Flora and Fauna Assessment Report

54 – 58 Beaconsfield Street, Newport NSW 2106

Report prepared by Narla Environmental

for

JAK Newport Pty Ltd

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NARLA
environmental

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Table of Contents

Tables

Figures

Glossary

Acronym/ Term	Definition
BAM	Biodiversity Assessment Methodology
BC Act	New South Wales Biodiversity Conservation Act 2016
BDAR	Biodiversity Development Assessment Report
DA	Development Application
DAFF	Federal Department of Agriculture, Fisheries, and Forestry
DCCEEW	Federal Department of Climate Change, Energy, the Environment and Water
Development	The use of land, and the subdivision of land, and the carrying out of a work, and the demolition of a building or work, and the erection of a building, and any other act, matter, or thing referred to in Section 26 that is controlled by an environmental planning instrument but does not include any development of a class or description prescribed by the regulations for the purposes of this definition (Environmental Planning and Assessment Act 1979)
DPE	Department of Planning and Environment (formerly DPIE/OEH, now NDCCEEW)
DPI	Department of Primary Industries
DPIE	Department of Planning, Industry, and Environment (became DPE, now NDCCEEW)
EEC	Endangered Ecological Community
EP&A Act	Environmental Planning & Assessment Act 1979
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999
FFA	Flora and Fauna Assessment
ha	Hectares
km	Kilometre
LGA	Local Government Area
Locality	The area within a 10 km radius of the Subject Property
NDCCEEW	NSW Department of Climate Change, Energy, the Environment, and Water
NSW	New South Wales
OEH	Office of Environment and Heritage (became DPE, now NDCCEEW)
PDCP	Pittwater 21 Development Control Plan 2004
PLEP	Pittwater Local Environmental Plan 2014
PWSGF	Pittwater and Wagstaffe Spotted Gum Forest
SEPP	State Environmental Planning Policy
Subject Property	2013 Pittwater Road, Bayview NSW 2104 (Lot 3/-/DP231194)
Subject Site	The footprint of the proposed development
TEC	Threatened Ecological Community
Threatened species, populations, and	Species, populations, and ecological communities specified in Schedules 1 and 2 of the BC Act 2016

Acronym/ Term	Definition
ecological communities	
TPZ	Tree Protection Zone: A specified area above and below ground and at a given distance from the trunk set aside for the protection of a tree's roots and crown to provide for the viability and stability of a tree to be retained where it is potentially subject to damage by development.
VRZ	Vegetated Riparian Zone

1. Introduction

1.1 Project Background

Narla Environmental Pty Ltd (Narla) were engaged by JAK Newport Pty Ltd ('The Proponent') to undertake a Flora and Fauna Assessment (FFA) for the proposed development at 54, 56, and 58 Beaconsfield Street, Newport NSW 2106 (Lot 7B/-/DP162021; Lot 6/-/DP1096088; and Lot 5B/-/DP158658). The development is situated across three individual lots, hereafter collectively referred to as the 'Subject Property' (**Figure 1**). Within the Subject Property, the Subject Site encompasses all areas of the proposed development, including a proposed residential building and associated inroads and vegetation removal.

Narla have produced this report in order to assess any potential impacts associated with the proposed development on terrestrial ecology (biodiversity), particularly threatened species, populations, and ecological communities listed under the Biodiversity Conservation Act 2016 (BC Act) and the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act). The report will also recommend appropriate measures to mitigate any potential impacts in line with all relevant State Environmental Planning Policies (SEPP) and local government plans, namely the Pittwater Local Environmental Plan 2014 (PLEP) and the Pittwater 21 Development Control Plan 2004 (PDCP).

1.2 Site Description and Location

The Subject Property is located within the locality of Newport in the Northern Beaches Local Government Area (LGA). The site boundary was defined by cadastral boundaries provided by the NSW Government Land and Property Information Spatial Information Exchange map viewer (NSW SixMaps 2024) and provided development site plans (PBD Architects 2024) (**Appendix A**).

The Subject Property covers an area of approximately 0.21ha and currently contains three dwellings and associated structures, including regions of existing landscaping. The surrounding area is dominated by similar residential properties with sporadic remnant areas of native vegetation. The Subject Site encompasses an area of approximately 0.13ha and covers most of the Subject Property.

1.3 Topography, Geology, and Soil

The Subject Properties are located at a level altitude of approximately 25m above sea level (asl). The Subject Site stretches across all three Subject Properties at the same elevation of 25m asl.

The Subject Site is situated on the 'Erina' soil landscape as described in the Soil Landscapes of the Sydney 1:100,000 sheet (Chapman et al. 2009). The Erina soil landscape is characterized by undulating to rolling rises and low hills on fine-grained sandstones and claystone of the Narrabeen Group. The landscape includes rounded narrow crests with moderately inclined slopes (local relief to 60 m, slopes <20%). Vegetation is typically comprised of extensively cleared tall open-forest (wet sclerophyll forest) with open-heathland in exposed areas.

1.4 Hydrology

No mapped or unmapped watercourses occur within the Subject Site or the broader Subject Property. The southern boundary of the Subject Properties is situated approximately 150m from the foreshore of Pittwater Harbour.

1.5 Scope of Assessment

The objectives of this FFA were to:

- Establish the likelihood of occurrence of migratory species, threatened species, endangered populations, and threatened ecological communities as listed under the BC Act and/or the EPBC Act;
- Assess any potential impacts to species and/or communities listed under the BC Act and EPBC Act;
- Identify and map the distribution of vegetation communities within the Subject Site;
- Record presence and the extent of any known or potential fauna habitat features such as nests, dreys, caves, crevices, culverts, pools, soaks, flowering trees, fruiting trees, or hollow-bearing trees and provide recommendations for ongoing management of these habitat features and any fauna present;
- Record presence and the extent of any priority weeds or weed infestations and provide recommendations for ongoing management; and
- Recommend any controls or additional actions to be taken to protect or improve environmental outcomes of the proposed development.

1.6 Study Limitations

This study was not intended to provide a complete inventory of all flora and fauna species with potential to occur on the Subject Property. The species list provided for the Subject Property within this report is restricted to what was observed during the site assessment by the Narla Ecologist. The timing of the survey may not have coincided with emergence times of some species of flora and fauna, such as seasonally flowering herbs, seasonal migratory fauna, or nocturnal fauna.

To account for those species that could not be identified during the field survey, detailed habitat assessments were combined with desktop research and local ecological knowledge to establish an accurate prediction of the potential for such species to occur on or adjacent the Subject Property.

Figure 1. Components of the Subject Site.

1.7 Relevant Legislation and Policy

The legislation and policy that are addressed in this report are listed in **Table 1.**

Table 1. Relevant legislation and policy addressed

Legislation/Policy	Relevant Ecological Feature on Site	Triggered	Action Required
Environmental Planning and Assessment Act 1979 (EP&A Act)	All threatened species, populations, and ecological communities and their habitat that occur or are likely to occur within the Subject Site during a part of their lifecycle.	Yes	This Flora and Fauna Assessment and all subsequent recommendations relevant to the planning process under 'Part 4 Development assessment and consent'.
Biodiversity Conservation Act (BC Act) (New South Wales)	No BC Act listed Endangered Ecological Community were present within the Subject Site. No threatened species listed under the BC Act were identified within the Subject Site at the time of the site assessment however suitable potential habitat was present.	Yes	This FFA, particularly the likelihood tables for threatened fauna and flora species occurring or potentially occurring within the Subject Site, as well as severity of potential impacts.
Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) (Commonwealth)	No EPBC Act listed Endangered Ecological Community were present within the Subject Site. No threatened species listed under the EPBC Act were identified within the Subject Site at the time of the site assessment however suitable potential habitat was present.	Yes	This FFA, particularly the likelihood tables for EPBC Act listed fauna and flora species occurring or potentially occurring within the Subject Site, as well as severity of potential impacts.
Biosecurity Act 2015 (Bio Act)	Two (2) priority weeds for the Greater Sydney region were identified within the Subject Site: ▪ *Asparagus aethiopicus* (Asparagus Fern); ▪ *Lantana camara* (Lantana)	No	The proponent has a duty to ensure the risk of Priority Weed spread is prevented, eliminated or minimised, so far as is reasonably practicable.
State Environmental Planning Policy (Resilience and Hazards) 2021 - Chapter 2 Coastal Management	Neither the Subject Site nor the Subject Property contain areas mapped as 'Coastal Wetlands,' 'Littoral Rainforest,' or proximity to either.	No	None.
State Environmental Planning Policy (Biodiversity and Conservation) 2021 – Chapter 4 Koala Habitat Protection 2021	Although Chapter 4 of the Biodiversity and Conservation SEPP (2021) applies to land within the Northern Beaches LGA, the Subject Property does not encompass an area larger than 1ha; therefore, this chapter of the SEPP does not apply.	No	None.
Water Management Act 2000	The Subject Property does not intersect with land located within 40m of the top bank of a mapped watercourse, therefore this Act is not triggered.	No	None.

1.8 Biodiversity Assessment Pathway

The requirements of the BC Act 2016 and Biodiversity Conservation Regulation 2017 are mandatory for all Development Applications (DA) assessed pursuant to Part 4 of the Environmental Planning and Assessment Act 1979 (EP&A Act) submitted in the Northern Beaches LGA.

The Biodiversity Values (BV) Map (DPE 2024a) identifies land with high biodiversity values that are particularly sensitive to impacts from development and clearing. The map forms part of the Biodiversity Offsets Scheme Entry Threshold which is one of the triggers for determining whether the Biodiversity Offset Scheme (BOS) applies to a clearing or development proposal. The map has been prepared by the Department of Planning and Environment (DPE) under Part 7 of the Biodiversity Conservation Act 2016 (BC Act). At the time of preparing this report, the Subject Site does not contain any areas mapped on the BV Map (DPE 2024a).

The BC Act and its regulations stipulate clearing 'area threshold' values (**Table 2**) that determine whether a development is required to be assessed in accordance with the 'Biodiversity Offset Scheme' (BOS). Minimum entry thresholds for vegetation clearing depend on the minimum lot size (shown in the Lot Size Maps made under the relevant Local Environmental Plan [LEP]), or actual lot size (where there is no minimum lot size provided for the relevant land under the LEP).

There is no prescribed minimum lot size for the Subject Properties covered by the Subject Site. Therefore, the minimum entry threshold for vegetation clearing during this development has been determined by the actual lot size of the Subject Property (0.21ha).

To avoid triggering the Biodiversity Offset Scheme, the proponent must therefore avoid the clearing/management of native vegetation in excess of 0.25ha. The entire Subject Property only covers an area of approximately 0.21ha. As the threshold for clearing is greater than the entire area of the Subject Property, and no areas mapped as containing Biodiversity Values are located within the Subject Property, the BOS does not apply.

Table 2. Biodiversity offset scheme entry thresholds. Bold indicates the threshold relevant to this report.

Minimum lot size associated with the property	Threshold for clearing, above which the BAM and offsets scheme apply
Less than 1ha	**0.25ha or more**
1ha to less than 40ha	0.5 ha or more
40ha to less than 1000ha	1ha or more
1000ha or more	2ha or more

1.9 Pittwater Local Environmental Plan 2014 (PLEP)

1.9.1 Zoning

The Subject Properties are zoned as 'R3: Medium Density Residential'. The Pittwater LEP requires that the development satisfies the zone objectives which are:

- To provide for the housing needs of the community within a medium density residential environment.
- To provide a variety of housing types within a medium density residential environment.
- To enable other land uses that provide facilities or services to meet the day to day needs of residents.

- To provide for a limited range of other land uses of a low intensity and scale, compatible with surrounding land uses.

The proposed development satisfies the objectives of Zone 'R3: Medium Density Residential' as it will provide for local housing needs within the community and will not impede on any surrounding land uses (facilities, services, ecological values, etc.). Dwelling houses are permitted with consent within this zone.

1.10 Pittwater 21 Development Control Plan 2004 (PDCP)

1.10.1 Part B4.22

The desired outcomes of Part B4.22 of the Pittwater DCP are:

- To protect and enhance the urban forest of the Northern Beaches.
- To effectively manage the risks that come with an established urban forest through professional management of trees.
- To minimise soil erosion and to improve air quality, water quality, carbon sequestration, storm water retention, energy conservation and noise reduction.
- To protect, enhance bushland that provides habitat for locally native plant and animal species, threatened species populations and endangered ecological communities.
- To promote the retention and planting of trees which will help enable plant and animal communities to survive in the long-term.
- To protect and enhance the scenic value and character that trees and/or bushland vegetation provide.

When a DA required for clearing vegetation the following requirements apply:

- Development is to be sited and designed to minimise the impact on remnant native vegetation, including canopy trees and understorey vegetation, and on remnant native ground cover species.
- Where the applicant demonstrates that no reasonable alternative design exists and a tree must be removed, suitable compensatory tree planting is required. Details including proposed species and the location of replacement planting are to be provided.
- Development must also avoid any impact on trees on public land.

In order for the proposed development to satisfy the controls of this clause it should:

- Replace any canopy trees being removed with species representative of Central Coast Escarpment Moist Forest, at a ratio of 1:1. These trees must be located within the Subject Property;
- Manage environmental and Priority Weeds in the remaining vegetation within the Subject Site.

This Flora and Fauna Assessment and the Arboricultural Impact Appraisal and Method Statement (Ezigrow 2023) covers all issues relating to the assessment of potential impacts to native vegetation within the Subject Property.

2. Methodology

2.1 Desktop Assessment and Literature Review

A thorough literature review of local information relevant to the Northern Beaches Council area was undertaken. Searches using NSW Wildlife Atlas (BioNet; DPE 2024b) and the Commonwealth Protected Matters Search Tool (DCCEEW 2024) were conducted to identify all current threatened flora and fauna, as well as migratory fauna records within a 10km x 10km cell search area centred on the Subject Site. These data were used to assist in establishing the presence or likelihood of any ecological values as occurring on or adjacent the Subject Property, and helped inform our Ecologist on what to look for during the site assessment.

Soil landscape and geological mapping was examined to gain an understanding of the environment on the Subject Property and assist in determining whether any threatened flora or ecological communities may occur there (Chapman et al. 2009).

2.2 Ecological Site Assessment

2.2.1 General Survey

A site assessment was undertaken by Narla Ecologist, Gemma Hicks, on Monday the 15th of April 2024. During the site assessment, the following activities were undertaken:

- Identifying and recording the vegetation communities present within the Subject Property, with focus on identifying any threatened ecological communities (TEC);
- Recording a detailed list of flora species encountered within the Subject Property, with a focus on threatened species, species diagnostic of threatened ecological communities, and priority weeds;
- Recording opportunistic sightings of any fauna species seen or heard on or within the immediate surrounds of the Subject Property;
- Targeted surveys for threatened flora;
- Identifying and recording the locations of notable fauna habitat such as important nesting, roosting, or foraging microhabitats;
- Assessing the connectivity and quality of the vegetation within the Subject Property and surrounding area; and
- Targeting the habitat of any threatened and regionally significant fauna including:
    - Tree hollows (habitat for threatened large forest owls, parrots, and arboreal mammals);
    - Caves and crevices (habitat for threatened reptiles, small mammals, and microbats);
    - Termite mounds (habitat for threatened reptiles);
    - Soaks (habitat for threatened frogs);
    - Wetlands (habitat for threatened fish, frogs, and water birds);
    - Drainage lines (habitat for threatened fish and frogs);
    - Fruiting trees (food for threatened frugivorous birds and mammals);
    - Flowering trees (food for threatened nectarivorous birds and mammals);
    - Trees and shrubs supporting nest structures (habitat for threatened birds and arboreal mammals); and
    - Any other habitat features that may support fauna (particularly threatened) species.

2.2.2 Weather Conditions

Weather conditions recorded at the nearest weather station (Terrey Hills AWS 066059) prior to and during the site assessment are provided in **Table 3** (BOM 2024). The data revealed moderate temperatures but almost no rainfall in the days preceding the site assessment. Such conditions may not have been conducive to the emergence and flowering of threatened species that could potentially occur within the Subject Site or Subject Property.

Table 3. Weather conditions recorded at Terrey Hills AWS (Station 066059) preceding and during the site assessment (site assessment date in bold).

Date	Day	Minimum Temp. (°C)	Maximum Temp. (°C)	Rainfall (mm)
09/04/2024	Tuesday	14.6	20.6	0
10/04/2024	Wednesday	10.4	20.4	9.4
11/04/2024	Thursday	11.9	22.0	0
12/04/2024	Friday	11.6	23.4	0
13/04/2024	Saturday	13.7	23.5	0
14/04/2024	Sunday	14.9	23.8	0
15/04/2024	**Monday**	**14.7**	**25.2**	**0**

2.2.3 Mapping and Analysis of Vegetation Communities

Narla examined local satellite imagery, geological mapping, soil landscape mapping, and topographic mapping, in addition to existing vegetation mapping (The Native Vegetation of the Sydney Metropolitan Area [OEH 2016b]) in order to stratify the Subject Property and guide the site assessment survey efforts. The following documents were also consulted during the site assessment to assist with the identification of vegetation communities present within the Subject Property:

- Chapman G.A., Murphy C.L., Tille P.J., Atkinson G. and Morse R.J. (2009) Soil Landscapes of the Sydney 1:100,000 Sheet map, Ed. 4, Department of Environment, Climate Change and Water, Sydney;
- Department of Planning and Environment (DPE) (2024d) eSPADE v2.1 https://www.environment.nsw.gov.au/eSpade2Webapp#;
- DPE (2022) NSW State Vegetation Type Map.
- Office of Environment and Heritage (OEH) (2016a) The Native Vegetation of the Sydney Metropolitan Area. Version 3.1; and
- Office of Environment and Heritage (OEH) (2016b) The Native Vegetation of the Sydney Metropolitan Area. Volume 2: Vegetation Community Profiles. Version 3.0.

2.2.4 Impact Assessment

An assessment of likely occurrence was carried out for locally occurring threatened species (**Table 6** and **Table 8**) and threatened migratory species. It was then determined that a further impact assessment (5-Part Test) was not required for any locally occurring threatened species.

3. Native Vegetation

3.1 Vegetation Community

3.1.1 Historically Mapped Vegetation Communities

Both the Native Vegetation of the Sydney Metropolitan Area (OEH 2016b) and the more recent NSW State Vegetation Mapping (DPE 2022) were consulted for historical vegetation mapping for the Subject Site and Subject Property. On both of these maps, the entire extent of the Subject Property and surrounds have not yet been classified. As there was no significant difference in the extent of vegetation mapping available between both maps, the NSW State Vegetation Mapping (DPE 2022) was prioritised.

The NSW State Vegetation Mapping (DPE 2022) identified two (2) vegetation communities within proximity to the Subject Site:

- Central Coast Escarpment Moist Forest; and
- Grey Mangrove-River Mangrove Forest.

3.1.2 Field-validated Vegetation Communities

The field survey conducted by the Narla Ecologist on Monday the 15th of April 2024 identified the vegetation within and around the Subject Site as best conforming to two (2) vegetation communities:

- PCT 3230: Central Coast Escarpment Moist Forest; and
- Exotic-Dominated Garden.

The vegetation within these communities is detailed within **Table 4** and **Table 5**. Vegetation mapping of the Subject Property is presented in **Figure 3.**

Figure 2. Historical Mapping of Vegetation Communities around the Subject Property.

Figure 3. Narla Field-validated Mapping of the Subject Property.

Table 4. Description of Central Coast Escarpment Moist Forest identified within the Subject Property.

Central Coast Escarpment Moist Forest	
	
Extent within Subject Property (approximate)	0.06ha
Extent within Subject Site (approximate)	0.03ha
Description of the Vegetation within the Subject Property	
The vegetation within the subject property consisted of scattered native canopy trees among a sparse mid-storey predominantly featuring landscaped and planted species, and a ground layer dominated by exotic species. Native canopy trees included *Eucalyptus capitellata*, *Eucalyptus paniculata*, *Angophora costata*, *Banksia integrifolia*, and *Syncarpia glomulifera*. The mid-storey layer mostly contained planted non-native species; however, it also included two native species, *Acacia implexa* and *Callistemon citrinus*. Non-native species in this layer were *Archontophoenix alexandrae*, *Bougainvillea spp.*, *Leptospermum petersonii*, and *Stenocarpus sinuatus*. The priority weed *Lantana camara* was also present. The ground layer was dominated by exotic species such as *Ehrharta erecta*, *Oxalis latifolia*, and *Stenotaphrum secundatum*, with native ground cover species including *Commelina cyanea* and *Hardenbergia violacea*.	
Description (DPE 2024c)	
A tall to very tall sclerophyll open forest with a sparse mixed mesophyll and sclerophyll mid-stratum and a ground layer of ferns and grasses. This PCT occurs on Narrabeen sandstone slopes and escarpments of the lower Hawkesbury, Pittwater, Brisbane Waters and Watagan Ranges, Central Coast region. The tree canopy is variable in composition and no set of eucalypt species is consistently recorded with a high cover. *Angophora floribunda* and *Syncarpia glomulifera* are common, however maybe a member of the upper canopy or as a small tree,	

Central Coast Escarpment Moist Forest	
sometimes both. There are a range of canopy species that also have high cover, however each occur no more than occasionally or rarely across the distribution of the PCT. These include *Eucalyptus pilularis*, *Eucalyptus piperita*, *Eucalyptus saligna* or *Eucalyptus deanei*, *Eucalyptus paniculata*, *Angophora costata*, *Eucalyptus umbra* or *Eucalyptus punctata*. A layer of small trees is almost always present and dominated by *Allocasuarina torulosa*, with a lower shrub layer very frequently including *Persoonia linearis*, commonly *Breynia oblongifolia*, occasionally with *Platysace lanceolatus*, *Myrsine variabilis* and *Synoum glandulosum subsp. glandulosum*. Occasionally there is a sparse cover of *Livistona australis*, typically with no more than one or two individuals. The ground layer is characterised by a high cover of ferns with *Pteridium esculentum* almost always present, commonly with a higher cover of *Calochlaena dubia* and occasionally *Blechnum cartilagineum*. Small mesic climbers are both diverse and very frequent including *Eustrephus latifolius*. Grasses also comprise a high proportion of the cover, very frequently including *Imperata cylindrica* and *Entolasia stricta*, commonly with *Microlaena stipoides*. Graminoids almost always include *Dianella caerulea* and very frequently *Lomandra longifolia*. This PCT is primarily found at low elevation Narrabeen escarpments and hills, commonly on lower slopes above the flooded Hawkesbury and Pittwater valleys. It occurs typically on sheltered to intermediate easterly aspects or rarely on crests of the main range east of Gosford and in the Watagan Range, both identified as residual Hawkesbury Sandstone, however this may only be a thin layer above the Narrabeen stratum. A geological outlier occurs on a volcanic dyke at West Head in Kuring-Gai National Park. On Narrabeen shales in the Central Coast-Pittwater districts it is replaced by moist forest PCT 3234 on sheltered aspects or dry grassy forest PCT 3437 on drier aspects.	
Justification of Vegetation Assignment	The determination of this community was based on landscape attributes, including soil landscapes and elevation, and the presence of a number of characteristic species as listed in the BioNet Vegetation Classification System (DPE 2024c).
BC Act 2016 Status	Not Listed.
EPBC Act 1999 Status	Not Listed.
References	Department of Planning and Environment (DPE) (2024c) BioNet Vegetation Classification. https://www.environment.nsw.gov.au/research/Visclassification.html

Table 5. Description of Exotic-dominated Garden Vegetation identified within the Subject Property

Exotic-dominated Garden Vegetation	
	
Extent within Subject Property (approximate)	0.06ha
Extent within Subject Site (approximate)	0.02ha
Description of the Vegetation within the Subject Property	
The vegetation within this zone consisted of planted urban vegetation, exotic weeds, and sporadic common native species. Exotic species included but are not limited to *Agave spp., Bouganvillea spp., Chlorophytum comosum, Jacaranda mimisifolia, Nephrolepsis cordifolia, Stenotaphrum secundatum* among others. The Priority Weed *Asparagus aethiopicus* was present. Incidental native species include *Commelina cyanea* and *Hardenbergia violeacea.*	
Justification of Vegetation Assignment	The vegetation within this area consisted of common urban exotic and native species. As the vegetation in this area did not conform to the characteristic of any remnant vegetation found in the locality and has been extensively modified, it has been classified as exotic-dominated garden vegetation.
BC Act 2016 Status	Not Listed.
EPBC Act 1999 Status	Not Listed.

4. Threatened Entities

4.1 Threatened Ecological Communities (TECs)

The native vegetation within the Subject Site does not align with any BC Act or EPBC act listed TECs.

4.2 Threatened Flora

Desktop analysis revealed a range of threatened flora as occurring or having the potential to occur on or within a 10km x 10km cell centred on the Subject Site. Thorough targeted surveys were undertaken throughout the Subject Site and broader Subject Property for potentially-occurring threatened flora.

No threatened species were identified within the Subject Property during the site assessment in April 2024. A comprehensive list of all flora species identified during the site assessment is presented in Appendix B.

The following locally-occurring species were assessed for their potential to occur within the Subject Site (Table 6). It was deemed unlikely that the proposed development will have a significant impact on these species. Therefore, no further assessment of impacts pursuant the BC Act (e.g. Biodiversity Development Assessment Report [BDAR]) and/or EPBC Act Referral to Commonwealth should be required.

Table 6. Assessment of likely occurrence of threatened flora species within the Subject Site.

Species	BC Act	EPBC Act	Habitat Requirements (DPE 2024b)	Likelihood of occurrence within the Subject Site	Further Impact Assessment Required?
Acacia bynoeana (Bynoe's Wattle)	E	V	Occurs in heath or dry sclerophyll forest on sandy soils. Seems to prefer open, sometimes slightly disturbed sites such as trail margins, edges of roadside spoil mounds and in recently burnt patches. Associated overstorey species include *Corymbia gummifera*, *Eucalyptus haemastoma*, *E. parramattensis*, *Banksia serrata*, and *Angophora bakeri*.	**Absent.** Some potential habitat is present within the Subject Site; however, a targeted survey was conducted within the approved survey period for this species (Year-Round), and the species was not detected.	No.
Acacia terminalis subsp. Eastern Sydney (Sunshine Wattle)	E	E	Very limited distribution, mainly in near-coastal areas from the northern shores of Sydney Harbour south to Botany Bay. Coastal scrub and dry sclerophyll woodland on sandy soils. Habitat is generally sparse and scattered. Most sites are highly modified or disturbed due to surrounding urban development.	**Low.** Some potential habitat is present within the Subject Site; however, the limited distribution of this species makes it unlikely that it would be present.	No.
Asterolasia elegans	E	E	Occurs on Hawkesbury sandstone. Found in sheltered forests on mid- to lower slopes and valleys, e.g. in or adjacent to gullies which support sheltered forest. The canopy at known sites includes *Syncarpia glomulifera*, *Angophora costata*, *Eucalyptus piperita*, *Casuarina* species, and *Ceratopetalum gummiferum*.	**Low.** Some associated overstorey species were present within the Subject Site, but the vegetation is highly degraded and unlikely to support this species.	No.
Astrotricha crassifolia (Thick-leaf Star-hair)	V	V	This species occurs in dry sclerophyll woodland on sandstone. It grows as a resprouter from root suckers or basal stem buds after fire.	**Low.** The vegetation within the Subject Site is highly degraded and has not been historically burned, making it unlikely this species would be able to sprout.	No.

Species	BC Act	EPBC Act	Habitat Requirements (DPE 2024b)	Likelihood of occurrence within the Subject Site	Further Impact Assessment Required?
Boronia umbellata (Orara Boronia)	V	V	Only one collection of this species is known from the Pittwater region, with the remainder distributed within the Coffs Harbour district. This Boronia grows as an understorey shrub in and around gullies in wet open forest.	**Absent.** Appropriate habitat is not present within the Subject Site. Furthermore, a targeted survey was conducted within the approved survey period for this species (Year-Round), and the species was not detected.	No.
Caladenia tessellata (Thick-lipped Spider-orchid)	E	V	Occurs in heath or dry sclerophyll forest on sandy soils. Seems to prefer open, sometimes slightly disturbed sites such as trail margins, edges of roadside spoil mounds and in recently burnt patches. Associated overstorey species include *Corymbia gummifera*, *Eucalyptus haemastoma*, *E. parramattensis*, *Banksia serrata*, and *Angophora bakeri*.	**Low.** Some potential habitat is present within the Subject Site; however, the highly disturbed nature of the vegetation and the lack of associated canopy species makes it unlikely that this species would be present.	No.
Callistemon linearifolious (Netted Bottle Brush)	V	-	Three of the remaining populations are reserved in Ku-ring-gai Chase National Park, Lion Island Nature Reserve, and Spectacle Island Nature Reserve. Grows in dry sclerophyll forest on the coast and adjacent ranges.	**Low.** Some potential habitat is present within the Subject Site; however, the highly disturbed nature of the vegetation makes it unlikely that this species would be present. Additionally, only one Callistemon species was identified during the survey (*Callistemon citrinus*).	No.
Chamaesyce psammogeton (Sand Spurge)	E	-	Grows on fore-dunes, pebbly strandlines, and exposed headlands, often with *Spinifex* species and *Zoysia macrantha*.	**Absent.** Appropriate habitat is not present within the Subject Site. Furthermore, a targeted survey was conducted within the approved survey period for this species (Year-Round), and the species was not detected.	No.

Species	BC Act	EPBC Act	Habitat Requirements (DPE 2024b)	Likelihood of occurrence within the Subject Site	Further Impact Assessment Required?
Cryptostylis hunteriana (Leafless Tongue-orchid)	V	V	Does not appear to have well defined habitat preferences and is known from a range of communities, including swamp-heath and woodland. The larger populations typically occur in woodland dominated by *Eucalyptus sclerophylla*, *E. sieberi*, *Corymbia gummifera,* and *Allocasuarina littoralis*; appears to prefer open areas in the understorey of this community.	**Low.** Some potential habitat is present within the Subject Site; however, the highly disturbed nature of the vegetation and the lack of associated canopy species makes it unlikely that this species would be present.	No.
Cynanchum elegans (White-flowered Wax Plant)	E	E	This species usually occurs on the edge of dry rainforest vegetation. Other associated vegetation types include littoral rainforest; *Leptospermum laevigatum – Banksia integrifolia* subsp. *integrifolia* coastal scrub; *Eucalyptus tereticornis* aligned open forest and woodland; *Corymbia maculata* aligned open forest and woodland; and *Melaleuca armillaris* scrub to open scrub.	**Low.** Minimal associated vegetation for this species occurs within the Subject Site and the vegetation is highly disturbed.	No.
Darwinia biflora	V	V	Occurs on the edges of weathered shale-capped ridges, where these intergrade with Hawkesbury Sandstone. Associated overstorey species include *Eucalyptus haemastoma*, *Corymbia gummifera,* and/or *E. squamosa*. The vegetation structure is usually woodland, open forest or scrub-heath.	**Absent.** No shale-capped ridges occur within the Subject Site and the vegetation is highly degraded. Furthermore, a targeted survey was conducted within the approved survey period for this species (Year-Round), and the species was not detected.	No.
Epacris purpurascens var. purpurascens	V	-	Found in a range of habitat types, most of which have a strong shale soil influence.	**Low.** Some potential habitat is present within the Subject Site; however, the highly disturbed nature of the vegetation makes it unlikely that this species would be present.	No.

Species	BC Act	EPBC Act	Habitat Requirements (DPE 2024b)	Likelihood of occurrence within the Subject Site	Further Impact Assessment Required?
Eucalyptus camfieldii (Camfield's Stringybark)	V	V	Occurs mostly in small scattered stands near the boundary of tall coastal heaths and low open woodland of the slightly more fertile inland areas. Associated species frequently include stunted species of *Eucalyptus oblonga*, *E. capitellata*, and *E. haemastoma*.	**Absent.** Some potential habitat is present within the Subject Site; however, a targeted survey was conducted within the approved survey period for this species (Year-Round), and the species was not detected.	No.
Genoplesium baueri (Yellow Gnat-orchid)	-	E	This species usually grows in heathland to shrubby woodland on sands or sandy loams or open forest, shrubby forest, and heathy forest on well-drained sandy and gravelly soils.	**Low.** No suitable forest habitat is present within the Subject Site.	No.
Grevillea caleyi (Caley's Grevillea)	CE	CE	This species is restricted to an 8km square area around Terrey Hills. All sites occur on the ridgetop between elevations of 170 to 240m above sea level, in association with laterite soils and a vegetation community of open forest, generally dominated by *Eucalyptus sieberi* and *E. gummifera*. Commonly found in the endangered Duffys Forest ecological community.	**Absent.** Appropriate habitat is not present within the Subject Site. Furthermore, a targeted survey was conducted within the approved survey period for this species (Year-Round), and the species was not detected.	No.
Grevillea shiressii	V	V	Known from two populations near Gosford, on tributaries of the lower Hawkesbury River north of Sydney. Grows along creek banks in wet sclerophyll forest with a moist understorey in alluvial sandy or loamy soils.	**Low.** No suitable habitat was present in the Subject Site for this species.	No.
Haloragodendron lucasii (Hal)	E	E	Associated with dry sclerophyll forest. Reported to grow in moist sandy loam soils in sheltered aspects, and on gentle slopes below cliff-lines near creeks in low open woodland. Associated with high soil moisture and relatively high soil-phosphorus levels.	**Absent.** No suitable habitat was present in the Subject Site for this species. Furthermore, a targeted survey was conducted within the approved survey period for this species (Year-Round), and the species was not detected.	No.

Species	BC Act	EPBC Act	Habitat Requirements (DPE 2024b)	Likelihood of occurrence within the Subject Site	Further Impact Assessment Required?
Kunzea rupestris (Rocky Kunzea)	V	V	This species grows in shallow depressions on large flat sandstone rock outcrops. It is characteristically found in short to tall shrubland or heathland.	**Absent.** Appropriate habitat is not present within the Subject Site. Furthermore, a targeted survey was conducted within the approved survey period for this species (Year-Round), and the species was not detected.	No.
Lasiopetalum joyceae (Velvet Bush)	V	V	This species has a restricted range occurring on lateritic to shaley ridgetops on the Hornsby Plateau south of the Hawkesbury River. It grows in heath on sandstone.	**Low.** Appropriate habitat is not present within the Subject Site.	No.
Leptospermum deanei (Deane's Tea-tree)	V	V	Occurs in Hornsby, Warringah, Ku-ring-gai and Ryde LGAs. Woodland on lower hill slopes or near creeks. Sandy alluvial soil or sand over sandstone. Occurs in Riparian Scrub - e.g. *Tristaniopsis laurina*, Baechea myrtifolia; Woodland - e.g. *Eucalyptus haemastoma*; and Open Forest - e.g. *Angophora costata*, *Leptospermum trinervium*, *Banksia ericifolia*.	**Low.** The Subject Site falls outside the known LGA distribution of this species and does not contain the required hillslope or creek habitat, making it unlikely the species would be present.	No.
Leucopogon exolasius (Woronora Beard-heath)	V	V	This species is found along the upper Georges River area and in Heathcote National Park. The plant occurs in woodland on sandstone.	**Low.** Appropriate habitat is not present within the Subject Site.	No.
Melaleuca deanei (Deane's Paperbark)	V	V	This species occurs in two distinct areas, in the Ku-ring-gai/Berowra and Holsworthy/Wedderburn areas respectively. The species occurs mostly in ridgetop woodland, with only 5% of sites in heath on sandstone.	**Absent.** Appropriate habitat is not present within the Subject Site. Furthermore, a targeted survey was conducted within the approved survey period for this species (Year-Round), and the species was not detected.	No.

Species	BC Act	EPBC Act	Habitat Requirements (DPE 2024b)	Likelihood of occurrence within the Subject Site	Further Impact Assessment Required?
Micromyrtus blakelyi	V	V	Restricted to areas near the Hawkesbury River, north of Sydney. Typically occurs within heathlands in shallow sandy soil in cracks and depressions of sandstone rock platforms.	**Absent.** Appropriate habitat is not present within the Subject Site. Furthermore, a targeted survey was conducted within the approved survey period for this species (Year-Round), and the species was not detected.	No.
Microtis angusii (Angus's Onion Orchid)	E	E	All currently known records of the species are located within Northern Beaches LGA in disturbed areas, with most individuals recorded in road verges. Occurs on soils that have been modified but were originally those of the restricted ridgetop lateritic soils in the Duffys Forest - Terrey Hills - Ingleside and Belrose areas. These soils support a specific and distinct vegetation type, the Duffys Forest Vegetation Community ranges from open forest to low open forest and rarely woodland.	**Low.** The Subject Site does not occur on the restricted ridgetop lateritic soils required by this species or contain the vegetation type Duffys Forest. Given the limited distribution of this species, it is unlikely that it would be present within the Subject Site.	No.
Persicaria elatior (Knotweed)	V	V	This species normally grows in damp places, especially beside streams and lakes. Occasionally in swamp forest or associated with disturbance.	**Low.** The highly degraded and exotic-dominated nature of the vegetation and the lack of streams or lakes within the Subject Site makes it unlikely this species would be present.	No.
Persoonia hirsuta (Hairy Geebung)	E	E	This species is found in clayey and sandy soils in dry sclerophyll open forest, woodland, and heath, primarily on the Mittagong Formation and on the upper Hawkesbury Sandstone. It is usually present as isolated individuals or very small populations.	**Absent.** Some potential habitat is present within the Subject Site; however, a targeted survey was conducted within the approved survey period for this species (Year-Round), and the species was not detected.	No.
Pimelea curviflora var. curviflora (Curved Ri~~o~~ceflower)	V	V	This species occurs on shaley/lateritic soils over sandstone and shale/sandstone transition soils on ridgetops and upper slopes amongst woodlands.	**Low.** Appropriate soils may exist within the Subject Site; however, no associated appropriate woodland habitat was present.	No.

Species	BC Act	EPBC Act	Habitat Requirements (DPE 2024b)	Likelihood of occurrence within the Subject Site	Further Impact Assessment Required?
Prostanthera densa (Villous Mintbush)	V	V	This species generally grows in sclerophyll forest and shrubland on coastal headlands and near coastal ranges, chiefly on sandstone, and rocky slopes near the sea.	**Absent.** Some potential habitat is present within the Subject Site; however, a targeted survey was conducted within the approved survey period for this species (Year-Round), and the species was not detected.	No.
Prostanthera junonis (Somersby Mintbush)	E	E	The species is restricted to the Somersby Plateau. It occurs on both the Somersby and Sydney Town soil landscapes on gently undulating country over weathered Hawkesbury sandstone within open forest/low woodland/open scrub. It occurs in both disturbed and undisturbed sites.	**Low.** Appropriate soil type is not present within the Subject Site and given the highly disturbed nature of the vegetation in the Subject Site and the limited distribution of this species, it is unlikely that this species would be present.	No.
Prostanthera marifolia (Seaforth Mintbush)	CE	CE	This species is currently only known from the northern Sydney suburb of Seaforth and has a very highly restricted distribution within the Sydney Basin Bioregion. The single population is fragmented by urbanisation into three small sites. All known sites are within an area of 2x2 km. The sites are within the local government area of Northern Beaches Council. Occurs in localised patches in or in close proximity to the endangered Duffys Forest ecological community. Located on deeply weathered clay-loam soils associated with ironstone and scattered shale lenses, a soil type which only occurs on ridge tops and has been extensively urbanised.	**Absent.** The Subject Site does not fall within the known distribution area of this species and no associated vegetation or soil types are present. A targeted survey was conducted within the approved survey period for this species (Year-Round), and the species was not detected.	No.
Rhizanthella slateri (Eastern Underground Orchid)	V	E	Habitat requirements are poorly understood and no particular vegetation type has been associated with this species, although it is known to occur in sclerophyll forest.	**Low.** Some potential habitat may be present within the Subject Site; however, the highly disturbed nature of the vegetation makes it unlikely that this species would be present.	No.

Species	BC Act	EPBC Act	Habitat Requirements (DPE 2024b)	Likelihood of occurrence within the Subject Site	Further Impact Assessment Required?
Rhodamnia rubescens (Scrub Turpentine)	CE	CE	This species is found in littoral, warm temperate, and subtropical rainforest and wet sclerophyll forest usually on volcanic and sedimentary soils.	**Absent.** Appropriate habitat is not present within the Subject Site. Furthermore, a targeted survey was conducted within the approved survey period for this species (Year-Round), and the species was not detected.	No.
Rhodomyrtus psidioides (Native Guava)	CE	CE	Pioneer species found in littoral, warm temperate, and subtropical rainforest and wet sclerophyll forest often near creeks and drainage lines.	**Absent.** Appropriate habitat is not present within the Subject Site. A targeted survey was conducted within the approved survey period for this species (Year-Round), and the species was not detected.	No.
Syzygium paniculatum (Magenta Lilly Pilly)	E	V	On the central coast Magenta Lilly Pilly occurs on gravels, sands, silts and clays in riverside gallery rainforests and remnant littoral rainforest communities.	**Absent.** No suitable rainforest habitat for this species was present within the Subject Site. A targeted survey was conducted within the approved survey period for this species (April – May), and the species was not detected.	No.
Tetratheca glandulosa	v	-	This species is associated with shale-sandstone transition habitat where shale-cappings occur over sandstone. Topographically, the plant occupies ridgetops, upper-slopes and to a lesser extent mid-slope sandstone benches. Vegetation structure varies from heaths and scrub to woodlands/open woodlands, and open forest.	**Low.** No appropriate geological features were present within the Subject Site and given the highly disturbed nature of the vegetation, it is unlikely that this species would be present.	No.
Thesium australe (Austral Toadflax)	V	V	Occurs in grassland. The species is a root parasite that takes water and some nutrient from other plants, especially *Themeda triandra*.	**Low.** No grasslands or *Themeda triandra* were identified within the Subject Site, making it unlikely this species would be present.	No.

4.2 Fauna Habitat

Details of the fauna habitat recorded within the Subject Site and broader Subject Property are included in **Table 7**. Desktop analysis revealed that a number of threatened fauna species have the potential to utilise habitat within the Subject Property during part of their lifecycles (**Table 8**).

Table 7. Fauna habitat values identified within the Subject Property.

Habitat Component	Site Values
Coarse woody debris	Absent.
Rock outcrops and bush rock	Absent.
Caves, crevices, and overhangs	Absent.
Culverts, bridges, mine shafts, or abandoned structures	Absent.
Nectar/lerp-bearing Trees	Present. Nectar-bearing trees were recorded within the Subject Property. These trees may provide intermittent nectar sources for nomadic nectivores such as the Grey-headed Flying-fox.
Nectar-bearing shrubs	*Callistemon citrinus* and *Hibiscus* species were present within the Subject Property.
Koala Feed Trees	Present.
Large stick nests	Absent.
Sap and gum sources	Present.
She-oak fruit (Glossy Black Cockatoo feed)	Absent.
Seed-bearing trees and shrubs	Present. Seed-bearing trees may provide foraging habitat for various bird species.
Soft-fruit-bearing trees	Absent.
Dense shrubbery and leaf litter	Present.
Tree hollows	Absent.
Decorticating bark	Present.
Wetlands, soaks, and streams	Absent.
Open water bodies	The Subject Property is located close to Pittwater Harbour and, as such, may provide intermittent foraging/sheltering habitat for shore bird species.
Estuarine, beach, mudflats, and rocky foreshores	Absent.
Nests and possum dreys	Absent.

4.3 Threatened Fauna

No threatened fauna species were observed during the site assessment in April 2024 within or surrounding the Subject Site or Subject Property. It was deemed unlikely that the proposed works will have a significant impact such that a local viable population or occurrence of any of the threatened species will be placed at risk of extinction. Therefore, no BDAR or EPBC Act Referral to the Commonwealth should be required for the proposed development.

All native fauna species encountered are listed as 'Protected' under the BC Act. The list of fauna recorded during the site visit was produced opportunistically (**Appendix A**).

4.3.1 Migratory Fauna Species

Desktop analysis revealed the following EPBC Act listed migratory terrestrial fauna species were considered to have the potential to utilise habitat within the Subject Property (e.g. foraging or passage) during part of their lifecycles:

- *Actitis hypoleucos* (Common Sandpiper)
- *Ardenna carneipes* (Flesh-footed Shearwater)
- *Ardenna grisea* (Sooty Shearwater)
- *Calidris acuminata* (Sharp-tailed Sandpiper)
- *Calidris canutus* (Red Knot, Knot)
- *Calidris ferruginea* (Curlew Sandpiper)
- *Calidris melanotos* (Pectoral Sandpiper)
- *Charadrius leschenaultii* (Greater Sand Plover, Large Sand Plover)
- *Cuculus optatus* (Oriental Cuckoo, Horsfield's Cuckoo)
- *Diomedea epomophora* (Southern Royal Albatross)
- *Diomedea exulans* (Wandering Albatross)
- *Diomedea sanfordi* (Northern Royal Albatross)
- *Fregata ariel* (Lesser Frigatebird, Least Frigatebird)
- *Fregata minor* (Great Frigatebird, Greater Frigatebird)
- *Gallinago hardwickii* (Latham's Snipe, Japanese Snipe)
- *Limosa lapponica* (Bar-tailed Godwit)
- *Monarcha melanopsis* (Black-faced Monarch)
- *Phaethon lepturus* (White-tailed Tropicbird)
- *Thalassarche carteri* (Indian Yellow-nosed Albatross)
- *Thalassarche cauta* (Shy Albatross)
- *Thalassarche eremita* (Chatham Albatross)
- *Tringa nebularia* (Common Greenshank, Greenshank)

It was deemed that the proposed works were unlikely to result in a significant impact on these species. Therefore, no EPBC Act Referral to the Commonwealth should be required.

Figure 4. Narla Survey Effort for Threatened Species and Habitat (April 2024).

Table 8. List of potential threatened fauna that may occupy the Subject Site at some stage of their lifecycles. Vulnerable = V, Endangered = E, Endangered Population = EP, Critically Endangered = CE.

Species	BC Act	EPBC Act	Likelihood of Occurrence	Foraging Habitat Present Within the Subject Site	Breeding Habitat Present Within the Subject Site	Anticipated Impact	Further Impact Assessment Required?
Anthochaera phrygia (Regent Honeyeater)	CE	CE	Low	This species inhabits dry open forest and woodland, particularly Box-Ironbark woodland, and riparian forests of River She oak. These woodlands have significantly large numbers of mature trees, high canopy cover, and abundance of mistletoes. Some potential foraging habitat occurs within the Subject Site.	There are three (3) known key breeding areas, two of them in NSW-Capertee Valley and Bundarra-Barraba regions which do not occur within the Subject Property. The Subject Property does not occur within the important areas map for this species.	Minimal impact to potential foraging habitat given the mobility of this species. Nectar-producing trees will persist within the broader Subject Property and adjoining properties. No anticipated impacts to potential breeding habitat. Site assessment in April 2024 did not detect this species.	No.
Artamus cyanopterus (Dusky Wood swallow)	V	-	Low	This species often inhabits dry, open eucalypt forests and woodlands with an open or sparse understorey of eucalypt saplings, acacias and other shrubs, and ground-cover of grasses or sedges and fallen woody debris. It has also been recorded in shrublands, heathlands and very occasionally in moist forest or rainforest. Some suboptimal foraging habitat was present within the Subject Site; however, the vegetation is highly disturbed.	Nest sites vary greatly, but generally occur in shrubs or low trees, living or dead, horizontal or upright forks in branches, spouts, hollow stumps or logs, behind loose bark or in a hollow in the top of a wooden fence post. No nests were identified within the Subject Site during the assessment.	Minimal impact to potential foraging habitat given the mobility of this species. Nectar producing trees will persist within the broader Subject Property and adjoining properties. No anticipated impacts to potential breeding habitat. Site assessment in April 2024 did not detect this species.	No.

Species	BC Act	EPBC Act	Likelihood of Occurrence	Foraging Habitat Present Within the Subject Site	Breeding Habitat Present Within the Subject Site	Anticipated Impact	Further Impact Assessment Required?
Burhinus grallarius (Bush Stone-curlew)	E	-	Low	This species inhabits open forests and woodlands with a sparse grassy groundlayer and fallen timber. Some suboptimal foraging habitat was present within the Subject Site; however, the vegetation is highly disturbed.	This species nests on the ground in a scrape of small bare patch. Some suboptimal habitat was present within the Subject Site; however, the site is highly disturbed. No nests were identified within the Subject Property during the assessment.	Minimal impact to potential foraging habitat given the disturbed nature of the site. No anticipated impacts to potential breeding habitat. Site assessment in April 2024 did not detect this species.	No.
Calidris ferruginea (Curlew Sandpiper)	E	CE	Very Low	This species generally occupies littoral and estuarine habitats, and is mainly found in intertidal mudflats of sheltered coasts. It also occurs in non-tidal swamps, lakes, and lagoons on the coast and sometimes inland. It forages in or at the edge of shallow water, occasionally on exposed algal mats or waterweed, or on banks of beach-cast seagrass or seaweed, feeding on worms, molluscs, crustaceans, insects and some seeds. Mudflats are not present within the Subject Site.	The Curlew Sandpiper breeds in Siberia and migrates to Australia.	Negligible. No anticipated net loss of potential foraging or breeding habitat. Site assessment in April 2024 did not detect this species.	No.
Callocephalon fimbriatum (Gang-gang Cockatoo)	V	E	Low	This species feeds on the seeds of native flora including eucalyptus and acacia seed. The species favours box-gum and box-ironbark assemblages, or in dry forest in coastal areas and often found in urban areas. Potential feed trees occur within the Subject Site.	This species favours Eucalypt tree species with hollows that are 10 cm in diameter or larger and at least 9m above the ground in eucalypts. No tree hollows were identified within the Subject Site during the site assessment.	Minimal impact to potential foraging habitat given the mobility of this species, and the similar habitat that will remain within the broader Subject Property and adjoining areas. No anticipated net loss of potential breeding habitat. Site assessment in April 2024 did not detect this species.	No.

Species	BC Act	EPBC Act	Likelihood of Occurrence	Foraging Habitat Present Within the Subject Site	Breeding Habitat Present Within the Subject Site	Anticipated Impact	Further Impact Assessment Required?
Calyptorhynchus lathami (Glossy Black-Cockatoo)	V	-	Low	This species feeds almost exclusively on the seeds of several species of she-oak (*Casuarina* and *Allocasuarina* species). Inhabits open forest and woodlands of the coast and the Great Dividing Range where stands of she-oak occur. No she-oak species were identified within the Subject Site or Subject Property.	This species is dependent on large hollow-bearing eucalypts for nest sites. No tree hollows were identified within the Subject Site during the site assessment.	Negligible. No anticipated net loss of potential foraging or breeding habitat. Site assessment in April 2024 did not detect this species.	No.
Cercartetus nanus (Eastern Pygmy-possum)	V	-	Low	This species is found in a broad range of habitats from rainforest through sclerophyll (including Box-Ironbark) forest and woodland to heath, but in most areas woodlands and heath appear to be preferred. It feeds largely on nectar and pollen collected from banksias, eucalypts, and bottlebrushes, as well as insects. Some suboptimal foraging habitat was present within the Subject Site; however, the vegetation is highly disturbed.	This species shelters in tree hollows, rotten stumps, holes in the ground, abandoned bird-nests, Ringtail Possum dreys, or thickets of vegetation, although hollows are preferred. No suitable breeding habitat identified within the Subject Site during the site assessment.	Minimal anticipated impact to potential suboptimal foraging habitat. No anticipated net loss of potential breeding habitat. A suite of eucalypts will remain within the broader Subject Property and adjoining areas.	No.
Chalinolobus dwyeri (Large-eared Pied Bat)	V	V	Low	This species forages for small, flying insects in well-timbered areas. The open, disturbed vegetation within the Subject Site is unlikely to provide suitable foraging habitat for this species.	This species 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*). No such habitat was identified within the Subject Site during the assessment.	Negligible. No anticipated net loss of potential foraging or breeding habitat. Site assessment in April 2024 did not detect this species.	No.

Species	BC Act	EPBC Act	Likelihood of Occurrence	Foraging Habitat Present Within the Subject Site	Breeding Habitat Present Within the Subject Site	Anticipated Impact	Further Impact Assessment Required?
Climacteris picumnus victoriae (Brown Treecreeper)	V	-	Low	This species is found in eucalypt woodlands and dry open forest mainly dominated by stringybarks or other rough-barked eucalypts, usually with an open grassy understorey, sometimes with one or more shrub species. It is usually not found in woodlands with a dense shrub layer; fallen timber is an important habitat component for foraging. Some suboptimal foraging habitat was present within the Subject Site; however, the vegetation is highly disturbed and no fallen timber was present.	This species uses hollows in standing dead or live trees and tree stumps. No suitable breeding habitat identified within the Subject Site during the site assessment.	Minimal anticipated impact to potential suboptimal foraging habitat. No anticipated net loss of potential breeding habitat. A suite of trees will remain within the broader Subject Property and adjoining areas. Site assessment in April 2024 did not detect this species.	No
Daphoenositta chrysoptera (Varied Sittella)	V	-	Low	This species inhabits eucalypt forests and woodlands, especially those containing rough-barked species and mature smooth-barked gums with dead branches, mallee, and *Acacia* woodland. It feeds on arthropods gleaned from crevices in rough or decorticating bark, dead branches, standing dead trees and small branches and twigs in the tree canopy. Some potential habitat was present within the Subject Site.	This species builds a cup-shaped nest of plant fibres and cobwebs in an upright tree fork high in the living tree canopy, and often re-uses the same fork or tree in successive years. No nests were identified within the Subject Site during the assessment.	Minimal impact to potential foraging habitat given the mobility of this species. A suite of trees will remain within the broader Subject Property and adjoining areas. No anticipated net loss of potential breeding habitat. Site assessment in April 2024 did not detect this species.	No
Dasyornis brachypterus (Eastern Bristlebird)	E	E	Low	This species requires dense, low vegetation including heath and open woodland with a heathy understorey. The open, disturbed vegetation within the Subject Site is unlikely to provide suitable foraging habitat for this species.	Nests are elliptical domes constructed on or near the ground amongst dense vegetation. No nests were identified within the Subject Site during the assessment.	Negligible. No anticipated net loss of potential foraging or breeding habitat. Site assessment in April 2024 did not detect this species.	No.

Species	BC Act	EPBC Act	Likelihood of Occurrence	Foraging Habitat Present Within the Subject Site	Breeding Habitat Present Within the Subject Site	Anticipated Impact	Further Impact Assessment Required?
Dasyurus maculatus (Spotted-tailed Quoll)	V	E	Low	This species consumes a variety of prey, including gliders, possums, small wallabies, rats, birds, bandicoots, rabbits, reptiles and insects. It also eats carrion and takes domestic fowl. Potential prey items may exist within the Subject Site.	This species uses hollow-bearing trees, fallen logs, small caves, rock outcrops and rocky-cliff faces as den sites. No tree hollows were identified within the Subject Site during the site assessment.	Minimal impact to potential foraging habitat given the mobility of this species and the relatively small Subject Site. No anticipated net loss of potential breeding habitat.	No.
Erythrotriorchis radiatus (Red Goshawk)	CE	V	Low	This species inhabits open woodland and forest, preferring a mosaic of vegetation types, a large population of birds as a source of food, and permanent water, and are often found in riparian habitats along or near watercourses or wetlands. In NSW, preferred habitats include mixed subtropical rainforest, Melaleuca swamp forest and riparian Eucalyptus Forest of coastal rivers. Potential prey items may occur within the Subject Site.	This species builds stick nests in a tall tree (>20 m tall) within 1 km of a watercourse or wetland. No nests were identified within the Subject Site during the assessment.	Minimal anticipated impact to potential foraging habitat given the mobility of the species and the relatively small Subject Site. No anticipated impact to potential breeding habitat. Site assessment in April 2024 did not detect this species.	No.
Esacus magnirostris (Beach Stone-curlew)	CE	-	Very Low	This species forages in the intertidal zone of beaches and estuaries, on islands, flats, banks and spits of sand, mud, gravel or rock, and among mangroves. Although the Subject Property is located close to Pittwater Harbour, the proposed development does not encroach on the intertidal zone of the beach. No such foraging habitat exists within the Subject Site.	This species breeds above the littoral zone; at the backs of beaches; or on sandbanks and islands. Breeding occurs amongst low vegetation of grass, scattered shrubs, or low trees. Breeding may also occur amongst open mangroves. No such habitat occurs within the Subject Site.	Negligible. No anticipated net loss of potential foraging or breeding habitat. Site assessment in April 2024 did not detect this species.	No.

Species	BC Act	EPBC Act	Likelihood of Occurrence	Foraging Habitat Present Within the Subject Site	Breeding Habitat Present Within the Subject Site	Anticipated Impact	Further Impact Assessment Required?
Falco hypoleucos (Grey Falcon)	V	V	Low	This species is usually restricted to shrubland, grassland, and wooded watercourses of arid and semi-arid regions, although it is occasionally found in open woodlands near the coast. Also occurs near wetlands where surface water attracts prey. Preys primarily on birds, especially parrots and pigeons; reptiles and mammals are also taken. Potential prey items may occur within the Subject Site.	This species utilises old nests of other birds of prey and ravens, usually high in a living eucalypt near water or a watercourse. No nests were identified within the Subject Site during the assessment.	Minimal anticipated impact to potential foraging habitat given the mobility of the species and the relatively small Subject Site. No anticipated impact to potential breeding habitat. Site assessment in April 2024 did not detect this species.	No.
Falsistrellus tasmaniensis (Eastern False Pipistrelle)	V	-	Very Low	This species prefers moist habitats, with trees taller than 20m. It hunts beetles, moths, weevils, and other flying insects above or just below the tree canopy. No such foraging habitat exists within the Subject Site.	Generally, this species roosts in eucalypt hollows, but has also been found under loose bark on trees or in buildings. No tree hollows were identified within the Subject Site during the site assessment.	Negligible. No anticipated net loss of potential foraging or breeding habitat.	No.
Glossopsitta pusilla (Little Lorikeet)	V	-	Low	This species forages primarily in the canopy of open Eucalyptus Forest and woodland, yet also finds food in *Angophora*, *Melaleuca,* and other tree species. Mostly feeds on nectar and pollen of flowers in the open canopy of woodland trees. Suitable foraging habitat exists within the Subject Site.	This species nests in proximity to feeding areas, if possible, most typically selecting hollows in the limb or trunk of smooth-barked Eucalypts. Entrance is small (3cm) and usually high above the ground (2–15m). No tree hollows were identified within the Subject Site during the site assessment.	Minimal impact to potential foraging habitat given the mobility of this species. A suite of trees will remain within the broader Subject Property and adjoining areas. No anticipated net loss of potential breeding habitat. Site assessment in April 2024 did not detect this species.	No.

Species	BC Act	EPBC Act	Likelihood of Occurrence	Foraging Habitat Present Within the Subject Site	Breeding Habitat Present Within the Subject Site	Anticipated Impact	Further Impact Assessment Required?
Grantiella picta (Painted Honeyeater)	V	V	Very Low	A specialist feeder on the fruits of mistletoes growing on woodland eucalypts and acacias. Prefers mistletoes of the genus *Amyema*. No mistletoes were identified within the Subject Site or Subject Property during the site assessment.	This species nests from spring to autumn in a small, delicate nest hanging within the outer canopy of drooping eucalypts, she-oak, paperbark, or mistletoe branches. No nests were identified within the Subject Site during the assessment.	Negligible. No anticipated net loss of potential foraging or breeding habitat. Site assessment in April 2024 did not detect this species.	No.
Haematopus fuliginosus (Sooty Oystercatcher)	V	-	Very Low	Found in rocky coastline areas, and occasionally estuaries. Although the Subject Property is located close to Pittwater Harbour, the proposed development does not encroach on the exposed rock below the cliff face. No such foraging habitat exists within the Subject Site.	This species breeds almost exclusively on offshore islands, and occasionally on isolated promontories. No such habitat exists within the Subject Site.	Negligible. No anticipated net loss of potential foraging or breeding habitat. Site assessment in April 2024 did not detect this species.	No.
Haliaeetus leucogaster (White-bellied Sea-Eagle)	V	-	Low	Habitats are characterised by the presence of large areas of open water including larger rivers, swamps, lakes, and the sea. Occurs at sites near the sea or sea-shore, such as around bays and inlets, beaches, reefs, lagoons, estuaries, and mangroves. Feed mainly on fish and freshwater turtles, but also waterbirds, reptiles, mammals, and carrion. Potential prey items may occur within the Subject Site.	Breeding habitat consists of mature tall open forest, open forest, tall woodland, and swamp sclerophyll forest close to foraging habitat. Nests are large structures built from sticks and lined with leaves or grass. No nests were identified within the Subject Site during the assessment.	Minimal anticipated impact to potential foraging habitat given the mobility of the species and the relatively small Subject Site. No anticipated impact to potential breeding habitat. Site assessment in April 2024 did not detect this species.	No.

Species	BC Act	EPBC Act	Likelihood of Occurrence	Foraging Habitat Present Within the Subject Site	Breeding Habitat Present Within the Subject Site	Anticipated Impact	Further Impact Assessment Required?
Heleioporus australiacus (Giant Burrowing Frog)	V	V	Low	This species is found in heath, woodland, and open dry sclerophyll forest on a variety of soil types except those that are clay-based. It mainly eats invertebrates including ants, beetles, cockroaches, spiders, centipedes, and scorpions. Some suboptimal foraging habitat was present within the Subject Site; however, the vegetation is highly disturbed.	The species breeds in soaks and second order streams. No such habitat was present within the Subject Site or Subject Property.	Minimal anticipated impact to potential foraging habitat given the disturbed nature of the site. No anticipated impact to potential breeding habitat. Site assessment in April 2024 did not detect this species.	No.
Hieraaetus morphnoides (Little Eagle)	V	-	Low	This species occupies open eucalypt forest, woodland, or open woodland. It preys on birds, reptiles, and mammals, occasionally adding large insects and carrion. Potential prey items may occur within the Subject Site.	The species nests in tall living trees within a remnant patch, where pairs build a large stick nest in winter. No nests were identified within the Subject Site during the assessment.	Minimal anticipated impact to potential foraging habitat given the mobility of the species and the relatively small Subject Site. No anticipated impact to potential breeding habitat. Site assessment in April 2024 did not detect this species.	No.
Hirundapus caudacutus (White-throated Needletail)	V	V	Low	This species is mostly aerial, from heights of less than 1m to greater than 1000m above the ground. It feeds on a wide variety of insects. Potential prey items may occur within the Subject Site.	This species does not breed in Australia.	Minimal anticipated impact to potential foraging habitat given the mobility of the species and the relatively small Subject Site. No anticipated impact to potential breeding habitat.	No.

Species	BC Act	EPBC Act	Likelihood of Occurrence	Foraging Habitat Present Within the Subject Site	Breeding Habitat Present Within the Subject Site	Anticipated Impact	Further Impact Assessment Required?
Hoplocephalus bungaroides (Broad-headed Snake)	E	V	Very Low	This species moves from sandstone rocks to shelters in crevices or hollows in large trees within 500m of escarpments in summer. It feeds mostly on geckos and small skinks; will also eat frogs and small mammals occasionally. Caves and cliff crevices are not present within the Subject Site.	The species shelters in rock crevices and under flat sandstone rocks on exposed cliff edges during autumn, winter and spring. Caves and cliff crevices not are present within the Subject Site.	Negligible. No anticipated net loss of potential foraging or breeding habitat. Site assessment in April 2024 did not detect this species.	No.
Isoodon obesulus obesulus (Southern Brown Bandicoot)	E	E	Low	This species is typically found in heath or open forest with a heathy understorey on sandy or friable soils. Some suboptimal foraging habitat was present within the Subject Site; however, the vegetation is highly disturbed.	Nests may be located under Grass trees, blackberry bushes, other shrubs, or in rabbit burrows. Such habitat does not occur within the Subject Site.	Minimal anticipated impact to potential foraging habitat given the disturbed nature of the site. No anticipated impact to potential breeding habitat.	No.
Ixobrychus flavicollis (Black Bittern)	V	-	Very Low	This species inhabits both terrestrial and estuarine wetlands, generally in areas of permanent water and dense vegetation. Where permanent water is present, the species may occur in flooded grassland, forest, woodland, rainforest and mangroves. Feeds on frogs, reptiles, fish and invertebrates, including snails, dragonflies, shrimps. and crayfish, with most feeding done at dusk and at night. No such habitat was identified within the Subject Site.	Nests, built in spring, are located on a branch overhanging water and consist of a bed of sticks and reeds on a base of larger sticks. No such habitat was identified within the Subject Site.	Negligible. No anticipated net loss of potential foraging or breeding habitat. Site assessment in April 2024 did not detect this species.	No.

Species	BC Act	EPBC Act	Likelihood of Occurrence	Foraging Habitat Present Within the Subject Site	Breeding Habitat Present Within the Subject Site	Anticipated Impact	Further Impact Assessment Required?
Lathamus discolor (Swift Parrot)	E	CE	Low	On the mainland, this species occurs in areas where eucalypts are flowering profusely or where there are abundant lerp infestations (from sap-sucking bugs). Favoured feed trees include winter flowering species such as *Eucalyptus robusta, Corymbia maculata, C. gummifera, E. tereticornis, E. sideroxylon, E. pilularis,* and *E. albens.* Potential feed trees were present within the Subject Site.	This species breeds in Tasmania. The Subject Property does not occur within the important areas map for this species.	Minimal impact to potential foraging habitat given the mobility of this species. *Eucalyptus spp.* will be retained within the broader Subject Property and adjoining areas. No anticipated net loss of potential breeding habitat. Site assessment in April 2024 did not detect this species.	No.
Litoria aurea (Green and Golden Bell Frog)	E	V	Very Low	This species forages on insects and inhabits marshes, dams, and stream sides, particularly those containing bullrushes (*Typha* spp.) or spikerushes (*Eleocharis* spp.) No such habitat was identified within the Subject Site.	The species breeds within aquatic habitats. No such habitat was identified within the Subject Site.	Negligible. No anticipated net loss of potential foraging or breeding habitat. Site assessment in April 2024 did not detect this species.	No.
Melithreptus gularis gularis (Black-chinned Honeyeater - eastern subspecies)	V	-	Very Low	This species typically occurs in large woodland patches, as birds forage over large home ranges of at least 5 hectares, occupying dry open forests or woodlands. No such habitat was identified within the Subject Site.	This species typically occurs in large woodland patches, as birds forage over large home ranges of at least 5 hectares, occupying dry open forests or woodlands. No such habitat was identified within the Subject Site.	Negligible. No anticipated net loss of potential foraging or breeding habitat. Site assessment in April 2024 did not detect this species.	No.

Species	BC Act	EPBC Act	Likelihood of Occurrence	Foraging Habitat Present Within the Subject Site	Breeding Habitat Present Within the Subject Site	Anticipated Impact	Further Impact Assessment Required?
Meridolum maryae (Maroubra Woodland Snail)	E	-	Very Low	This species is found in the leaf litter of coastal vegetation communities, most commonly in heathland on foredunes also from areas of podsolised dunes/sand plains that support taller heath communities including Eastern Suburbs Banksia Scrub. No such habitat was identified within the Subject Site.	The species is found in the leaf litter of coastal vegetation communities, most commonly in heathland on foredunes also from areas of podsolised dunes/sand plains that support taller heath communities including Eastern Suburbs Banksia Scrub. No such habitat was identified within the Subject Site.	Negligible. No anticipated net loss of potential foraging or breeding habitat. Site assessment in April 2024 did not detect this species.	No.
Micronomus norfolkensis (Eastern Coastal Free-tailed Bat)	V	-	Low	This species is insectivorous and occurs in dry sclerophyll forest, woodland, swamp forests, and mangrove forests east of the Great Dividing Range. Potential prey items may occur within the Subject Site.	This species roosts in caves, tunnels, tree hollows, abandoned mines, stormwater drains, culverts, bridges, and sometimes buildings during the day. No such habitat was identified within the Subject Site.	Minimal anticipated impact to potential foraging habitat given the mobility of the species and the relatively small Subject Site. No anticipated impact to potential breeding habitat.	No.
Miniopterus australis (Little Bent-winged Bat)	V	-	Low	This species is found in moist eucalypt forest, rainforest, vine thicket, wet and dry sclerophyll forest, Melaleuca swamps, dense coastal forests and banksia scrub. It is generally found in well-timbered areas. At night, this species forages for small insects beneath the canopy of densely vegetated habitats. Potential prey items may exist within the Subject Site.	This species roosts in caves, tunnels, tree hollows, abandoned mines, stormwater drains, culverts, bridges and sometimes buildings during the day. Only five (5) nursery sites/maternity colonies are known in Australia. They require large colonies roosting together to provide the high temperatures needed to rear their young. No such habitat was identified within the Subject Site.	Minimal anticipated impact to potential foraging habitat given the mobility of the species and the relatively small Subject Site. No anticipated impact to potential breeding habitat.	No.

Species	BC Act	EPBC Act	Likelihood of Occurrence	Foraging Habitat Present Within the Subject Site	Breeding Habitat Present Within the Subject Site	Anticipated Impact	Further Impact Assessment Required?
Miniopterus orianae oceanensis (Large Bent-winged Bat)	V	-	Low	This species hunts in forested areas, catching moths and other flying insects above the tree tops. Potential prey items may exist within the Subject Site.	Caves are the primary roosting habitat, but also use derelict mines, storm-water tunnels, buildings and other man-made structures. No such habitat was identified within the Subject Site.	Minimal anticipated impact to potential foraging habitat given the mobility of the species and the relatively small Subject Site. No anticipated impact to potential breeding habitat.	No.
Mixophyes balbus (Stuttering Frog)	E	V	Low	This species is found in rainforest and wet, tall open forest in the foothills and escarpment on the eastern side of the Great Dividing Range. It feeds on insects and smaller frogs. Potential prey items may exist within the Subject Site.	Outside the breeding season, adults live in deep leaf litter and thick understorey vegetation on the forest floor. They breed in streams during summer after heavy rain. No such habitat was identified within the Subject Site.	Minimal anticipated impact to potential foraging habitat given the disturbed nature of the site. No anticipated impact to potential breeding habitat. Site assessment in April 2024 did not detect this species.	No.
Myotis macropus (Southern Myotis)	V	-	Very Low	This species forages over streams and pools catching insects and small fish by raking their feet across the water surface. No such habitat was identified within the Subject Site or Subject Property.	Generally, this species roosts in groups of 10-15 close to water in caves, mine shafts, hollow-bearing trees, storm water channels, buildings, under bridges, and in dense foliage. No such habitat was identified within the Subject Site.	Negligible. No anticipated net loss of potential foraging or breeding habitat.	No.
Notamacropus parma (Parma Wallaby)	V	V	Very Low	This species typically feeds at night on grasses and herbs in more open eucalypt forest and the edges of nearby grassy areas. No appropriate foraging habitat is present within the Subject Site.	Preferred habitat is moist eucalypt forest with thick, shrubby understorey, often with nearby grassy areas, rainforest margins and occasionally drier eucalypt forest. During the day they shelter in dense cover. No such habitat was identified within the Subject Site.	Negligible. No anticipated net loss of potential foraging or breeding habitat. Site assessment in April 2024 did not detect this species.	No.

Species	BC Act	EPBC Act	Likelihood of Occurrence	Foraging Habitat Present Within the Subject Site	Breeding Habitat Present Within the Subject Site	Anticipated Impact	Further Impact Assessment Required?
Numenius madagascariensis (Eastern Curlew)	-	CE	Very Low	This species is mainly found in intertidal mudflats and sometimes saltmarsh of sheltered coasts. It forages in or at the edge of shallow water. No such habitat was identified within the Subject Site.	This species does not breed in Australia.	Negligible. No anticipated net loss of potential foraging or breeding habitat. Site assessment in April 2024 did not detect this species.	No.
Petauroides volans (Southern Greater Glider)	E	E	Very Low	This species is typically found in taller, montane, moist eucalypt forests within relatively old trees and abundant hollows. No such habitat was present within the Subject Site.	This species is typically found in taller, montane, moist eucalypt forests within relatively old trees and abundant hollows. No tree hollows were identified within the Subject Site during the site assessment.	Negligible. No anticipated net loss of potential foraging or breeding habitat.	No.
Petaurus australis australis (Yellow-bellied Glider)	V	V	Low	This species occurs in tall mature eucalypt forest generally in areas with high rainfall and nutrient rich soils. Forest type preferences include mixed coastal forests to dry escarpment forests in the north; moist coastal gullies and creek flats to tall montane forests in the south. Feeds primarily on plant and insect exudates, including nectar, sap, honeydew, and manna with pollen and insects providing protein. Some foraging habitat was present within the Subject Site.	Den, often in family groups, in hollows of large trees. No tree hollows were identified within the Subject Site during the site assessment.	Minimal anticipated impact to potential foraging habitat given the disturbed nature of the site. A suite of trees will remain within the broader Subject Property and adjoining areas. No anticipated impact to potential breeding habitat.	No.

Species	BC Act	EPBC Act	Likelihood of Occurrence	Foraging Habitat Present Within the Subject Site	Breeding Habitat Present Within the Subject Site	Anticipated Impact	Further Impact Assessment Required?
Petaurus norfolcensis (Squirrel Glider)	V	-	Low	This species inhabits Blackbutt-Bloodwood Forest with heath understorey in coastal areas. The species' diet consists of Acacia gum, eucalypt sap, nectar, honeydew, and manna, with invertebrates and pollen providing protein. Some foraging habitat was present within the Subject Site.	The species requires abundant tree hollows for refuge and nest sites. No tree hollows were identified within the Subject Site during the site assessment.	Minimal anticipated impact to potential foraging habitat given the disturbed nature of the site. A suite of trees will remain within the broader Subject Property and adjoining areas. No anticipated impact to potential breeding habitat.	No.
Petrogale penicillate (Brush-tailed Rock-wallaby)	E	V	Very Low	This species browses on vegetation in and adjacent to rocky areas eating grasses and forbs as well as the foliage and fruits of shrubs and trees. No rocky habitat was present within the Subject Site.	This species occupies rocky escarpments, outcrops, and cliffs with a preference for complex structures with fissures, caves, and ledges, often facing north. No such habitat was present within the Subject Site.	Negligible. No anticipated net loss of potential foraging or breeding habitat. Site assessment in April 2024 did not detect this species.	No.
Petroica boodang (Scarlet Robin)	V	-	Low	This species lives in dry eucalypt forests and woodlands, habitat usually contains abundant logs and fallen timber. Birds forage from low perches, fence-posts, or on the ground, pouncing on small insects and other invertebrates. Some foraging habitat was present within the Subject Site; however, it is considered suboptimal due to lack of logs and timber.	This species' nest is an open cup made of plant fibres and cobwebs and is built in the fork of tree usually more than 2 metres above the ground. No nests were identified within the Subject Site during the site assessment.	Minimal anticipated impact to potential foraging habitat given the mobility of the species and the relatively small Subject Site. No anticipated impact to potential breeding habitat. Site assessment in April 2024 did not detect this species.	No.

Species	BC Act	EPBC Act	Likelihood of Occurrence	Foraging Habitat Present Within the Subject Site	Breeding Habitat Present Within the Subject Site	Anticipated Impact	Further Impact Assessment Required?
Phascolarctos cinereus (Koala)	E	-	Low	This species feeds on the foliage of more than 70 eucalypt species and 30 non-eucalypt species. Although potential feed trees are present within the Subject Site, it provides suboptimal foraging habitat for this species. The highly urbanised and fragmented nature of the surrounding Subject Property suggests the potential for koala presence is extremely low.	No potential breeding habitat exists within the Subject Site. The urbanised and fragmented nature of the surrounding Subject Property makes the potential for koala presence extremely low.	Minimal anticipated impact to potential foraging habitat given its suboptimal condition. No anticipated impact to potential breeding habitat. Site assessment in April 2024 did not detect this species.	No.
Potorous tridactylus (Long-nosed Potoroo)	V	V	Low	This species inhabits coastal heaths and dry and wet sclerophyll forests. Dense understorey with occasional open areas is an essential part of habitat, and may consist of grass-trees, sedges, ferns or heath, or of low shrubs of tea-trees or melaleucas. Some suboptimal foraging habitat was present within the Subject Site; however, the vegetation is highly disturbed.	This species inhabits coastal heaths and dry and wet sclerophyll forests. Dense understorey with occasional open areas is an essential part of habitat, and may consist of grass-trees, sedges, ferns or heath, or of low shrubs of tea-trees or melaleucas. Some suboptimal breeding habitat was present within the Subject Site; however, the vegetation is highly disturbed.	Minimal anticipated impact to potential foraging and breeding habitat given its suboptimal condition. Site assessment in April 2024 did not detect this species.	No.
Pseudomys novaehollandiae (New Holland Mouse)	-	V	Very Low	This species is known to inhabit open heathlands, woodlands, and forests with a heathland understorey and vegetated sand dunes. No such habitat was present within the Subject Site.	This species breeds in burrows. No burrows were identified within the Subject Site during the site assessment.	Negligible. No anticipated net loss of potential foraging or breeding habitat.	No.

Species	BC Act	EPBC Act	Likelihood of Occurrence	Foraging Habitat Present Within the Subject Site	Breeding Habitat Present Within the Subject Site	Anticipated Impact	Further Impact Assessment Required?
Pseudophryne australis (Red-crowned Toadlet)	V	-	Very Low	This species occurs in open forests, mostly on Hawkesbury and Narrabeen Sandstones. Inhabits periodically wet drainage lines below sandstone ridges that often have shale lenses or cappings. No such habitat was identified within the Subject Site.	Breeding congregations occur in dense vegetation and debris beside ephemeral creeks and gutters. No such habitat was identified within the Subject Site.	Negligible. No anticipated net loss of potential foraging or breeding habitat. Site assessment in April 2024 did not detect this species.	No.
Pteropus poliocephalus (Grey-headed Flying-fox)	V	V	Low	This species feeds on the nectar and pollen of native trees, in particular *Eucalyptus*, *Melaleuca*, and *Banksia*, and fruits of rainforest trees and vines. Appropriate foraging habitat was identified within the Subject Site.	Roosting camps are generally located within 20 km of a regular food source and are commonly found in gullies, close to water, in vegetation with a dense canopy. The closest roosting camp is approximately 16km from the Subject Site and will not be impacted by the proposed works.	Minimal anticipated impact to potential foraging habitat given the mobility of the species and the relatively small Subject Site. No anticipated impact to potential breeding habitat. Site assessment in April 2024 did not detect this species.	No.
Ptilinopus regina (Rose-crowned Fruit-Dove)	V	-	Low	This species occurs mainly in sub-tropical and dry rainforest and occasionally in moist eucalypt forest and swamp forest, where fruit is plentiful. Some suboptimal foraging habitat was present within the Subject Site; however, the vegetation is highly disturbed.	This species nests in rainforests with dense growth vines. The nest is a frail loosely woven cup of twigs and tendrils. No nests were identified within the Subject Site during the site assessment.	Minimal anticipated impact to potential foraging habitat given the mobility of the species and the relatively small Subject Site. No anticipated impact to potential breeding habitat. Site assessment in April 2024 did not detect this species.	No.

Species	BC Act	EPBC Act	Likelihood of Occurrence	Foraging Habitat Present Within the Subject Site	Breeding Habitat Present Within the Subject Site	Anticipated Impact	Further Impact Assessment Required?
Ptilinopus superbus (Superb Fruit-dove)	V	-	Low	This species inhabits rainforest and similar closed forests where it forages high in the canopy, eating the fruits of many tree species such as figs and palms. It may also forage in eucalypt or acacia woodland where there are fruit-bearing trees. Appropriate foraging habitat was identified within the Subject Site.	The nest is a structure of fine interlocked forked twigs, giving a stronger structure than its flimsy appearance would suggest, and is usually 5-30m up in rainforest and rainforest edge tree and shrub species. No nests were identified within the Subject Site during the site assessment.	Minimal anticipated impact to potential foraging habitat given the mobility of the species and the relatively small Subject Site. No anticipated impact to potential breeding habitat. Site assessment in April 2024 did not detect this species.	No.
Saccolaimus flaviventris (Yellow-bellied Sheathtail-bat)	V	-	Low	This species forages for small, flying insects. The species flies high and fast over the forest canopy, but lower in more open country. Appropriate foraging habitat was identified within the Subject Site.	This species roosts in trees hollows and dilapidated buildings. No tree hollows were identified within the Subject Site during the site assessment.	Minimal anticipated impact to potential foraging habitat given the mobility of the species and the relatively small Subject Site. No anticipated impact to potential breeding habitat.	No.
Scoteanax rueppellii (Greater Broad-nose bat)	V	-	Low	This species forages in most habitats across its very wide range, with and without trees. When foraging for insects, it flies high and fast over the forest canopy, but lower in more open country. Appropriate foraging habitat was identified within the Subject Site.	This species requires tree hollows or buildings for roosting/ breeding. No tree hollows were identified within the Subject Site during the site assessment.	Minimal anticipated impact to potential foraging habitat given the mobility of the species and the relatively small Subject Site. No anticipated impact to potential breeding habitat.	No.

Species	BC Act	EPBC Act	Likelihood of Occurrence	Foraging Habitat Present Within the Subject Site	Breeding Habitat Present Within the Subject Site	Anticipated Impact	Further Impact Assessment Required?
Stagonopleura guttata (Diamond Firetail)	V	V	Low	Found in grassy eucalypt woodlands, including Box-Gum Woodlands and Snow Gum *Eucalyptus pauciflora* Woodlands. Also occurs in open forest, mallee, Natural Temperate Grassland, and in secondary grassland derived from other communities. Feeds exclusively on the ground, on ripe and partly-ripe grass and herb seeds and green leaves, and on insects (especially in the breeding season).	Nests are globular structures built either in the shrubby understorey, or higher up, especially under hawk's or raven's nests. Birds roost in dense shrubs or in smaller nests built especially for roosting.	Minimal anticipated impact to potential foraging habitat given the mobility of the species and the relatively small Subject Site. No anticipated impact to potential breeding habitat.	No.
Stictonetta naevosa (Freckled Duck)	V	-	Very Low	This species prefers permanent freshwater swamps and creeks with heavy growth of Cumbungi, Lignum, or Tea-tree. No such habitat was present within the Subject Site.	Nests are usually located in dense vegetation at or near water level. No such habitat was present within the Subject Site.	Negligible. No anticipated net loss of potential foraging or breeding habitat. Site assessment in April 2024 did not detect this species.	No.
Varanus rosenbergi (Rosenburg's Goanna)	V	-	Very Low	This species is found in heath, open forest, and woodland and is associated with termites. It feeds on carrion, birds, eggs, reptiles and small mammals. There are no termite mounds or other required habitat elements within the Subject Site.	The species lays up to 14 eggs in a termite mound; the hatchlings dig themselves out of the mounds. No such habitat exists within the Subject Site.	Negligible. No anticipated net loss of potential foraging or breeding habitat. Site assessment in April 2024 did not detect this species.	No.

Species	BC Act	EPBC Act	Likelihood of Occurrence	Foraging Habitat Present Within the Subject Site	Breeding Habitat Present Within the Subject Site	Anticipated Impact	Further Impact Assessment Required?
Vespadelus troughtoni (Eastern Cave Bat)	V	-	Low	Little is understood of this species' feeding or breeding requirements or behaviour. Species roosts in caves that are 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. Some foraging habitat may occur within the Subject Site.	This species roosts in caves. No such habitat exists within the Subject Site.	Minimal anticipated impact to potential foraging habitat given the mobility of the species and the relatively small Subject Site. No anticipated impact to potential breeding habitat.	No.

5. Impact Summary

5.1 Vegetation

Approximately 0.05 hectares of vegetation is proposed to be impacted by the development, including about 0.03 hectares of native vegetation classified as Central Coast Escarpment Moist Forest and approximately 0.02 hectares of vegetation classified as Exotic-Dominated Garden. As neither of these vegetation communities is listed as threatened under the BC Act or the EPBC Act, and the area of removal is minimal, it was deemed unlikely that the proposed works would result in a significant impact. Therefore, further assessment is not deemed necessary.

5.2 Threatened Species Habitat

No hollowing-bearing trees were identified within the Subject Site during the assessment in April 2024. If any hollows or dens are identified in the future, they should be replaced at a 1:1 ratio with artificial nestboxes elsewhere in the Subject Property prior to removal.

A likelihood assessment was undertaken for all species with potential to utilise habitat within the Subject Site and it was concluded that owing to the extensive habitat still remaining within the broader Subject Property and locality, it was deemed unlikely that the proposed works would result in a significant impact to any BC Act or EPBC Act listed threatened species.

6. Recommendations

6.2 Impact Mitigation and Minimisation Recommendations

This section of the report details recommended efforts to avoid and minimise impacts on biodiversity values associated with the proposed development. Measures to be implemented before, during, and post construction are detailed in **Table 9.**

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

Action	Outcome	Timing	Responsibility
Assigning a Project Ecologist	Prior to the construction phase of the development, the proponent may be required to commission the services of a qualified and experienced Ecologist 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. If required by Council, the Ecologist will be commissioned to: ▪ Undertake an extensive pre-clearing survey; delineating habitat-bearing trees and shrubs to be retained/removed; and ▪ Supervise the clearance of and identified habitat trees and shrubs in order to capture, treat and/or relocate any displaced fauna.	Pre-construction phase	Proponent
Tree Protections	Australian Standard 4970 (2009) Protection of Trees on Development Sites (AS-4970) outlines that a Tree Protection Zone (TPZ) is the principal means of protecting trees on construction sites. It is an area isolated from construction disturbance so that the tree remains viable. Ideally, works should be avoided within the TPZ. A Minor Encroachment is less than 10% of the TPZ and is outside the structural root zone (SRZ). A Minor Encroachment is considered acceptable by AS-4970 when it is compensated for elsewhere and contiguous within the TPZ. A Major Encroachment is greater than 10% of the TPZ or inside the SRZ. Major Encroachments generally require root investigations undertaken by non-destructive methods or the use of tree sensitive construction methods.	Pre-construction phase	Proponent Arborist

Action	Outcome	Timing	Responsibility
	Tree protection fencing is to be installed around all trees to be retained prior to the commencement of works.		
Erosion and Sedimentation	Appropriate erosion and sediment control must be erected and maintained at all times during construction in order to avoid the potential of incurring indirect impacts on biodiversity values. As a minimum, such measures should comply with the relevant industry guidelines such as 'the Blue Book' (Landcom 2004).	Construction phase	Proponent Construction Contractor
Landscaping	Where possible, landscaping efforts within the Subject Property should incorporate locally indigenous species representative of Central Coast Escarpment Moist Forest.	Construction phase	Proponent
Storage and Stockpiling (Soil and Materials)	Allocate all storage, stockpile, and laydown sites away from any vegetation that is planned to be retained. Avoid importing any soil from outside the site as this can introduce weeds and pathogens to the site in order to avoid the potential of incurring indirect impacts on biodiversity values.	Construction phase	Construction Contractors
Stormwater	The proposed development is unlikely to result in significant changes to local storm-water runoff so it is expected there will be no exacerbated impact on native species of flora and fauna.	Post-construction phase	Proponent Construction Architect

7. Conclusion

In conclusion, this Flora and Fauna Assessment for the proposed development at 54-58 Beaconsfield Street, Newport NSW 2106 has provided a comprehensive evaluation of the ecological characteristics of the site. The assessment reveals that approximately 0.05 hectares of vegetation will be impacted by the development, including 0.03 hectares of native vegetation classified as Central Coast Escarpment Moist Forest and approximately 0.02 hectares classified as Exotic-Dominated Garden. Given that neither vegetation community is listed as threatened under the BC Act or the EPBC Act, and the area of removal is minimal, it is unlikely that the proposed works would result in a significant impact. Thus, no further assessment is deemed necessary.

A likelihood assessment was undertaken for all species with potential to utilise habitat within the Subject Site and it was concluded that owing to the extensive habitat still remaining within the broader Subject Property and locality, it was deemed unlikely that the proposed works would result in a significant impact to any BC Act or EPBC Act listed threatened species.

Key recommendations to mitigate and minimize impacts include:

- The installation of tree protection zones in accordance with Australian Standards to safeguard existing vegetation.
- The management of erosion and sedimentation through adherence to industry guidelines to prevent indirect biodiversity impacts.
- The implementation of landscaping that incorporates indigenous species to enhance the ecological value of the site post-construction.

These measures aim to ensure that the development proceeds with minimal environmental impact. These actions will also support compliance with relevant environmental regulations and contribute to sustainable development practices in the Newport area.

8. References

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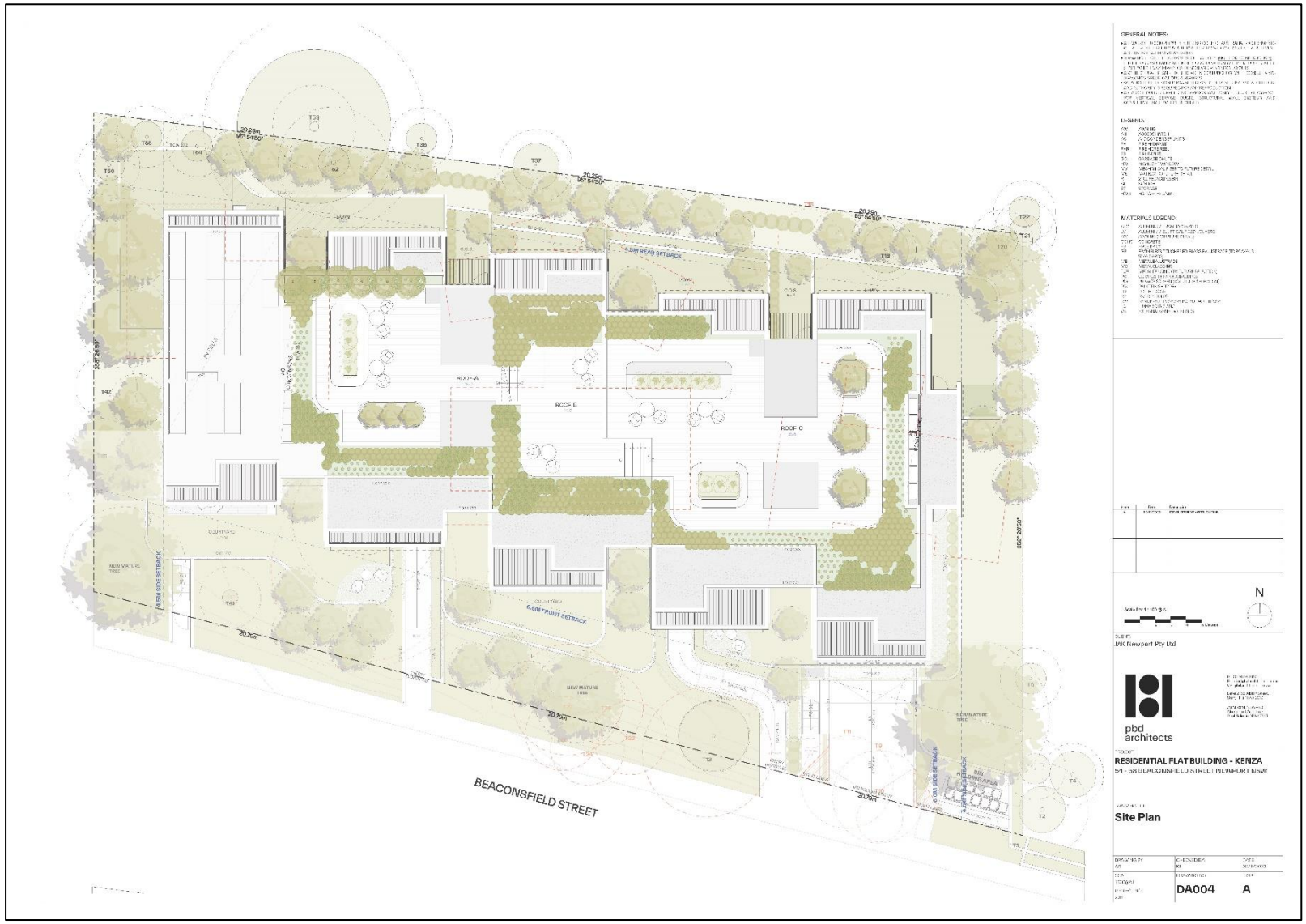
9. Appendices

Appendix A. Site Plans (PBD Architects 2024).

Appendix B. Flora species identified within the Subject Property.

Appendix C. Fauna species identified within and surrounding the Subject Property.

Appendix A. Site Plans (PBD Architects 2024).



Appendix B. Flora species identified within the Subject Property.

Scientific Name	Canopy	Midstory	Ground
Acacia implexa		X	
*Agapanthus spp.**			X
*Agave spp.**			x
*Ageratina adenophora**			X
Angophora costata	X		
*Asparagus aethiopicus**			X
*Aptenia cordifolia**			X
*Archontophoenix alexandrae**		X	
*Aristia ecklionii**			X
*Babingtonia pluriflora**		X	
Banksia integrifolia	X		
*Bouganvillea spp.**		X	
Bromeliad spp.			x
Callistemon citrinus		X	
*Chlorophytum comosum**			X
*Cinnamomum camphora**	X		
Commelina cyanea			X
*Conyza spp.**			X
Cyathea cooperi		x	
*Dypris decanji**		X	
*Erharta erecta**			x
Eucalyptus capitellata	X		
Eucalyptus paniculata	X		
Hardenbergia violeacea			x
*Hedera helix**			X
*Hibiscus spp. **		X	
*Ipomea indica**			X
*Jacaranda mimisifolia**		X	
*Lantana camara***		X	
Leptospermum petersonii		X	
*Linnaea spp.**		X	
Livistonia australis			x
*Monstera deliciosa**			x
*Nephrolepis cordifolia**			X
*Ochna serrulate**		x	
*Oxalis latifolia**			X
*Phyllostachys spp.**		X	
*Rumex sagittatas**			X
*Salvia rosmarinus**			X
*Schinus terebinthifolia**		X	
*Senna pendula var. glabrata**		X	
*Stenocarpus sinnatus**		X	
Stenotaphrum secundatum			X
*Strelitzia reginae**		X	

Scientific Name	Canopy	Midstory	Ground
Syncarpia glomulifera	X		
Syzgium spp.			X
*Taraxacum officinale**			X
*Trifolium repens**			X
*Wisteria spp.**		X	

** Denotes exotic species*

*** Denotes Priority Weed*

Appendix C. Fauna species identified within and surrounding the Subject Property.

Class	Scientific Name	Common Name	Status
Aves	*Manorina melanocephala*	Noisy Miner	Protected
	Cacatua galerita	Sulphur-crested Cockatoo	
	Trichoglossus moluccanus	Rainbow Lorikeet	
Reptilia	*Lampropholis guichenoti*	Common Garden Skink	

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