing and they are often surrounded by Broad-leaved Tea-tree (*Melaleuca quinquenervia*) and Swamp Oak (*Casuarina glauca*). Water margins are occupied by *Juncus* sp. and Common Reed (*Phragmites australis*) in fresh water areas. Grey mangrove (*Avicennia marina*) may occur in some tidal inlets.

### 2.3 Topography, Geology and Soils

The Subject Land is situated on a north east facing slope with elevation ranging from 30m to 20m above sea level (asl; Google Earth 2025). The Subject Land is mapped as occurring on the Erina soil landscape as per the Soil Landscapes of Sydney 1:100,000 Sheet (Chapman et al. 2009).

The Erina soil landscape is characterised by undulating to rolling rises and low hills on fine-grained sandstones and claystones of the Narrabeen Group. Local relief to 60 m, slopes <20%. Rounded narrow crests with moderately inclined slopes. Vegetation is extensively cleared tall-open forest (wet sclerophyll forest) with open-heathland in exposed areas.

The Subject Land did not contain any areas of geological significance, such as karsts, caves, cliffs or crevices. The Subject Land and wider locality (1,500m buffer) are mapped as occurring on Class 1, 2, 3, 4 and 5 acid sulfate soils (**Figure 5**) according to the Pittwater LEP 2014.

## 2.4 Hydrology

One (1) mapped watercourse, is mapped as occurring within the Subject Land (**Figure 6**). Numerous first and second order watercourses occur within 1500m of the Subject Land (**Figure 7**).

## 2.5 State Environmental Planning Policy (Resilience and Hazards) 2021: Chapter 2 – Coastal Management

The Subject Land contains areas mapped as ‘Littoral Rainforest Proximity Area’ as per Chapter 2 – ‘Coastal Management’ of the State Environmental Planning Policy (Resilience and Hazards) 2021 (Figure 8). The wider locality (1,500m buffer) contains areas mapped as ‘Coastal Wetlands’, ‘Coastal Wetlands Proximity Area’, ‘Coastal Environment Area’, ‘Coastal Use Area’, as well as ‘Littoral Rainforest’ and ‘Littoral Rainforest Proximity Area’ as per Chapter 2 – ‘Coastal Management’ of the State Environmental Planning Policy (Resilience and Hazards) 2021 (**Figure 9**).

## 2.6 Native Vegetation Cover and Connectivity

Native vegetation cover and connectivity have been assessed in accordance with Section 3.1.3 and 3.2 of the BAM (DPIE 2020a). The native vegetation cover will be used to assess the habitat suitability of the Subject Land for threatened species. Areas of connectivity will determine the extent of habitat that may facilitate the movement of threatened species across their range. A 1500m buffer around the boundary of the Subject Land was calculated to determine the extent of native vegetation and habitat connectivity.

All areas within the 1500m buffer were not ground-truthed to determine whether native vegetation was present, therefore, native vegetation was mapped on the following assumptions:

- Turfed areas within sport ovals were determined to be non-native;
- Owing to the heavily urbanised landscape, street trees were considered non-native; and
- Tree’d areas connected to native vegetation within the Subject Land were considered to be native.

Native vegetation covered approximately 323ha within the buffer circle (total area = 902ha) which equates to approximately 35.8% and was therefore assigned to the >30-70% class (**Figure 10**).

Areas of connectivity that may facilitate the movement of threatened species were evident within the 1,500m surrounding the Subject Land (**Figure 10**).

## 2.7 Areas of Outstanding Biodiversity Value

No Areas of Outstanding Biodiversity Value occur on the Subject Land or surrounding area.

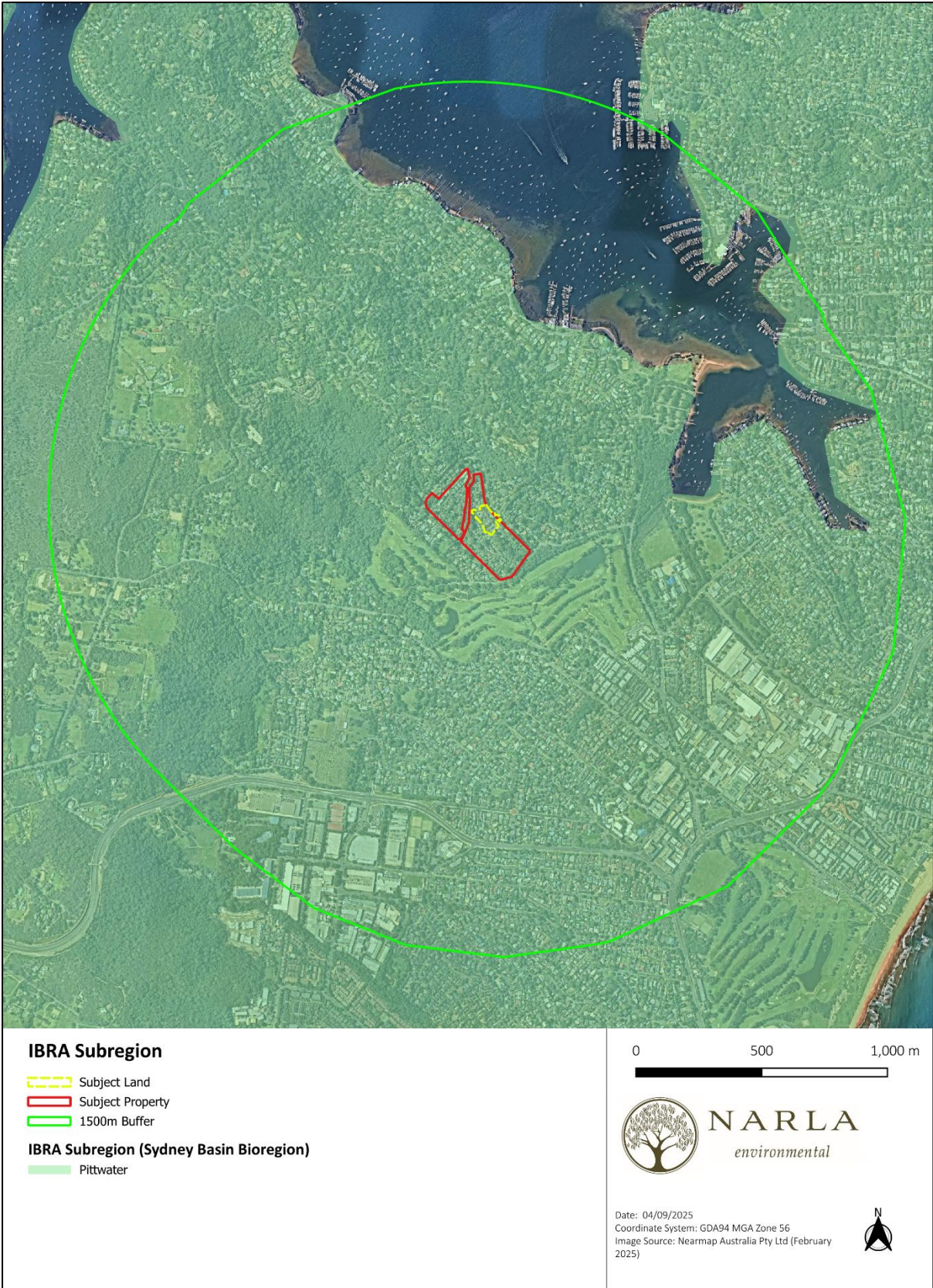


Figure 3. IBRA Bioregion and Subregion of the Subject Property and Subject Land, and within a 1,500m buffer.

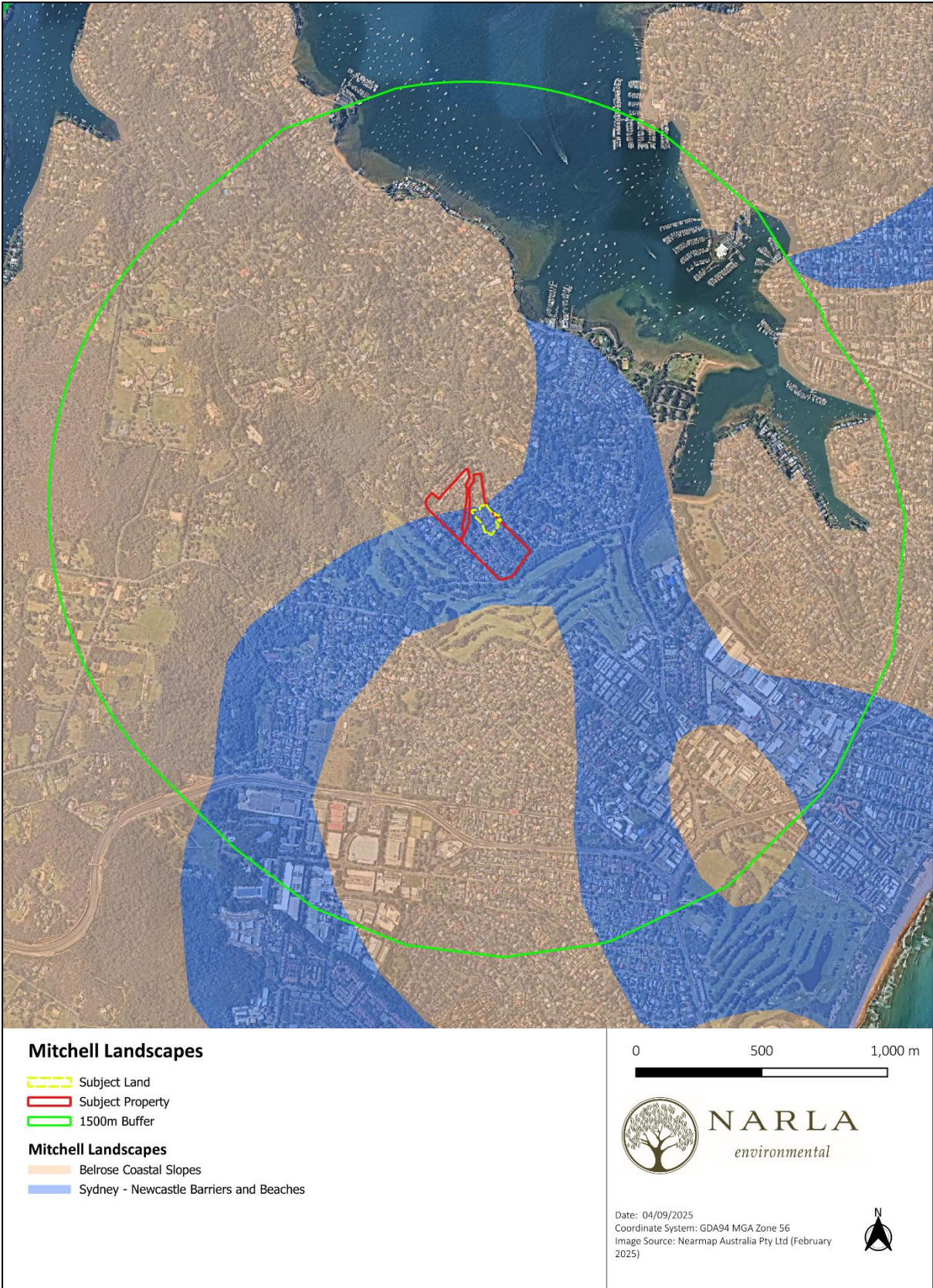


Figure 4. Mitchell Landscapes of the Subject Property and Subject Land, and within a 1,500m buffer.

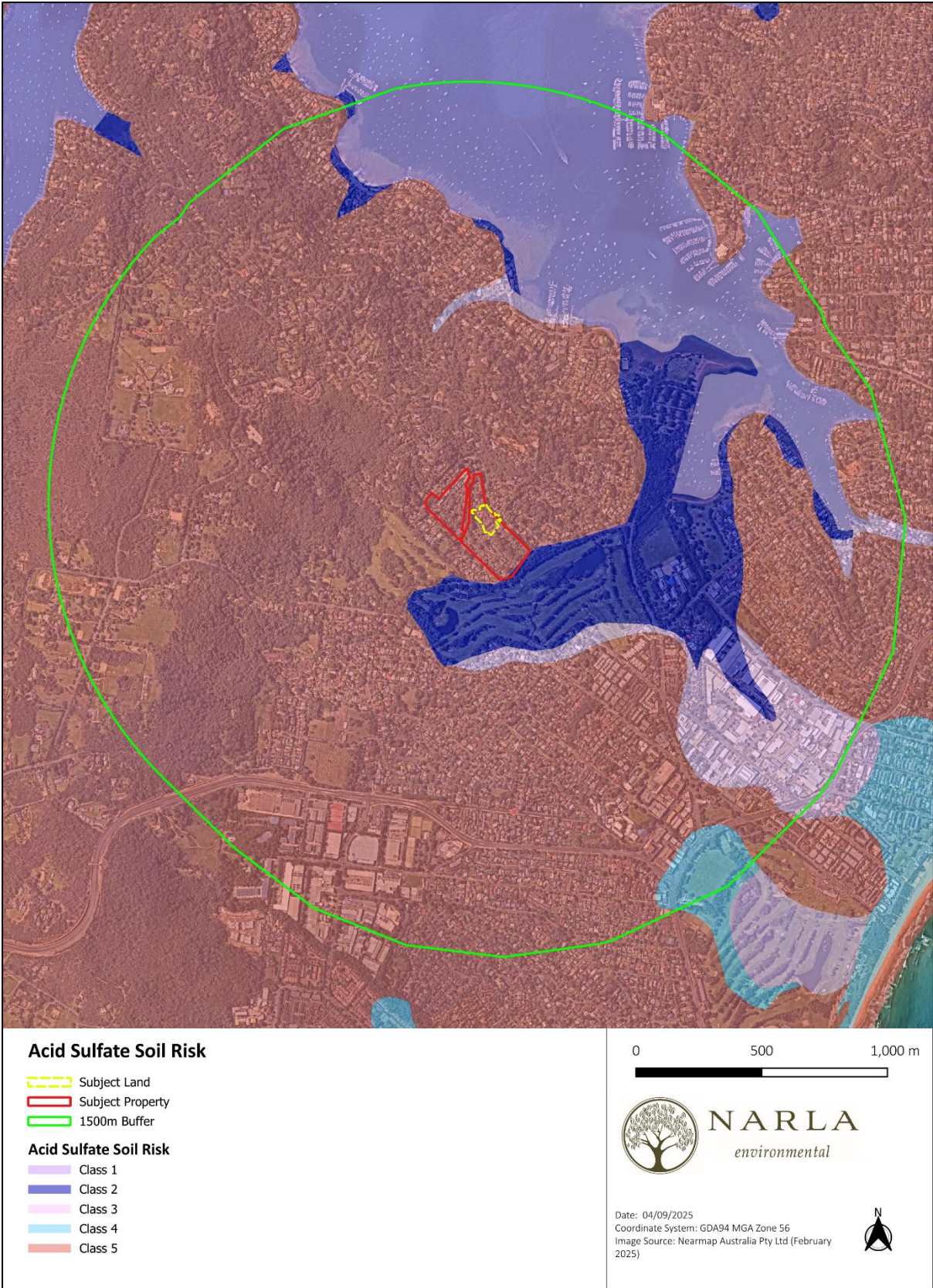


Figure 5. Acid Sulfate Soils of the Subject Property and Subject Land, and within a 1,500m buffer.



Figure 6. Watercourses occurring adjacent to the Subject Land.

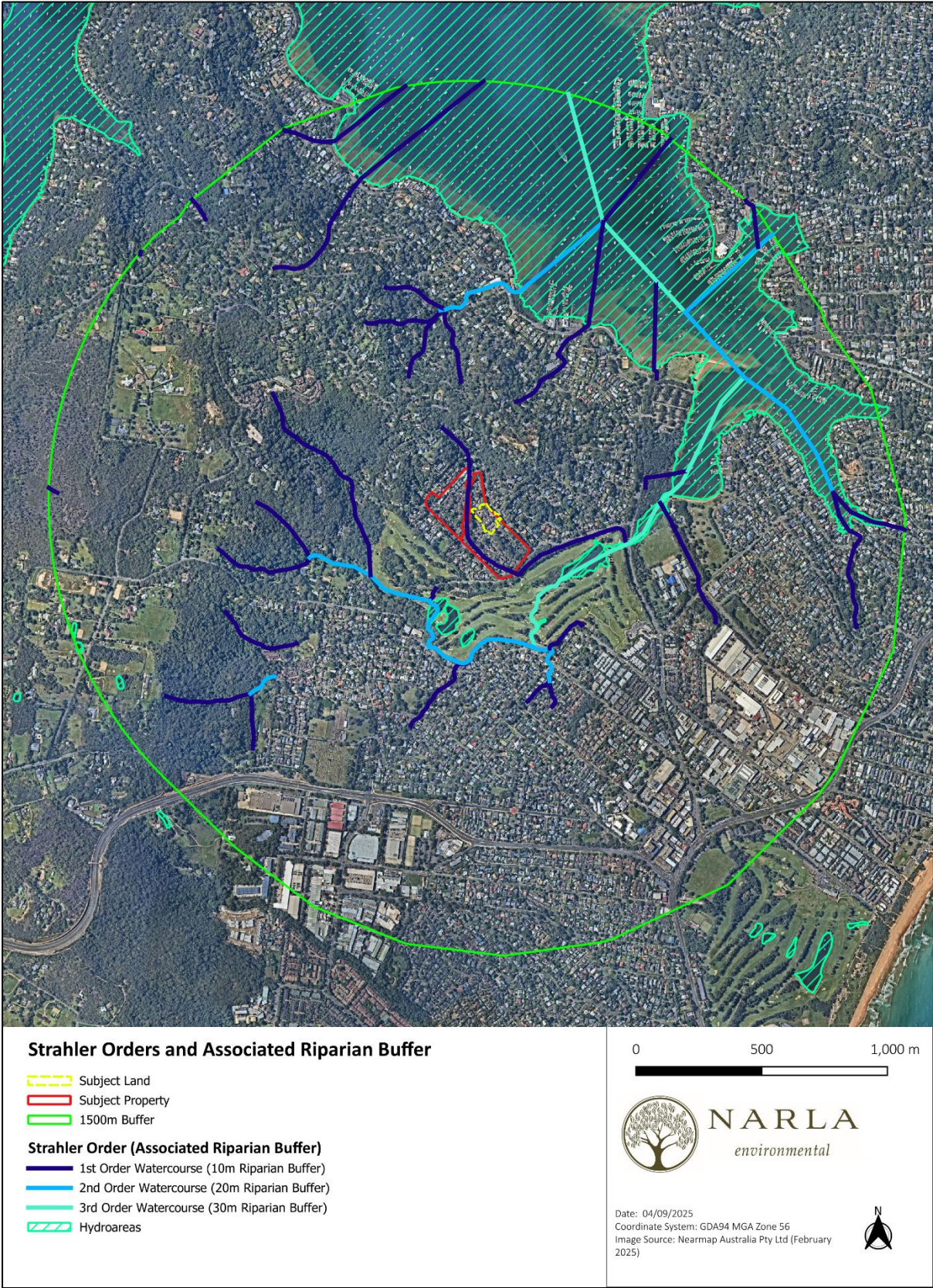


Figure 7. Rivers and streams (with associated riparian buffers) occurring within the 1,500m buffer.



Figure 8. Areas occurring within the Subject Land in which the State Environmental Planning Policy (Resilience and Hazards) 2021 applies.



**State Environmental Planning Policy (Resilience and Hazards) 2021**

-  Subject Land
-  Subject Property
-  1500m Buffer

**SEPP Resilience and Hazards 2021**

-  Coastal Wetlands
-  Coastal Wetlands Proximity Area
-  Littoral Rainforest
-  Littoral Rainforest Proximity Area

0 500 1,000 m



**NARLA**  
environmental

Date: 04/09/2025  
Coordinate System: GDA94 MGA Zone 56  
Image Source: Nearmap Australia Pty Ltd (February 2025)



Figure 9. Areas occurring within the 1,500m buffer in which the State Environmental Planning Policy (Resilience and Hazards) 2021 applies.



Figure 10. The extent of native vegetation within the 1,500m buffer.

## 3. Native Vegetation

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### 3.1 Dominant Plant Community Type (PCT) Identified within the Subject Land

#### 3.1.1 Historically Mapped Vegetation

The vegetation adjacent to the Subject Land is mapped by the NSW State Vegetation Type Map (DPE 2022) as containing the following vegetation communities (**Figure 11**):

- Sydney Coastal Lilly-Pilly Palm Gallery Rainforest
- Central Coast Escarpment Moist Forest

#### 3.1.2 Plant Community Type Selection Process

Plant Community Type selection for the vegetation community occurring on the Subject Land was undertaken using information and databases provided in the BioNet Vegetation Classification System (NDCCEEW 2025e). The following selection criteria were used in the PCT Filter Tool to develop the PCT shortlist:

- IBRA Bioregion: Sydney Basin
- IBRA Subregion: Pittwater
- Dominant Species: *Angophora floribunda*, *Banksia integrifolia*, *Banksia spinulosa*, *Eucalyptus tereticornis*, *Eucalyptus fibrosa*, *Livistona australis*, *Melaleuca quinquenervia* and *Corymbia maculata*.

This process delivered a selection of one (1) PCTs that occur within the Pittwater IBRA Subregion (and Sydney Basin Bioregion) that had seven (7) of eight (8) dominant species observed within the Subject Land (i.e., the highest potential of occurring within the Subject Land). It was found that the Subject Land was located in the right distribution and contained the appropriate landscape attributes for two (2) candidate PCT. The steps taken to justify the presence/absence of the candidate PCTs within the Subject Land are detailed in **Table 3**.

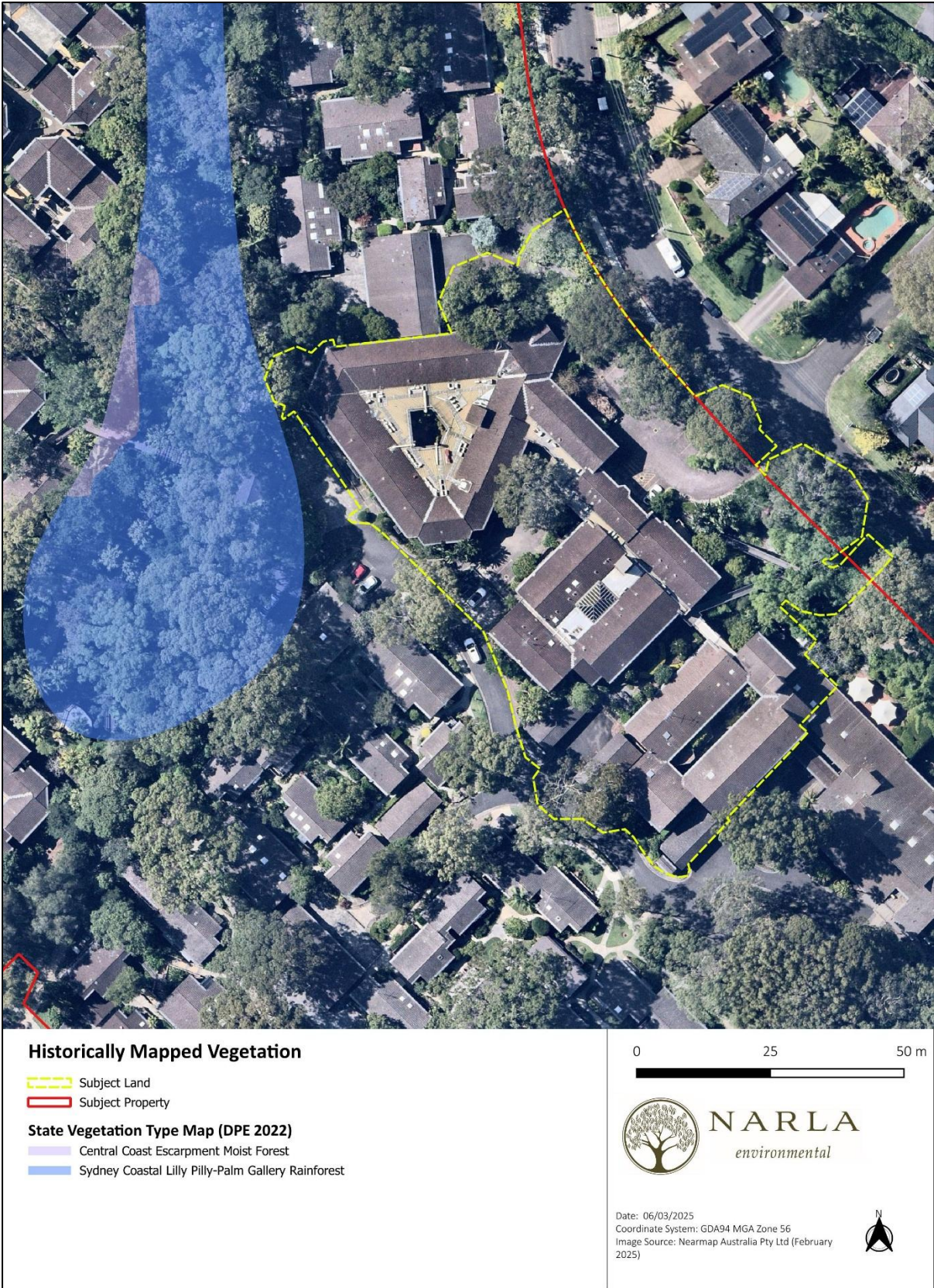


Figure 11. Historically mapped vegetation within and surrounding the Subject Land.

**Table 3. Output from the PCT Filter Tool (NDCCEEW 2025e) and subsequent shortlisting of dominant PCTs. Green shading indicates the selected best fit dominant PCT.**

Plant Community Type (PCT)	Subject Land within known geographic distribution/ landscape position	No. of Floristic Matches
3234: Hunter Coast Lowland Spotted Gum Moist Forest	Yes. This community occurs on sheltered Permo-Triassic sandstone escarpments and hills in coastal lowlands, primarily between Pittwater and the Karuah River. It is found at low elevations, with a distribution extending from the Central Coast to Lake Macquarie and north to Newcastle, with northern outliers on Nerong Volcanic substrates. The topography includes sheltered escarpments and hills, transitioning to drier communities on exposed aspects. The Subject Land is located within the correct elevation range, geographic distribution and landscape position for the PCT.	7/8
3250: Northern Foothills Blackbutt Grassy Forest	No. This community occurs extensively on the coast, coastal ranges, and foothills between Grafton and Gosford, with outliers near Woodburn and Wollongong. It is found at low to mid-elevations (10-370 metres above sea level) on clay-rich sedimentary or meta-sedimentary substrates, occasionally higher-quartz sediments. The topography includes ridge to mid-slope sites, with transitions to more mesic communities in sheltered or fertile areas. The Subject Land is not located within the correct geographic distribution for the PCT.	7/8
3437: Hunter Coast Lowland Spotted Gum Dry Forest	Yes. This community is found on exposed low elevation coastal hills and rises, primarily on Permo-Triassic sediments, with outliers on Nerong Volcanics and Carboniferous sandstone. It occurs at elevations below 80 metres above sea level, typically in coastal landscapes between Pittwater and Seal Rocks. The topography is characterized by exposed aspects, with transitions to other communities in more sheltered areas or at higher elevations. The Subject Land is located within the correct elevation range, geographic distribution and landscape position for the PCT.	7/8
3581: Hunter Coast Foothills Apple Forest	No. This community is mainly found on enriched sedimentary hills and rises on coastal plains between Gosford and Wallis Lake. It occurs on Narrabeen sandstone, Permian and Carboniferous sandstones, and Nerong Volcanics, typically below 160 metres above sea level, though it can reach over 350 metres on higher peaks. The topography includes coastal plains and foothills, with transitions to other communities based on soil fertility and elevation. The Subject Land is not located within the correct geographic distribution for the PCT.	7/8

Table 4. PCT selection criteria. Green indicates the selected PCT.

Candidate PCT	PCT Description (NDCCEE 2025e)	Justification
3234: Hunter Coast Lowland Spotted Gum Moist Forest	<p>A tall to very tall sclerophyll open forest with a mid-stratum of mesophyll shrubs and a ground layer of grasses, graminoids and small climbers, found on sheltered Permo-Triassic sandstone escarpments and hills along the coastal lowlands between Pittwater and the Karuah River, central and lower north coast. The tree canopy commonly includes a high cover of <i>Corymbia maculata</i>, occasionally with <i>Eucalyptus paniculata</i> and <i>Eucalyptus umbra</i> or another related species from the mahogany group of eucalypts. One or all of these species may be replaced or accompanied by a range of other species, occasionally including <i>Angophora costata</i>, rarely <i>Syncarpia glomulifera</i> or <i>Corymbia gummifera</i>. The mid-stratum is layered with a sparse cover of smaller trees that commonly includes <i>Allocasuarina torulosa</i>, eucalypt species, <i>Pittosporum undulatum</i> or <i>Glochidion ferdinandi</i>, and rarely <i>Allocasuarina littoralis</i>. Occasionally a sparse cover of <i>Livistona australis</i> may be present, though more frequently it is recorded in the lower shrub layer. Other members of the lower shrub layer very frequently include <i>Breynia oblongifolia</i>, commonly with <i>Notelaea longifolia</i>, and occasionally <i>Pittosporum undulatum</i>, <i>Pittosporum revolutum</i> and <i>Myrsine variabilis</i>. The ground layer has a high diversity of mesic climbers with <i>Eustrephus latifolius</i> and <i>Pandorea pandorana</i> subsp. <i>pandorana</i> almost always present. Grasses very frequently include <i>Imperata cylindrica</i> and <i>Entolasia stricta</i> and occasionally <i>Oplismenus imbecillis</i>, while the fern <i>Pteridium esculentum</i> is very frequent. The graminoids <i>Dianella caerulea</i> and <i>Lomandra longifolia</i> are almost always present. This PCT is common on low-lying Narrabeen sandstone escarpments and hills between Pittwater and the lower Central Coast between Wagstaff, Bouddi and Wamberal. From there, its distribution northwards is interrupted until Lake Macquarie, where it is more commonly associated with Permian sediments in similar low-lying coastal landscapes north to Newcastle. Northern outliers occur on either side of the Karuah River at Nelson Bay on Nerong Volcanic substrates. This community grades into dry shrub grass forests, PCT 3437 on adjoining exposed aspects in the coastal low elevation landscapes, and is replaced by PCT 3230 on coarser Narrabeen sandstone soils or in lower rainfall zones.</p>	<p>Narla has chosen this PCT as the ‘best fit’ as the Subject Land includes <i>Corymbia maculata</i> which is a dominant canopy species for the PCT. Additionally, <i>Syncarpia glomulifera</i> was also present which is mentioned as an occasional canopy species. The Subject Land also includes <i>Pittosporum undulatum</i>, <i>Oplismenus aemulus</i>, and <i>Parsonsia straminea</i> which are also associated with the PCT.</p> <p>It is acknowledged that this Vegetation Zone within this Subject Land is highly altered, containing locally occurring native canopy species that have most likely been planted as part of previous landscaping efforts within the Subject Property. However, owing to the species being locally occurring they are required to be assigned to a PCT. Narla have therefore assigned this PCT to this Vegetation Zone within the Subject Land as it most accurately describes the geology, landscape features and canopy species coverage associated with the vegetation within this zone of the Subject Land and was therefore considered to be the “Best Fit”.</p>

Candidate PCT	PCT Description (NDCCEEW 2025e)	Justification
3437: Hunter Coast Lowland Spotted Gum Dry Forest	<p>A mid-high to tall, occasionally very tall, sclerophyll open forest with a sparse dry shrub layer and grassy ground layer on exposed low elevation coastal hills and rises between Pittwater and Seal Rocks on the Lower North and Hunter coasts. The tree canopy almost always includes a high cover of <i>Corymbia maculata</i> very frequently with species from the ironbark and mahogany eucalypt groups of which <i>Eucalyptus paniculata</i> and <i>Eucalyptus umbra</i> are most frequent. Other common however less abundant members of the canopy include <i>Eucalyptus punctata</i> or <i>Angophora costata</i>. The mid-stratum is typically sparse however includes a taller layer of small trees, commonly <i>Allocasuarina littoralis</i> or <i>Allocasuarina torulosa</i>. Lower growing dry shrubs commonly include <i>Dodonaea triquetra</i>, <i>Persoonia linearis</i>, <i>Pultenaea villosa</i> or <i>Acacia longifolia</i>. The ground layer is grassy, almost always including <i>Entolasia stricta</i> and <i>Themeda triandra</i>, commonly with <i>Imperata cylindrica</i>. The grass like appearance is enhanced by the high frequency of graminoid species such as <i>Dianella caerulea</i> and clumps of <i>Lomandra longifolia</i>. Small climbers are also very frequent including <i>Eustrephus latifolius</i> and <i>Pandorea pandorana</i>. This PCT is strongly associated with elevations below 80 metres asl on Permo-Triassic sediments of the central coast, with outliers on the Nerong Volcanics at Port Stephens and Carboniferous sandstone at Blueys Beach, Smiths Lake. With increased shelter, this community grades into PCT 3234, and as distance from the coast and elevation increases, it grades into drier shrub grass <i>Corymbia maculata</i> forest PCT 3433.</p>	<p>Narla has not chosen this PCT as best-fit for the vegetation within the Subject Land. While <i>Corymbia maculata</i> is present, the site lacks <i>Eucalyptus paniculata</i> and <i>Eucalyptus umbra</i>, which are key canopy species for the PCT. The site does not include <i>Allocasuarina littoralis</i> or <i>Allocasuarina torulosa</i>, which are common in the mid-stratum of PCT 3437.</p>

### 3.1.3 Final PCT and Vegetation Zone Selection

Field surveys conducted by Narla confirmed that one (1) PCT was identified within the Subject Land, along with areas of exotic vegetation:

- PCT 3234: Hunter Coast Lowland Spotted Gum Moist Forest

This PCT was then assigned to one (1) native vegetation zone within the Subject Land:


- Zone 1: PCT 3234 (Moderate)

The other vegetation within the Subject Land that did not conform to a locally occurring PCT due its exotic nature and will hereafter be referred to as:

- Exotic-Dominated Vegetation.

These vegetation zones are detailed in **Table 5** and **Table 6** and displayed in **Figure 12**.

**Table 5. PCT 3234 identified within the Subject Land.**

PCT 3234: Hunter Coast Lowland Spotted Gum Moist Forest	
	
<b>Vegetation Class</b>	Northern Hinterland Wet Sclerophyll Forests
<b>Total Area Within the Subject Land</b>	0.16ha
<b>Vegetation Zone</b>	Zone 1: PCT 3234 (Moderate)
<b>Field survey effort</b>	One (1) 20m x 50m VIS plot was established. The BAM plot was situated in an area within the Subject Property that was determined to be indicative of the vegetation community and condition class of the Subject Land ( <b>Figure 12</b> ).

PCT 3234: Hunter Coast Lowland Spotted Gum Moist Forest	
<b>Description of vegetation</b>	The vegetation within this zone is characterised by a native canopy above a mixed native and exotic midstory and ground layer in the form of garden beds. The canopy consists of wide variety of trees, including <i>Angophora floribunda</i> , <i>Brachychiton acerifolius</i> , <i>Corymbia maculata</i> , <i>Eucalyptus fibrosa</i> , <i>Eucalyptus grandis</i> , <i>Eucalyptus microcorys</i> , <i>Eucalyptus punctata</i> , <i>Eucalyptus saligna</i> , <i>Eucalyptus tereticornis</i> , <i>Grevillea robusta</i> , <i>Melaleuca quinquenervia</i> and <i>Syncarpia glomulifera</i> . The midstorey comprises sporadic native species including <i>Banksia integrifolia</i> , <i>Banksia spinulosa</i> , <i>Callistemon salignus</i> , <i>Cyathea australis</i> , <i>Elaeocarpus reticulatus</i> , <i>Leptospermum petersonii</i> , <i>Livistona australis</i> and <i>Pittosporum undulatum</i> . The ground layer contains a mix of native and exotic species. Native groundcovers include incidental occurrences of <i>Adiantum aethiopicum</i> , <i>Adiantum hispidulum</i> , <i>Centella asiatica</i> , <i>Commelina cyanea</i> , <i>Crassula ovata</i> , <i>Dendrobium speciosum</i> , <i>Dichondra repens</i> , <i>Oplismenus aemulus</i> , <i>Parsonsia straminea</i> and <i>Viola banksii</i> . Exotic species in the ground cover include <i>Agapanthus</i> spp., <i>Alpinia</i> spp., <i>Begonia semperflorens</i> , <i>Bidens pilosa</i> , <i>Bromelia</i> spp., <i>Chlorophytum comosum</i> , <i>Clivia</i> spp., <i>Ehrharta erecta</i> , <i>Monstera deliciosa</i> , <i>Sida rhombifolia</i> , <i>Solanum nigrum</i> , <i>Sonchus oleraceus</i> , <i>Spathiphyllum</i> spp. and <i>Tulbaghia violacea</i> .
<b>Structure of vegetation</b>	Native canopy cover was moderate within the VIS plot, with native trees totalling 35% cover. Native shrub coverage was moderate at 15.5% and native ground cover was very low at 0% grasses, 0.2% forbs and 0% ferns and 5% other due to the presence of <i>Livistona australis</i> . High Threat Exotics were at a low coverage within the plot at 0%. A moderate coverage of leaf litter (44%) was present. The VIS plot contained tree stems recorded in three (3) DBH classes. No (0) large trees (+80cm DBH) were recorded. No hollow bearing trees were recorded. No fallen logs were recorded.
<b>BC Act 2016 Status</b>	This vegetation conforms to the BC Act listed EEC Pittwater and Wagstaffe Spotted Gum Forest in the Sydney Basin Bioregion (see <b>Section 3.2.1</b> )
<b>EPBC Act 1999 Status</b>	Not Listed
<b>Scientific Reference from VIS (NDCCEEW 2025c)</b>	Connolly, D., Binns, D., Turner, K., Hager, T., Lyons, M., Magarey, E. (in prep.) A revised classification of Plant Community Types for eastern New South Wales. NSW DPIE, Parramatta;

Table 6. Exotic-Dominated Vegetation identified within the Subject Land

Exotic-Dominated Vegetation	
	
Total area within the Subject Land (approximate)	0.14ha
Field Survey Effort	No VIS plots were established within this zone owing to its exotic nature.
Description of vegetation within the Subject Land	The vegetation comprises a series of garden beds dominated by a diverse assemblage of horticultural species, including <i>Acer palmatum</i> , <i>Alpinia</i> spp., <i>Agapanthus</i> spp., <i>Camellia sasanqua</i> , <i>Crassula ovata</i> , <i>Duranta erecta</i> , <i>Eriobotrya japonica</i> , <i>Grevillea</i> cv. 'Robyn Gordon', <i>Jacaranda mimosifolia</i> , <i>Lagerstroemia indica</i> , <i>Magnolia grandiflora</i> , <i>Monstera deliciosa</i> , <i>Murraya paniculata</i> , <i>Nandina domestica</i> , and <i>Tulbaghia violacea</i> . The vegetation is maintained in a highly modified state, consistent with an intensively managed garden setting.
Justification of vegetation assignment	The vegetation within this zone consisted of environmental weeds and landscaped exotic species. The vegetation within the does not conform to a locally occurring PCT and was therefore classified as 'Exotic-Dominated Vegetation'.
Associated TEC	None.



Figure 12. Narla field-validated vegetation mapping and location of BAM VIS plot within the Subject Property.

## 3.2 Threatened Ecological Communities

### 3.2.1 Biodiversity Conservation Act 2016 - Pittwater and Wagstaffe Spotted Gum Forest in the Sydney Basin Bioregion

The Hunter Coast Lowland Spotted Gum Moist Forest in Vegetation Zone 1 is associated with the BC Act listed Endangered Ecological Community (EEC), known as the Pittwater and Wagstaffe Spotted Gum Forest in the Sydney Basin Bioregion (PWSGF). Vegetation Zone 1 is situated on Narrabeen series geology within the Northern Beaches Local Government Area (LGA), formerly known as Pittwater.

The vegetation within the subject land includes several canopy species identified in the Final Determination for PWSGF, such as *Angophora floribunda*, *Corymbia maculata*, *Livistona australis*, *Pittosporum undulatum*, and *Pteridium esculentum*. Based on the presence of these species and the ecological characteristics of the area, Vegetation Zone 1 aligns with the description of the BC Act listed EEC, PWSGF (**Figure 12**).

## 3.3 Assessing Patch Size

A patch is defined by the BAM (DPIE 2020a) as an area of native vegetation that occurs on the Subject Land and includes native vegetation that has a gap of less than 100m from the next area of native vegetation (or  $\leq 30$ m for non-woody ecosystems). A patch may extend onto adjoining land.

For each vegetation zone, the assessor must determine the patch size in hectares and assign it to one of the following classes:

- <5ha
- 5–<25ha
- 25–<100ha
- $\geq 100$ ha.

The patch size class is used to assess habitat suitability on the Subject Land for threatened species. The assessor may assign more than one patch size class to the vegetation zone if both of the following apply:

- A vegetation zone comprises two or more discontinuous areas of native vegetation, and
- The areas of discontinuous native vegetation have more than one patch size class.

As areas outside of the Subject Property were not assessed as part of the scope of this assessment, the vegetation zones identified within the Subject Land were assigned to the following category to allow for aerial mapping of patch size within the broader area (**Table 7**; **Figure 13**)

- Woody Ecosystems:
  - Zone 1: PCT 3234 – Moderate Condition.

Owing to the exotic nature of the Exotic Dominated Vegetation, it is not required to be assigned a patch size under the BAM.

**Table 7. Patch size classes that each PCT and associated vegetation zone fall into.**

Plant Community Type	Vegetation Zone	Patch Size Class
PCT 3234	Zone 1	>100ha



Figure 13. Patch size within the 1500m buffer for each vegetation zone identified within the Subject Land.

### 3.4 Vegetation Integrity Survey (VIS) Plots

One (1) BAM VIS Plot was undertaken to determine the integrity score of the vegetation within the Subject Land. The plot was located in vegetation that is likely to be indicative of the vegetation community and condition class of the Subject.

Plot data gathered for each attribute used to assess the function of the Subject Land vegetation is detailed in **Appendix B**. Vegetation Integrity (VI) scores represented by existing vegetation within each vegetation zone is detailed in **Table 8**.

#### 3.4.1 Determining future vegetation integrity scores

Most projects will result in complete clearing of vegetation and threatened species habitat within the development footprint. In this scenario, the assessor must assess the proposed future value of each of the VI attributes as zero in the BAMC. However, in circumstances where partial clearing of vegetation is proposed and remaining vegetation will be maintained, the assessor may determine that the future value of the relevant VI attributes are greater than zero (DPIE 2020a).

The vegetation within this zone has been assessed as complete removal to facilitate the proposed development. Consequently, the vegetation within the Subject Land has been assigned to the following management zones (**Figure 14**):

- Management Zone 1: PCT 3234 (Moderate) Complete Removal

The attributes influencing future vegetation scores within this management zone are detailed in **Table 9**.

Owing to the exotic nature of the remaining vegetation within the Subject Land, it not been assigned to a management zone and will not require further assessment.

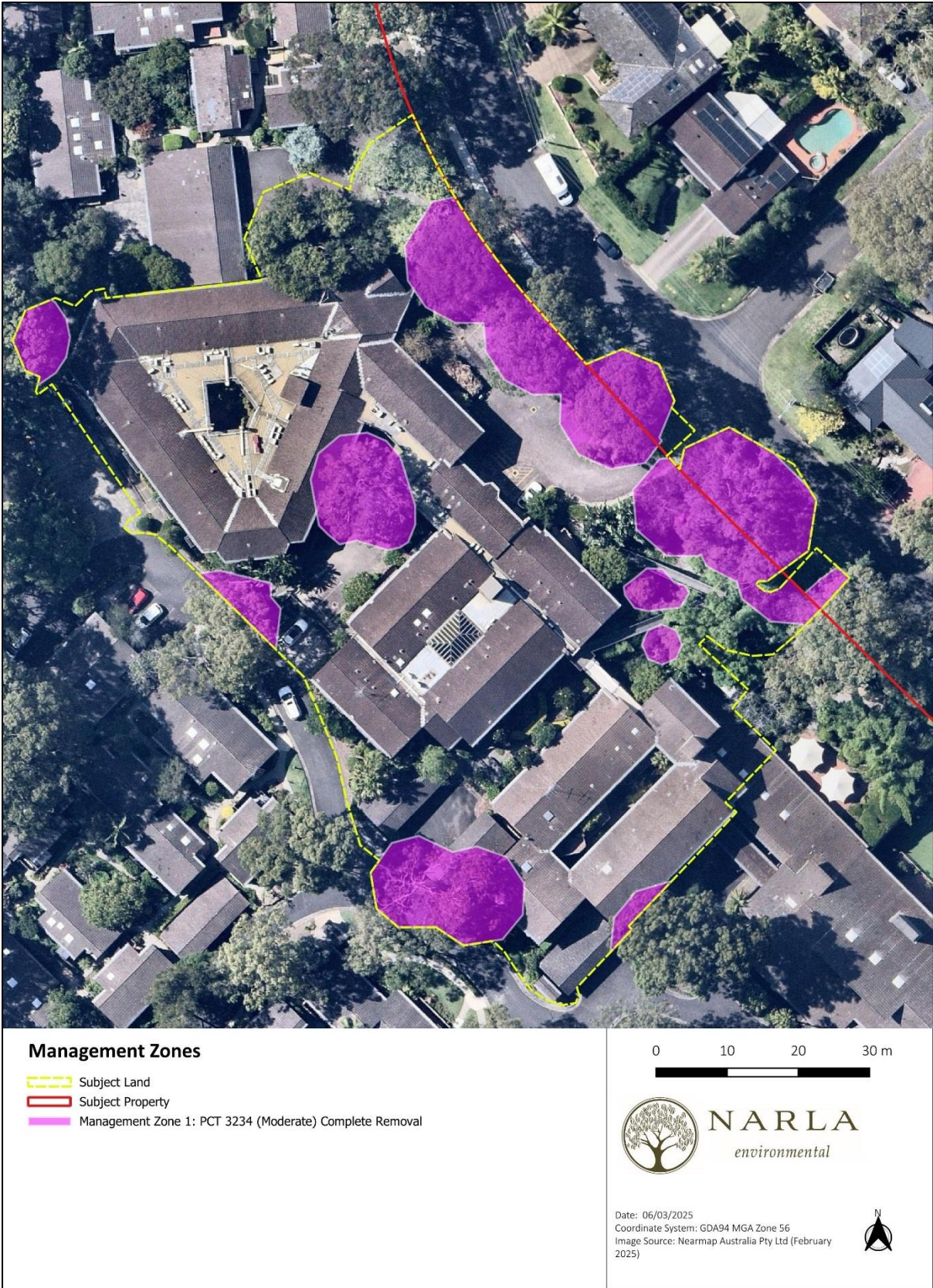


Figure 14. Management zones within the Subject Land.

**Table 8. Vegetation integrity scores for the identified zone.**

PCT 3234: Sydney Coastal Enriched Sandstone Forest											
Vegetation Zone	Management Zone	Area (ha)	Survey Effort	Composition Condition Score	Structure Condition Score	Function Condition Score	VI Score	Future VI Score	Change in VI Score	Total VI Loss	Hollow bearing trees
Zone 1: PCT 3234 (Moderate)	Management Zone 1: PCT 3234 (Moderate) Complete Removal	0.16ha	1 x 1000m2 (20m x 50m) VIS Plot	13.1	45.9	24.8	24.6	0	-24.6	24.6	absent

**Table 9. Management zone within the Subject Land and relevant vegetation attributes (composition, structure and function) affecting future VI scores.**

Vegetation Zone	Management Zone	Changes in Current Vegetation Attributes	Vegetation Attributes Not Changed	Future Vegetation Scores and Justification
Zone 1: PCT 3234 (Moderate)	Management Zone 1: PCT 3234 (Moderate) Complete Removal	All vegetation within the Subject Land has been assessed and lost.	N/A	<ul style="list-style-type: none"> <li>All vegetation within the Subject Land has been assessed as lost.</li> <li>Future VI Score is 0.</li> </ul>

## 4. Threatened Species

### 4.1 Candidate Ecosystem Credit Species

Ecosystem credit species associated with the Subject Land are listed below in **Table 10**. No predicted by the BAM calculator as potential ecosystem credits were excluded from the assessment due to habitat constraints.

**Table 10. Candidate ecosystem credits predicted to occur within the Subject Land.**

Scientific Name	BC Act Status	Sensitivity to gain class	Excluded from Assessment	Reason for Exclusion from Assessment
<i>Anthochaera phrygia</i> Regent Honeyeater (Foraging)	Critically Endangered	High	No	-
<i>Artamus cyanopterus cyanopterus</i> Dusky Woodswallow	Vulnerable	Moderate	No	-
<i>Callocephalon fimbriatum</i> Gang-gang Cockatoo (Foraging)	Vulnerable	Moderate	No	-
<i>Calyptorhynchus lathami lathami</i> South-eastern Glossy Black-Cockatoo (Foraging)	Vulnerable	High	No	-
<i>Climacteris picumnus victoriae</i> Brown Treecreeper (eastern subspecies)	Vulnerable	High	No	-
<i>Daphoenositta chrysoptera</i> Varied Sittella	Vulnerable	Moderate	No	-
<i>Dasyurus maculatus</i> Spotted-tailed Quoll	Vulnerable	High	No	-
<i>Falsistrellus tasmaniensis</i> Eastern False Pipistrelle	Vulnerable	High	No	-
<i>Glossopsitta pusilla</i> Little Lorikeet	Vulnerable	High	No	-
<i>Haliaeetus leucogaster</i> White-bellied Sea-Eagle (Foraging)	Vulnerable	High	No	-
<i>Hieraaetus morphnoides</i> Little Eagle (Foraging)	Vulnerable	Moderate	No	-
<i>Hirundapus caudacutus</i> White-throated Needletail	Vulnerable	High	No	-
<i>Ixobrychus flavicollis</i> Black Bittern	Vulnerable	Moderate	No	-
<i>Lathamus discolor</i> Swift Parrot (Foraging)	Endangered	Moderate	No	-
<i>Lophoictinia isura</i> Square-tailed Kite (Foraging)	Vulnerable	Moderate	No	-
<i>Melithreptus gularis gularis</i> Black-chinned Honeyeater (eastern subspecies)	Vulnerable	Moderate	No	-

Scientific Name	BC Act Status	Sensitivity to gain class	Excluded from Assessment	Reason for Exclusion from Assessment
<i>Micronomus norfolkensis</i> Eastern Coastal Free-tailed Bat	Vulnerable	High	No	-
<i>Miniopterus australis</i> Little Bent-winged Bat (Foraging)	Vulnerable	High	No	-
<i>Miniopterus orianae oceanensis</i> Large Bent-winged bat (Foraging)	Vulnerable	High	No	-
<i>Pandion cristatus</i> Eastern Osprey (Foraging)	Vulnerable	Moderate	No	-
<i>Petaurus australis</i> Yellow-bellied Glider	Vulnerable	High	No	-
<i>Petroica boodang</i> Scarlet Robin	Vulnerable	Moderate	No	-
<i>Petroica phoenicea</i> Flame Robin	Vulnerable	Moderate	No	-
<i>Phoniscus papuensis</i> Golden-tipped Bat	Vulnerable	High	No	-
<i>Pseudomys novaehollandiae</i> New Holland Mouse	Vulnerable (EPBC Only)	High	No	-
<i>Pteropus poliocephalus</i> Grey-headed Flying-fox (Foraging)	Vulnerable	High	No	-
<i>Ptilinopus regina</i> Rose-crowned Fruit-Dove	Vulnerable	Moderate	No	-
<i>Ptilinopus superbus</i> Superb Fruit-Dove	Vulnerable	Moderate	No	-
<i>Saccolaimus flaviventris</i> Yellow-bellied Sheath-tail-bat	Vulnerable	High	No	-
<i>Scoteanax rueppellii</i> Greater Broad-nosed Bat	Vulnerable	High	No	-
<i>Varanus rosenbergi</i> Rosenberg's Goanna	Vulnerable	High	No	-

## 4.2 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 BAMC (NDCCEEW 2025f). A summary of the targeted survey effort applied to each species is provided along with the results of the survey effort, specifically whether or not the species credit needs to be offset through retiring of Biodiversity Offset Credits (**Table 11** and **Table 12**).

**Table 11. Candidate Fauna Credit Species predicted to occur within the Subject Land.**

Scientific 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, the Subject Land is not included on the map of important areas for Regent Honeyeaters.	No	N/A	Very High – 3	No
<i>Chalinolobus dwyeri</i> Large-eared Pied Bat	No. The SAll threshold for this species is potential breeding habitat and presence of breeding individuals. Potential breeding habitat is identified as land within 100m of rocky areas containing caves, overhangs, crevices, cliffs, escarpments, old mines, tunnels, culverts, or derelict concrete buildings. No such habitat was present within or surrounding the Subject Land. Therefore, the SAll threshold is not met for this species and it has been excluded from the assessment.	No	N/A	Very High – 3	No
<i>Lathamus discolor</i> Swift Parrot (Breeding)	No, the Subject Land is not included on the map of important areas for Swift Parrots.	No	N/A	Very High – 3	No
<i>Miniopterus australis</i> Little Bent-winged Bat (Breeding)	No. This species is known to breed in caves, tunnels, mines and culverts. As such habitat constraints are not present within the Subject Land, this species was excluded from the assessment.	No	N/A	Very High – 3	No
<i>Miniopterus orianae</i> oceanensis Large Bent-winged Bat (Breeding)	No. This species is known to breed in caves, tunnels, mines and culverts. As such habitat constraints are not present within the Subject Land, this species was excluded from the assessment.	No	N/A	Very High – 3	No

Scientific Name	Included in Assessment?	Targeted Survey conducted?	Present within Subject Land?	Biodiversity Risk Weighting	Biodiversity Offset Credits Required?
<i>Vespadelus troughtoni</i> Eastern Cave Bat	No. The SAI threshold for this species is potential breeding habitat and presence of breeding individuals. Potential breeding habitat is identified as land within 100m of rocky areas containing caves, overhangs, crevices, cliffs, escarpments, old mines, tunnels, culverts, or derelict concrete buildings. No such habitat was present within or surrounding the Subject Land. Therefore, the SAI threshold is not met for this species and it has been excluded from the assessment.	No	N/A	Very High – 3	No

**Table 12. Candidate Flora Credit Species predicted to occur within the Subject Land.**

Scientific Name	Included in Assessment?	Targeted Survey conducted?	Present within Subject Land?	Biodiversity Risk Weighting	Biodiversity Offset Credits Required?
<i>Rhizanthella slateri</i> Eastern Australian Underground Orchid	Yes. As potential habitat was identified within the Subject Land this species was included in the assessment.	Yes	No	Very High – 3	No
<i>Rhodamnia rubescens</i> Scrub Turpentine	Yes. Found in littoral, warm temperate and subtropical rainforest and wet sclerophyll forest usually on volcanic and sedimentary soils. As such habitat is present within the Subject Land, this species was included in the assessment.	Yes	No	Very High – 3	No
<i>Rhodomyrtus psidioides</i> Native Guava	Yes. Found in littoral, warm temperate and subtropical rainforest and wet sclerophyll forest. As such habitat is present within the Subject Land, this species was included in the assessment.	Yes	No	Very High – 3	No

### 4.3 Species Credit Habitat Surveys

Species credit habitat surveys were undertaken for any SAIL species credit species considered likely to have suitable habitat within the Subject Land (**Figure 15**). These surveys were implemented in accordance with Section 5.3 of the BAM and all relevant OEH, DPE and DCCEEW threatened species survey guidelines.

Habitat surveys were undertaken on the 19<sup>th</sup> November 2024 by experienced ecologists Brodie Miller and Luke Johnson within and surrounding the Subject Land. Weather conditions taken from the nearest weather station (Terrey Hills, station no. 066059) in the lead up and during the field survey are outlined in **Table 13**.

Pre-survey weather conditions were generally conducive for identifying threatened species and their habitats should they occur within the Subject Land. Limited rainfall and moderate temperature in the week prior to the targeted flora surveys may have provided ideal conditions for the flowering and/or emergence of the targeted flora species.

**Table 13. Weather conditions taken from the nearest weather stations (Station number 066059) in the lead up and during the field survey (BOM 2023). Survey date is in bold.**

Timing/activities	Date	Temperature		Rainfall (mm)
		Min	Max	
Lead up to the survey	12/11/2024	16.4	21.5	0
	13/11/2024	16.6	22.6	1.2
	14/11/2024	15.8	20.7	1.4
	15/11/2024	15.3	18.9	1.8
	16/11/2024	16.2	22.7	1.4
	17/11/2024	18.6	26.2	0.4
	18/11/2024	17.2	27.2	18.6
<b>Site Assessment, Habitat Survey, Threatened Flora Survey</b>	19/11/2024	15.6	20	0.4

#### 4.3.1 Fauna Species Credit Survey

A total of six (6) SAIL threatened fauna species were identified within the BAMC (NDCCEEW 2025f) as having the potential to occur within the Subject Land. Following the site assessment, it was then determined that all of the predicted species were unlikely to be present within the Subject Land due to the follow:

- The assessor determines that microhabitats required by a species are absent from the Subject Land (or specific vegetation zone) [(Section 5.2.3(2ai) of the BAM (DPIE 2020a)].

##### 4.3.1.1 Threatened Microchiropteran Bat Survey

Owing to the presence of man-made structures within the Subject Land that will require demolition to facilitate the proposed works, a targeted survey for threatened microchiropteran bat (microbats) species with potential to utilise such habitat was conducted. The following threatened microbat species, which are known to inhabit buildings, occur within the locality of the Subject Land (NDCCEEW 2025b):

- *Miniopterus orianae oceanensis* (Large Bent-winged Bat);
- *Miniopterus australis* (Little Bent-winged Bat);
- *Saccolaimus flaviventris* (Yellow-bellied Sheath Tail Bat);
- *Falsistrellus tasmaniensis* (Eastern False Pipistrelle);

- *Scoteanax rueppellii* (Greater Broad-nosed Bat); and
- *Micronomus norfolkensis* (Eastern Coastal Free-tailed Bat).

The survey was conducted during daylight hours, on the 19<sup>th</sup> November 2024 by experienced Narla Ecologists Brodie Miller and Luke Johnson. During the site assessment the Ecologists conducted a walk over of both the inside and outside of all structure which are proposed to be demolished as part of this SSDA.

The ecologists focussed searches on potential entry and exit points as well as cracks, crevices and holes that could be utilised for roosting. Each area of potential habitat was examined using an endoscope as well as a EchoMeter Touch 2 Pro to record any potential individuals for analysis.

No threatened microbats, were observed within or surrounding the structures during the site assessment. Photos from the assessment can be found in **Appendix D**.

#### 4.3.2 Flora Species Credit Survey

Three (3) SAIL threatened flora species was identified within the BAMC (NDCCEEW 2025f) as having the potential to occur within the Subject Land.

A targeted survey was undertaken for these in accordance with the ‘Surveying threatened plants and their habitats - NSW survey guide for the Biodiversity Assessment Method’ (DPE 2020a; **Table 13**). This species was not detected within the Subject Land or Subject Property.

**Table 13. Species credit flora species requiring targeted surveys.**

Candidate Fauna Species	Survey Period (BAMC)											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<i>Rhizanthella slateri</i> Eastern Australian Underground Orchid											✓	
<i>Rhodamnia rubescens</i> Scrub Turpentine											✓	
<i>Rhodomyrtus psidioides</i> Native Guava											✓	
<b>Key</b>	✓ = Time of Site Assessment						= NDCCEEW Endorsed Survey Period					

## 4.4 Species Polygons

### 4.4.1 Confirmed Present

No SAIL species were confirmed to be present within the Subject Land.

### 4.4.2 Assumed Present

No SAIL species were assumed to be present within the Subject Land.

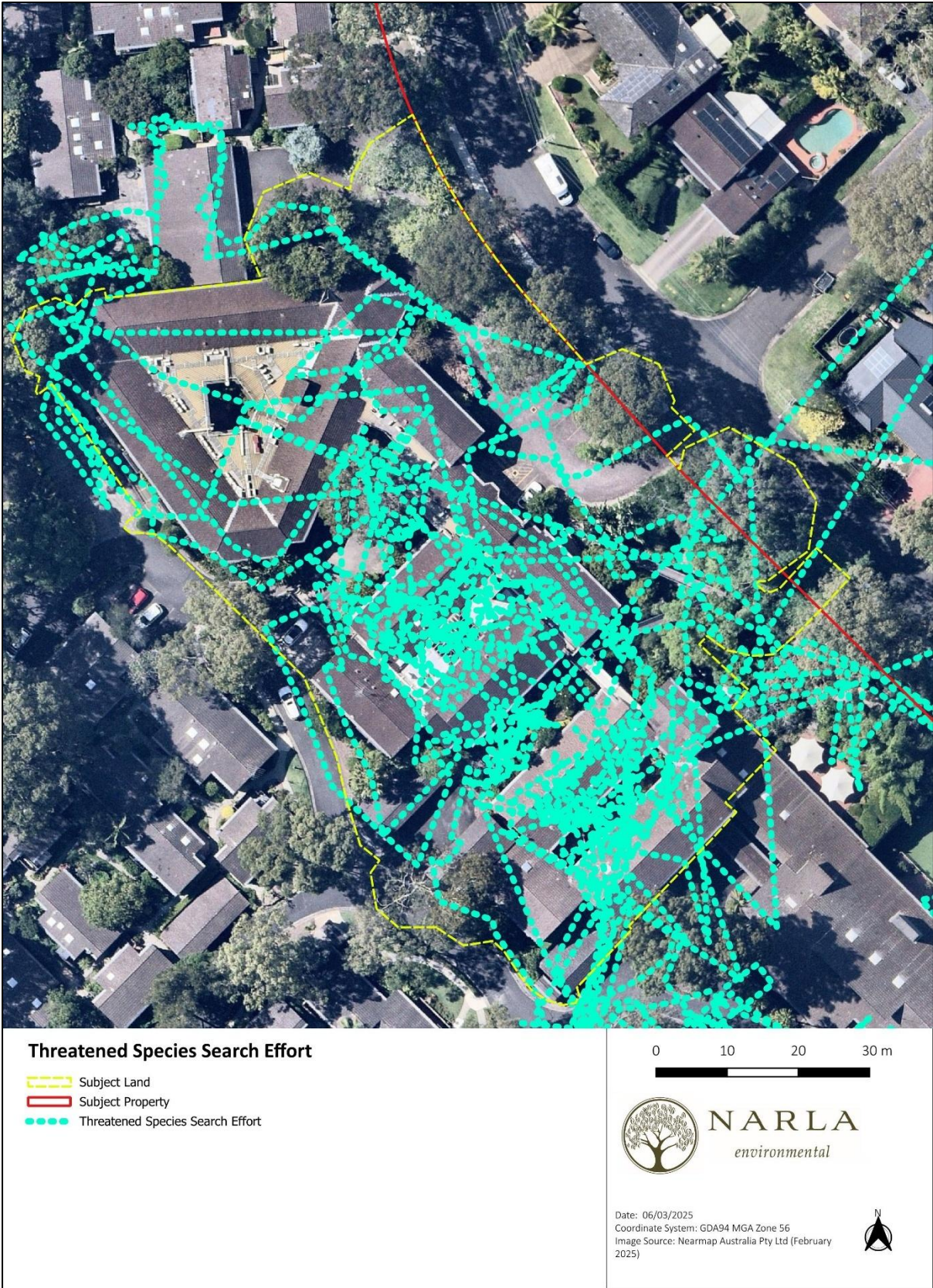


Figure 15. Targeted survey effort for SAll threatened species and their habitats.

## 5. 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 proposed development on the habitat of threatened species or ecological communities. This is discussed in **Table 14**.

**Table 14. 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
<p>Habitat of threatened entities including:</p> <ul style="list-style-type: none"> <li>▪ karst, caves, crevices, cliffs, rocks and other geological features of significance, or</li> <li>▪ human-made structures, or</li> <li>▪ non-native vegetation</li> </ul>	Yes	<p>There are no karsts, caves, crevices, cliffs and other features of geological significance on or near the Subject Land.</p> <p>The Subject Land contains human-made structure that will be demolished as part of the development. The following threatened microbat species may utilise this human-made structures for roosting and breeding:</p> <ul style="list-style-type: none"> <li>▪ <i>Falsistrellus tasmaniensis</i> (Eastern False Pipistrelle);</li> <li>▪ <i>Micronomus norfolkensis</i> (Eastern Coastal Free-tailed Bat);</li> <li>▪ <i>Saccolaimus flaviventris</i> (Yellow-bellied Sheathtail-bat); and</li> <li>▪ <i>Scoteanax rueppellii</i> (Greater Broad-nosed Bat).</li> </ul> <p>Two (2) other species may use such structures for roosting purposes, but not breeding purposes:</p> <ul style="list-style-type: none"> <li>▪ <i>Miniopterus australis</i> (Little Bent-winged Bat); and</li> <li>▪ <i>Miniopterus orianae oceanensis</i> (Large bent-winged Bat).</li> </ul> <p>A survey was undertaken for threatened microbats (<b>Section 4.3.1.1</b>) and no microbats, or evidence of microbats, were observed. However, as a precaution this prescribed impact is assessed further in <b>Section 7.2</b>.</p> <p>Non-native vegetation within the Subject Land is not expected to provide habitat for threatened species, considering it mostly constituted of manicured gardens.</p>

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
On areas connecting threatened species habitat, such as movement corridors	No	It is unlikely the proposed development will interrupt connectivity for any threatened species, owing to the areas of habitat connectivity that will continue to exist in vegetated areas surrounding the Subject Land.
That affect water quality, water bodies and hydrological processes that sustain threatened entities (including from subsidence or upsidence from underground mining)	No	No threatened species were identified within the Subject Land that are sustained by water bodies and hydrological processes. It is also not expected that the removal of vegetation within the Subject Land will impact upon any groundwater processes within the surrounding landscape.
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	Due to the highly urbanised nature of the Subject Land and locality it is highly unlikely that vehicle strikes will be an issue with the proposed development, especially considering the slow speeds required to manoeuvre the site.

## 6. Avoid, Minimise and Mitigate Impacts

### 6.1 Impact Mitigation and Minimisation Measures

This section details the measures to be implemented before, during and post construction to avoid and minimise the impacts of the project (Table 15).

**Table 15. Mitigation and management of impacts associated with the proposed development.**

Action	Outcome	Timing	Responsibility
<b>Avoid and Minimise Impact - Project Location and Design</b>	Owing to the nature of the development, complete avoidance of impacts to vegetation could not be avoided due to the need to upgrade infrastructure and the close proximity of trees to existing buildings. The vegetation to be impacted however is highly altered consisting of native vegetation within landscaped garden beds and exotic vegetation.	Pre-construction phase	Proponent
<b>Preparation of a Construction Environmental Management Plan (CEMP)</b>	A CEMP may 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 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 and nearby waterways 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 for the site.	Pre-construction phase	Proponent Construction Contractor
<b>Tree Protections</b>	In accordance with AS 4970-2009 Protection of Trees on Development Sites, a Tree Protection Zone (TPZ) will be established around all trees designated for retention. These zones will be fenced and clearly signposted as no-disturbance areas to prevent accidental damage.  If minor encroachments (<10% TPZ) occur, these must be compensated within the same TPZ area to maintain tree health.  If major encroachments (>10% TPZ or within the Structural Root Zone) occur, a detailed root investigation using non-destructive methods (e.g., air-spading) must be undertaken. Tree-sensitive construction techniques (e.g., bridging over root zones) will be applied where required.	Prior to and during vegetation clearance works, Construction phase; Post-construction phase	Proponent
<b>Erosion and Sedimentation</b>	To prevent sediment runoff and indirect biodiversity impacts, erosion and sediment control measures must be installed prior to earthworks and maintained throughout construction. These measures will comply with The Blue	Construction phase	Proponent

Action	Outcome	Timing	Responsibility
	Book (Landcom 2004, Volume 1), the NSW industry standard for soil and water management. Regular inspections will be undertaken, and sediment basins/silt fences will be installed in high-risk areas to prevent runoff into nearby waterways or adjacent native vegetation.		Construction Contractor
<b>Erection of temporary fencing</b>	To protect retained native vegetation from accidental disturbance, temporary fencing will be erected around these areas. The fencing will be: <ul style="list-style-type: none"> <li>Clearly marked and signed as a 'No-go Zone' for construction workers.</li> <li>Monitored to ensure effectiveness, with repairs undertaken as necessary.</li> <li>Installed before ground disturbance and remain in place until completion of works.</li> </ul>	Construction phase	Proponent Construction Contractor
<b>Storage and Stockpiling (Soil and Materials)</b>	Stockpiling sites will be designated outside of native vegetation zones to avoid trampling and degradation of retained habitats. Any soil or materials imported onto the site must be certified weed-free to prevent the introduction of invasive species or pathogens that could impact local biodiversity. Stockpiles will be managed to prevent erosion and sediment loss, with stabilisation measures applied where necessary.	Construction phase	Construction Contractors
<b>Assigning a Project Ecologist for vegetation clearing</b>	Prior to construction, the applicant should commission the services of a qualified and experienced Ecologist Consultant with a minimum tertiary degree in Science, Conservation, Biology, Ecology, Natural Resource Management, Environmental Science or Environmental Management. The Ecologist must be licensed with a current Department of Primary Industries Animal Research Authority permit and New South Wales Scientific License issued under the BC Act. The Ecologist will be commissioned to: Undertake an extensive pre-clearing survey, identifying potential habitat trees as well as reinspecting roof cavities of buildings to be removed for potential microbat species.	Prior to and during vegetation clearance works	Proponent Project Ecologist
<b>Landscaping</b>	Future landscaping efforts should incorporate vegetation representative of PCT 3234: Hunter Coast Lowland Spotted Gum Moist Forest. All trees proposed for removal should be replaced at a 2:1 ratio with locally sourced, native species representative of this community.	Post-construction phase	Proponent

## 7. Assessment of Impacts

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### 7.1 Direct Impacts

#### 7.1.1 Full Clearing

The proposed works will result in complete clearing to the following vegetation:

- 0.16ha of PCT 3234: Hunter Coast Lowland Spotted Gum Moist Forest which conforms to the EEC Pittwater and Wagstaffe Spotted Gum Forest in the Sydney Basin Bioregion; and
- 0.14 ha of Exotic Vegetation.

#### 7.1.2 Partial Clearing

No partial clearing will occur as a result of the proposed development.

### 7.2 Prescribed Impacts

As there is potential for the Subject Land to contain habitat for a number of threatened microbat species in the form of human-made structures (**Figure 16**) an assessment of this prescribed impact must be undertaken in accordance with Section 8.3 of the BAM (DPIE 2020a). This is discussed in **Table 16**.

Table 16. Prescribed and uncertain impacts associated with the proposed development.

Prescribed Impact	Nature, Extent and Duration	Threatened Species and Their Habitat Likely to be Impacted	Consequences of the Impacts on Threatened Entities
<p>Habitat of threatened entities:</p> <ul style="list-style-type: none"> <li>▪ human-made structures.</li> </ul>	<p>There is the potential that threatened microbat species use human-made structures (in particular, roof cavities) within the Subject Land for roosting and potentially breeding. The demolition of these structures has the potential to temporarily displace any occurring individuals. These species are highly mobile and there is ample suitable roosting/breeding habitat nearby. It is therefore likely that this prescribed impact will have a low impact of short duration</p> <p>To manage these impacts works a pre-clearing survey is to be conducted for microbats in the roof space of the building prior to demolition. If any individuals are found to be present, they are to be captured the morning of demolition works, and released at night time into surrounding bushland following demolition works.</p>	<ul style="list-style-type: none"> <li>▪ <i>Falsistrellus tasmaniensis</i> (Eastern False Pipistrelle)</li> <li>▪ <i>Micronomus norfolkensis</i> (Eastern Coastal Free-tailed Bat)</li> <li>▪ <i>Saccolaimus flaviventris</i> (Yellow-bellied Sheath-tail-bat)</li> <li>▪ <i>Scoteanax rueppellii</i> (Greater Broad-nosed Bat).</li> <li>▪ <i>Miniopterus australis</i> (Little Bent-winged Bat)</li> <li>▪ <i>Miniopterus oriana oceanensis</i> (Large bent-winged Bat)</li> </ul>	<p>While the demolition of potential roost/breeding sites may have a temporary displacement-impact to local populations of threatened microbats, these species are highly mobile and as such, any impacts would be considered minor and temporary.</p> <p>Habitat connectivity will continue to exist in the locality through streets trees and planted vegetation, which would provide alternative and potentially higher-quality roosting/breeding sites for these species.</p>

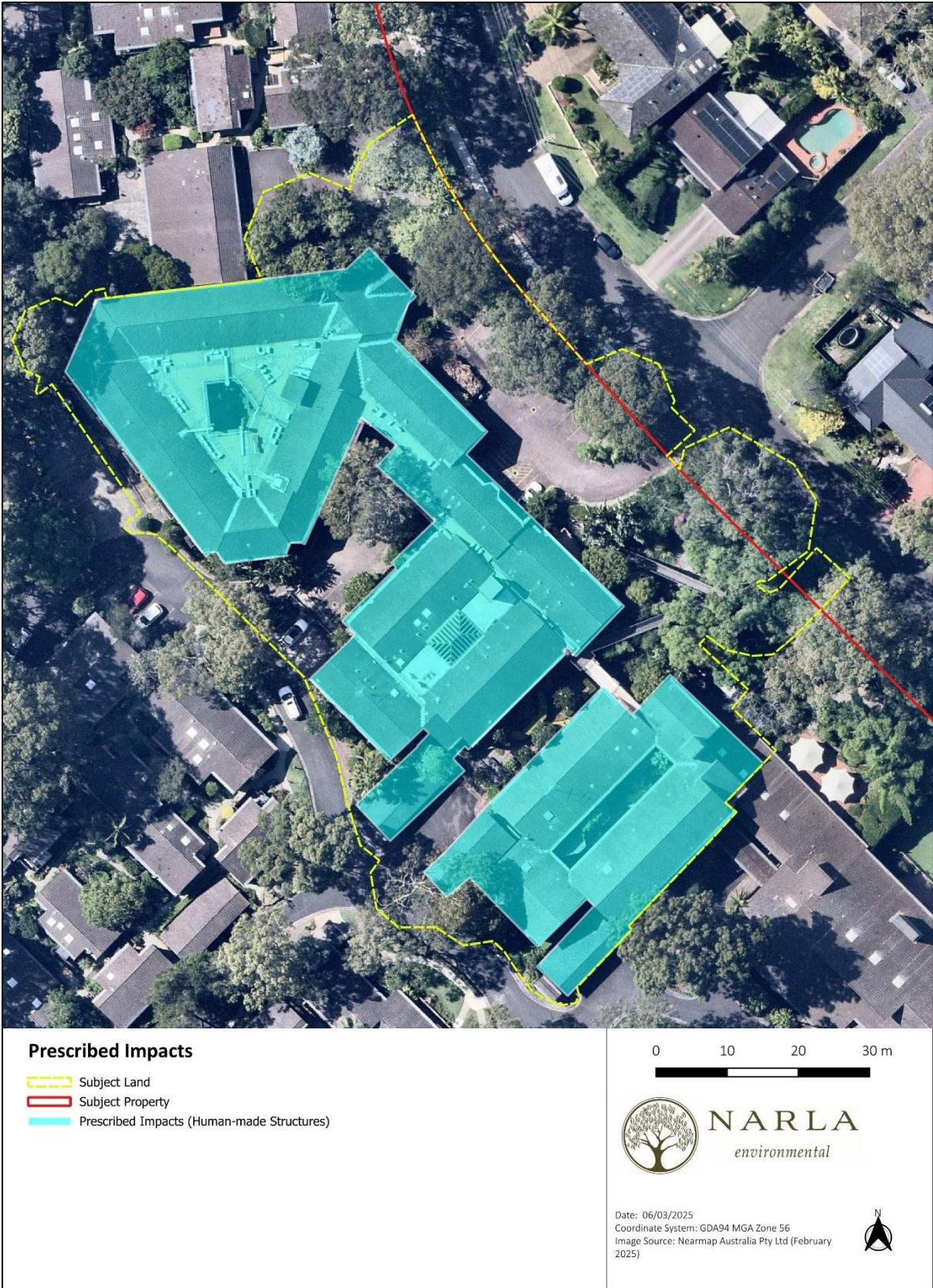


Figure 16. Prescribed impacts identified within the Subject Land.

### 7.3 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. 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 that have the potential to occur as a result of the development are outlined in **Table 17**.

**Table 17. Indirect impacts associated with the proposed development.**

Indirect Impact	Nature, Extent and Duration	TEC's/PCTs and/or Threatened Species and Their Habitat Likely to be Impacted	Consequences of the Impacts for the Bioregional Persistence of the Threatened Species, Threatened Ecological Communities and Their Habitats.
(a) inadvertent impacts on adjacent habitat or vegetation	Vegetation and habitat directly adjacent to the Subject Land may experience ongoing indirect impacts from the development. Construction activities may facilitate weed invasion, reducing habitat quality. Accidental trampling could degrade vegetation. However, given the existing disturbance and exotic species presence, significant alteration is unlikely.	One (1) TEC occurs within and adjacent the Subject Land – Pittwater and Wagstaffe Spotted Gum Forest in the Sydney Basin Bioregion. There is also the potential that threatened species occur in areas adjacent the Subject Land that may be impacted by a decrease in habitat condition and direct impacts such as trampling. One (1) other TEC (Littoral Rainforest) is mapped as occurring in close proximity to the Subject Land however this is not expected to be impacted by the proposed works.	While changes to vegetation condition, hydrology and threats of trampling may have a localised impact to threatened species, threatened ecological communities and their habitats, this is not expected to impact on their bioregional persistence.
(b) reduced viability of adjacent habitat due to edge effects	Construction may lead to increased weed infiltration due to edge effects. However, the area is already highly urbanised, limiting additional impacts. The small scale of the development is unlikely to disrupt species	One (1) TEC occurs within and adjacent the Subject Land – Pittwater and Wagstaffe Spotted Gum Forest in the Sydney Basin Bioregion. There is also the potential that threatened species occur in areas adjacent the Subject Land. The TEC and threatened species	While edge effects may have a localised impact to TECs and threatened species, this is not expected to impact on their bioregional persistence, considering the areas of habitat connectivity that continue to exist within the surrounding areas.

Indirect Impact	Nature, Extent and Duration	TEC's/PCTs and/or Threatened Species and Their Habitat Likely to be Impacted	Consequences of the Impacts for the Bioregional Persistence of the Threatened Species, Threatened Ecological Communities and Their Habitats.
	movement significantly. Impacts are expected to be localised (within a few metres).	may be impacted by edge effects leading to a reduced viability in habitat. One (1) other TEC (Littoral Rainforest) is mapped as occurring in close proximity to the Subject Land however this is not expected to be impacted by the proposed works.	
(c) reduced viability of adjacent habitat due to noise, dust or light spill	Noise levels will increase during construction and occupation, potentially affecting diurnal species roosting nearby. However, construction will occur during standard working hours, limiting impact on nocturnal species. Dust may temporarily affect adjacent vegetation but is unlikely to significantly reduce habitat viability. Light spill is expected to be minimal.	One (1) TEC occurs within and adjacent the Subject Land – Pittwater and Wagstaffe Spotted Gum Forest in the Sydney Basin Bioregion. There is also the potential that threatened species occur in areas adjacent the Subject Land. Threatened species may be impacted by an increase in noise and dust spill into adjacent habitats, although this will be primarily restricted to the construction period. One (1) other TEC (Littoral Rainforest) is mapped as occurring in close proximity to the Subject Land however this is not expected to be impacted by the proposed works.	While the construction may have a localised impact to the TEC and threatened species, this is not expected to impact on their bioregional persistence. The areas of habitat connectivity that continue to exist within the surrounding areas will allow their movement away from potentially impacted areas.
(d) transport of weeds and pathogens from the site to adjacent vegetation	Construction and ongoing use of the site may introduce weeds into adjacent habitats, but human or vehicular transport of invasive species is unlikely.	One (1) TEC occurs within and adjacent the Subject Land – Pittwater and Wagstaffe Spotted Gum Forest in the Sydney Basin Bioregion. There is also the potential that threatened species occur in areas adjacent the Subject Land. The TEC and threatened species may be impacted by weed and pathogen	While weeds and pathogens may have a localised impact to TECs and threatened species, this is not expected to impact on their bioregional persistence considering the patchy habitat connectivity within the surrounding areas.

Indirect Impact	Nature, Extent and Duration	TEC's/PCTs and/or Threatened Species and Their Habitat Likely to be Impacted	Consequences of the Impacts for the Bioregional Persistence of the Threatened Species, Threatened Ecological Communities and Their Habitats.
		<p>transportation leading to a reduced viability in habitat.</p> <p>One (1) other TEC (Littoral Rainforest) is mapped as occurring in close proximity to the Subject Land however this is not expected to be impacted by the proposed works.</p>	
(e) increased risk of starvation, exposure and loss of shade or shelter	<p>Tree removal may increase exposure to predation and extreme weather, particularly for fauna dependent on canopy cover. However, the small-scale impact and presence of surrounding habitat reduce significant risks.</p>	<p>There is the potential that threatened species occur in areas adjacent the Subject Land. These threatened species may be impacted by an increased risk of starvation, exposure and loss of shade or shelter.</p>	<p>While the proposed development may have a localised impact to threatened species, this is not expected to impact on their bioregional persistence. The areas of habitat connectivity that continue to exist within the surrounding areas will allow their movement away from potentially impacted areas.</p>
(f) loss of breeding habitats	<p>Noise and vegetation removal may reduce breeding opportunities for species dependent on intact habitat. The loss of prey species may also affect predatory species.</p>	<p>There is potential that threatened fauna species use habitat adjacent to the Subject Land for breeding. Such species may be impacted by an increase in noise, exposure, fragmentation and loss of vegetation which may impact on their breeding habitat.</p>	<p>This impact is expected to be localised and will not have an overall impact on the bioregional persistence of threatened species. The areas of habitat connectivity that continue to exist within the surrounding areas will allow their movement away from potentially impacted areas.</p>
(g) trampling of threatened flora species	<p>Increased foot and vehicle traffic during and after construction may pose a risk to adjacent vegetation. However, as most remaining vegetation is outside the Subject Property, direct trampling is unlikely.</p>	<p>There is potential that threatened flora species occur in habitat adjacent to the Subject Land.</p>	<p>Any potential impacts to threatened species adjacent to the Subject Land is expected to be localised and will not have an overall impact on the bioregional persistence of threatened species.</p>

Indirect Impact	Nature, Extent and Duration	TEC's/PCTs and/or Threatened Species and Their Habitat Likely to be Impacted	Consequences of the Impacts for the Bioregional Persistence of the Threatened Species, Threatened Ecological Communities and Their Habitats.
(h) inhibition of nitrogen fixation and increased soil salinity	Soil disturbance may temporarily alter nitrogen levels, potentially impacting adjacent vegetation. However, clearing is confined to the Subject Land, limiting broader effects.	One (1) TEC occurs within and adjacent the Subject Land – Pittwater and Wagstaffe Spotted Gum Forest in the Sydney Basin. The PCT may be impacted by weed and pathogen transportation leading to inhibition of nitrogen fixation and increased soil salinity. One (1) other TEC (Littoral Rainforest) is mapped as occurring in close proximity to the Subject Land however this is not expected to be impacted by the proposed works.	While changes to vegetation condition may have a small and localised impact on threatened species, threatened ecological communities and their habitats, this is not expected to impact on their bioregional persistence
(i) fertiliser drift	The development is unlikely to generate fertiliser drift that would impact surrounding vegetation.	N/A	N/A
(j) rubbish dumping	There is the possibility that rubbish dumping (including littering) in adjacent vegetation increases during construction and on-going. The dumping/littering of food resources may provide a food source for fauna, including threatened species. However, this may also encourage invasive species into such habitats. This impact can be mitigated by the appropriate disposal of rubbish.	There is potential that threatened fauna species use habitat adjacent to the Subject Land. Such species may be impacted by the dumping of rubbish, particularly food resources. This may result in both positive (food source) and negative impacts (increase in predators) to such species.	This impact is expected to be localised and will not have an overall impact on the bioregional persistence of threatened species.
(k) wood collection	Wood collection is not expected to occur, as adjacent vegetation is on private property.	N/A	NA

Indirect Impact	Nature, Extent and Duration	TEC's/PCTs and/or Threatened Species and Their Habitat Likely to be Impacted	Consequences of the Impacts for the Bioregional Persistence of the Threatened Species, Threatened Ecological Communities and Their Habitats.
(l) bush rock removal and disturbance	No bush rock was observed within the Subject Land, though it occurs in the general vicinity. The proposed development is not expected to disturb these features.	N/A	NA
(m) increase in predatory species populations	The presence of human settlements and waste may attract invasive predators (e.g., foxes, cats). This could increase predation pressure on native fauna.	There is potential that threatened fauna species use habitat adjacent to the Subject Land. Such species may be impacted by an increase in predatory species populations.	An increase in predatory species adjacent to the Subject Land may have widespread ramifications for any locally occurring threatened species. In particular, the patchy areas of habitat connectivity adjacent to the Subject Land will allow for the movement of predatory species across the wider landscape.
(n) increase in pest animal populations	Development may facilitate the spread of pest species (e.g., rodents, rabbits). This could lead to competition with native species.	There is potential that threatened fauna species use habitat adjacent to the Subject Land. Such species may be impacted by an increase in pest animal populations.	An increase in pest animal species adjacent to the Subject Land may have widespread ramifications for any locally occurring threatened species. In particular, the patchy areas of habitat connectivity adjacent to the Subject Land will allow for the movement of pest animal species across the wider landscape.
(o) increased risk of fire	The Subject Land is within a bushfire-prone area. However, the proposed development follows Rural Fire Service (RFS) guidelines and does not increase fire risk beyond existing conditions.	N/A	N/A

Indirect Impact	Nature, Extent and Duration	TEC's/PCTs and/or Threatened Species and Their Habitat Likely to be Impacted	Consequences of the Impacts for the Bioregional Persistence of the Threatened Species, Threatened Ecological Communities and Their Habitats.
(p) disturbance to specialist breeding and foraging habitat, e.g., beach nesting for shorebirds.	The development is not located near habitats used by species with highly specific breeding or foraging requirements (e.g., shorebirds).	N/A	N/A

## 8. Threshold for Assessing and Offsetting

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### 8.1 Impacts on Native Vegetation

The following native vegetation within the Subject Land is proposed to be impacted as a result of the proposed development:

- 0.16ha representative of PCT 3234: Hunter Coast Lowland Spotted Gum Moist Forest.

The purchase and retirement of Biodiversity Offset Credits will be required for the 0.16ha of vegetation within Zone 1: PCT 3234 (Moderate) (**Figure 17**). No offsets are required for the impacts associated with the Exotic-Dominated Vegetation owing its exotic nature.

### 8.2 Impacts on Threatened Species

No threatened species will require the purchase and retirement of Biodiversity Offset Credits.

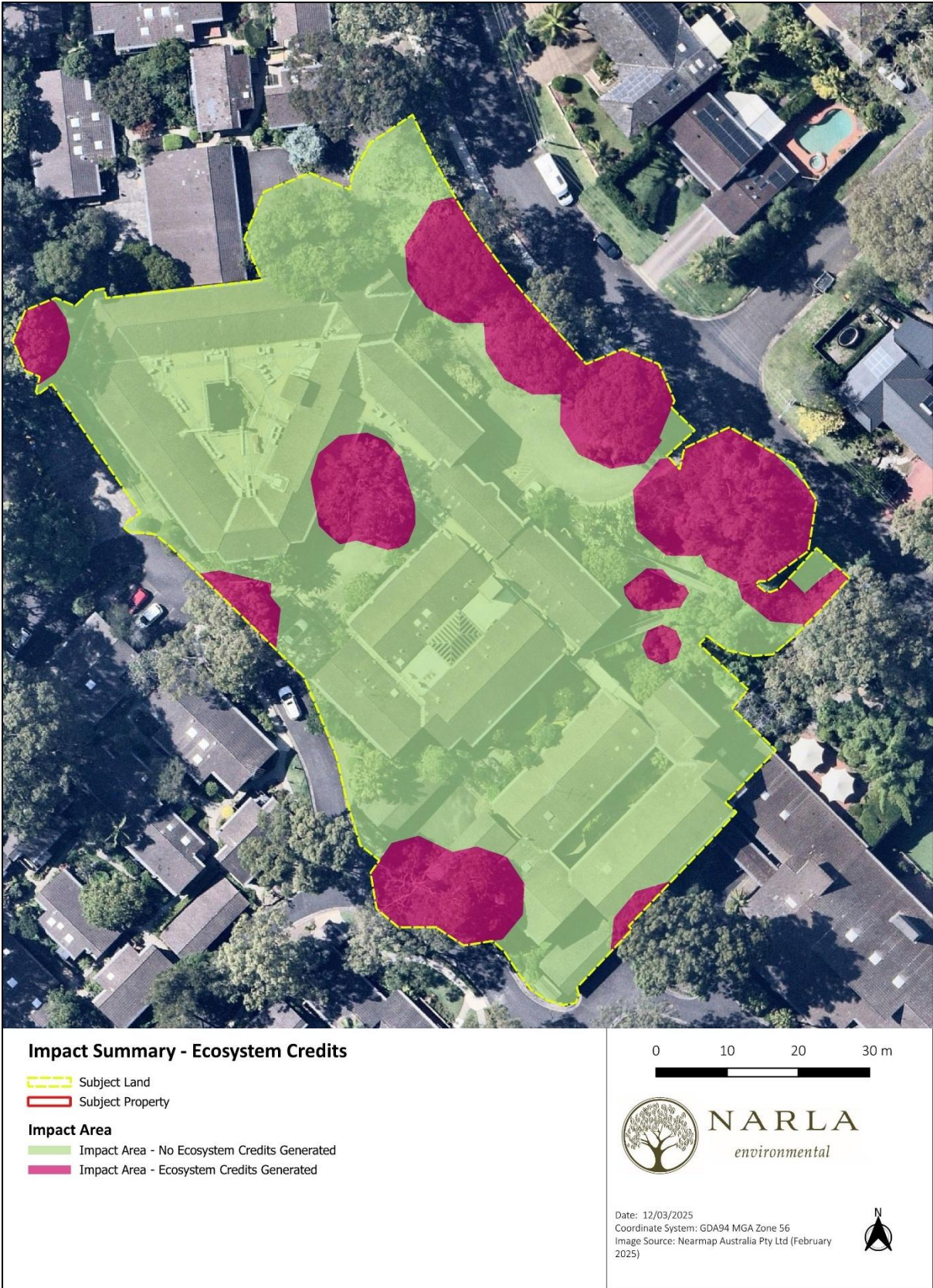


Figure 17. Impacts summary and offset requirements.

### 8.3 Serious and Irreversible Impacts (SAI's)

One (1) threatened ecological community within the Subject Land has been identified as an entity at risk of an SAI in the Threatened Biodiversity Data Collection (NDCCEEW 2025d):

- Pittwater and Wagstaffe Spotted Gum Forest in the Sydney Basin Bioregion (Principle 3)

#### 8.3.1 Pittwater and Wagstaffe Spotted Gum Forest in the Sydney Basin Bioregion

Due to the sensitivity of this TEC to any impact, a determination of whether or not the proposed impacts are serious and irreversible is to be undertaken in accordance with Section 9.1 of the BAM (DPIE 2020a) is required. This is outlined in **Table 18**.

**Table 18. Additional impact assessment provisions for ecological communities that are associated with a serious and irreversible impact.**

<b>Serious and Irreversible Impact (SAI)</b> <b>Impact assessment provisions for ecological communities:</b> <b>Pittwater and Wagstaffe Spotted Gum Forest in the Sydney Basin Bioregion (PWSGF)</b>	
<b>BC Act Status: Endangered</b>	
<b>The action and measures taken to avoid the direct and indirect impact on the potential entity for a SAI</b>	The development is designed to minimise environmental impacts by being confined within an existing development footprint, reducing disturbance to undisturbed areas. However, removal of several trees is required for construction. A 2:1 compensatory planting ratio is recommended to offset vegetation loss. The primary impacts involve the removal of exotic species, with lesser concerns for native habitat disturbance. Additional mitigation measures are outlined in <b>Table 15</b> .
<b>Current total geographic extent (ha) of the TEC in NSW</b>	The current estimated total geographic extent of PWSGF as per the State Vegetation Type Mapping in NSW is 264.88ha (DPE 2022).
<b>Estimated reduction in geographic extent of the TEC since 1970</b>	No precise data is available; however, extensive clearing since European settlement has reduced the TEC's distribution by approximately 75% (NSW Threatened Species Scientific Committee, 2013)
<b>Extent of reduction in ecological function, describing the degree of environmental degradation or disruption to biotic processes such as:</b> <ul style="list-style-type: none"> <li>• <b>Change in community structure;</b></li> <li>• <b>Change in species composition;</b></li> <li>• <b>Disruption of ecological processes;</b></li> <li>• <b>Invasion and establishment of exotic species;</b></li> <li>• <b>Degradation of habitat; and</b></li> <li>• <b>Fragmentation of habitat</b></li> </ul>	PWSGF has undergone significant ecological degradation, resulting in a substantial decline in its ecological function. Once an open-forest ecosystem, it now persists mainly as fragmented woodland or isolated remnant trees, with few large stands remaining. This disruption has altered community structure and species composition, with native species increasingly replaced by invasives and bird-dispersed species such as <i>Pittosporum undulatum</i> , <i>Glochidion ferdinandi</i> , <i>Livistona australis</i> , and <i>Elaeocarpus reticulatus</i> . Elevated nutrient levels and the absence of fire further favour these species at the expense of fire-dependent flora. Weed invasion exacerbates degradation, with many escaped garden plants smothering native vegetation, reducing reproduction and survival rates, and inhibiting seedling establishment. Inappropriate fire regimes have further disrupted ecological processes, particularly the recruitment of fire-cued species. The prolonged absence of high-intensity fires since the 1960s has led to a decline in short-lived, fire-dependent species, altering community composition and structure. Ongoing threats include urban development, bushfire mitigation, and onsite wastewater disposal, which contribute to fragmentation, reduced genetic diversity, and increased vulnerability to environmental stressors. Urban runoff, rubbish dumping, and garden refuse

<b>Serious and Irreversible Impact (SAIL)</b>	
<b>Impact assessment provisions for ecological communities: Pittwater and Wagstaffe Spotted Gum Forest in the Sydney Basin Bioregion (PWSGF)</b>	
<b>BC Act Status: Endangered</b>	
	further degrade habitat quality, compounding pressures on the ecosystem (NSW Threatened Species Scientific Committee, 2013).
<b>Evidence of restricted geographic distribution (Principle 3) based on the TEC's geographic range in NSW:</b> <ul style="list-style-type: none"> <li>• <b>Extent of occurrence (ha);</b></li> <li>• <b>Area of occupancy (ha);</b></li> <li>• <b>Number of threat-defined locations</b></li> </ul>	<p>The total extant area of this ecological community is approximately 227 hectares, with an area of occupancy of about 88 km<sup>2</sup>, calculated using 2 × 2 km grid cells as recommended by the IUCN. The extent of occurrence is estimated at approximately 104 km<sup>2</sup> based on a minimum convex polygon (NSW Threatened Species Scientific Committee, 2013).</p> <p>Clause 4.21 of the Biodiversity Conservation Regulation (BC Reg.) provides guidelines for interpreting listing criteria under the Biodiversity Conservation Act (BC Act). Subclause 4.10(f) of the BC Reg. requires an assessment of the number of threat-defined locations, which are areas occupied by the community that face serious and plausible threats. Under the IUCN Red List criteria for ecosystems, an entity is classified as Endangered if fewer than five such locations exist. Given that Pittwater and Wagstaffe Spotted Gum Forest is listed as Endangered, it meets this criterion, with fewer than five threat-defined locations identified.</p>
<b>Area of TEC to be impacted by the proposal (ha)</b>	0.16ha of vegetation confirming to PWSGF will be impacted by the proposed works.
<b>Area of TEC to be impacted by the proposal as a % of the current geographic extent in NSW (%)</b>	Current extent is estimated at 264.88 (DPE 2022). The proposed development will impact less than 0.06% of the current geographic extent in NSW.
<b>Direct/indirect impacts likely as a result of the proposal to contribute to loss of flora/fauna species characteristic of the TEC</b>	The proposed development will result in direct impacts to approximately 0.16ha of PWSGF. The PWSGF within the Subject Land was found to be in moderate condition, with a VI score of 24.6. It is possible for the vegetation surrounding the Subject Land to be indirectly impacted by the proposal, however as discussed in <b>Section 7.3</b> these potential impacts are not expected to be significant.
<b>Remaining extent of isolated areas of TEC (ha)</b>	The impacts to this TEC are restricted to the edges of a disturbed patch in a highly urbanised locality, therefore no further isolation is likely to occur as a result of the proposed development.
<b>Average distance between remaining remnants – remnant is retained (m) vs remnant is removed.</b>	As previously mentioned, the area of TEC to be removed is located on the edge of a disturbed patch and is considered small (0.06% of total extent) which is not likely to result in any further isolation of remaining areas of the TEC as it will continue, as it currently does, to exist around within the broader locality.
<b>Estimated maximum dispersal distance of species associated with the TEC (km)</b>	It is assumed that native species within the TEC have an estimated maximum dispersal distance of 100m for the exchange of genetic material, based on the definition of a “patch” of vegetation within the BAM 2020.
<b>Other information relevant to describing the impact on connectivity and fragmentation, such as the area to perimeter ratio for remaining areas of the</b>	<p>The total area to perimeter ratio of the patches PWSGF in a 1500m radius from the Subject Land is currently estimated to be 17.35m<sup>2</sup></p> <p>The total area perimeter ratio following the proposed development is estimated to be of the patches PWSGF in a 1500m radius from the Subject Land is estimated to be 18.21m<sup>2</sup></p>

<b>Serious and Irreversible Impact (SII)</b> <b>Impact assessment provisions for ecological communities:</b> <b>Pittwater and Wagstaffe Spotted Gum Forest in the Sydney Basin Bioregion (PWSGF)</b>	
<b>BC Act Status: Endangered</b>	
<b>TEC as a result of the development</b>	This represents an approximate 4.95% change in the levels of fragmentation of PWSGF in the 1500m radius.
<b>Vegetation Integrity Analysis:</b> <ul style="list-style-type: none"> <li>▪ <b>Composition Score;</b></li> <li>▪ <b>Structure Score;</b></li> <li>▪ <b>Function Score</b></li> </ul>	<ul style="list-style-type: none"> <li>▪ Composition Score: 13.1</li> <li>▪ Structure Score: 45.9</li> <li>▪ Function Score: 24.8</li> <li>▪ Total VIS: 24.6</li> </ul>

## 9. Biodiversity Offset Credit Requirements

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 calculator. If such credits are unavailable, credits would be sourced in accordance with the 'variation report' generated by the BAMC.

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. A quote will be required from the BCT to determine the costings of any credits to be offset through a payment to the BCT.

### 9.1 Offset Requirement for Ecosystem Credits

A total of two (2) ecosystem credits are required to offset the biodiversity impacts of the proposed development (Table 19).

**Table 19. Ecosystem credits required to offset the proposed development.**

PCT	BC Act Status	Vegetation Zone	Total Area (ha)	Ecosystem Credits Required
PCT 3234: Hunter Coast Lowland Spotted Gum Moist Forest	Not a TEC	Zone 1: PCT 3234 (Moderate)	0.16	2
<b>Total Ecosystem Credits</b>				<b>2</b>

### 9.2 Offset Requirement for Species Credits

No species credit species require offsetting as a result of the proposed development

## 10. Other Relevant Legislation and Planning Policies

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### 10.1 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 chapter of the SEPP applies to LGAs that are listed in Schedule 2 'Local government areas' of the SEPP. The Northern Beaches LGA is included in Schedule 2, this Chapter applies to the Subject Land. As such, the development control provisions of Part 2, Clause 11 of the SEPP apply to development applications relating to the land, as the land:

- Has an area of at least 1 hectare (including adjoining land within the same ownership); and
- Does not have an approved koala plan of management applying to the land.

Before a Consent Authority may grant consent to a development application for consent to carry out development on the land, the Consent Authority must assess whether the development is likely to have any impact on koalas or koala habitat. If the council is satisfied that the development is likely to have low or no impact on koalas or koala habitat, the Consent Authority may grant consent to the development application.

A site assessment was undertaken to determine whether the land contained core koala habitat, which is defined by the SEPP as:

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

The Subject Property contains suitable habitat (where 15% or greater of the total number of trees within any Plant Community Type are the regionally relevant species of those listed in Schedule 3 of the SEPP).

However, during the site assessment no koalas or signs of koala occupancy (scats, scratch marks) were observed within the Subject Property. A spatial search using NSW Wildlife Atlas (DPE 2025e) reveals no records within a 2.5km radius of the Subject Property that are within 18 years. The vegetation within Subject Property therefore does not meet the definition of Core Koala Habitat as defined by the SEPP.

### 10.2 State Environmental Planning Policy (Resilience and Hazards) 2021- Chapter 2 Coastal Management

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.

The Subject Land contains areas identified as 'proximity area for littoral rainforest', as such this SEPP applies.

Development consent must not be granted to development on land identified as “proximity area for coastal wetlands” or “proximity area for littoral rainforest” on the Coastal Wetlands and Littoral Rainforests Area Map unless the consent authority is satisfied that the proposed development will not significantly impact on:

- The biophysical, hydrological or ecological integrity of the adjacent coastal wetland or littoral rainforest, or
- The quantity and quality of surface and ground water flows to and from the adjacent coastal wetland or littoral rainforest.

The Subject Land is within the ‘proximity area for littoral rainforest’ as mapped under the Coastal Wetlands and Littoral Rainforests Area Map. However, the proposed development has been designed to ensure no significant impact on the biophysical, hydrological, or ecological integrity of adjacent littoral rainforests. Measures have been incorporated to protect surface and groundwater flows, ensuring no adverse effects on the quantity or quality of water flows to and from adjacent coastal ecosystems.

### 10.3 Water Management Act 2000

In accordance with Schedule 4 Section 62 – “Controlled Activities Exemptions on Certain Waterfront Land” of the Water Management Regulation 2025. The following are exempt from controlled activities:

- A controlled activity separated from certain waterfront land by a lawfully constructed—:
  - (a) a public road,
  - (b) a hard stand space (such as a car park or building),
  - (c) a levee bank, but only if the levee bank is in an urban area, was the subject of a development consent under the Environmental Planning and Assessment Act 1979 and is located within a designated high risk flood area (within the meaning of clause 45 of this regulation).

As the proposed works are located on the waterfront land and is separated by a hard stand place, comprised of a combination of a regularly utilised access road, buildings and parking areas. The proposed works area is considered to meet the requirements for an exemption for controlled activity approval under Schedule 4 Section 62 of the Water Management Regulation 2025.

### 10.4 Pittwater Local Environmental Plan (LEP) 2014

#### 10.4.1 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. In order to avoid and minimise potential impacts of the proposal on local biodiversity values, a series of mitigation and management measures have been identified, which are to be implemented as part of any Construction Environmental Management Plan (CEMP) produced for the site. To offset the removal of vegetation, a compensatory planting ratio of 2:1 is recommended. This approach ensures adequate replacement of lost vegetation.

Pittwater Development Control Plan (DCP) 2003

#### 10.4.2 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.

Although the proposed development will have an impact on PWSGF, a series of mitigation and management measures have been identified in order to avoid, minimise and offset potential impacts of the proposal on PWSGF (Table 15).

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## 12. Appendices

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Appendix A. Proposed Site Plans (Opal HealthCare 2025).

Appendix B. BAM Site- Field Survey Forma (copied directly from Electronic Data Sheet).

Appendix C. BAMC Biodiversity Credit Report.

Appendix D. Photographs taken during the microbat survey undertaken in October 2024.

Appendix A. Proposed Site Plans (Opal HealthCare 2025).



Appendix B. BAM Site- Field Survey Forma (copied directly from Electronic Data Sheet).

BAM Site – Field Survey Form					
Date:	19.11.24	Plot ID:	1	Photo #:	n/a
Zone:	56	Plot Dimensions:	50x20m	Easting:	341983
Datum:	GDA94	Middle bearing from 0m:	298	Northing:	6273450
PCT:	Zone 1: PCT 3234 (Moderate)				
Growth Form	Scientific Name		Cover	Abundance	
Tree (TG)	<i>Eucalyptus tereticornis</i>		20	5	
Tree (TG)	<i>Eucalyptus microcorys</i>		10	2	
Exotic	Protea spp.		1	10	
Shrub (SG)	<i>Grevillea juniperina</i>		5	50	
Tree (TG)	<i>Melaleuca quinquenervia</i>		5	2	
Exotic	Magnolia spp.		3	3	
Shrub (SG)	<i>Grevillea lanigera</i>		5	50	
Shrub (SG)	Callistemon spp.		5	20	
Other (OG)	<i>Livistona australis</i>		5	1	
Forb (FG)	<i>Commelina cyanea</i>		0.1	50	
Exotic	Lagerstroemia spp.		1	2	
Shrub (SG)	<i>Banksia spinulosa</i>		0.5	1	
Exotic	<i>Grevillea banksii</i> × <i>Grevillea bipinnatifida</i>		1	10	
Exotic	Dianthus chinensis		0.2	15	
Exotic	<i>Sida rhombifolia</i>		0.1	5	
Exotic	Isopogon formosus		0.1	1	
Forb (FG)	<i>Dichondra repens</i>		0.1	50	
DBH	# Tree Stems Count		# Hollow Bearing Trees		
80+cm	absent		0		
50-79cm	4		0		
30-49cm	present		0		
20-29cm	present		0		
10-19cm	absent		0		
5-9cm	absent		0		
<5cm	absent		0		
Length of Logs (m)		0			
BAM Attribute (1x1m)		Litter Cover (%)			
1 (5m)		50			
2 (15m)		30			
3 (25m)		70			
4 (35m)		20			
5 (45m)		50			
Average		44			
Growth Form		Composition Data		Structure Data	

	(Count of Native Cover)	(Sum of Cover)
Tree	3	35
Shrub	4	15.5
Grass	0	0
Forb	2	0.2
Fern	0	0
Other	1	5
High Threat Exotics	0	0



## BAM Biodiversity Credit Report (Like for like)

### Proposal Details

Assessment Id	Proposal Name	BAM data last updated *
00055762/BAAS21009/25/00055763	36 Cabbage Tree Road Bayview	05/08/2025
Assessor Name	Assessor Number	BAM Data version *
Christopher Moore	BAAS21009	Current classification (live - default) (82)
Proponent Names	Report Created	BAM Case Status
	27/10/2025	Finalised
Assessment Revision	BOS entry trigger	Assessment Type
1	BOS Threshold: Biodiversity Values Map and area clearing threshold	Part 4 Developments (Small Area)
Date Finalised	* Disclaimer: BAM data last updated may indicate either complete or partial update of the BAM calculator database. BAM calculator database may not be completely aligned with Bionet.	
27/10/2025		

### Potential Serious and Irreversible Impacts

Name of threatened ecological community	Listing status	Name of Plant Community Type/ID
Pittwater and Wagstaffe Spotted Gum Forest in the Sydney Basin Bioregion	Endangered Ecological Community	3234-Hunter Coast Lowland Spotted Gum Moist Forest
Species		
Nil		

Assessment Id	Proposal Name	Page 1 of 3
00055762/BAAS21009/25/00055763	36 Cabbage Tree Road Bayview	

## BAM Biodiversity Credit Report (Like for like)

### Additional Information for Approval

PCT Outside Ibra Added

None added

PCTs With Customized Benchmarks

PCT

No Changes

Predicted Threatened Species Not On Site

Name

No Changes

### Ecosystem Credit Summary (Number and class of biodiversity credits to be retired)

Name of Plant Community Type/ID	Name of threatened ecological community	Area of impact	HBT Cr	No HBT Cr	Total credits to be retired
3234-Hunter Coast Lowland Spotted Gum Moist Forest	Pittwater and Wagstaffe Spotted Gum Forest in the Sydney Basin Bioregion	0.2	0	2	2

Assessment Id

00055762/BAAS21009/25/00055763

Proposal Name

36 Cabbage Tree Road Bayview

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## BAM Biodiversity Credit Report (Like for like)

3234-Hunter Coast Lowland Spotted Gum Moist Forest	Like-for-like credit retirement options					
	Name of offset trading group	Trading group	Zone	HBT	Credits	IBRA region
	Pittwater and Wagstaffe Spotted Gum Forest in the Sydney Basin Bioregion This includes PCT's: 3234, 3437	-	3234_Moderate	No	2	Pittwater, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

### Species Credit Summary

No Species Credit Data

### Credit Retirement Options

Like-for-like credit retirement options

Assessment Id

00055762/BAAS21009/25/00055763

Proposal Name

36 Cabbage Tree Road Bayview

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Appendix D. Photographs taken during the microbat survey undertaken in October 2024.









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