ACS Environmental Pty Ltd

BIODIVERSITY DEVELOPMENT ASSESSMENT REPORT (BDAR) FOR PROPOSED SECONDARY DWELLING AND GARAGE DEVELOPMENT AT 154 CABARITA ROAD, AVALON BEACH, NSW, 2107

PREPARED FOR:

Grieg Witney
129 George St,
Avalon Beach, NSW, 2107

20th March 2025

ACS Environmental Pty Ltd

Flora and Fauna Surveys, Biodiversity and Ecological Impact Assessment and Bushland Plans of Management Services

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Consultants experience

The principal of 'ACS Environmental P/L' has worked in the area of biodiversity impact and bushland management plan preparation services for 20 years. He also has 20 years of experience in scientific research (ecological) and teaching in biological science at UNSW.

The consultant senior ecologist has many cumulative years' experience in ecology and biodiversity impact assessment. She has also taught biological sciences at UNSW.

CURRENCY OF BIODIVERSITY DEVELOPMENT ASSESSMENT REPORT

I Josie Drevon, certify that this Biodiversity Development Assessment Report (BDAR) has been prepared on the basis of the requirements of (and information provided) the biodiversity assessment method on the 20th March 2025, the BAM report submitted to the consent authority on XXX

The relevant application is for the proposed secondary dwelling development at 154 Cabarita Road, Avalon Beach, NSW, 2107

Signed: **Dated: 20th March 2025**

TABLE OF CONTENTS

FIGURES

TABLES

APPENDICES

GLOSSARY AND ACRONYMS

APZ	Asset Protection Zone
BAM	Biodiversity Assessment Method (2017) - supports the BC Act (2016)
BC Act	Biodiversity Conservation Act (2016) - legislation enacted in August 2017
BV Map	Biodiversity Values Map
CCPD	Crown Canopy Projective Density (DEC 2002)
CEEC	Critically Endangered Ecological Community
CRA	Conservation Risk Assessment
DCCEEW	Commonwealth Department of Climate Change, Environment, Energy and Water
DEC	State Department of Environment and Conservation
DPE	Department of Planning and Environment
DPI	Department of Primary Industries
E (threatened species status)	Endangered species
EEC	Endangered Ecological Community as listed by the BC Act and EPBC Act
EMA	Effluent Management Area
EPA Act	Environment Protection Act
EPBC Act	Environmental Protection & Biodiversity Conservation Act (1999). Enacted to protect and manage nationally and internationally (migratory) flora, fauna and ecological communities, defined in the Act as matters of national environmental significance (NES)
Habitat	areas occupied, either territorially, periodically or occasionally, by a species, population or ecological community
HTW	High Threat Weed
IPA	Inner Protection Zone
KTP	Key threatening process, a process that threatens the survival, life cycle, abundance or potential evolutionary development of native species, populations or ecological communities (Dept of Environment and Conservation 2004). KTP's are listed under the BC Act and the EPBC Act.
Migratory species	Listed under the EPBC Act and relating to international agreements to which Australia is a signatory. Includes the Japan-Australia Migratory Bird Agreement (JAMBA), China-Australia Migratory Bird Agreement (CAMBA) Republic of Korea Migratory Bird Agreement (ROKAMBA)
OEH	State Office of Environment and Heritage
OPA	Outer Protection Zone
PCT	Plant Community Type identified as such using the Bionet Vegetation Classification system (OEH 2018)

RoTAP	Rare or Threatened Australian Plants
SRZ	Structural Root Zone
Threatened species, populations or ecological communities	Entities listed by the BC Act and EPBC Act as 'Vulnerable to decreasing population growth in time', Endangered as population growth decreasing rapidly leading to eventual extinction' or 'Critically Endangered, a more extreme rate of population decrease than the former'.
TPZ	Tree Protection Zone
TSC Act	Threatened Species Conservation Act
V (threatened species status)	Vulnerable

1 INTRODUCTION

1.1 Proposed development

In November 2024, ACS Environmental was commissioned by Grieg Witney to survey for flora and fauna and undertake a biodiversity impact assessment (BDAR) for a proposed secondary dwelling development to occur at Lot 4 DP 14882 at 154 Cabarita Road, Avalon Beach, NSW, 2107.

The property at 154 Cabarita Road, Avalon Beach, has a total land area of 0.1189ha or 1,189m^2.

The proposal is to construct a small secondary dwelling with garage at the upper Cabarita Road section of the property.

The lower section of the property currently consists of a dwelling house, garage and a partly landscaped native garden.

The forested sections of the land has been mapped as Hunter Coast Lowland Spotted Gum Moist Forest (PCT 3234) (DCCEEW 2025).

Figure 1 is a diagram indicating the location of the subject site in the Sydney region (Nearmap 2024).

Figure 2 is a locality aerial image of the subject site (blue marker) and surrounds in relation to landscapes and current urbanisation (Nearmap 2025).

Figure 3 is an aerial image of the subject site at 154 Cabarita Road, Avalon Beach, indicating the canopy cover of the forested vegetation within the property. The property has a narrow width of just 13.4m and is 88.9m in length.

Figure 4 is a schematic image of the proposed development area, also indicating tree numbers within and outside the development footprint (from Ezigrow 2024).

Figure 5 is a schematic image of the secondary house footprint.

The general vegetation at the subject site appears as a medium-tall open forest to 50% canopy cover with tree heights to 25m tall (Figures 6 & 7).

The predominant tree species include Spotted Gum (*Corymbia maculata*), Cabbage Palm (*Livistona australis*) and Grey Gum (*Eucalyptus punctata*) (Figures 6 & 7).

A mid-storey/understorey stratum attains a height of about 8m to 10% canopy cover, consisting mainly of Cabbage Palm and Blueberry Ash (*Elaocarpus reticulatus*) (Figures 6 & 7).

A sparse ground cover/understorey cover includes native species such as Kidney Weed (*Dichondra repens*) and Scurvy Weed (*Commelina cyanea*), vines and twiners including Native Grape (*Cayratia clematidea*) and Snake Vine (*Stephania japonica*) (Figures 6 & 7) as well as exotic ornamentals such as Fishpole Bamboo, African Olive and Wild Banana, and weeds such as Cassia and African Veldt Grass.

A large section of the upper slope of the subject land has been cleared and contains discarded building material and rubble (Figure 8). This section of the upper slope of the land which is highly degraded would form the footprint for the proposed development avoiding impact to high biodiversity areas further downslope which contain canopy species including Spotted Gum and Grey Gum (Figure 7).

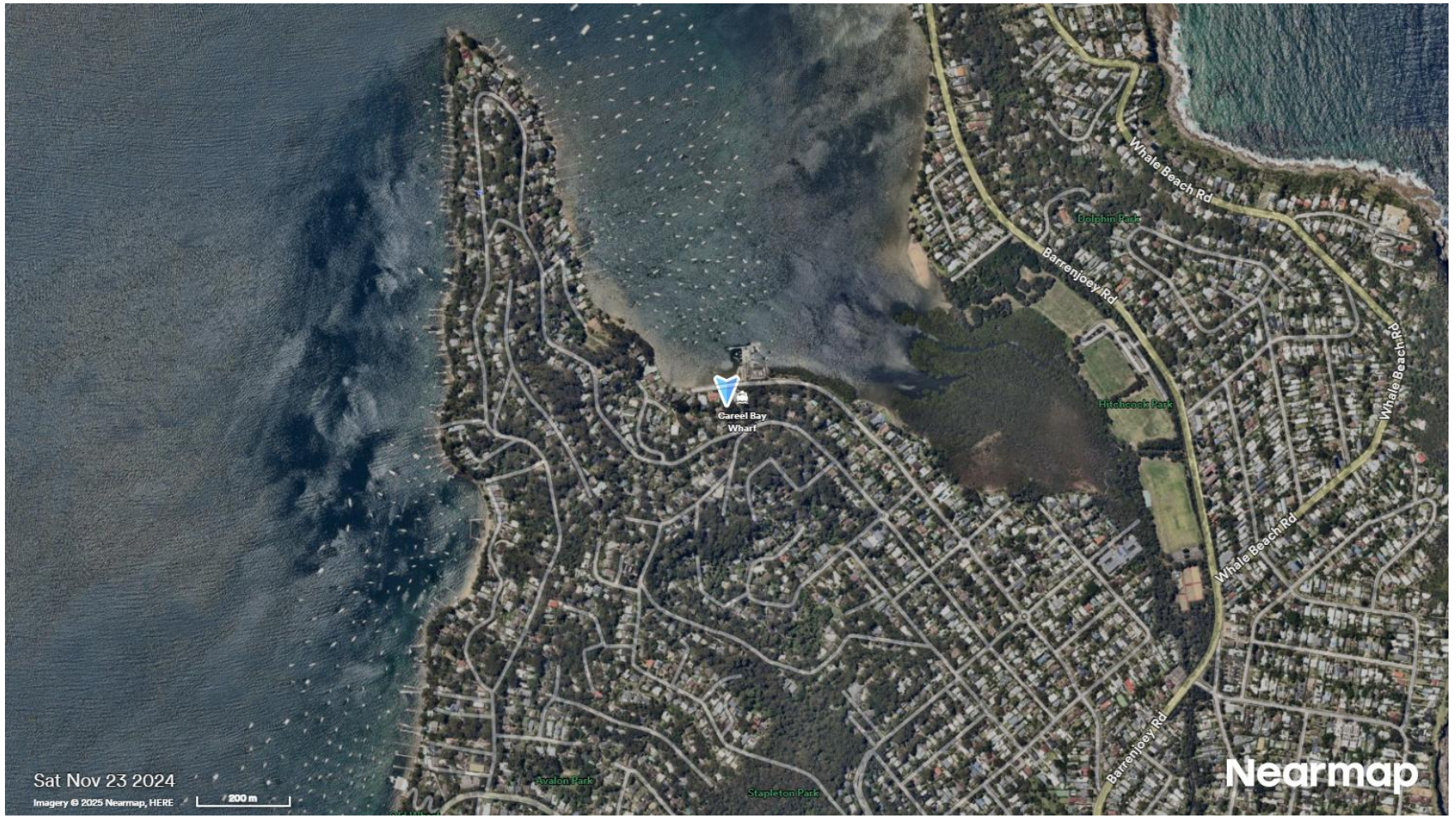


Figure 1- Location of 154 Cabarita Road, Avalon Beach, within the road network of the Sydney region (blue marker) (imagery from Nearmap 2024).

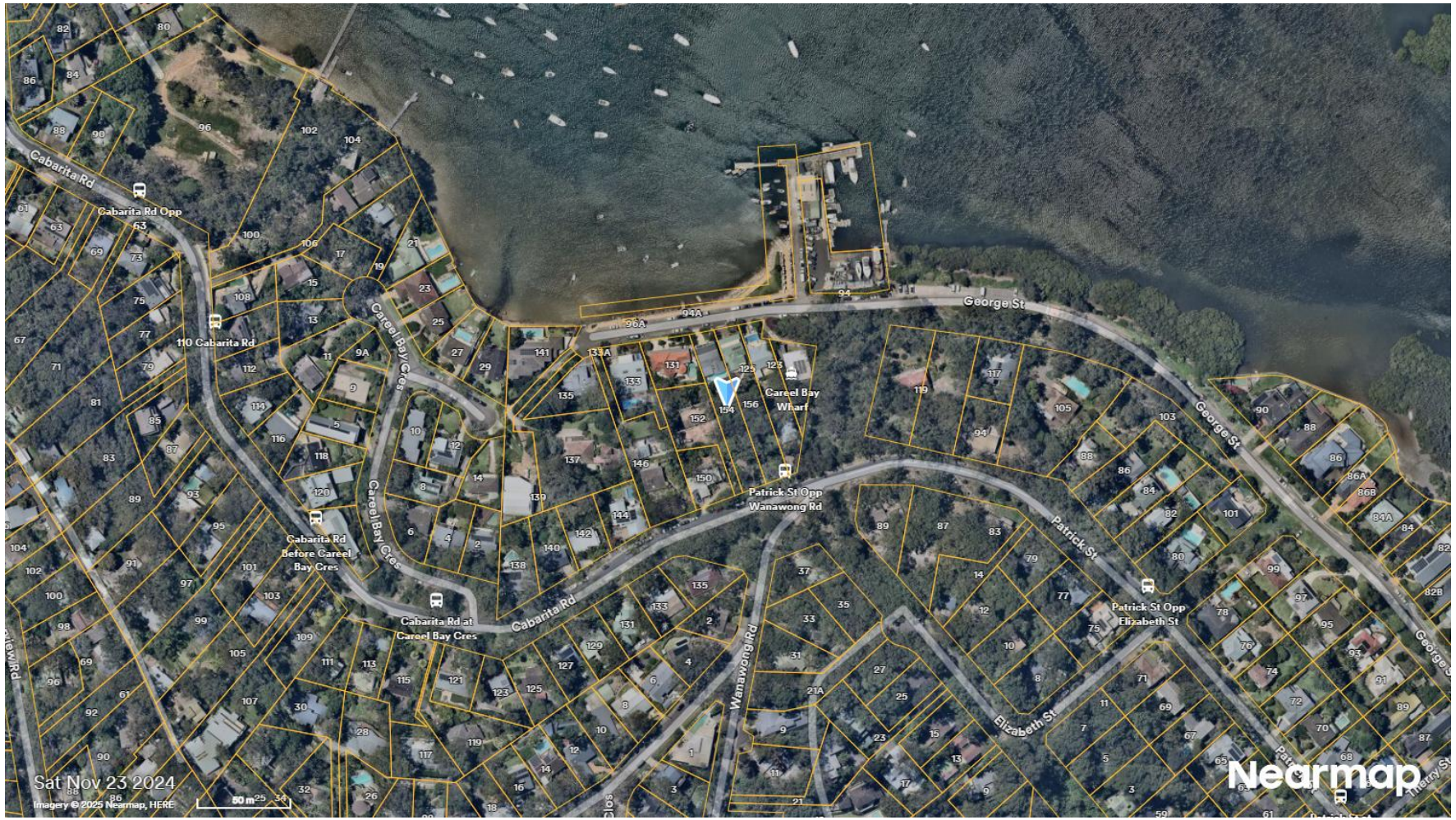


Figure 2 - Locality aerial image of 154 Cabarita Road, Avalon Beach, (blue marker) within the Sydney region and surrounds in relation to landscapes and current urbanisation (imagery from Nearmap 2024).

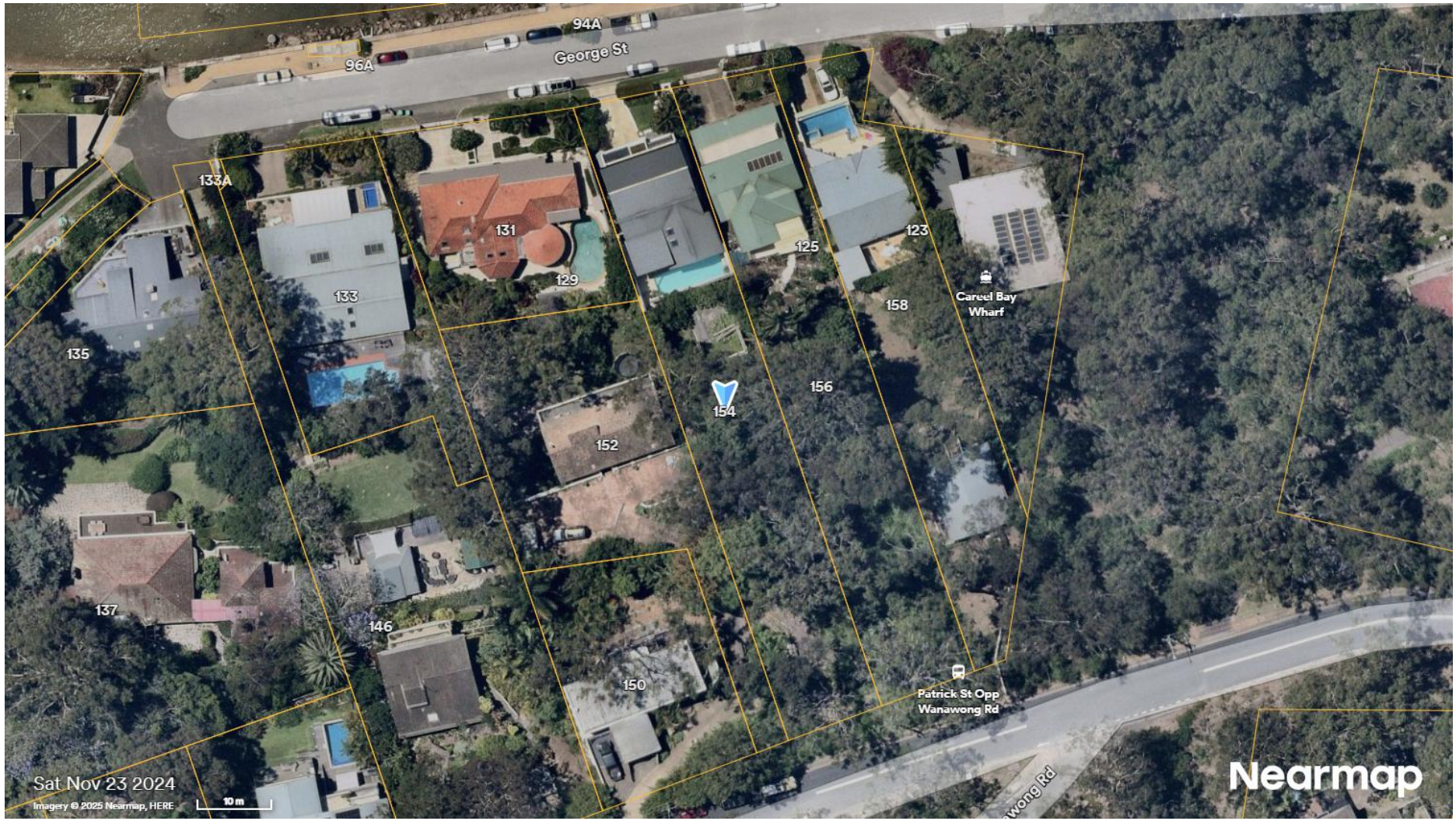


Figure 3 - Locality aerial image of part of Avalon Beach showing property boundaries in relation to the subject site at 154 Cabarita Road (blue marker) (Nearmap 2024).

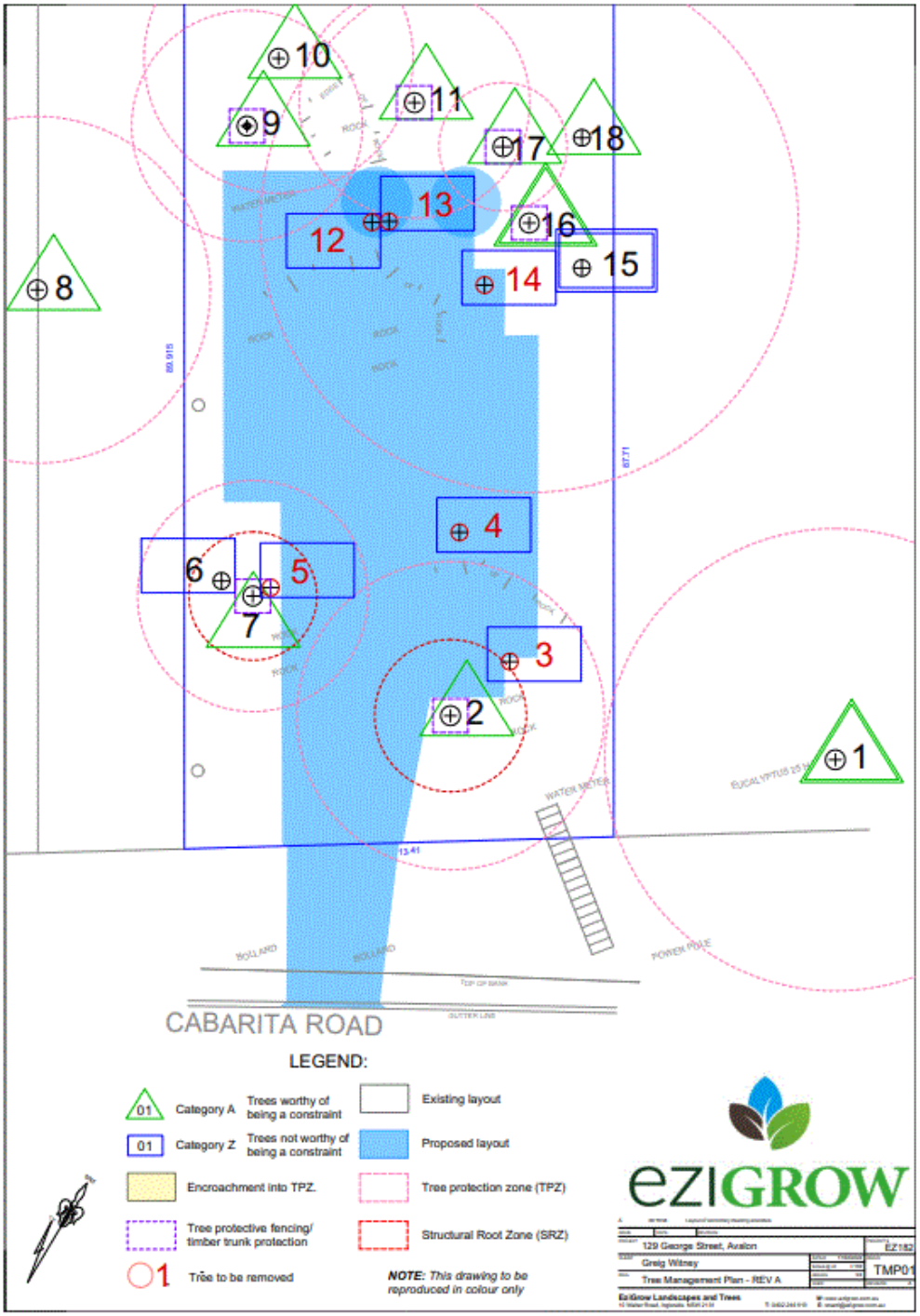


Figure 4 - Site Plan representation of building footprint for secondary house at subject address (the proposed potential secondary house footprint shaded in blue); tree numbers with TPZ outlines are also indicated (see Ezigrow 2024 for more detail on tree species and attributes).

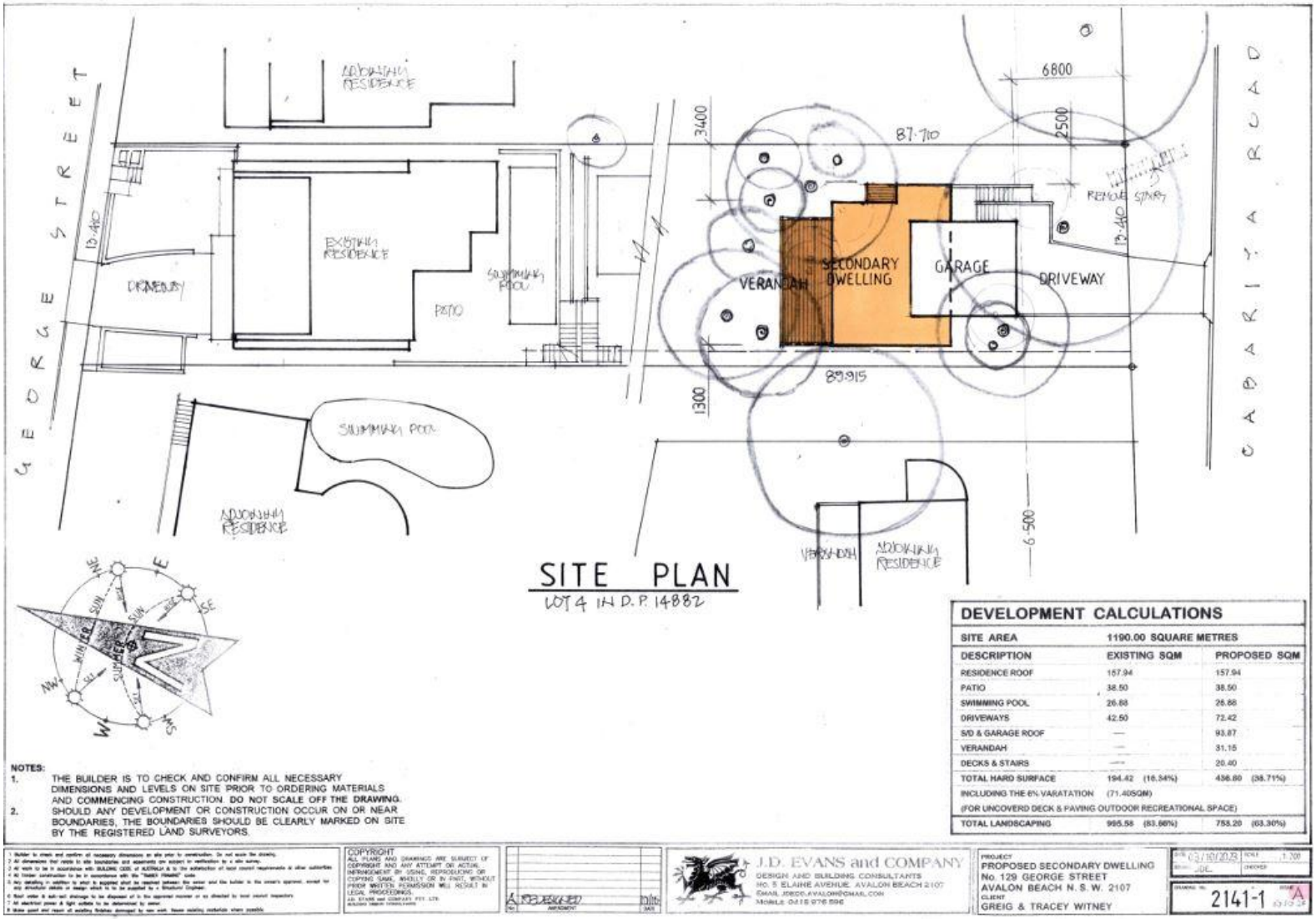


Figure 5 - Site plan for proposed secondary dwelling at 154 Cabarita Road, Avalon Beach (for detail see Updated drawings Ref: 2141 - 1A to 7A - J.D Evans and Co. Design and Building Consultants dated 10.10.2024)

Figure 6 - Subject land viewed from the lower slope towards Cabarita Road to the south indicating exotic species such as Fruit Salad Plant in the foreground, small trees of Blueberry Ash and Cabbage Palm, and Fishpole Bamboo at the upper slope.

Figure 7 - Image showing typical vegetation at the subject site occurring on a steep, sloped landform dominated by Cabbage Gum, both juvenile and mature forms, and Spotted Gum to 25m tall, and other trees including Grey Gum and Camphor Laurel with Bamboo prevalent on the upper slope of the land where development is proposed.

Figure 8 - Image showing cleared area at the upper slope of the subject land with felled Bamboo and Native Grape, and with building rubble comprising much of the surface area at this section of the land.

1.2 Sampling vegetation attributes

The area of degraded forested vegetation within in the footprint of the proposed secondary dwelling, as well as sections of the retained forested vegetation in good condition further down the slope of the subject land was sampled for vegetation composition attributes in a quadrat of size 13.4 x 30m to derive a Vegetation Integrity Score (VIS). This area and an additional area extending for another 46m from the floristic quadrat was sampled for functional attributes.

BAM attributes for floristic composition, structural variation and functional attributes were sampled on the 26th of November 2024.

Figure 9 indicates the location of the sampling area at the subject property.

These plots provided the attributes that were used to derive potential offsets. The plots were orientated from to the north north-west (Figure 9)

Table 1 summarises environmental and biotic attributes recorded in the floristic plot (PLOT 1) (Figure 9).

DESCRIPTION	MEDIUM TALL FOREST
PLOT COORDINATES (SE Corner of quadrat)	- 33.62196 151. 322751
BEARING	350^0 NNW
APPROX TREE CANOPY COVER (%)	~50%
TOTAL NUMBER LOCALLY-OCCURRING NATIVE SPP	10
LOCALLY- OCCURRING NATIVE CANOPY SPP OCCURRING AT >5% COVER IN 400m PLOT	*Eucalyptus punctata, Cayratia clematidea, Livistona australis, Corymbia maculata*
LOCALLY-OCCURRING NATIVE SPP OCCURRING AT <5% COVER IN 400m PLOT	*Stephania japonica, Dichondra repens, Commelina cyanea, Syzygium australe, Polyscias elegans, Brachychiton acerifolius,*

Table 1 - Summarises abiotic environmental and biotic attributes recorded at the sampled plot at the subject land.

Figure 9 - Sampled quadrats at the subject land, the 400m^2 quadrat shaded in blue, the larger quadrat for additional functional attributes shaded in green (Nearmap 2024).

1.3 Extent of land to be affected by proposed development

The mapping of Biodiversity Value indicates that there is Biodiversity Value associated with the subject property (Figure 10), and biodiversity offsets would be required for the proposal (BAM 2020).

Figure 4 indicates the extent of potential habitat that would be impacted by the proposed development. The area footprint of a new proposed secondary dwelling at the southern section of the subject land is 180m^2 (or 0.018ha)

As such, a total extent of 0.018ha is used for land that is impacted and included in offset evaluation by the BAM Calculator.

The plant community has been mapped by DCCEEW (2025) as Hunter Coast Lowland Moist Forest (PCT 3234) with an associated TEC ecological plant community being 'Pittwater and Wagstaffe Spotted Gum Forest' (PCT 3234) (DCCEEW 2025).

This report will determine the number of Biodiversity Credits that may be required to offset the loss of 0.018ha of potential 'Pittwater and Wagstaffe Spotted Gum Forest' (PCT 3234), the offset to be paid under the NSW Biodiversity Offsets Agreement Management Scheme (BOAMS).

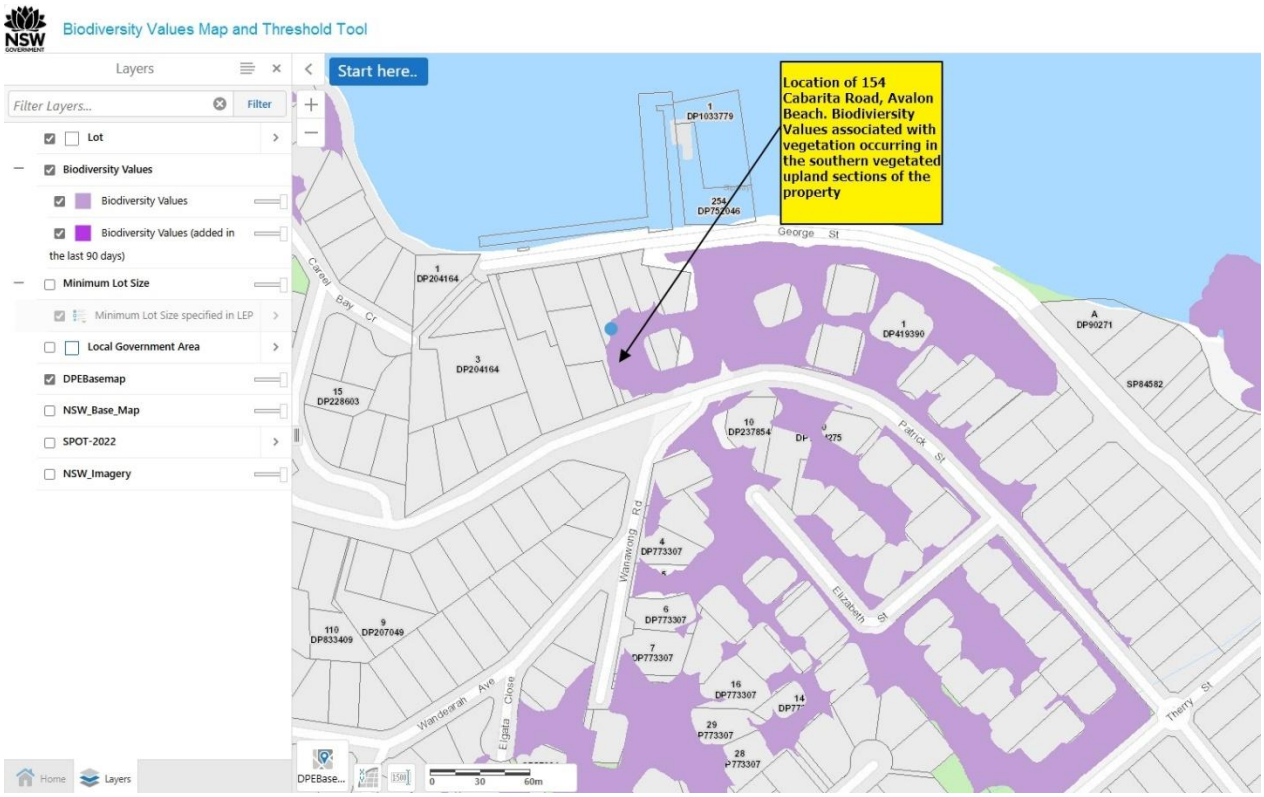


Figure 10 - Biodiversity Values (BV) map indicating that the subject land at 154 Cabarita Road, Avalon Beach, contains mapped areas of biodiversity value associated with vegetation occurring in the southern upper slope parts of the subject land (purple shading) (DCCEEW 2024)

1.4 Topography, geology and soils

The local substrate geology of subject area at the subject site at Avalon Beach appears to lie near the junction of the Narrabeen Group of Sandstones and upslope Hawkesbury Sandstone (Herbert 1983).

The Sandstone-based substrate is largely comprised of medium to coarse-grained quartz sandstone with minor shale and laminite lenses whereas the Narrabeen Sandstone is comprised of interbedded laminite, shale and quartz, to lithic quartz sandstone (Herbert 1983).

At the subject site, the colluvial Watagan Soil Landscape Series is associated with the Narrabeen Sandstone sediments (Chapman & Murphy 1989).

Soil material derived from Watagan Soil Landscapes include shallow to deep lithosols/siliceous sands and yellow podzolics on sandstones, with moderately deep red podzolics, brown podzolics and gleyed podzolics on shales (Chapman & Murphy 1989).

1.5 Current database and mapping searches

Existing information on 'Threatened Flora of the Locality', defined as an area of 5km radius around the site, was accessed from the DCCEEW Bionet Atlas of NSW Wildlife (online BioNet 2025), Review of Commonwealth DCCEEW Environmental Protected Matters Search Tool for MNES records within an area of 5km radius around the site (January 2025) and RoTAP (Briggs and Leigh 1996) databases.

Other literature detailing regionally and locally threatened and significant flora and fauna, as well as plant communities of the study area, included NSW Scientific Committee Final Determinations (1996-2025), Benson and Howell (1994) and 'The Native Vegetation of the Sydney Metropolitan Catchment Management Authority Area' (OEH 2016).

1.6 Literature review

Information sources reviewed included the following:

Aerial Photograph Interpretation (API)

Relevant guidelines, including:

- DPE Biodiversity Assessment Method (BAM) (2020);
- NSW Guide to Surveying Threatened Plants (OEH 2016);

- 'Species credit' threatened bats and their habitats: NSW survey guide for the Biodiversity Assessment Method (OEH 2018);
- Threatened Biodiversity Survey and Assessment: Guidelines for Developments and Activities (Department of Environment and Conservation 2004);
- DPE Threatened Species, Populations and Ecological Communities website (2024);
- Commonwealth DCCEEW Species, Profile and Threats Database (2024);
- Threatened species survey and assessment guidelines: field survey methods for fauna: Amphibians (DEC 2009);
- NSW Guideline to Surveying Threatened Plants (OEH 2016b);
- Survey guidelines for Australia's threatened birds. Guidelines for detecting birds listed as threatened under the Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth of Australia 2010a);
- Survey guidelines for Australia's threatened frogs. Guidelines for detecting frogs listed as threatened under the Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth of Australia 2010c);
- Survey guidelines for Australia's threatened mammals. Guidelines for detecting mammals listed as threatened under the Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth of Australia 2011);
- Survey guidelines for Australia's threatened orchids (2017);
- Guidelines for detecting bats listed as 'threatened' under the Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth of Australia 2013).

2 LANDSCAPE FEATURES

2.1 IBRA Regions and Subregions

The subject site occurs within the Sydney Basin IBRA region and the Pittwater IBRA Subregion.

2.2 Mitchell Landscapes (NSW Landscape regions)

The landscape features of the subject site included in a 1500m buffer zone centred around the subject site occurs within the Belrose Coastal Slopes landscape in the Pittwater IBRA Subregion within the Sydney Basin IBRA region.

The Mitchell Landscape is described as follows:

Benched hill slopes and deep valleys of the coastal fall on horizontal Triassic quartz sandstone, lithic sandstone and shales. High proportion of rock outcrop with discontinuous cliffs to 5m high. General elevation 0 to 180m, local relief 80m. Shallow uniform or gradational sands and earthy sands on ridges, deeper sands, loamy sands and organic sands on wet benches and in hanging swamps, grey or yellow texture-contrast soils on shale benches.

Coastal forest in sheltered areas on better quality shale soil with; Sydney blue gum (*Eucalyptus saligna*), blackbutt (*Eucalyptus pilularis*), turpentine (*Syncarpia glomulifera*), grey ironbark (*Eucalyptus paniculata*), spotted gum (*Corymbia maculata*), southern mahogany (*Eucalyptus botryoides*), cabbage-tree palm (*Livistona australis*) and burrawang (*Macrozamia sp.).*

2.3 Extent of native vegetation

The area of native vegetation cover within a 1,500 m buffer area surrounding the site is shown in Figure 12. It is estimated that the native vegetation cover within the 1500m buffer area (Figure 11) to the subject site is 29.11% and this was used in the BAM Offsets calculations.

2.4 Wetlands, Rivers, Streams and Estuaries

No significant wetlands, rivers, streams and estuaries are present within the developmental section of the subject land or that would affect the assessment.

2.5 Connectivity

Landscapes that retain connections between patches of otherwise isolated areas of vegetation are more likely to maintain more numerous and more diverse populations of plant and animal species (Lindenmayer and Fischer 2006).

In the subject locality the canopy cover is continuous with connectivity among adjacent properties and surrounding canopies. It is considered that any potential connectivity to the biodiversity corridor that currently exists in the area would not be significantly impacted.

2.6 Areas of geological significance and soil hazard features

These features are not present on the subject land. The landscape is stabilised by vegetative cover, dead foliage and building rubble and no evident soil creep or landslip features are apparent.

2.7 Areas of Outstanding Biodiversity Value (AOBV)

AOBV are special areas that contain irreplaceable biodiversity values that are considered important to NSW, Australia or globally. No listed AOBV occur within the site or within a 1,500m area buffer around the subject site.

2.8 Site context

2.8.1 Native vegetation cover

Native vegetation cover is calculated as a percentage cover occurring on the subject land and within the surrounding 1,500m buffer area (Figures 11 & 12).

Cover estimates are based on the cover of native woody and non-woody vegetation relative to the approximate benchmarks for the PCT considering the extent and condition of the vegetation. The native vegetation cover within the 1500m buffer area is estimated at 29.11% (Figures 11 & 12).

2.8.2 Patch size

Patch size is used to describe areas that include native vegetation with a gap of less than 100m from adjacent or surrounding areas of native vegetation that occur in moderate to good condition.

The patch size for the vegetation onsite is assessed as 181.74ha (Drevon GIS 2025) (Figure 11).

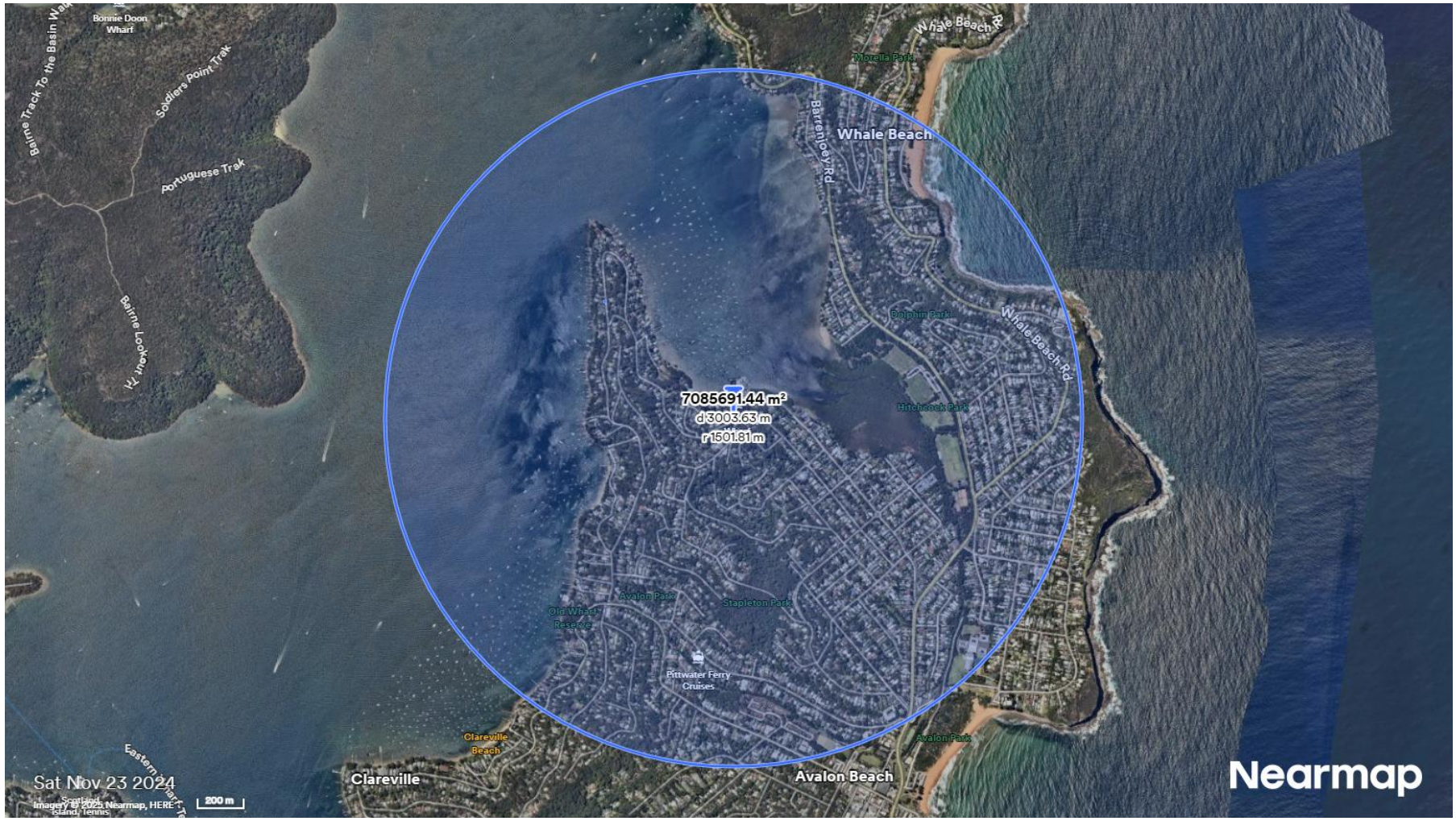
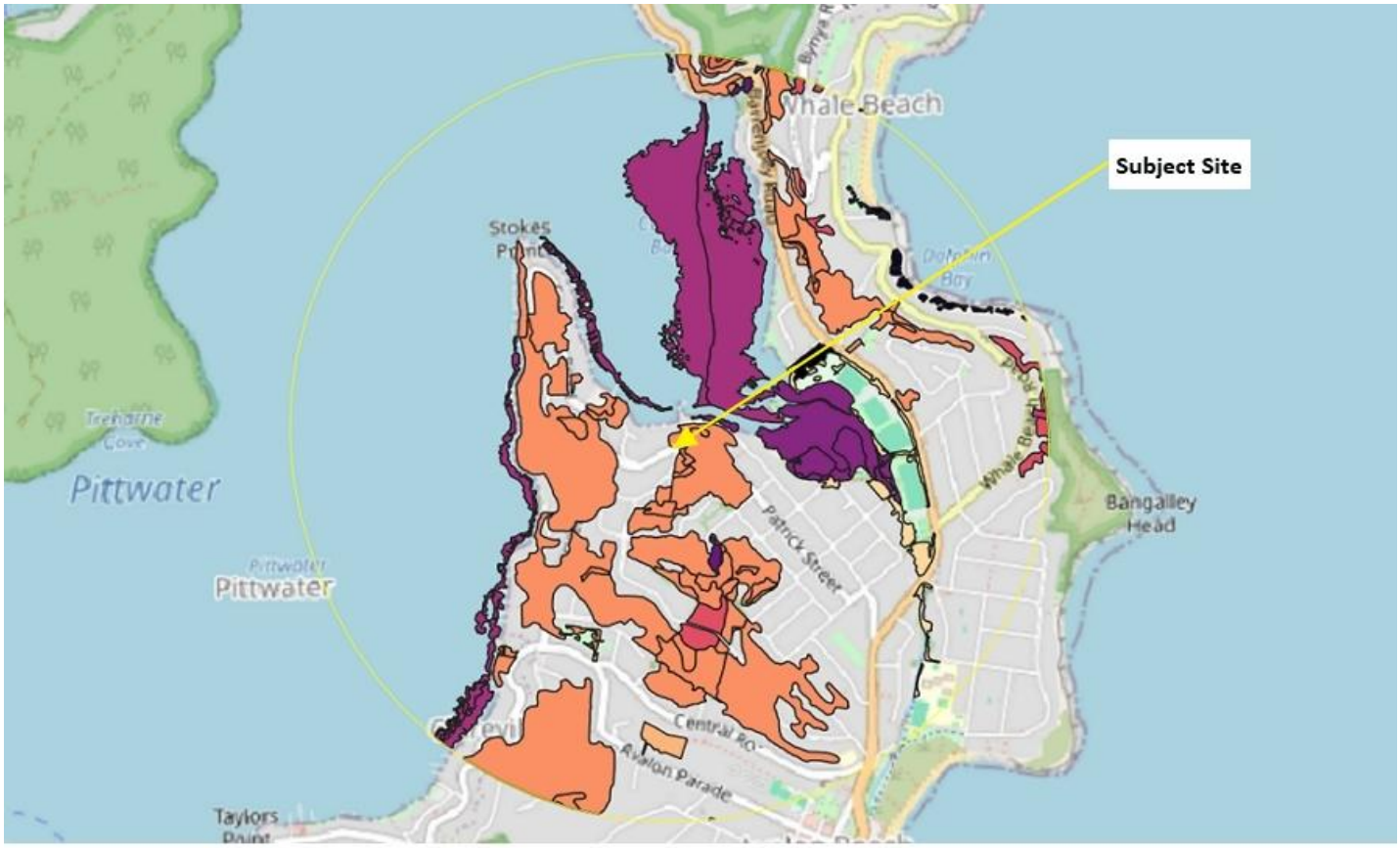


Figure 11 - Indicates the 1500m buffer zone surrounding the subject site at Avalon Beach where % vegetation within the buffer zone is 29% and patch size estimated at 182ha (Drevon GIS 2025) (from Nearmap imagery 2024)



LEGEND

- Bangalay - Smooth-barked Apple / She-oak open forest on sandy alluvium in coastal parts of the Sydney region
- Banksia - Tea-tree - She-oak / Spiny-headed Mat-rush - Kangaroo Grass heath on clay soils on headlands around Sydney and the Central Coast
- Coast Banksia - Coast Tea-tree low moist forest on coastal sands and headlands, Sydney Basin Bioregion and South East Corner Bioregion
- Coast Banksia - Coast Wattle dune scrub of the Sydney Basin Bioregion and South East Corner Bioregion
- Lilly Pilly - Cabbage Tree Palm littoral rainforest on escarpment slopes and gullies of the Sydney basin
- Mangrove Forests in estuaries of the Sydney Basin Bioregion and South East Corner Bioregion
- Seagrass meadows of the estuaries and lagoons of the New South Wales coast
- Smooth-barked Apple - Coast Banksia / Cheese Tree open forest on sandstone slopes on the foreshores of the drowned river valleys of Sydney
- Smooth-barked Apple - Red Bloodwood open forest on enriched sandstone slopes around Sydney and the Central Coast
- Smooth-barked Apple - Turpentine - Blackbutt tall open forest on enriched sandstone slopes and gullies of the Sydney region
- Spotted Gum - Grey Ironbark open forest in the Pittwater and Wagstaffe area, Sydney Basin Bioregion
- Swamp Mahogany / Cabbage Tree Palm - Cheese Tree - Swamp Oak tall open forest on poorly drained coastal alluvium in the Sydney basin
- Swamp Oak swamp forest fringing estuaries, Sydney Basin Bioregion and South East Corner Bioregion

Figure 12 – Image of native vegetation cover and vegetation types within the 1500m buffer area centred on the subject site (From Drevon GIS 2024)

3 NATIVE VEGETATION

3.1 Native vegetation extent within subject site

The area of native vegetation cover within the site was estimated at about 57% of the total area of the subject property (Figure 3) and equates to about 680m^2.

The extent of vegetation intended for removal is estimated to be about 0.018ha or 180m^{2,} and includes cleared area of dead Bamboo and builder's rubble. This extent equates to about 19% of the total vegetation which includes a high proportion of exotic vegetation such as Bamboo and Camphor Laurel, as well as two native species including one individual of Grey Gum in very poor condition (Ezigrow 2024), and two individuals of Cabbage Palm (Ezigrow 2024).

As such, a total of 0.018ha was included in the potential impacted area to construct a new secondary dwelling in the upslope southern section of the property, on the BAM calculator.

3.2 Plant Community Types (PCTs)

3.2.1 Plant Community Type mapped and PCT assessed as occurring at the site

Mapping by DCCEEW (2024) and ground-truthing the vegetation has confirmed the vegetation across the subject site as PCT 3234 - Hunter Coast Lowland Spotted Gum Moist Forest (includes the TEC described as Pittwater and Wagstaffe Spotted Gum Forest) (Figure 12).

The description of PCT 3234 refers to a tree canopy that commonly includes a high cover of *Corymbia maculata,* occasionally with *Eucalyptus paniculata* and *Eucalyptus umbra* 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 *Angophora costata*, rarely *Syncarpia glomulifera* or *Corymbia gummifera* (DCCEEW 2024).

As such, PCT 3234 was entered into the BAM calculator as the relevant PCT for this assessment.

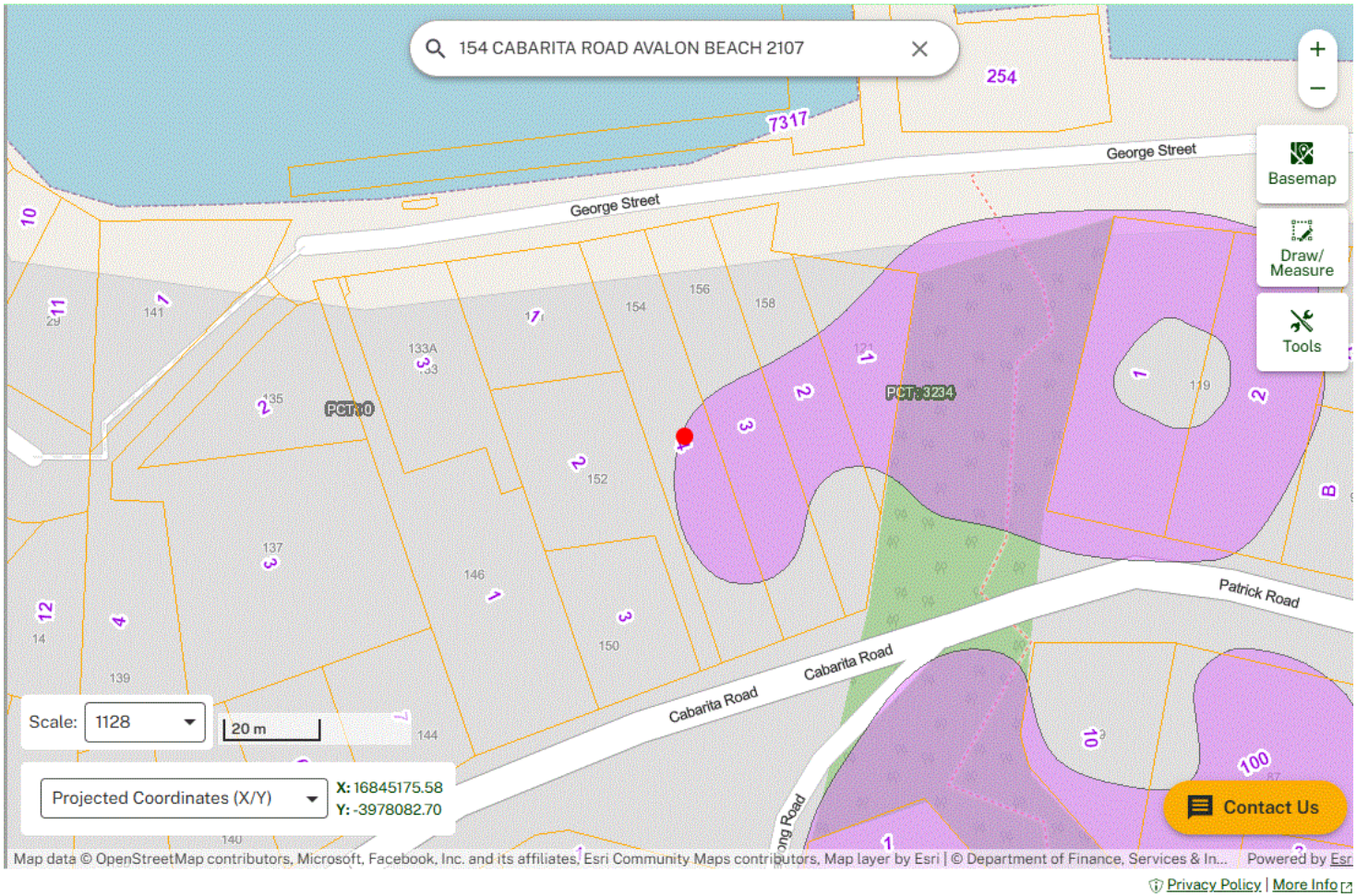


Figure 13 - Mapping of ecological communities over the locality including the Study Area (pink shading) indicating a distribution of Hunter Coast Lowlands Spotted Gum Moist Forest (PCT 3234) occurring in a wide band through the central and part of the southern section of the subject property (red dot) (DCCEEW mapping 2024).

Description of Hunter Coast Lowland Spotted Gum Moist Forest (from DCCEEW 2024)

BioNet Vegetation Classification - Community Profile Report

Plant Community Type ID (PCT ID): PCT 3234

Name: Hunter Coast Lowland Spotted Gum Moist Forest

Classification Confidence Level: 2-High

Vegetation Description: 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 *Corymbia maculata*, occasionally with *Eucalyptus paniculata* and *Eucalyptus umbra* 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 *Angophora costata*, rarely *Syncarpia glomulifera* or *Corymbia gummifera*.

The mid-stratum is layered with a sparse cover of smaller trees that commonly includes *Allocasuarina torulosa*, eucalypt species, *Pittosporum undulatum* or *Glochidion ferdinandi*, and rarely *Allocasuarina littoralis*. Occasionally a sparse cover of *Livistona australis* may be present, though more frequently it is recorded in the lower shrub layer.

Other members of the lower shrub layer very frequently include *Breynia oblongifolia*, commonly with *Notelaea longifolia*, and occasionally *Pittosporum undulatum, Pittosporum revolutum* and *Myrsine variabilis*.

The ground layer has a high diversity of mesic climbers with *Eustrephus latifolius* and *Pandorea pandorana* subsp. *pandorana* almost always present. Grasses very frequently include *Imperata cylindrica* and *Entolasia stricta* and occasionally *Oplismenus imbecillis*, while the fern *Pteridium esculentum* is very frequent. The graminoids *Dianella caerulea* and *Lomandra longifolia* 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.

Vegetation Formation: Wet Sclerophyll Forests (Grassy sub-formation);

Vegetation Class: Northern Hinterland Wet Sclerophyll Forests;

IBRA Bioregion(s): Sydney Basin; NSW North Coast

IBRA Sub-region(s): Wyong; Pittwater; Karuah Manning; Hunter;

LGA: LAKE MACQUARIE, CESSNOCK, PORT SPEPHENS, NEWCASTLE, CENTRAL COAST, MID-COAST;

TEC Assessed: Has associated TEC

TEC List:

ListStatus	ThreatStatus	FitStatus	TEC Name	Degree of TEC Fit
BC Act	Listed	E	(Part)	Pittwater and Wagstaffe Spotted Gum Forest in the Sydney Basin Bioregion

(Comment TEC1)
Relates to the NSW Pittwater and Wagstaffe Spotted Gum Forest TEC only where it occurs in the LGAs of Gosford or Pittwater (LGA boundaries as at date of Final Determination), consistent with the threat assessment in paragraph 6 in the Final Determination.

Associated TEC Comments: PCT Percent Cleared: 28%

Current extent: 7925ha

PCT Definition Status: Approved

As such, PCT 3234, Hunter Coast Lowland Spotted Gum Moist Forest, was assessed as the PCT to enter into the BAM calculator.

3.2.1 Plot data used in BAM Calculator

The area containing Plot 1 (Figure 9) was subject to BAM analysis for a Vegetation Integrity Score that may require biodiversity offsets.

The data for Plot 1 is presented in Appendix 1.

3.2.2 Flora species occurring in plot

The complement of flora species and respective cover values are listed in Appendix 1.

3.2.3 Fauna species and potential fauna habitat

The area subject to offsets (Figure 3) is a medium tall forest to 25m tall with canopy cover to 50%, dominated by 3 tree species (Cabbage Gum, Spotted Gum and Grey Gum) (Table 1).

During the site survey no tree hollows were sighted in mature trees or stags within the development footprint (Figures 6, 7 & 8).

A range of native bird species may forage, overfly and nest in the mature trees present at the subject site, including Boobook Owl, Crimson Rosella, Rainbow Lorikeet, Laughing Kookaburra, Little Wattle Bird and the Sulphur Crested Cockatoo. Natural tree cover is relatively continuous across the immediate locality, habitat suitable for arboreal species and species of avifauna. One individual of Boobook Owl was noted during the survey period roosting in an individual of Cabbage Palm.

The mid and understorey stratums have a low cover of mostly exotic plants, a high cover of Cabbage Palm (Figure 7), a high weed cover (particularly Fishpole Bamboo) and with a relatively low native species diversity.

The ground stratum has a high cover of ornamental plants (Figure 7) with low weed cover and a relatively low native species diversity. This stratum contains a relatively poor structural habitat for sheltering and foraging, but with a relatively high cover of leaf litter.

Reptiles observed include the Dark-flecked Skink and the Eastern Water Skink is also expected to occur.

3.2 Vegetation Integrity Assessment

3.2.1 Vegetation Zone

Plot 1 was dominated by 2 tree species - Spotted Gum (*Corymbia maculata*) and Grey Gum (*Eucalyptus punctata*), to 25m tall. lllawarra Flame Tree (*Brachychiton acerifolius*) and Celery Wood (*Polyscias elegans*) were also present in the assemblage at lower frequencies and cover (Appendix 1).

The only shrub species occurring in the assemblage was *Syzygium australe*, with a cover score of 5% (Appendix 1).

There were two forb species including Kidney Weed (*Dichondra repens*) and Scurvy Weed (*Commelina cyanea*) that occurred sparsely in the ground layer. No native grass species were recorded.

Two vine species (particularly Native Grape) and Cabbage Palm were included in the grouping of 'Others' for the BAM assessment.

The understorey contained a high abundance of the high threat weed Fishpole Bamboo (*Phyllostachys aurea*).

The plot was located as shown in Figure 9.

Quantitative measures for species composition, structure and function attributes were derived from the intact vegetation within the plot as listed in Table 2 of BAM (2020).

The 13.34m x 30m plot was located within mostly intact vegetation (Figures 6, 7 & 8) and scores derived from the 13.34m x 74.98m plot (Figure 9) were used for functional attributes.

Condition attributes use to assess composition of vegetation	Condition attributes use to assess structure within vegetation	Condition attributes use to assess functionality within vegetation
Tree richness	Tree cover	Number large trees
Shrub richness	Shrub cover	Tree regeneration potential
Grass and grass-like richness	Grass and grass-like cover	Tree stem size classes Tree hollows
Forb richness	Forb cover	Total length of fallen logs
Fern richness	Fern cover	Litter cover
Other richness (Twiners, Palms etc)	Other cover (Twiners etc)	High Threat Weed cover

Table 2 - Condition attributes for composition, structure and function at plots (Table 1; Figure 8) which were sampled for BAM analysis (from Table 2 in BAM 2020).

Table 3 tabulates the plot scores for the attributes listed in Table 2 for the plot.

PLOT 1 (Figure 9)

Life-form	Tree	Shrub	Grass & Grass-like	Forb	Fern	Other
Counts for composition	4	1	0	2	0	3
Counts for cover (%)	49	5	0	2	0	35.1

Number large trees (>80cm DBH)	Tree regeneration	Tree stem size classes (cm)					Length fallen logs	Litter cover (%)	Tree Hollows	HTW (%)
		5-9	10-19	20-29	30-49	50-79				
0	absent	no	no	yes	yes	yes	2	61	0	71

Table 3 - Condition attributes for composition, structure and function in Plot 1 (Figure 9)

Table 4 summarises the condition attributes for composition, structure and functionality of the biota in the plot which were sampled for BAM analysis, with the resultant Vegetation Integrity Score (VIS) based on the area of 0.0180ha impacted (from Table 2 in BAM 2020). The VIS is used to calculate the offset credits required and the costs incurred for clearing native vegetation at the subject land.

PLOT 1 (Figure 9)

ATTRIBUTE	COMPOSITION SCORE	STRUCTURE SCORE	FUNCTION SCORE	VEGETATION INTEGRITY SCORE (VIS)
PCT 3234	15.3	48	26.4	26.8

Table 4 - Condition attribute scores for composition, structure, function and VIS at Plot 1 for PCT 3234.

4 THREATENED SPECIES

4.1 Ecosystem Credit Species

These species are those where the likelihood of occurrence of the species potential elements of the species habitat can reasonably be predicted by vegetation surrogates and features of the landscape, or for which targeted species surveys have a low probability of detection.

The Threatened Biodiversity Data Collection (TBDC) has identified 28 potential ecosystem credit species as predicted by vegetation surrogates and landscape features. These are listed and addressed in Appendix 3.

4.2 Species Credit Species (Candidate Species)

These species are those where the likelihood of occurrence of the species, or potential suitable elements of the species habitat, cannot be reliably predicted by vegetation surrogates and landscape features and can more reliably be detected by species surveys.

The TBDC has identified 7 potential candidate species and these are listed and addressed in the following Table 5.

In accordance with Section 5.3 of BAM (2020) a targeted species survey must be undertaken for a threatened candidate species that is likely to occur at the site based on the application of Steps 1 - 3 in Sub-sections 5.2.1 - 5.2.3 (BAM 2020).

The habitat features for breeding for threatened microchiropterans (such as caves, rocky overhangs and escarpments) are not present on the subject land that is proposed to be impacted. No other cliffs or caves occur within the area proposed for development.

Targeted surveys for Scrub Turpentine (*Rhodamnia rubescens*), Eastern Australian Underground Orchid (*Rhizanthella slateri*) and Native Guava (*Rhodomyrtus psidioides*) were undertaken throughout the proposed development site but none were located.

However, Table 5 lists all Species Credit Species (Candidate Species) listed in the TBDC and addresses their suitability to the habitat and likelihood of occurrence.

Table 5 - Candidate species assessment table for PCT 3234 occurring 154 Cabarita Road, Avalon Beach

SPECIES & COMMON NAME	DESCRIPTION/HABITAT REQUIREMENTS AND PREFERENCES (CONSTRAINTS) (from species profiles DPE 2024)	HABITAT SUITABILITY FROM DPE PROFILES; TDBC AND CALCULATOR TICK BOXES (DPE 2024)	HISTORICAL RECORDS (TO 20 YEARS PREVIOUS)	CANDIDATE SPECIES ASSESSMENT
PLANTS				
Rhodamnia rubescens **Scrub Turpentine**	Shrub or small tree to 25m tall with red/brown fissured bark. Found in littoral, warm temperate and subtropical rainforest and wet sclerophyll forest usually on volcanic and sedimentary soils.	Potential habitat onsite is suboptimal.	Nearest record is about 2.8km to the south at Crown of Newport Reserve in Gully Forest (Figure 14).	**A candidate species credit species but targeted searches did not locate individuals of this species.** This distinctive large life-form species was not observed during targeted searches within the small proposed development area of the subject site and can be deemed to not occur and not impacted. No further surveys required.
Rhizanthella slateri **Eastern Australian Underground Orchid**	An orchid with a whitish, fleshy underground stem to 15 cm long and 15 mm diameter. Known to occur in sclerophyll forest. Highly cryptic as it grows almost completely below the soil surface, with flowers being the only part of the plant that can occur above ground. Therefore, usually located only when the soil is disturbed. Occurs from south-east Queensland to south-east NSW.	Potential habitat onsite is suboptimal, moist open forest with Cabbage Palm understorey mixed with large expanses of exotic Bamboo and Camphor laurel. Currently known from fewer than 10 locations, including near Bulahdelah, the Watagan Mountains, the Blue Mountains, Wiseman's Ferry area, Agnes Banks and near Nowra.	No records in the locality in the past 20 years.	**A candidate species credit species but habitat is suboptimal and targeted searches did not locate individuals of this species.** No further surveys required.

SPECIES & COMMON NAME	DESCRIPTION/HABITAT REQUIREMENTS AND PREFERENCES (CONSTRAINTS) (from species profiles DPE 2024)	HABITAT SUITABILITY FROM DPE PROFILES; TDBC AND CALCULATOR TICK BOXES (DPE 2024)	HISTORICAL RECORDS (TO 20 YEARS PREVIOUS)	CANDIDATE SPECIES ASSESSMENT
Rhodomyrtus psidioides **Native Guava**	A shrub or small tree to 12 m high with brown scaly bark. Occurs from Broken Bay, approximately 90 km north of Sydney, New South Wales, to Maryborough in Queensland.	Potential habitat onsite is suboptimal, moist open forest with Cabbage Palm understorey mixed with large expanses of exotic Bamboo and Camphor laurel. Pioneer species found in littoral, warm temperate and subtropical rainforest and wet sclerophyll forest often near creeks and drainage lines. This species is characterised as being extremely susceptible to infection by Myrtle Rust. Myrtle Rust affects all plant parts.	No records in the locality in the past 20 years.	**A candidate species credit species but habitat is suboptimal and targeted searches did not locate individuals of this species.** No further surveys required.

SPECIES & COMMON NAME	DESCRIPTION/HABITAT REQUIREMENTS AND PREFERENCES (CONSTRAINTS) (from species profiles DPE 2024)	HABITAT SUITABILITY FROM DPE PROFILES; TDBC AND CALCULATOR TICK BOXES (DPE 2024)	HISTORICAL RECORDS (TO 20 YEARS PREVIOUS)	CANDIDATE SPECIES ASSESSMENT
ANIMALS				
Anthochaera phrygia **Regent Honeyeater (Foraging)**	A striking and distinctive, medium-sized, black and yellow honeyeater with a sturdy, curved bill. Inhabits temperate woodlands and open forests of the inland slopes of south-east Australia. Inhabits dry open forest and woodland, particularly Box-Ironbark woodland, and riparian forests of River Sheoak. Regent Honeyeaters inhabit woodlands that support a significantly high abundance and species richness of bird species. These woodlands have significantly large numbers of mature trees, high canopy cover and abundance of mistletoes.	In NSW the distribution is very patchy and mainly confined to the two main breeding areas and surrounding fragmented woodlands. In some years flocks converge on flowering coastal woodlands and forests. Potential habitat onsite is unsuitable, site contains high cover of Bamboo and Cabbage Palm, unsuitable for foraging.	No records in the locality in the last 20 years. Not mapped in important habitat area mapping on BOAMS	**Dual Candidate Credit /Ecosystem credit species.** Unlikely for this species to occur on subject land due to its unsuitable foraging habitat. **No further surveys required**.
Chalinolobus dwyeri **Large-eared Pied Bat**	A small to medium-sized bat with long, prominent ears and glossy black fur. It is generally rare with a very patchy distribution in NSW. Roosts in caves (near their entrances), crevices in cliffs, old mine workings and in the disused, bottle-shaped mud nests of the Fairy Martin (*Petrochelidon ariel*), frequenting low to mid-elevation dry open forest and woodland close to these features. Females have been recorded raising young in maternity roosts (c. 20-40 females) from November through to January in roof domes in sandstone caves and overhangs. Found in well-timbered areas containing gullies.	Modified moist open forest, habitat suboptimal, with no sandstone caves. No sandstone cliffs or rocky cave habitat features. This species will not be impacted by any proposed development.	9 sightings in locality in last 20 years, nearest at Ingleside Heights some 650m to the east (Figure 16).	**Candidate species credit species.** Subject site is suboptimal moist open forest and unlikely to provide suitable habitat. No sandstone caves for breeding. Development proposal is not likely to impact on this species. **No further surveys or assessment required**

SPECIES & COMMON NAME	DESCRIPTION/HABITAT REQUIREMENTS AND PREFERENCES (CONSTRAINTS) (from species profiles DPE 2024)	HABITAT SUITABILITY FROM DPE PROFILES; TDBC AND CALCULATOR TICK BOXES (DPE 2024)	HISTORICAL RECORDS (TO 20 YEARS PREVIOUS)	CANDIDATE SPECIES ASSESSMENT
Lathamus discolor **Swift Parrot (Breeding)/Foraging**	The Swift Parrot is small parrot about 25 cm long. Bright green with red around the bill, throat and forehead. One of most distinctive features from a distance is its long (12 cm), thin tail, which is dark red. This distinguishes it from the similar lorikeets, with which it often flies and feeds. Breeds in Tasmania during spring and summer, migrating in the autumn and winter months to south-eastern Australia from Victoria and the eastern parts of South Australia to south-east Queensland. In NSW mostly occurs on the coast and south-west slopes. Migrates to the Australian south-east mainland between March and October.	They occur in areas where eucalypts are flowering profusely or where there are abundant lerp (from sap-sucking bugs) infestations. Favoured feed trees include winter flowering species such as Swamp Mahogany *Eucalyptus robusta*, Spotted Gum *Corymbia maculata*, Red Bloodwood *C. gummifera*, Mugga Ironbark *E. sideroxylon*, and White Box *E. albens.*	Only 3 records in the locality, with the closest being about 5km to west in Ku-ring-gai Chase NP (Figure 15). Not mapped in important habitat area mapping on BOAMS.	**Dual Candidate Credit /Ecosystem credit species.** There are a few individuals of winter flowering eucalypts onsite (Spotted Gum) which would provide food resources in winter, however none of these individuals are being removed during development. In relation to breeding, this parrot breeds exclusively in Tasmania and migrates to the eastern states during winter. **No further surveys required.**
Miniopterus australis **Little Bent-winged Bat (Breeding)**	Habitat in moist eucalypt forest, rainforest, vine thicket, wet and dry sclerophyll forest, Melaleuca swamps, dense coastal forests and banksia scrub. Generally found in well-timbered areas. Little Bentwing-bats roost in caves, tunnels, tree hollows, abandoned mines, stormwater drains, culverts, bridges and at night forage for small insects beneath the canopy of densely vegetated habitats.	Found mainly in heavily forested areas and areas with hollows and caves. Potential roosting/breeding habitat does not at the subject land however potential foraging habitat does exist.	29 records in the locality, Nearest record about 650m to the east (Figure 16).	**Dual Candidate/Ecosystem credit species.** Potential for this species to forage at subject site as habitat requirements for foraging are present. Potential roosting/breeding habitat does not occur at the subject land. The proposal considered to not affect species. **No further surveys required.**

SPECIES & COMMON NAME	DESCRIPTION/HABITAT REQUIREMENTS AND PREFERENCES (CONSTRAINTS) (from species profiles DPE 2024)	HABITAT SUITABILITY FROM DPE PROFILES; TDBC AND CALCULATOR TICK BOXES (DPE 2024)	HISTORICAL RECORDS (TO 20 YEARS PREVIOUS)	CANDIDATE SPECIES ASSESSMENT
Miniopterus orianae oceanensis **Large Bent-winged Bat (Breeding)**	This sub species of Bentwing Bat occurs from Cape York to central Vic. Occurs in wet and dry sclerophyll forests and rainforests. Roost within man-made structures. Known roost sites include caves, disused mines, storm-water drains, culverts and buildings. However maternity roosts occur in sandstone or limestone cave systems. Will form scattered smaller colonies, mostly within 300km of the larger maternity cave (Churchill 1998). Active all year round, foraging mostly on moths above the tree canopy. Feeds over large areas of land and has been reported to travel up to 70 km in one night (Dwyer 1995).	Found mainly in heavily forested areas and areas with hollows and caves. May forage above canopy in subject area. Common throughout the locality (DPE 2024) Potential roosting/breeding habitat does not at the subject land.	32 records in the locality, the nearest about 680m to the south (Figure 16).	**Dual Candidate/Ecosystem credit species.** This species expected to forage above canopy at subject site as habitat requirements are present. Potential roosting/breeding habitat does not occur at the subject site. **No further surveys required.**
Tyto tenebricosa **Sooty Owl**	A medium-sized owl with a heart shaped facial disk, dark grey in colour. Occurs in the eastern most parts of NSW on coastal escarpments and eastern tablelands, in habitats ranging from rainforest to moist eucalypt forest. Roosts in very large tree hollows of tall forest trees or where vegetation is heavy. Diet consists of small ground or tree-dwelling mammals such as the Sugar glider.	Found mainly in heavily forested areas where there are large tree hollows and dense foliage, usually in deep gullies in moist forests where smooth barked gums, tree ferns and wet forest understory are present. May hunt in drier areas but usually breed in moist areas.	Only 2 recent sightings in the locality in the last 20 years (Figure 15).	**Candidate species credit species.** Unlikely for this species to occur on subject land due to its unsuitable roosting habitat. **No further surveys required.**

SPECIES & COMMON NAME	DESCRIPTION/HABITAT REQUIREMENTS AND PREFERENCES (CONSTRAINTS) (from species profiles DPE 2024)	HABITAT SUITABILITY FROM DPE PROFILES; TDBC AND CALCULATOR TICK BOXES (DPE 2024)	HISTORICAL RECORDS (TO 20 YEARS PREVIOUS)	CANDIDATE SPECIES ASSESSMENT
Vespadelus troughtoni **Eastern Cave Bat**	A small chestnut-brown bat with rufous tones on the head, and darker wings. It has smallish, conical ears and a short, up-tipped nose. The Eastern Cave Bat is found in a broad band on both sides of the Great Dividing Range from Cape York to Kempsey, with records from the New England Tablelands and the upper north coast of NSW. The western limit appears to be the Warrumbungle Range, and there is a single record from southern NSW, east of the ACT.	Very little is known about the biology of this uncommon species. A cave-roosting species that is usually found in dry open forest and woodland, near cliffs or rocky overhangs; has been recorded roosting in disused mine workings, occasionally in colonies of up to 500 individuals. Occasionally found along cliff-lines in wet eucalypt forest and rainforest. Little is understood of its feeding or breeding requirements or behaviour.	Only 1 record of this species in the locality in the last 20 years, approximately 920m to the south of the subject site (Figure 16)	**Candidate Credit Species** Subject site is unlikely to provide suitable habitat. No sandstone caves for breeding. Development proposal is not likely to impact on this species. **No further surveys or assessment required**

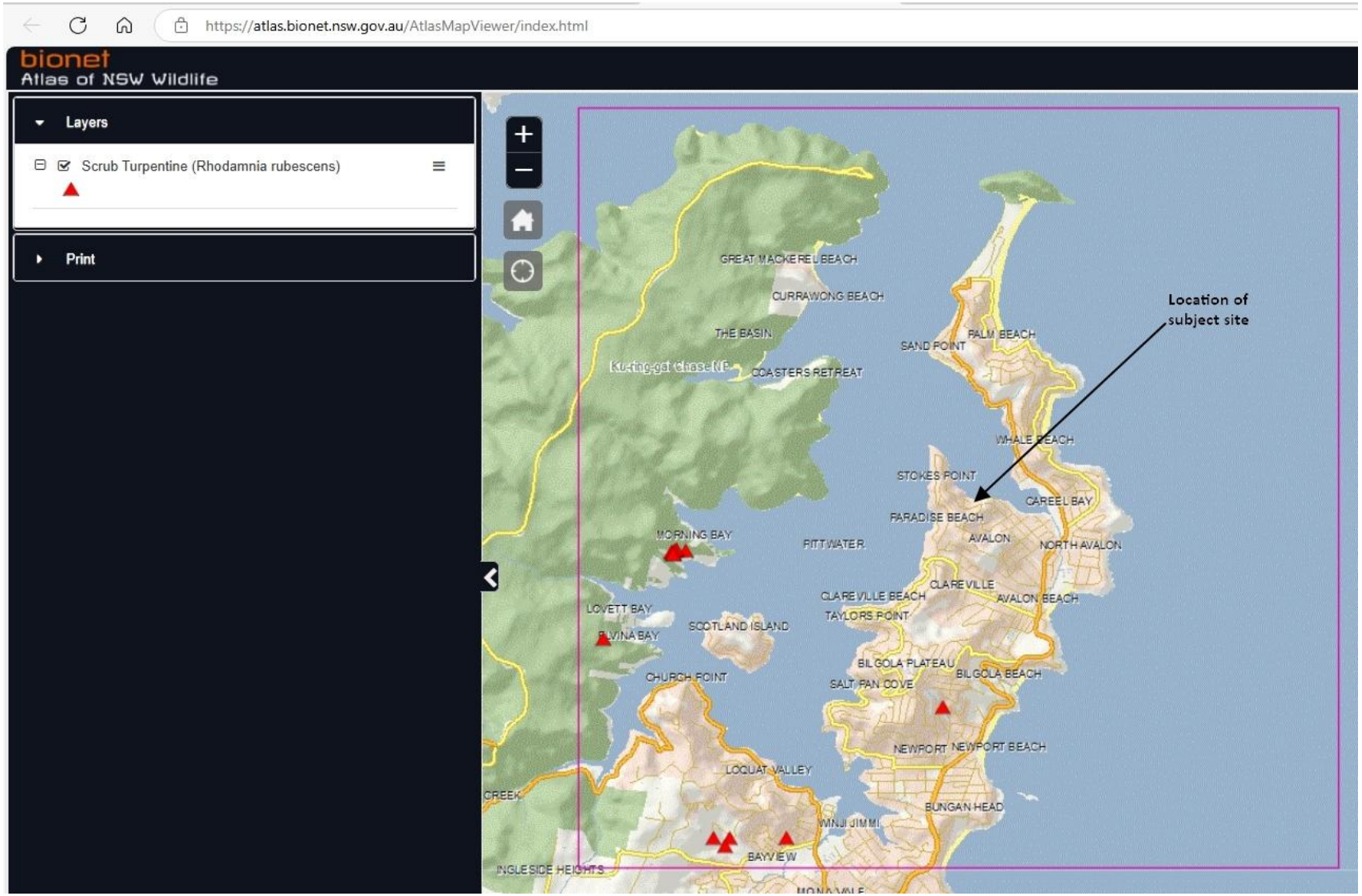


Figure 14 - Location of recordings of Scrub Turpentine in the locality within the previous 20 years, closest sighting about 2.8km to the south of the subject site (DPE 2025)

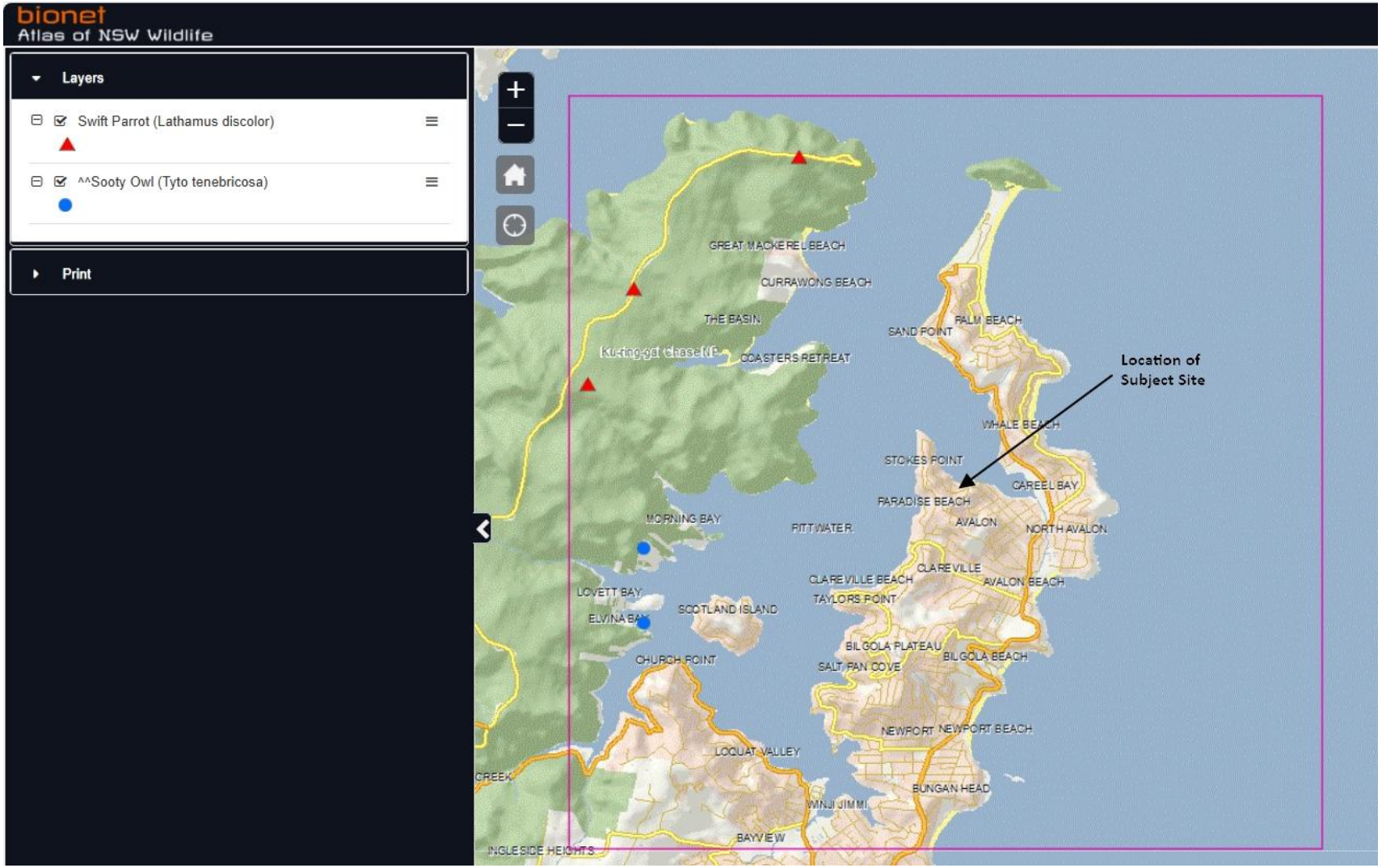


Figure 15 - Mapped area of recordings of the Swift Parrot and Sooty Owl in the locality within the previous 20 (DPE 2024).

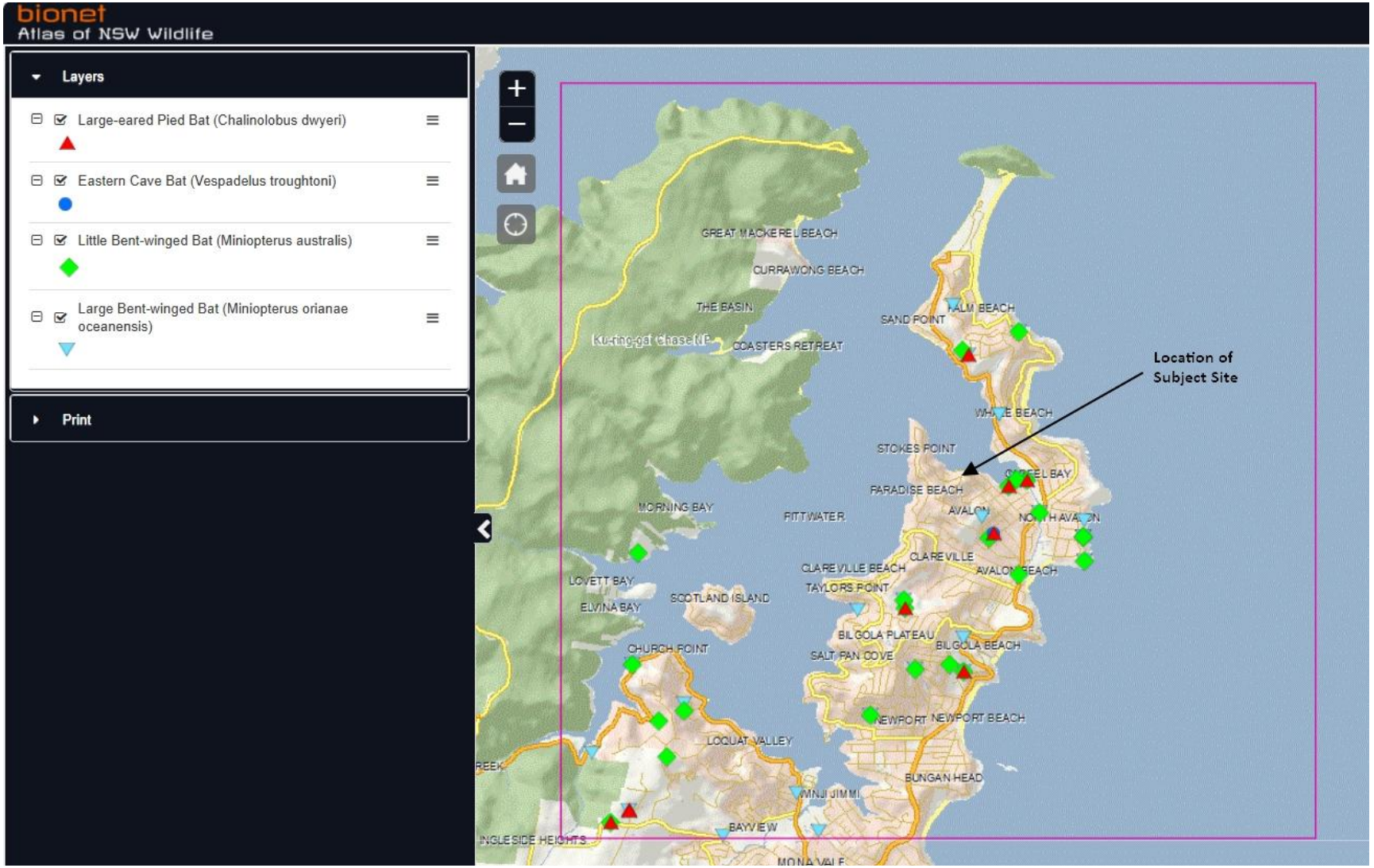


Figure 16 - Mapped area of recordings of several microbat species in the locality within the previous 20 (DPE 2024).

4.3 Description of impacts

4.3.1 Direct impacts to subject site

The extent of land to be potentially impacted by a secondary dwelling at the subject land at Avalon Beach is small, about 180m^2 (Figure 4), and, in regard to native species, only two trees of Cabbage Palm and one individual of Grey Gum occurring in very poor condition (Figure 4; Ezigrow 2024), will be removed (Ezigrow 2024). Some extent of the native vine Native Grape, will also be removed (Figures 6 & 8). No trees of Spotted Gum will be impacted.

There is a total of 680m^2 of bushland at the subject property and the loss of about 180m^2 of vegetation that mostly includes Fishpole Bamboo, would result in the retention of about 500m^2 of forested vegetation in good condition further downslope (Figures 3, 7 & 9).

4.3.2 Potential for runoff, erosion and sedimentation during construction

Construction activities could potentially encourage soil erosion and increase local sediment wash downslope when a house is constructed at the top of the slope.

Sediment fences and placement of hay bales along the steep downslope contours would lessen these impacts.

Though unlikely, accidental leaks, oil spills, fuel, cement or other substances washed downslope could also act to pollute downstream water bodies (Careel Bay).

A certified Construction Environment Management Plan (CEMP) should be provided with the approved application prior to issue of the Construction Certificate to address any of these potential issues.

4.3.3 Biodiversity Credits for PCT 3234 (Hunter Coast Lowland Spotted Gum Moist Forest)

The vegetation community assessed as occurring as component of the native vegetation at the subject site (Hunter Coast Lowland Spotted Gum Moist Forest) relates to the NSW Pittwater and Wagstaffe Spotted Gum Forest TEC only where it occurs in the LGAs of Gosford or Pittwater (LGA boundaries as at date of Final Determination) (DCCEEW 2025).

Pittwater and Wagstaffe Spotted Gum Forest in the Sydney Basin Bioregion, is listed as an Endangered Ecological Community on registers of the BC Act (2016). The forest vegetation occurs in a mostly floristically and structurally modified condition (Figures 7 & 8).

This assessment (prepared using the BAM-C Offsets Calculator) has determined that for the potential clearing of 0.018ha of a stand of Hunter Coast Lowland Spotted Gum Moist Forest in a floristically modified condition due to invasion by Bamboo, clearing of vegetation and deposition of building material debris (Figures 6 & 8), one (1) ecosystem credit should be required to offset impacts to the removal of 0.018ha of the modified canopy area of this community.

4.3.4 Serious and Irreversible Impacts (SAIIs)

Species and ecological communities with a 'very high' biodiversity risk weighting are considered to be a potential serious and irreversible impact (SAII). These 'potential SAII entities' are identified by the BAM calculator (BAM 2020).

The determination of serious and irreversible impacts on biodiversity values is to be made by the consent authority in accordance with the principles set out in the BC Regulation. To assist the consent authority, the guidance document 'Guidance to Assist a Decision Maker to determine a serious and irreversible impact' includes criteria that enable the application of the four principles set out in clause 6.7 of the BC Regulation. These criteria provide a guide to identify the species and ecological communities that are likely to be the subject of serious and irreversible impacts.

These four principles include the following (BC Regulation 2018):

An impact is to be regarded as serious and irreversible if it is likely to contribute significantly to the risk of a threatened species or ecological community becoming extinct because:

> (a) it will cause a further decline of the species or ecological community that is currently observed, estimated, inferred or reasonably suspected to be in a rapid rate of decline, or
>
> (b) it will further reduce the population size of the species or ecological community that is currently observed, estimated, inferred or reasonably suspected to have a very small population size, or
>
> (c) it is an impact on the habitat of the species or ecological community that is currently observed, estimated, inferred or reasonably suspected to have a very limited geographic distribution, or
>
> (d) the impacted species or ecological community is unlikely to respond to measures to improve its habitat and vegetation integrity and therefore its members are not replaceable.

For the purpose of this clause, a decline of a species or ecological community is a continuing or projected decline in:

> (a) an index of abundance appropriate to the taxon, or
>
> (b) the geographic distribution and habitat quality of the species or ecological community.

Hunter Coast Lowland Spotted Gum Moist Forest (PCT 3234)

PCT 3234 in the Sydney Basin Bioregion is listed as a threatened entity though only 28% of its distribution has been cleared (DPE 2024) and 7,925ha is retained in the Sydney Basdin Bioregion (DPE 2024). However, it is a component of Pittwater and Wagstaffe Spotted Gum Forest in the Sydney Basin Bioregion and this community has had 76% of its distribution cleared (OEH 2016).

The relatively small area of the ecological community to be cleared represents a decrease of about 0.0002% of the 7,925ha of the Hunter Coast Lowland Spotted Gum Moist Forest community that is retained for the Sydney Basin Bioregion (DCCEEW 2024), and it is considered that the biodiversity offset would adequately compensate for this very small potential decrease in extent of the community, that occurs in a highly floristically and structurally modified condition in the locality and in the wider regional area.

4.3.5 Potential Direct Impacts

4.3.5.1 Removal of vegetation and potential habitat

The impacts would include the potential removal of approximately 0.018ha of a highly modified assemblage of Hunter Coast Lowland Spotted Gum Moist Forest at the subject site, which is characterized by the presence of mature trees of Spotted Gum, Grey Gum and Cabbage Palm (Figures 6, 7 & 8).

4.3.5.2 Potential for runoff, sedimentation and erosion during construction

Due to relatively steep sloping ground surfaces of the subject land, construction activities when a building is constructed, could potentially lead to much soil erosion and increase in sediment load downslope.

The potential for accidental leaks/spills of oil, fuel, cement or other substances entering the downslope stream channel could potentially pollute ground water and downslope water bodies. Sediment fences and hay bales installed along downslope contours from construction activities would serve to reduce potential erosion of land surfaces and decrease the sediment wash downslope were any clearing actions to be undertaken.

An approved Construction Environment Management Plan (CEMP) would require to be prepared for the proposal and be provided with the approved application prior to issue of the Construction Certificate to address these potential issues.

4.3.5.3 Potential temporary noise, dust, excessive lighting and vibration disturbance during construction period

The potential effects of temporary but excessive noise, dust, bright lighting and vibration disturbance during construction activities upon potential fauna are difficult to predict.

Potential impacts may include negative effects on predator-prey interactions and changes to roosting and breeding behaviours in the short term.

An approved Construction Environment Management Plan (CEMP) would require to be prepared for the proposal and be provided with the approved application prior to issue of the Construction Certificate to address these potential issues.

4.3.6 Indirect Impacts

Indirect impacts occur when the proposal or activities relating to the construction or operation of the proposal may affect adjacent or proximal areas of native vegetation, threatened ecological communities or threatened species habitat beyond the subject site.

4.3.6.1 Hydrological changes

Potential indirect impacts to flora and fauna would include hydrological changes to the surface water-runoff flow. Any additional hard surface areas created as a result of the proposed construction would be expected to potentially result in some changes to the current hydrological regime. However, it would be proposed that all water run-off would be directed within the property to the current urban stormwater management system.

4.3.6.2 Introduction of pathogens

The introduction of pathogens may occur into the site and surrounding remnant bushland, via machinery, tools and equipment and clothing (i.e. boots). Diseases that require caution include Phytophthora (also known as Root Rot – type of water mould) and Myrtle Rust (*Puccinia psidii* – type of fungus). Simple procedures such as minimising entry points to the site and washing down tyres and boots before entry, minimise this risk.

4.3.6.3 Weed removal, future growth and invasion

There is a large extent of particularly the weed species Fishpole Bamboo present at the subject site. At the direct work zone, this Bamboo present should be managed by physical removal by slashing and excavating the underground rhizomatous stem/root systems to remove the weed (Figures 6 & 8).

Weeds must be bagged and removed from the site and disposed of in a certified weed-disposal facility. Following weed removal, washing machinery, tools, equipment and clothes (e.g., boots) is undertaken to prevent weed-seed spread. There should be continuous maintenance of the site, where once weed growth is largely removed, future weed invasion is monitored and any resulting weed incidence is promptly pulled, bagged and disposed of. Weeds will colonize and pioneer on any cleared grounds, so weed establishment must be managed throughout the duration of the project as well as on-going post works.

4.3.7 Prescribed and uncertain impacts

Prescribed impacts on biodiversity values includes any potential impacts that are not a result of direct vegetation clearing or construction development that have been prescribed by the Biodiversity Conservation Regulation (2017), these listed in Table 6 as follows:

Attributes or features of the habitat	Potential impacts	Actions to alleviate or ameliorate potential impacts
Species using caves, cliffs, karsts or crevices. Includes potential roosting sites for cave-dwelling microchiropterans	Not applicable	Not applicable
Habitat of threatened species associated with rocks	Not applicable	Not applicable
Habitat of threatened species associated with man-made structures such as drainage pipes	Not applicable	Not applicable
Habitat of threatened species associated with non-native vegetation	There is considerable cover in the understorey stratum of Bamboo (Figures 6 & 8)	Revegetation of native species where applicable that may afford foraging and sheltering resources to avifauna
Connectivity of habitats within and between allotments facilitating movement of species across their range	A very small extent of connectivity may be reduced	The majority of trees that occur at the subject site will be retained (Ezigrow 2024)
Movement of threatened species required to maintain life cycles	Small area of potential impacts considered insufficient to cause decline in maintenance of life cycles, particularly with regard to avian and arboreal fauna	The proposal is unlikely to cause decline in maintenance of life cycles, particularly with regard to highly mobile avian, arboreal and microchiropteran fauna
Hydrological regimes required to sustain threatened species	Not applicable	Not applicable

Table 6 - List of potential prescribed impacts which may occur as a result of the proposed development.

4.3.8 Avoidance/minimisation of impacts

PCT 3234 – Hunter Coast Lowland Spotted Gum Moist Forest relates to the NSW Pittwater and Wagstaffe Spotted Gum Forest TEC only where it occurs in the LGAs of Gosford or Pittwater (LGA boundaries as at date of Final Determination) (DCCEEW 2025).

In order to avoid and minimise the environmental impact of the proposed development, it is recommended to use up to 80% of species representative of Hunter Coast Lowland Spotted Gum Moist in any landscaping that is associate with the proposed development.

The retention of most of the mature trees that are characteristic of Hunter Coast Lowland Spotted Gum Moist Forest has reduced the environmental impact of the proposed development and contributes to the preservation of Hunter Coast Lowland Spotted Gum Moist Forest in the Sydney Basin Bioregion, consistent with OEH's Saving our Species strategy to preserve endangered ecological communities (OEH, 2023).

A Vegetation Management Plan for the proposal should be prepared detailing management actions to protect any retained trees occurring within or adjacent to the construction footprint, as well as a weeding program to remove any invasive weeds from the property prior to and following potential construction.

4.3.9 Mitigation measures

4.3.9.1 Wildlife corridor/ revegetation

Native tree replanting commensurate with Hunter Coast Lowland Spotted Gum Moist Forest assemblages will assist the long-term retention of canopy.

Species plantings in any landscape plan should include locally native species representative of Hunter Coast Lowland Spotted Gum Moist Forest assemblages. This will provide greater foraging and nesting habitat for native species and will deliver greater biodiversity gain outcomes than the current mid and ground story. The greatest ecological outcome is to recreate areas of Hunter Coast Lowland Spotted Gum Moist Forest community where environmental criteria are favourable including shrubs, native grasses and forbs.

4.3.9.2 Retaining mature trees at subject site

All mature individuals of canopy trees belonging to the Hunter Coast Lowland Spotted Gum Moist Forest plant community that occur in good condition have been retained (Ezigroow 2024). This has greatly reduced the environmental impact of the proposed development.

5 IMPACT SUMMARY AND CONCLUSIONS

5.1 Serious and irreversible impacts (SAIIs)

OEH (2017) 'Guidance to Assist a Decision-maker to Determine a Serious and Irreversible Impact' lists the ecological communities and species that are 'potential serious and irreversible impact (SAII) entities'.

Hunter Coast Lowland Spotted Gum Moist Forest (PCT 3234) occurring in the Pittwater LGA in the Sydney Basin Bioregion is a component of Pittwater and Wagstaffe Spotted Gum Forest in the Sydney Basin Bioregion, and is listed as an endangered ecological community listed on registers of the BC Act (2016).

Pittwater and Wagstaffe Spotted Gum Forest in the Sydney Basin Bioregion has a current extent of 275ha in the Sydney Basin Bioregion with about 76% of its distribution cleared.

The relatively small area of the highly floristically and structurally modified Hunter Coast Lowland Spotted Gum Moist Forest ecological community to be cleared represents a decrease of about 0.0065% of the 275ha of the Hunter Coast Lowland Spotted Gum Moist Forest community that is retained within the Pittwater LGA of the Sydney Basin Bioregion (DCCEEW 2024). It is considered that the biodiversity offset may compensate for this very small potential decrease in extent of the community, that occurs in a highly floristically modified condition in the locality and in the wider regional area.

5.2 Impacts that require an Offset

Table 7 summarises the impact to areas of PCT 3234 that require an offset.

Vegetation Zone (Description)	PCT	Extent of potential area impacted	Current Vegetation Integrity Score (VIS)	Future Vegetation Integrity Score	Number of Ecosystem credits required
Small patch of Hunter Coast Lowland Spotted Gum Moist Forest **(Figures 3, 6, 7, 8 & 9)**	**3234**	**0.018ha**	**26.8**	**0**	**1**

Table 7 – Impact to PCT Areas

5.3 Conclusions of assessment

The proposed development is sited at the upper slope of the subject land in an area that is highly degraded and dominated by Fishpole Bamboo and building material rubble (Figures 6, 7 & 8).

No area of significant biodiversity value will be impacted by the proposal.

The retention of the mature trees down the slope (Figure 7) avoids impact to significant elements of biodiversity value at the subject site.

The avoidance of impacts to significant elements of biodiversity that occur at the subject site, mature individuals of canopy trees of Spotted Gum and Grey Gum, that are characteristic of Hunter Coast Lowland Spotted Gum Moist Forest, has significantly reduced the environmental impact of the proposed development and contributes to the preservation of Hunter Coast Lowland Spotted Gum Moist Forest in the Sydney Basin Bioregion, consistent with OEH's Saving our Species strategy to preserve endangered ecological communities (OEH, 2023).

6 BIODIVERSITY CREDIT REPORT (LIKE FOR LIKE)

For the proposed secondary dwelling development at 154 Cabarita Road, Avalon Beach, one (1) credit was assessed as having been generated with the loss of 0.018ha of a patch of Hunter Coast Lowland Spotted Gum Forest ecological community in a highly degraded condition, though supporting mature canopy trees in good condition with high amenity which will be retained (Ezigrow 2024) (Figures 6 & 7).

The vegetation is assessed as having a low floristic, low structural and moderate functional integrity in the canopy tree, shrub and ground strata.

There is low composition of natural species in the assemblage, a relatively low spread of tree DBH sizes with no regeneration occurring.

The Biodiversity Credit Report for the proposal is as follows:

BAM Biodiversity Credit Report (Like for like)

Proposal Details

Assessment Id 00054383/BAAS24033/25/00054384	Proposal Name Proposed Development of secondary dwelling at 154 Cabarita Rd Avalon Beach	BAM data last updated * 28/10/2024
Assessor Name Josie Drevon	Assessor Number BAAS24033	BAM Data version * Current classification (live - default) (80)
Proponent Names Grieg Witney	Report Created 22/01/2025	BAM Case Status Finalised
Assessment Revision 4	BOS entry trigger BOS Threshold: Biodiversity Values Map	Assessment Type Part 4 Developments (Small Area)
Date Finalised 22/01/2025	* 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.	

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		

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
Calyptorhynchus lathami lathami / South-eastern Glossy Black-Cockatoo
Lathamus discolor / Swift Parrot
Varanus rosenbergi / Rosenberg's Goanna
Anthochaera phrygia / Regent Honeyeater
Artamus cyanopterus cyanopterus / Dusky Woodswallow

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	0.0	0	1	1

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_Disturbed	No	1	Pittwater, Cumberland, Sydney Cataract, Wyong and Yengo. 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

7 REFERENCES

Benson, D. and Howell, J. (1994) The natural vegetation of the Sydney 1: 100,000 map sheet. *Cunninghamia* **3**:677 – 787.

Benson, DH and Howell, J 1995, Taken for granted: the bushland of Sydney and its suburbs, Kangaroo Press, Kenthurst

Briggs, J.D. and Leigh, J.H.C. (1996) Rare or Threatened Australian Plants: CSIRO Division of Plant Industry/Australian National Parks and Wildlife Service. CSIRO Publishing, Melb.

Chapman, G.A. and Murphy, C.L. (1989) *Soil landscapes of the Sydney 1;100 000 sheet.* (Soil Conservation Service of N.S.W.: Sydney).

Churchill, S., (1998). *Australian Bats*. Reed New Holland Publishers.

Cogger, H. G. (2000). Reptiles and Amphibians of Australia. 6th ed. Reed New Holland, Sydney.

Commonwealth DCCEEW Protected Matters Environmental Search Tool (2025)

Cropper, S (1993) *Management of Endangered Plants* CSIRO Pub. East Melbourne

DEC (2002) *Final Edition of 'Native Vegetation of the Cumberland Plain'*. Conservation Programs and Planning Division, Central Directorate.

DEC (2004) Threatened Biodiversity Survey and Assessment: Guidelines for Developments and Activities

DECCW (2011) Cumberland Plain Recovery Plan.

Department of Environment and Climate Change (NSW) (2002), Descriptions for NSW (Mitchell) Landscapes, Version 2

DCCEEW Bionet Atlas of NSW Wildlife (2025). NPWS Geographic Information Systems Division, Hurstville NSW, 2220.

Dwyer, P.D. (1995) Large Bentwinged-bat *Miniopterus orianae oceanensis* Pp. 494-5 in Strahan, R. (ed.) The Mammals of Australia. Reed Books, Sydney.

Ezigrow (2024) Aboricultural Impact Appraisal and Method Statement for 129 George Street, Avalon Beach

Fairley, A. (2004) Seldom Seen – Rare Plants of Greater Sydney. New Holland Publ Sydney, Aust.

Fairley, A. & Moore, P. (2010) Native Plants of the Sydney District – An Identification Guide. Kangaroo Press, Kenthurst, Sydney.

Gibbons P, Lindenmayer D (2000) 'Tree Hollows and Wildlife Conservation in Australia'. (CSIRO Publishing: Canberra)

Harden, G. J. (ed.) (1990 – 2002; 2025 online) Flora of New South Wales, Royal Botanic Gardens, Sydney NSW.

Herbert, C. (1983) 'Geology of the 1:100 000 Sheet 9130'. Geological Survey of NSW, Sydney.

J.D. Evans and Company Design and Building Consultants (Updated drawings Ref: 2141 - 1A to 7A - dated 10.10.2024) Various updated architectural drawings for proposed development at 154 Cabarita Road, Avalon Beach

Lumsden, L.F. and Menkhorst, P. (1995) Yellow-bellied Sheathtail-bat. Pp 161-2 in Menkhorst, P.W. (ed.) Mammals of Victoria. Oxford University Press, Melbourne.

Menkhorst, P & F Knight (2001). A field guide to the Mammals of Australia. Victoria: Oxford University Press.

NSW Scientific Committee. Final Determinations (1996 – 2025) Determinations relating to listings of threatened species, ecological communities and key threatening processes in the Schedules of the Biodiversity Conservation Act 1995.

OEH (2016) 'The Native Vegetation of the Sydney Metropolitan Catchment Management Authority Area'.

Pizzey, G. and Knight, F. (2003). The Field Guide to the Birds of Australia. Angus and Robinson Publs.

Smith A.P & Murray (2002) Habitat requirements of the squirrel glider (Petaurus norfolcensis) and associated possums and gliders on the New South Wales central coast. Wildlife Research 30(3) 291-301

Specht, R. L., Specht, A., Whelan, M.B., Hegarty, E. E. (1995) Conservation Atlas of Plant Communities in Australia. Southern Cross Univ Press Lismore

Strahan, R. 1995 Complete Book of Australian Mammals, Second Edition. Sydney: ReedBooks.

Appendix 1 - Field Data for Plot 1 at 154 Cabarita Road, Avalon Beach

Plot	1
Date	26/11/2024
PCT	3234: Hunter Coast Lowland Spotted Gum Moist Forest
	Pittwater and Wagstaffe Spotted Gum Forest in the Sydney Basin
TEC	Bioregion
Bearing	352^{o}
Latitude	-33.621927
Longitude	151.322751
Easting	344418.2
Northing	6278501.59
Zone	56

Flora species recorded in 13.34 x 30m plot (400m^2)

STATUS	FAMILY	SCIENTIFIC NAME	COMMON NAME	COVER (%)	FORM
Introduced	Amaryllidaceae	*Agapanthus praecox*	African Lily	1	
Introduced	Araceae	*Monstera deliciosa*	Fruit Salad Plant	4	
Native	Araliaceae	*Polyscias elegans*	Celery wood	10	Tree
Introduced	Araucariaceae	*Araucaria heterophylla*	Norfolk Island Pine	3	
Introduced	Arecaceae	*Dypsis lutescens*	Golden Cane Palm	2	
Native	Arecaceae	*Livistona australis*	Cabbage Tree Palm	20	Other
Introduced	Arecaceae	*Phoenix canariensis*	Canary Island Palm	5	
HTW	Asparagaceae	*Asparagus aethiopicus*	Asparagus Fern	2	

STATUS	FAMILY	SCIENTIFIC NAME	COMMON NAME	COVER (%)	FORM
Introduced	Asparagaceae	*Speirantha gardenii*	False Lily of the Valley	8	
HTW	Asteraceae	*Bidens pilosa*	Cobblers Pegs	1	
Introduced	Bignoniaceae	*Jacaranda mimosifolia*	Jacaranda	5	
Native	Commelinaceae	*Commelina cyanea*	Scurvy Weed	1	Forb
Native	Convolvulaceae	*Dichondra repens*	Kidney Weed	1	Forb
HTW	Fabaceae	*Senna pendula*	Easter Cassia	3	
HTW	Lauraceae	*Cinnamomum camphora*	Camphor Laurel	20	
Introduced	Lomariopsidaceae	*Nephrolepis cordifolia*	Fishbone Fern	4	
Native	Malvaceae	*Brachychiton acerifolius*	Illawarra Flame Tree	4	Tree
Native	Menispermaceae	*Stephania japonica*	Snake Vine	0.1	Other
Introduced	Moraceae	*Ficus pumila*	Creeping Fig	1	
Native	Myrtaceae	*Corymbia maculata*	Spotted Gum	20	Tree
Native	Myrtaceae	*Eucalyptus punctata*	Grey Gum	15	Tree
Native	Myrtaceae	*Syzygium australe*	Brush Cherry	5	Shrub
Introduced	Oleaceae	*Olea africana*	African Olive	10	
HTW	Poaceae	*Ehrharta erecta*	Panic Veldtgrass	5	
HTW	Poaceae	*Phyllostachys aurea*	Fishpole Bamboo	40	
Introduced	Strelitziaceae	*Strelitzia nicolai*	Bird of Paradise	5	
Native	Vitaceae	*Cayratia clematidea*	Native Grape	15	Other

Summary

FORM	TREE	SHRUB	OTHER	FORB	GRASS	FERN	HTW
Count	4	1	3	2	0	0	0
Sum Cover	49	5	35.1	2	0	0	71

BAM attributes recorded in 13.34 x 74.98m plot (1000m^2)

DBH							TREE HOLLOWS	LENGTH OF LOGS	LITTER COVER	ROCK
80+	**50-79**	**30-49**	**20-29**	**10-19**	**5-9**	**<5**				
0	3	3	3	0	0	0	0	2	61	22

Appendix 2 - **BAAS Profile for J Drevon**

Department of Climate Change, Energy, the Environment and Water

NSW GOVERNMENT

CERTIFICATE OF ACCREDITATION AS A BIODIVERSITY ASSESSMENT METHOD ASSESSOR under the *Biodiversity Conservation Act 2016* (NSW)

BAM Assessor		
Josie Drevon		
Accreditation number	**Accreditation date (Date of issue)**	**Expiry Date of**
BAAS24033	September 26, 2024	September 25, 2027

The person named above is accredited under section 6.10 of the *Biodiversity Conservation Act 2016* (NSW) (**BC Act**) as a Biodiversity Assessment Method Assessor to apply the Biodiversity Assessment Method in connection with the preparation of biodiversity stewardship site assessment reports, biodiversity development assessment reports and biodiversity certification assessment reports pursuant to Part 6 of the BC Act.

The accreditation is in force until and including the Expiry Date. The accreditation is subject to the conditions set out in the *Accreditation Scheme for the Application of the Biodiversity Assessment Method*, under the BC Act, and the conditions specified on the reverse of this certificate.

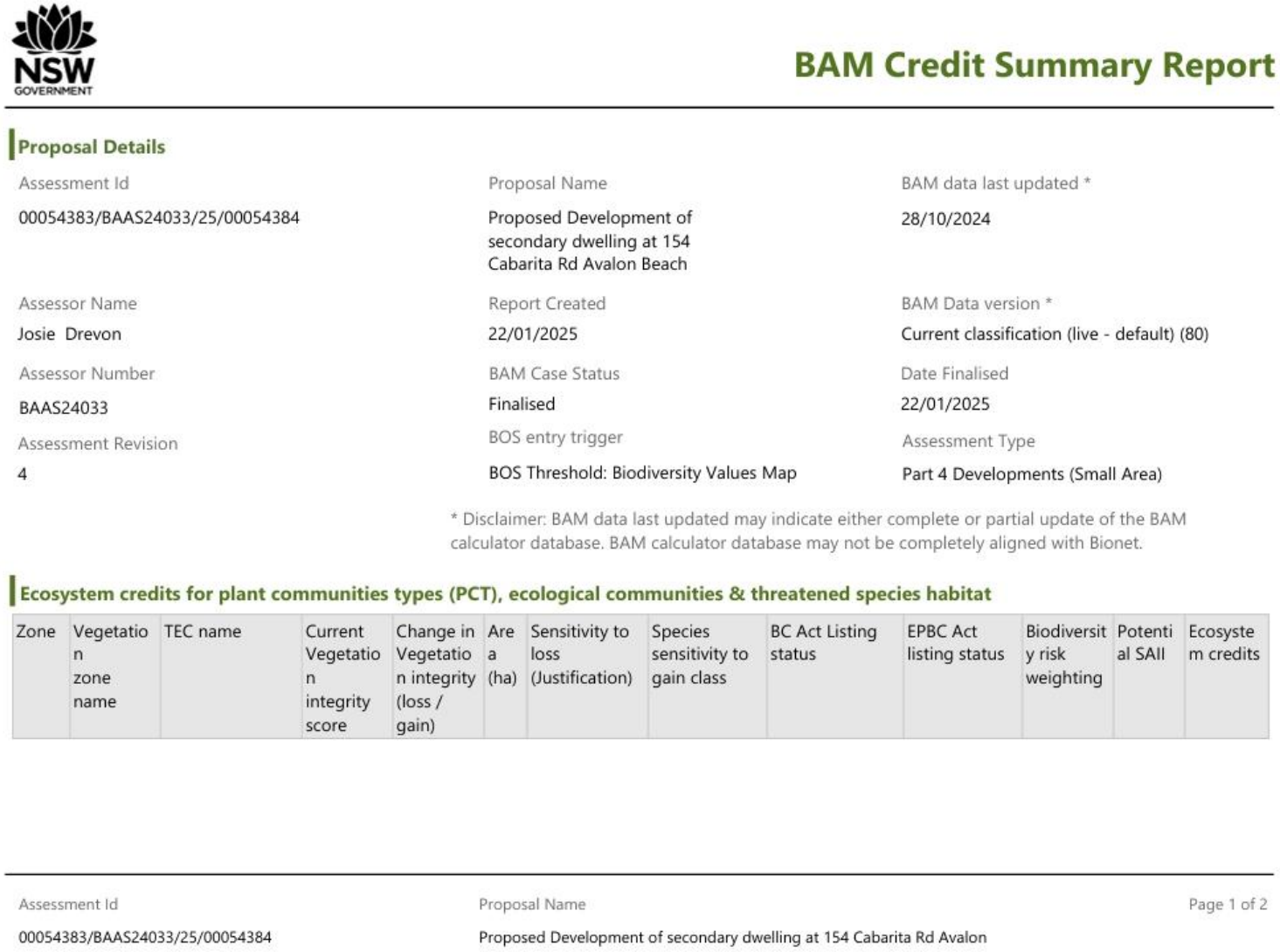
STEEN GYRN

Senior Team Leader, Accreditation and Training
Biodiversity and Conservation Division | Department of Climate Change, Energy, the Environment and Water

NOTES

- DCCEEW maintains a register of Accredited Biodiversity Assessment Method (BAM) Assessors accessible from the DCCEEW website.
- The BAM Assessor's accreditation expires on the Expiry Date unless renewed in accordance with the *Accreditation Scheme for the Application of the Biodiversity Assessment Method*. It is the BAM Assessor's responsibility to monitor the Expiry Date of their accreditation, and apply for any renewal with sufficient time for the application to be processed prior to the Expiry Date.
- Words and expressions used in this accreditation instrument and which are also used in the Act have the same meaning.

Appendix 3 - BAM Summary Reports



NSW GOVERNMENT

BAM Credit Summary Report

Proposal Details

Assessment Id 00054383/BAAS24033/25/00054384	Proposal Name Proposed Development of secondary dwelling at 154 Cabarita Rd Avalon Beach	BAM data last updated * 28/10/2024
Assessor Name Josie Drevon	Report Created 22/01/2025	BAM Data version * Current classification (live - default) (80)
Assessor Number BAAS24033	BAM Case Status Finalised	Date Finalised 22/01/2025
Assessment Revision 4	BOS entry trigger BOS Threshold: Biodiversity Values Map	Assessment Type Part 4 Developments (Small Area)

* 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.

Ecosystem credits for plant communities types (PCT), ecological communities & threatened species habitat

Zone	Vegetation zone name	TEC name	Current Vegetation integrity score	Change in Vegetation integrity (loss / gain)	Area (ha)	Sensitivity to loss (Justification)	Species sensitivity to gain class	BC Act Listing status	EPBC Act listing status	Biodiversity risk weighting	Potential SAII	Ecosystem credits

NSW GOVERNMENT

BAM Credit Summary Report

Hunter Coast Lowland Spotted Gum Moist Forest											
1	3234_Disturbed	Pittwater and Wagstaffe Spotted Gum Forest in the Sydney Basin Bioregion	26.8	26.8	0.02	Geographic Distribution	High Sensitivity to Gain	Endangered Ecological Community	Not Listed	2.00	True	1
											Subtotal	**1**
											Total	**1**

Species credits for threatened species

Vegetation zone name	Habitat condition (Vegetation Integrity)	Change in habitat condition	Area (ha)/Count (no. individuals)	Sensitivity to loss (Justification)	Sensitivity to gain (Justification)	BC Act Listing status	EPBC Act listing status	Potential SAII	Species credits

BAM Biodiversity Credit Report (Variations)

Proposal Details

Assessment Id
00054383/BAAS24033/25/00054384

Proposal Name
Proposed Development of secondary dwelling at 154 Cabarita Rd Avalon Beach

BAM data last updated *
28/10/2024

Assessor Name
Josie Drevon

Assessor Number
BAAS24033

BAM Data version *
Current classification (live - default) (80)

Proponent Name(s)
Grieg Witney

Report Created
22/01/2025

BAM Case Status
Finalised

Assessment Revision
4

BOS entry trigger
BOS Threshold: Biodiversity Values Map

Assessment Type
Part 4 Developments (Small Area)

Date Finalised
22/01/2025

* 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.

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		

Additional Information for Approval

PCT Outside Ibra Added

None added

BAM Biodiversity Credit Report (Variations)

PCTs With Customized Benchmarks

PCT
No Changes

Predicted Threatened Species Not On Site

Name
Calyptorhynchus lathami lathami / South-eastern Glossy Black-Cockatoo
Lathamus discolor / Swift Parrot
Varanus rosenbergi / Rosenberg's Goanna
Anthochaera phrygia / Regent Honeyeater
Artamus cyanopterus cyanopterus / Dusky Woodswallow

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	0.0	0	1	1.00

3234-Hunter Coast Lowland Spotted Gum Moist Forest

Like-for-like credit retirement options

Class	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_Disturbed	No	1	Pittwater,Cumberland, Sydney Cataract, Wyong and Yengo. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

BAM Biodiversity Credit Report (Variations)

3234-Hunter Coast Lowland Spotted Gum Moist Forest	Variation options					
	Formation	Trading group	Zone	HBT	Credits	IBRA region
	Wet Sclerophyll Forests (Grassy sub-formation)	Tier 3 or higher threat status	3234_Disturbed	No	1	IBRA Region: Sydney Basin, 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 options

BAM Candidate Species Report

Proposal Details

Assessment Id	Proposal Name	BAM data last updated *
00054383/BAAS24033/25/00054384	Proposed Development of secondary dwelling at 154 Cabarita Rd Avalon Beach	28/10/2024
Assessor Name	**Report Created**	**BAM Data version ***
Josie Drevon	22/01/2025	Current classification (live - default) (80)
Assessor Number	**Assessment Type**	**BAM Case Status**
BAAS24033	Part 4 Developments (Small Area)	Finalised
Assessment Revision	**BOS entry trigger**	**Date Finalised**
4	BOS Threshold: Biodiversity Values Map	22/01/2025

* 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.

List of Species Requiring Survey

Name	Presence	Survey Months
Rhizanthella slateri Eastern Australian Underground Orchid	No (surveyed)	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☐ Survey month outside the specified months?
Rhodamnia rubescens Scrub Turpentine	No (surveyed)	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☐ Survey month outside the specified months?

Rhodomyrtus psidioides Native Guava	No (surveyed)	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☐ Survey month outside the specified months?

Threatened species Manually Added

None added

Threatened species assessed as not on site

Refer to BAR for detailed justification

Common name	Scientific name	Justification in the BAM-C
Eastern Cave Bat	Vespadelus troughtoni	Habitat constraints
Large Bent-winged Bat	Miniopterus orianae oceanensis	Habitat constraints
Large-eared Pied Bat	Chalinolobus dwyeri	Habitat constraints
Little Bent-winged Bat	Miniopterus australis	Habitat constraints
Regent Honeyeater	Anthochaera phrygia	Habitat constraints
Sooty Owl	Tyto tenebricosa	Habitat constraints
Swift Parrot	Lathamus discolor	Habitat constraints

BAM Predicted Species Report

Proposal Details

Assessment Id	Proposal Name	BAM data last updated *
00054383/BAAS24033/25/00054384	Proposed Development of secondary dwelling at 154 Cabarita Rd Avalon Beach	28/10/2024
Assessor Name	**Report Created**	**BAM Data version ***
Josie Drevon	22/01/2025	Current classification (live - default) (80)
Assessor Number	**Assessment Type**	**BAM Case Status**
BAAS24033	Part 4 Developments (Small Area)	Finalised
Assessment Revision	**BOS entry trigger**	**Date Finalised**
4	BOS Threshold: Biodiversity Values Map	22/01/2025

* 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.

Threatened species reliably predicted to utilise the site. No surveys are required for these species. Ecosystem credits apply to these species.

Common Name	Scientific Name	Vegetation Types(s)
Black Bittern	Ixobrychus flavicollis	3234-Hunter Coast Lowland Spotted Gum Moist Forest
Black-chinned Honeyeater (eastern subspecies)	Melithreptus gularis gularis	3234-Hunter Coast Lowland Spotted Gum Moist Forest
Brown Treecreeper (eastern subspecies)	Climacteris picumnus victoriae	3234-Hunter Coast Lowland Spotted Gum Moist Forest
Eastern Coastal Free-tailed Bat	Micronomus norfolkensis	3234-Hunter Coast Lowland Spotted Gum Moist Forest
Eastern False Pipistrelle	Falsistrellus tasmaniensis	3234-Hunter Coast Lowland Spotted Gum Moist Forest
Eastern Osprey	Pandion cristatus	3234-Hunter Coast Lowland Spotted Gum Moist Forest
Flame Robin	Petroica phoenicea	3234-Hunter Coast Lowland Spotted Gum Moist Forest
Gang-gang Cockatoo	Callocephalon fimbriatum	3234-Hunter Coast Lowland Spotted Gum Moist Forest
Golden-tipped Bat	Phoniscus papuensis	3234-Hunter Coast Lowland Spotted Gum Moist Forest

Greater Broad-nosed Bat	Scoteanax rueppellii	3234-Hunter Coast Lowland Spotted Gum Moist Forest
Grey-headed Flying-fox	Pteropus poliocephalus	3234-Hunter Coast Lowland Spotted Gum Moist Forest
Large Bent-winged Bat	Miniopterus orianae oceanensis	3234-Hunter Coast Lowland Spotted Gum Moist Forest
Little Bent-winged Bat	Miniopterus australis	3234-Hunter Coast Lowland Spotted Gum Moist Forest
Little Eagle	Hieraaetus morphnoides	3234-Hunter Coast Lowland Spotted Gum Moist Forest
Little Lorikeet	Glossopsitta pusilla	3234-Hunter Coast Lowland Spotted Gum Moist Forest
New Holland Mouse	Pseudomys novaehollandiae	3234-Hunter Coast Lowland Spotted Gum Moist Forest
Rose-crowned Fruit-Dove	Ptilinopus regina	3234-Hunter Coast Lowland Spotted Gum Moist Forest
Scarlet Robin	Petroica boodang	3234-Hunter Coast Lowland Spotted Gum Moist Forest
Spotted-tailed Quoll	Dasyurus maculatus	3234-Hunter Coast Lowland Spotted Gum Moist Forest
Square-tailed Kite	Lophoictinia isura	3234-Hunter Coast Lowland Spotted Gum Moist Forest
Superb Fruit-Dove	Ptilinopus superbus	3234-Hunter Coast Lowland Spotted Gum Moist Forest
Varied Sittella	Daphoenositta chrysoptera	3234-Hunter Coast Lowland Spotted Gum Moist Forest
White-bellied Sea-Eagle	Haliaeetus leucogaster	3234-Hunter Coast Lowland Spotted Gum Moist Forest
White-throated Needletail	Hirundapus caudacutus	3234-Hunter Coast Lowland Spotted Gum Moist Forest
Yellow-bellied Glider	Petaurus australis	3234-Hunter Coast Lowland Spotted Gum Moist Forest
Yellow-bellied Sheathtail-bat	Saccolaimus flaviventris	3234-Hunter Coast Lowland Spotted Gum Moist Forest

Threatened species Manually Added

None added

Threatened species assessed as not within the vegetation zone(s) for the PCT(s)

Common Name	Scientific Name	Plant Community Type(s)
Dusky Woodswallow	Artamus cyanopterus cyanopterus	3234-Hunter Coast Lowland Spotted Gum Moist Forest
Regent Honeyeater	Anthochaera phrygia	3234-Hunter Coast Lowland Spotted Gum Moist Forest

Rosenberg's Goanna	Varanus rosenbergi	3234-Hunter Coast Lowland Spotted Gum Moist Forest
South-eastern Glossy Black-Cockatoo	Calyptorhynchus lathami lathami	3234-Hunter Coast Lowland Spotted Gum Moist Forest
Swift Parrot	Lathamus discolor	3234-Hunter Coast Lowland Spotted Gum Moist Forest

Threatened species assessed as not within the vegetation zone(s) for the PCT(s)

Refer to BAR for detailed justification

Common Name	Scientific Name	Justification in the BAM-C
Dusky Woodswallow	Artamus cyanopterus cyanopterus	Refer to BAR
Regent Honeyeater	Anthochaera phrygia	Refer to BAR
Rosenberg's Goanna	Varanus rosenbergi	Refer to BAR
South-eastern Glossy Black-Cockatoo	Calyptorhynchus lathami lathami	Habitat constraints
Swift Parrot	Lathamus discolor	Refer to BAR

BAM Vegetation Zones Report

Proposal Details

Assessment Id	Assessment name	BAM data last updated *
00054383/BAAS24033/25/00054384	Proposed Development of secondary dwelling at 154 Cabarita Rd Avalon Beach	28/10/2024
Assessor Name	Report Created	BAM Data version *
Josie Drevon	22/01/2025	Current classification (live - default) (80)
Assessor Number	Assessment Type	BAM Case Status
BAAS24033	Part 4 Developments (Small Area)	Finalised
Assessment Revision	BOS entry trigger	Date Finalised
4	BOS Threshold: Biodiversity Values Map	22/01/2025

* 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.

Vegetation Zones

#	Name	PCT	Condition	Area	Minimum number of plots	Management zones
1	3234_Disturbed	3234-Hunter Coast Lowland Spotted Gum Moist Forest	Disturbed	0.02	1	