Flora and Fauna Assessment

Demolition of the existing dwelling and construction of a new dwelling

327 McCarrs Creek Road, Terrey Hills

Prepared by Ecological Consultants Australia Pty Ltd
TA Kingfisher Urban Ecology and Wetlands

30 April 2025

About this document

Limitations Statement

Information presented in this report is based on an objective study undertaken in response to the brief provided by the client. Any opinions expressed in this report are the professional, objective opinions of the authors and are not intended to advocate any particular proposal or pre-determined position.

Document control

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Shortened forms

APZ	asset protection zone
AOBV	area of outstanding biodiversity value
BAM	biodiversity Assessment Method
BAM-C	biodiversity Assessment Method Calculator
BC Act	*Biodiversity Conservation Act 2016* (NSW)
BC Regulation	Biodiversity Conservation Regulation 2017 (NSW)
BCT	Biodiversity Conservation Trust
BDAR	Biodiversity Development Assessment Report
BOS	Biodiversity Offsets Scheme
CEEC	critically endangered ecological community
DBH	diameter at breast height over bark
EC	ecological community listed under the EPBC Act
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Cwlth)
EP&A Act	*Environmental Planning and Assessment Act 1979* (NSW)
EEC	endangered ecological community
HTW	high threat weed
IBRA	Interim Biogeographic Regionalisation for Australia
LGA	local government area
LLS Act	*Local Land Services Act 2013* (NSW)
NPW Act	*National Parks and Wildlife Act 1974* (NSW)
NSW	New South Wales
PCT	plant community type
SAII	serious and irreversible impact
TBDC	threatened Biodiversity Data Collection
TEC	threatened ecological community
VEC	Vulnerable ecological community

1 Introduction

1.1 Purpose of the Report

This Flora and Fauna Assessment has been prepared for the property located at 327 McCarrs Creek Road, Terrey Hills. The purpose of this assessment is to evaluate the site's ecological values, identify potential impacts of the proposed development, and ensure compliance with relevant environmental legislation and planning policies.

The assessment follows the guidelines set out in the *Biodiversity Conservation Act 2016* (BC Act), the *Environmental Planning and Assessment Act 1979* (EP&A Act), and the NSW Biodiversity Assessment Method (BAM) where applicable. It also considers local planning controls under the *Warringah Local Environmental Plan 2011* (Warringah LEP) and other relevant policies.

A site inspection was undertaken on 6 March 2025 to document existing vegetation communities, identify any threatened species or habitat features, and assess the ecological condition of the land. The assessment includes a review of existing databases, field survey results, and an evaluation of potential constraints and mitigation measures.

This report aims to provide an objective ecological assessment to inform the planning and decision-making process while ensuring the protection and management of significant flora and fauna values within the site and surrounding landscape.

1.2 Site Description

The site is located on Dharug Country at 327 McCarrs Creek Road, Terrey Hills, within the Northern Beaches Council Local Government Area (LGA) (refer to site details in Table 1.1). The site is depicted in Figure 1.1, with its location further highlighted in Figure 1.2 and land zoning shown in Figure 1.3.

The site is a trapezoid parcel of land situated approximately 22 km north of the Sydney CBD. The property comprises two storey brick residence, inground concrete swimming pool, two storey metal shed, and a corral. The site is largely cleared land with landscaped gardens surrounding residence and pool. The tree canopy is restricted to the landscaped gardens surrounding the residence and comprises both remnant and planted trees. The site has direct access to McCarrs Creek along the western boundary and is surrounded by large residential lots and native vegetation.

Table 1.1. Site details.

Address	327 McCarrs Creek Road, Terrey Hills
Local Government Area	Northern Beaches
Lot and DP	Lot 417 DP 752017
Site Area	8479 m^2
Local Environmental Plan	*Warringah Local Environmental Plan 2011*
Zoning	RU4 – Primary Production Small Lots

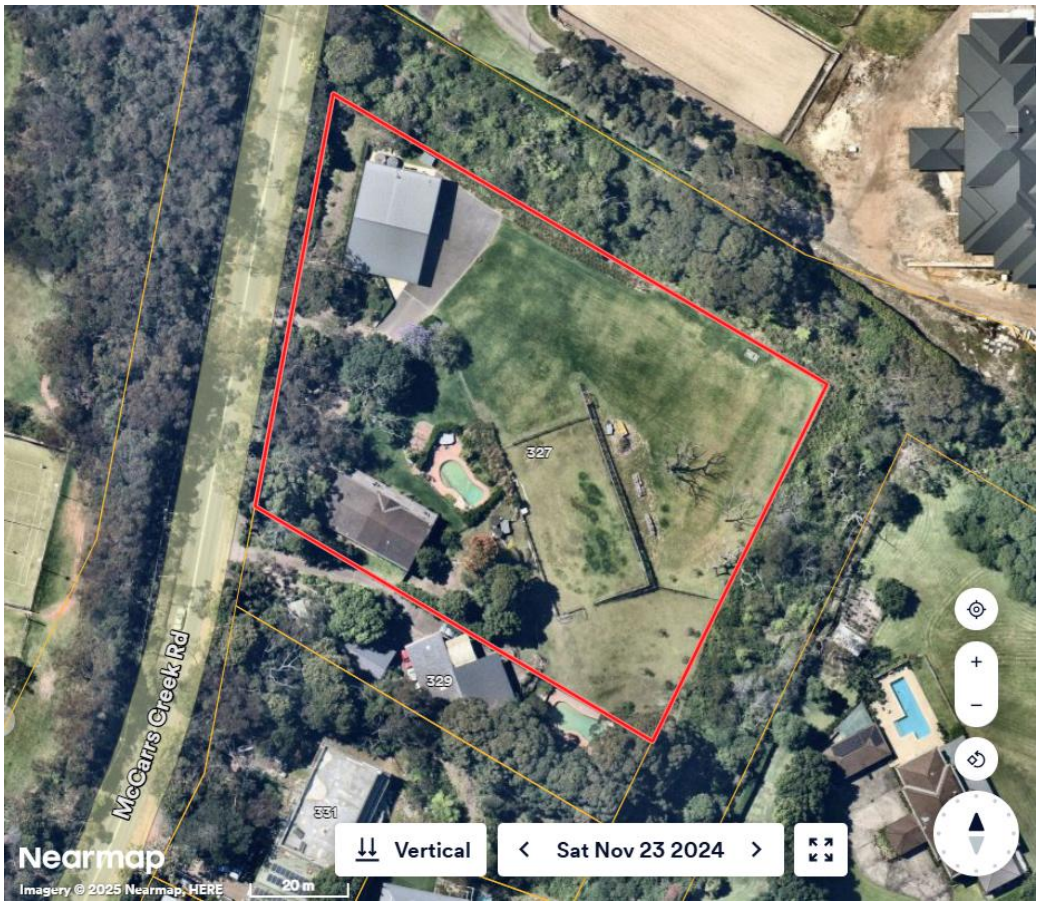


Figure 1.1. Subject site.

Source: Nearmap

Figure 1.2. Immediate surroundings.

Source: Nearmap

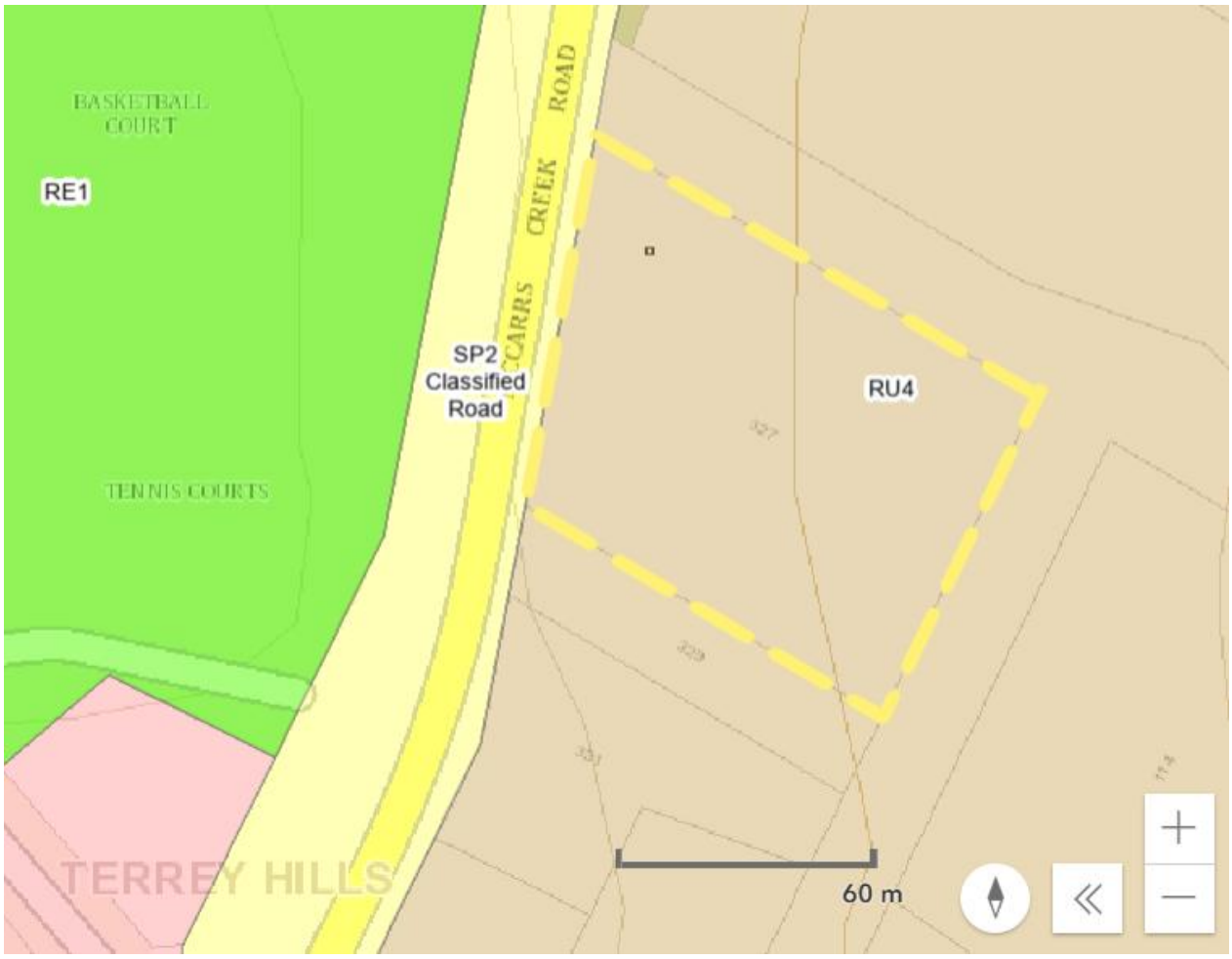


Figure 1.3. Land zoning.
Source: NSW Planning Portal Spatial Viewer

1.3 Proposed Development

The proposed development involves the construction of a new dwelling, swimming pool, and driveway, as illustrated in the Site Plan (Figure 1.4). The works will include the demolition of the existing dwelling and swimming pool, as detailed in the Demolition Plan (Figure 1.5). To facilitate the proposed development, the removal of six protected trees and five exempt tree species is required, in accordance with the recommendations outlined in the Arborist Report.

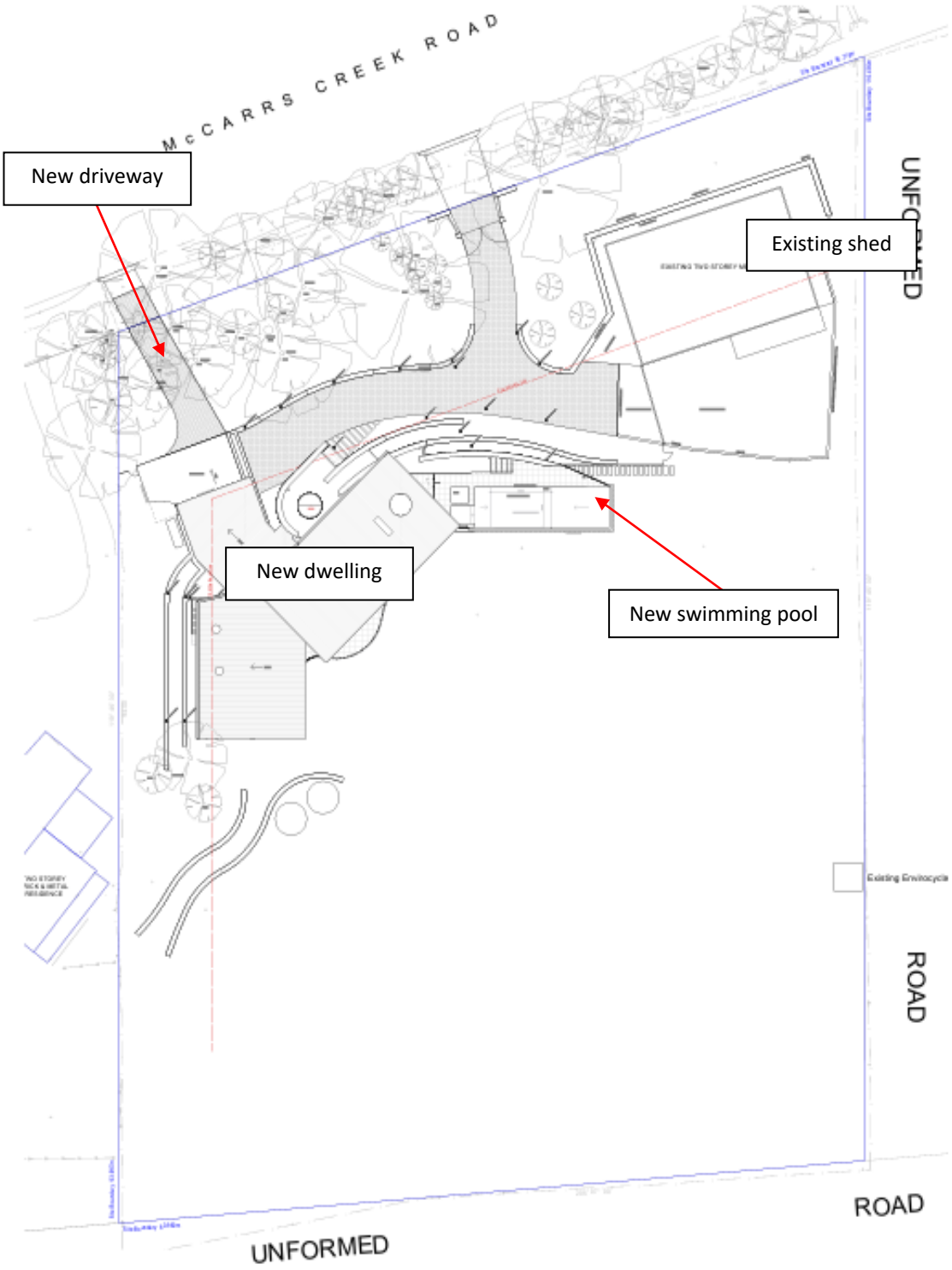


Figure 1.4. Site Plan.
Source: Playoust Churcher

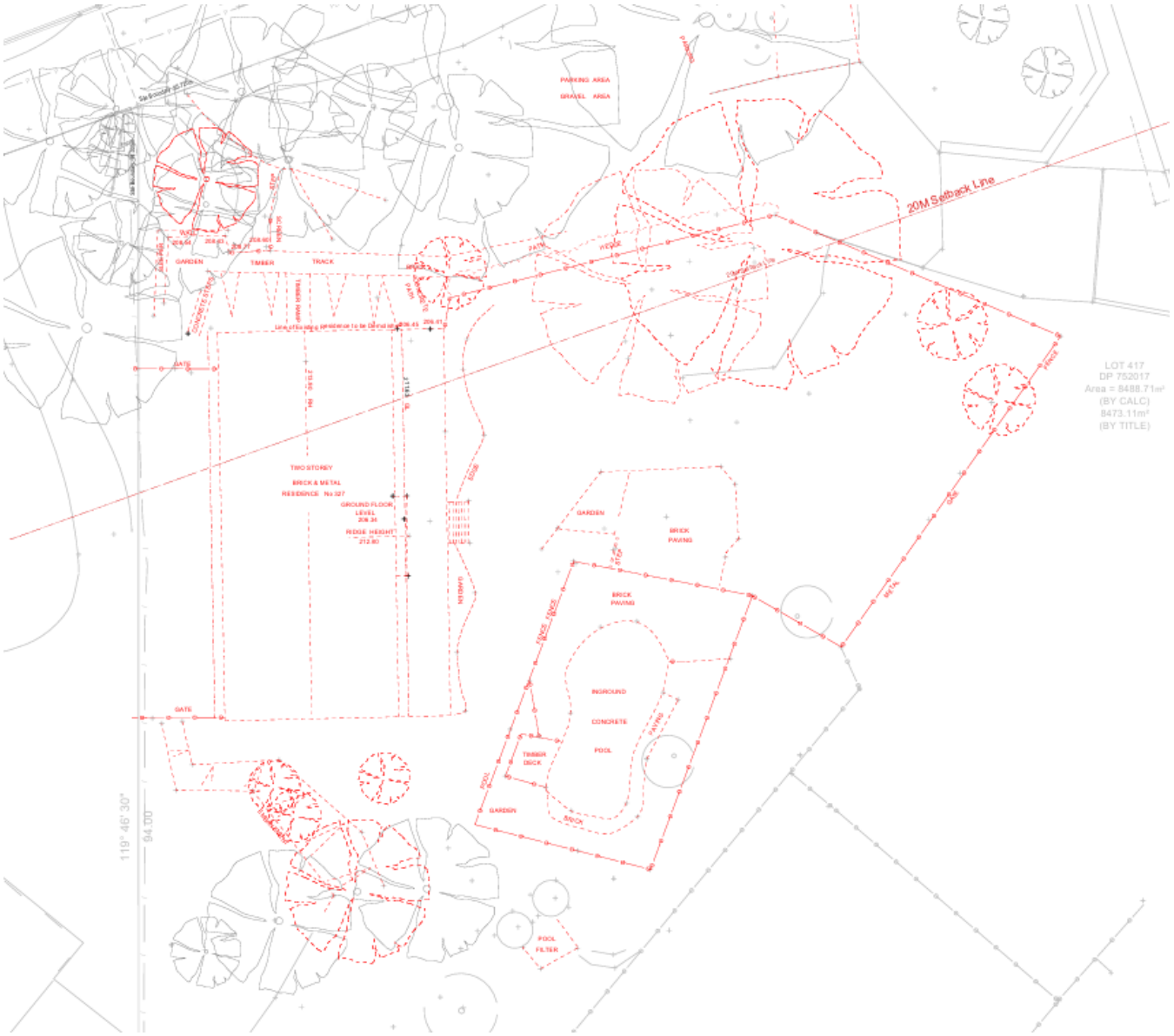


Figure 1.5. Demolition Plan.
Source: Playoust Churcher, 6/2/25

1.4 Legislative and Policy Context

Commonwealth and State legislation and policies, and local policies apply to the assessment, planning and management of the environment within the site.

1.4.1 Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)

The Commonwealth EPBC Act provides a framework for the assessment of actions that may have a significant impact on matters of national environmental significance (MNES). MNES include:

- World Heritage areas
- Commonwealth Heritage places
- wetlands of international importance (listed under the Ramsar Convention)
- listed threatened species and listed ecological communities
- listed migratory species (protected under international agreements)
- Commonwealth marine areas
- Great Barrier Reef Marine Park
- nuclear actions (including uranium mines)

The proposal is not expected to impact any MNES and thus, referral to the Australian Government Department of Climate Change, Energy, the Environment and Water (DCCEEW) is not required.

1.4.2 Environmental Planning and Assessment Act 1979 (EP&A Act)

The EP&A Act establishes the framework for environmental impact assessment in NSW. Under Part 4 and Part 5 of the Act, flora and fauna assessments are required to support development applications (DAs) and other planning approvals to ensure ecological considerations are appropriately addressed.

1.4.3 Biodiversity Conservation Act 2016 (BC Act)

The BC Act is the primary legislation for biodiversity conservation in NSW, providing mechanisms for the listing of threatened species, populations, and ecological communities. It also governs the Biodiversity Offsets Scheme (BOS) and the application of the Biodiversity Assessment Method (BAM) for assessing impacts on biodiversity.

1.4.4 Biodiversity Offsets Scheme entry

A Biodiversity Development Assessment Report (BDAR) is required to accompany a development application if the proposed development is likely to 'significantly affect threatened species or ecological communities, or their habitats and the Biodiversity Offsets Scheme (BOS) will apply.

Section 7.2 of the *Biodiversity Conservation Act 2016* (BC Act) states that a development will 'significantly affect threatened species' if:

a. it is likely to significantly affect threatened species or ecological communities, or their habitats, according to the test in section 7.3, or

b. the development exceeds the biodiversity offsets scheme threshold if the BOS applies to the impacts of the development on biodiversity values, or

c. it is carried out in a declared area of outstanding biodiversity value.

The BOS threshold is established by section 7.2(1)(b) of the BC Act and clause 7.1(1) of the Biodiversity Conservation Regulation 2017 (BC Regulation).

The threshold has two components:

- whether the amount of native vegetation being cleared exceeds a threshold area
- whether the development involves clearing of native vegetation or prescribed impacts on an area mapped on the biodiversity values map published by the Minister for the Environment.

1.4.4.1 Area clearing threshold

The area clearing threshold is one of the thresholds used to determine if a BDAR must accompany a development application.

The area clearing thresholds are set out in clause 7.2(1) of the BC Regulation as per Table 1.2.

The subject site has a minimum lot size of 2 hectares. The proposed development includes the clearing of approximately 370 m^2 of native vegetation (Figure 1.6), which remains below the area clearing threshold.

Table 1.2. Area clearing thresholds.

Minimum lot size associated with the property	Threshold for clearing above which a BDAR is required
Less than 1 hectare	0.25 hectares or more
1 hectare to less than 40 hectares	0.5 hectares or more
40 hectares to less than 1000 hectares	1 hectare or more
1000 hectares or more	2 hectares or more

Figure 1.6. Proposed clearing area.
Source: Nearmap

1.4.4.2 Biodiversity Values Map

Clearing of any native vegetation on an area mapped on the Biodiversity Values (BV) Map will trigger the requirement to prepare a BDAR for a development application under Part 4 of the EP&A Act (local development).

The site is not located on the BV Map, as shown in Figure 1.7.

Figure 1.7. Biodiversity Values Map (Biodiversity values indicated by purple shading).
Source: Biodiversity Values Map and Threshold Tool

1.4.5 Biosecurity Act 2015

This Act imposes a general biosecurity duty to prevent, eliminate, or minimise biosecurity risks, including invasive species that may threaten native flora and fauna. The assessment identifies and recommends control measures for declared priority weeds and pest animals.

1.4.6 Warringah Local Environmental Plan 2011

1.4.6.1 Clause 6.4 Development on sloping land

The entire site is mapped as landslide risk land under the Warringah LEP, as shown in Figure 1.8. As such, the proposed development must comply with the provisions set out in Clause 6.4 of the Warringah LEP.

(1) The objectives of this clause are as follows:

(a) to avoid significant adverse impacts on development and on properties in the vicinity of development sites resulting from landslides originating either on or near sloping land,

(b) to ensure the impacts of storm water runoff from development on or near sloping land are minimised so as to not adversely affect the stability of the subject and surrounding land,

(c) to ensure subsurface flows are not adversely affected by development to not impact on the stability of existing or adjoining land.

(2) This clause applies to land shown as Area A, Area B, Area C, Area D and Area E on the *Landslip Risk Map*.

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

(a) the application for development has been assessed for the risk associated with landslides in relation to both property and life, and

(b) the development will not cause significant detrimental impacts because of stormwater discharge from the development site, and

(c) the development will not impact on or affect the existing subsurface flow conditions.

Figure 1.8. Landslide Risk Land Map.
Source: NSW Planning Portal Spatial Viewer

1.4.7 Bushfire prone land

The site is located within an area mapped as bushfire prone land (refer to Figure 1.10). A Bushfire Hazard Assessment may be required to confirm whether the site currently meets the requirements for an adequate Asset Protection Zone (APZ).

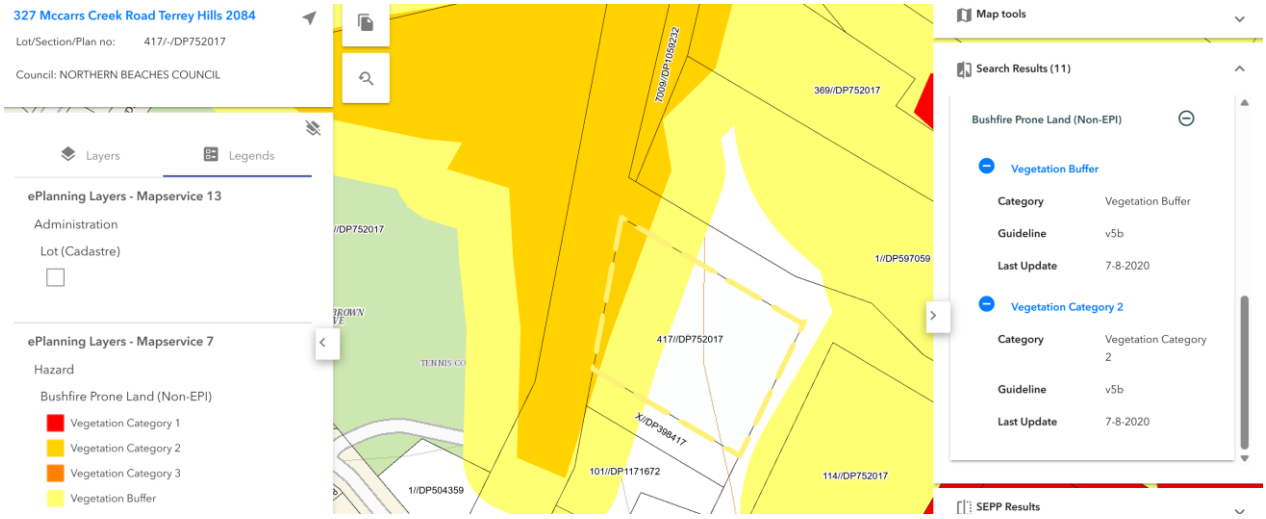


Figure 1.9. Bushfire Prone Land Map

Source: NSW Planning Portals Spatial Viewer

1.4.8 Hydrology

The site is situated west of McCarrs Creek and in proximity to the ridgeline, as indicated by the black dot in Figure 1.10. Surface water from the site is expected to naturally drain eastward, towards McCarrs Creek within the adjoining Ku-ring-gai Chase National Park.

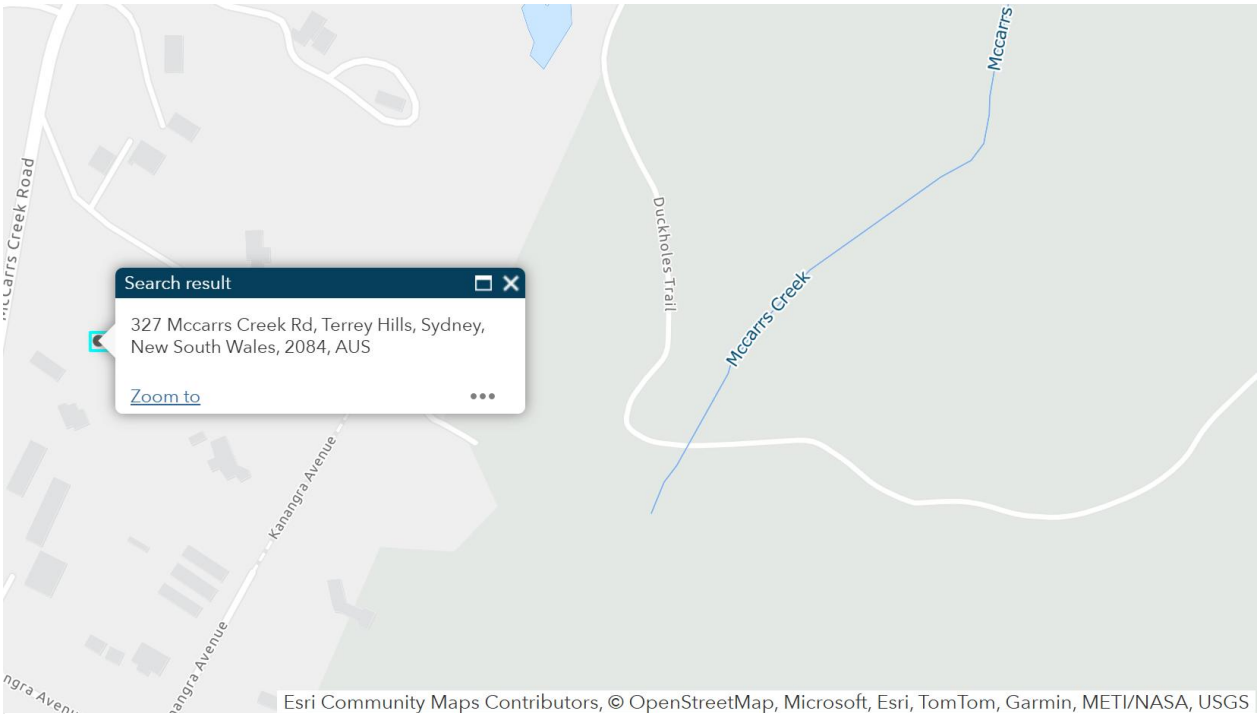


Figure 1.10. Catchment context.

Source: Water Management (General) Regulation 2018 hydroline spatial data 1.0

2 Methods

2.1 Desktop Assessment

The desktop assessment was undertaken to identify potential occurrences of threatened species and ecological communities on-site. A combination of publicly available datasets, previous studies, and the author's local knowledge was used to evaluate the likelihood of threatened species and communities occurring within the study area.

The following sources of information were reviewed to assist in this desktop assessment:

- BioNet (Atlas of NSW Wildlife): BioNet records were accessed for a 10 km² area surrounding the site, covering data from 1993 to the present. This dataset includes records of flora and fauna, with particular attention to those listed under the NSW BC Act and Commonwealth EPBC Act. Relevant records were examined to determine the likelihood of threatened species and communities occurring within or near the study area.
- NSW Threatened Species Information (DPIE): This resource was consulted to identify threatened species and ecological communities that may be present within the region. The records provide detailed information on the known occurrences of listed species and their habitats, which is critical for assessing potential impacts to biodiversity on the site.
- SEED NSW State Vegetation Type Map (SVTM_NSW_Extant_PCT): The SVTM was used to assess the potential vegetation communities present within the study area, with a particular focus on identifying any threatened ecological communities (TECs). This map helps identify the likely vegetation types and ecological contexts relevant to the site.
- Water Management (General) Regulation 2018 Hydro Line Spatial Data: The hydro line spatial data was reviewed to assess the proximity of watercourses and associated riparian zones, which are critical habitats for many species, including some that are threatened.
- PlantNET (The Royal Botanic Gardens and Domain Trust 2014): The PlantNET database was consulted for information on plant species within the region, particularly focusing on the presence of any threatened or regionally rare plant species. The database provides comprehensive botanical information, aiding in the assessment of plant diversity and the occurrence of species of conservation concern.
- Protected Matters Search Tool (Australian Government Department of the Environment, EPBC Act): The Protected Matters Search Tool was used to check for the presence of nationally protected species and ecological communities under the Commonwealth EPBC Act. These results of the search are provided in Appendix VI.

The information gathered from these sources was reviewed to assess the potential presence of threatened species and ecological communities within the site's vicinity.

2.2 Field Survey

A field assessment was conducted on 6 March 2025 by Principal Ecologist Elaway (Geraldene) Dalby-Ball.

The field survey was conducted using opportunistic survey methods in accordance with the NSW Guide to *Surveying Threatened Plants and Threatened Biodiversity Survey and Assessment: Guidelines for Developments and Activities* (DEC 2004). A random meander survey was carried out across the site and adjacent areas to document vegetation types, native and exotic flora species, and fauna presence. Observations were recorded with notes and photographs.

2.2.1 Flora survey methods

Vegetation surveys were conducted during daylight hours on 6 March 2025. Flora surveys involved the identification of native and exotic plant species and an assessment of the surrounding vegetation to characterise the site's ecological condition. These surveys involved the identification of native and exotic species within the proposed development area, as well as observations of vegetation adjoining the area. The surveys followed a random meander approach across the study area.

2.2.2 Fauna survey methods

Fauna assessments included diurnal bird and fauna observations and an evaluation of habitat resources suitable for native and threatened species. Key habitat features assessed included:

- Hollow-bearing trees (potential nesting, roosting, or shelter sites)
- Roosting and/or foraging trees
- Fruiting and flowering plants (potential food resources)
- Rock outcrops (potential refuge sites)
- Burrows (indicators of ground-dwelling fauna presence)
- Scats (evidence of fauna activity)
- Tree scratchings (evidence of arboreal mammals or birds)
- Loose bark (potential microhabitat for invertebrates and fauna)
- Scrapes or diggings (evidence of foraging activity)
- Dead trees and logs (important for habitat and nutrient cycling)
- Long grass and leaf litter (ground cover for fauna species)
- Waterbodies (potential breeding and foraging sites)

No targeted surveys for threatened species were conducted due to the low likelihood of occurrence of threatened species within or adjacent to the proposed development area. An assessment of potential threatened species occurrence is provided in Appendix II, which considers species recorded within a 10 km radius of the site.

2.3 Weather conditions

Table 2.1 documents weather conditions on the days of the surveys.

Table 2.1. Environmental conditions during field surveys.

Survey undertaken (e.g., method / targeted species)	**Date**	**Temperature** (min. & max.)	**Wind** (light, mod…)	**Rainfall** (mm)	**Other conditions relevant to the species**
Initial site inspection, species/habitat transects	6 March 2025	13.2 – 26.1	Light	0	N/A

2.4 Limitations

This assessment is subject to certain limitations, particularly concerning the detection of cryptic flora species. Some plant species may only be present as soil-stored seed banks or subterranean vegetative structures, emerging above ground only in response to specific environmental triggers such as:

- Fire frequency, intensity, or seasonality
- Soil moisture fluctuations
- Life-cycle patterns, particularly for ephemeral species such as orchids

Additionally, no targeted invertebrate surveys were undertaken as part of this assessment.

Surveys conducted at a single point in time cannot comprehensively detect all species that may occur in the study area. The presence of some species may be influenced by:

a) Seasonal occurrence – species that are active or detectable only during particular times of the year

b) Habitat utilisation patterns – fauna species that may move between different areas as part of a larger home range

c) Dormancy periods – species that enter seasonal dormancy or have irregular above-ground growth cycles

This survey provides a representative sample of the site's flora, fauna, and habitat values within the constraints of the available survey period. It aims to identify species likely to be encountered and assess habitat suitability for key taxa.

Given the site characteristics and available habitat, Kingfisher is confident that the survey results accurately reflect the likely species assemblages and vegetation community. Future surveys conducted at different times of the year are unlikely to significantly alter the conclusions presented in this report.

3 Existing Environment

3.1 Existing Vegetation Maps

A review of the current NSW State Vegetation Type Map (SVTM) indicates that the site contains Sydney Coastal Sandstone Bloodwood Shrub Forest (PCT 3593), as shown in Figure 3.1.

This PCT is associated with the Duffy's Forest Ecological Community in the Sydney Basin Bioregion, which is listed as endangered under the BC Act.

Figure 3.1. Plant Community Types.
Source: SEED NSW State Vegetation Type Map.

3.2 Existing Vegetation Condition

Field surveys undertaken on 6 March 2025 recorded a predominantly disturbed and modified vegetation structure across the site. Along the road frontage, the canopy is dominated by planted *Syzygium* spp. (Lilly Pilly), with a sparse remnant native canopy cover. The ground layer in these areas is dominated by exotic grasses, including *Cenchrus clandestinus* (Kikuyu) and patches of *Microlaena stipoides* (Weeping Grass). The front garden is characterised by exotic landscaping interspersed with invasive species such as *Cortaderia* spp. (Pampas Grass), *Acetosa sagittata* (Turkey Rhubarb), *Ageratina adenophora* (Crofton Weed), Lantana (*Lantana camara*), and *Ligustrum sinense* (Small-leaved Privet). Ongoing weed control is being undertaken by the landowner. Some native midstorey vegetation remains, including *Grevillea buxifolia* (Grey Spider Flower) and *Acacia* spp. Within planted areas, additional *Syzygium* spp. and *Acmena smithii* (Lilly Pilly) contribute to the canopy layer, while the understorey is largely composed of exotic grasses and patches of bare ground. The flowering of *Syzygium* and *Acmena* species may provides a potential seasonal foraging resource for local Flying Fox populations.

3.2.1 Site photos

Plate 1. Looking into the site at the existing dwelling to be demolished from McCarrs Creek Road.

Plates 2-3. Location of the proposed driveway.


Plates 4-5. Existing landscaped areas surrounding the existing shed.


Plates 6-7. *Syzygium* spp. and *Acmena smithii* (Lilly Pilly) within the development footprint.


Plates 8-9. Areas with groundcover dominated by turf and other exotics.

Plate 10. Roadside Lilly Pilly hedge to be retained.

Plate 11. Rear of the property outside of the development footprint.



Plates 12-14. Turf around the side of the existing dwelling is largely exotic grasses and weeds.

3.3 Habitat Features

The canopy-forming trees on site, including *Eucalyptus* spp. and *Corymbia* spp. offer suitable flowering resources for nectar-feeding birds and arboreal mammals. No large woody debris was observed that could provide ground-level habitat for fauna.

A dead tree located at the front of the property, was inspected and found to contain no hollows or fissures suitable for use by microbats or other hollow-dependent fauna. This tree is to be retained. No hollow-bearing trees are present on the site.

A small sandstone outcrop is located in the rear garden adjacent to a planted Lilly Pilly; however, it does not present features suitable for use as fauna habitat.

3.4 Connectivity

Native vegetation surrounding the site is moderately well connected to other remnant vegetation in the locality, as illustrated in Figure 3.2. Although the site is not located within a formal biodiversity corridor, it lies on the edge of Ku-ring-gai National Park and contributes to broader landscape connectivity. The site supports vegetation types that differ from those commonly found within the National Park, thereby enhancing local habitat diversity while maintaining canopy connectivity with adjacent vegetation.

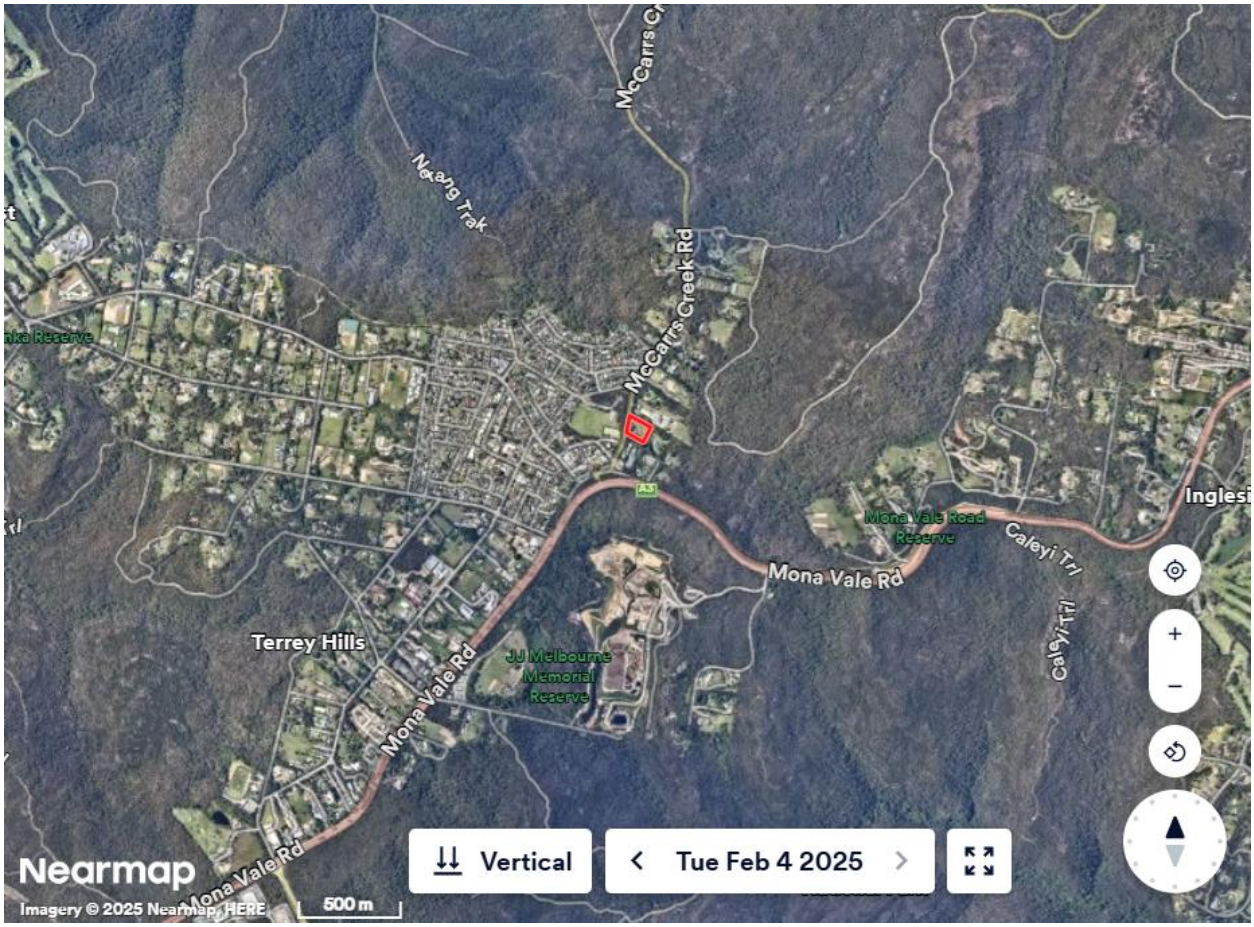


Figure 3.2. Habitat connectivity.

Source: Nearmap

3.5 Weeds

One Priority Weed identified under the *South East Regional Strategic Weed Management Plan 2023–2027* was recorded on the site: *Lantana camara* (Lantana). In addition to Lantana, the site also supports a range of other environmental weed species, including:

- *Cenchrus clandestinus* (Kikuyu)
- *Cortaderia* spp. (Pampas Grass)
- *Acetosa sagittata* (Turkey Rhubarb)
- *Ageratina adenophora* (Crofton Weed)
- *Ligustrum sinense* (Small-leaved Privet)

3.6 Fauna

The site has previously undergone vegetation clearing associated with the construction of the existing dwelling. However, native vegetation persists around the development footprint and beyond the property boundary, comprising extensive areas of dry sclerophyll forest and grassy woodland. These adjoining vegetated areas provide important habitat for a range of native flora and fauna, offering resources such as pollen, nectar, and fruit, as well as opportunities for nesting, foraging, and predation.

The following fauna species were recorded during field surveys, all observed off-site:

- *Colluricincla harmonica* (Grey Shrikethrush)
- *Dacelo novaeguineae* (Kookaburra)
- *Platycercus eximius* (Eastern Rosella)
- *Manorina melanocephala* (Noisy Minor)
- *Gymnorhina tibicen* (Australian Magpie)
- *Eopsaltria australis* (Eastern Yellow Robin)
- *Crinia signifera* (Common Eastern Froglet)
- *Limnodynastes dumerilii* (Pobblebonk frog)
- *Oryctolagus cuniculus* (Rabbit)

4 Impact Assessment

4.1 Direct Impacts

4.1.1 Vegetation clearing

The proposal would require the clearing of six (6) protected trees (or groups of trees), as detailed below:

- T10 – *Corymbia maculata* (Spotted Gum)
- T11 – *Eucalyptus* species (Stringybark)
- T14 – *Corymbia gummifera* (Red Bloodwood)
- T21 – *Corymbia eximia* (Yellow Bloodwood)
- T22a – *Fraxinus excelsior* cvr. (Ash)
- T22b – *Fraxinus excelsior* cvr. (Ash)
- T25 – *Syzygium species* (Lilly Pilly)

Futhermore, five (5) exempt trees may be removed without requiring permission from Council.

- T9 – *Pinus radiata* (Radiata Pine)
- T20 – *Callistemon viminalis* (Weeping Bottlebrush)
- T23 – *Jacaranda mimosifolia* (Jacaranda)
- T24 – *Ligustrum lucidum* (Large Leaf Privet)
- T26 – *Citharexylum spinosum* (Fiddlewood)

For further details, please refer to the figures below.

4.1.2 Habitat loss

The proposed tree removal will not result in the loss of any hollow-bearing trees. However, the removal of six protected trees will lead to the loss of moderately important habitat features for local fauna, including potential nesting sites and foraging resources. The absence of these features may reduce the availability of suitable nesting sites, potentially displacing species that rely on the trees for shelter or breeding.

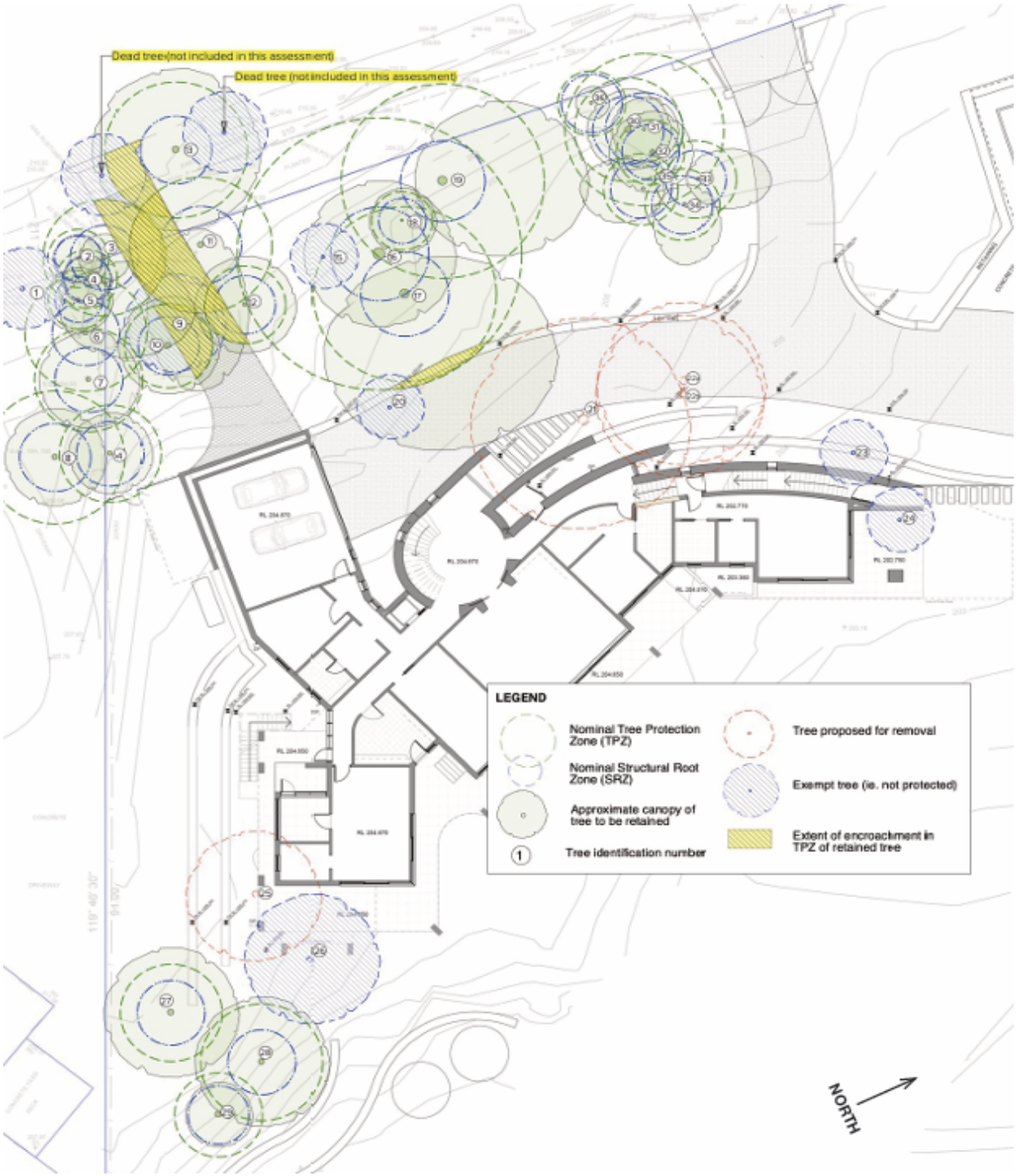


Figure 13: Proposed Site Plan showing an overlay of the protected and exempt trees using the proposed Site Plan as a base layer. The Tree Protection Zone (TPZ) and Structural Root Zone (SRZ) for the protected retained trees are indicated. The extent of proposed encroachment within the TPZ of the retained trees is indicated as yellow hatching. (Note, do not measure from drawings).

Figure 4.1 Tree Removal Plan.

Source: Joanne Willis

4.2 Indirect Impacts

4.2.1 Runoff and water quality impacts

Construction activities associated with the demolition of the existing dwelling and construction of a new residence, along with increases in impervious surface areas, may lead to elevated stormwater runoff. This poses a risk of sedimentation and potential contamination of nearby watercourses. Resulting impacts may include degradation of water quality and harm to aquatic habitats, which depend on clean, clear water for the survival of species that feed, shelter, or breed in these environments.

4.2.2 Human activity and disturbance

An increase in human activity during the construction phase, including vehicle movements, elevated noise levels, and general outdoor disturbance, may adversely affect local fauna. Sensitive species may be displaced or deterred from the area, with disruptions to key behaviours such as feeding, roosting, and breeding.

4.2.3 Weed growth and invasion

Weeds are already present on-site and, if unmanaged, may spread into adjacent bushland. Construction activities can contribute to weed dispersal through contaminated machinery, tools, and worker clothing (e.g. boots). To mitigate this risk, pre-works weed removal will be undertaken around the construction perimeter, with ongoing maintenance throughout and following the works. Cleared areas will be particularly vulnerable to weed colonisation and will require consistent monitoring and treatment to prevent the establishment of invasive species.

4.2.4 Introduction of pathogens

There is a risk of introducing plant pathogens to the site and surrounding native vegetation through contaminated equipment, footwear, and vehicles. Key pathogens of concern include:

- *Phytophthora cinnamomi* (Root Rot), a soil-borne water mould affecting plant roots
- *Austropuccinia psidii* (Myrtle Rust), a fungal disease impacting species in the Myrtaceae family

To minimise the risk of pathogen introduction and spread, hygiene protocols, including cleaning and disinfecting equipment and footwear, must be followed throughout all site works.

5 Recommendations

The following mitigation measures are proposed should the development be approved:

5.1.1 Delineation of work areas

To minimise disturbance to retained vegetation and surrounding habitat, all work areas will be clearly delineated prior to the commencement of construction. Access will be strictly limited to the approved development footprint, with exclusion zones established around all vegetation outside these areas. These exclusion zones will be maintained throughout the construction period.

5.1.2 Native species landscaping

All landscaping within the APZ will use only locally native species to maintain ecological integrity and support local biodiversity. The planting of environmental weeds or exotic landscape plants will be avoided to prevent their spread into adjacent bushland areas.

5.1.3 Erosion and sediment controls

Appropriate erosion and sediment control measures will be implemented during all stages of construction. Controls may include sediment fencing, jute matting, crushed sandstone, and coir logs. These measures will be inspected during regular site inspections and after rainfall events exceeding 10 mm in 24 hours.

Controls must prevent sedimentation within retained vegetation zones. Sediment fencing is to remain in place for as long as practical, with ongoing monitoring to ensure its effectiveness and to avoid concentrated runoff. Where required, coir log baffles will be installed to further reduce erosion and manage water flow.

5.1.4 Weed management

Weeds are currently present on-site and pose a risk of spreading during and after construction. Active weed management will be required throughout all phases of the project. Given the site's history of high weed abundance along its boundaries, ongoing maintenance and control are essential.

Key actions include:

- Pre-works and post-works weed monitoring and removal
- Prioritising areas of cleared soil to prevent weed colonisation
- Employing the weed removal methods outlined in Appendix IV

It is recommended that a qualified bush regeneration contractor or ecologist oversee weed management and bush regeneration efforts. All chemical applications will comply with the NSW *Pesticides Act 1999* and must not occur when exotic species are setting seed.

5.1.5 Pathogens

Soil-borne pathogens can be accidentally introduced or spread during and after construction. To minimise this risk, Bushland Hygiene Protocols (Appendix V) should be followed, particularly to prevent the introduction of *Phytophthora cinnamomi* (Root Rot) and *Austropuccinia psidii* (Myrtle Rust).

5.1.6 Companion Animals

Domestic animals, particularly cats, should not be permitted to access nearby National Park areas due to their potential impact on native wildlife. In alignment with relevant B4 Zone Development Control Plan (DCP) provisions, it is recommended that cats be prohibited on-site.

5.1.7 Dark Sky Friendly Lighting

All proposed lighting should comply with *Dark Sky* best practice guidelines to minimise light pollution, particularly upward light spill, which can adversely affect nocturnal wildlife and sky visibility. The lighting design should incorporate appropriate placement, shielding, and fixture selection in accordance with the following standards and resources:

- Australasian Dark Sky Alliance (ADSA) – approved lighting guidance
- Urban Night Sky Place exhibition (Palm Beach)
- NSW Department of Planning, Industry and Environment lighting guidelines
- International Dark Sky Association (IDA) standards

Lighting fixtures should be ADSA-approved and designed to provide necessary illumination while minimising light trespass. Key specifications include:

- 0% upward waste light
- Colour temperature ≤3000K
- On/off control capabilities
- Forward and back very high uplight (FVH & BVH) ≤2.0%

Post-construction, a lighting management plan should be maintained, including resident education on Dark Sky principles and the installation of motion sensors, timers, and dimmers to further reduce unnecessary light output.

5.1.8 Increased noise

To minimise disturbance to aerial fauna species, particularly breeding owls, excess construction noise should be avoided during the owl breeding season (April to August).

5.1.9 Runoff

The proposed works have the potential to increase stormwater runoff, which may lead to sediment transport off-site. To mitigate this risk, appropriate erosion and sediment controls will be implemented to prevent construction-related runoff from entering McCarrs Creek.

6 Appendices

6.1 Appendix I – Species Lists

Table 6.1. Flora recorded on the site during the March 2025 survey.

Scientific Name	Common Name
Callitris rhomboidea	Port Jackson Cypress
Corymbia gummifera	Red Bloodwood
Eucalyptus sieberi	Silver-top Ash
Callistemon viminalis	Weeping Bottlebrush
Corymbia eximia	Yellow Bloodwood
Fraxinus excelsior cvr.	Ash
Jacaranda mimosifolia	Jacaranda
Ligustrum lucidum	Large-leaf Privet
Syzygium spp.	Lilly Pilly
Citharexylum spinosum	Fiddlewood
Macadamia integrifolia	Macadamia
Persoonia levis	Smooth Geebung
Ceratopetalum gummiferum	NSW Christmas Bush
Acacia elata	Mountain Wattle
Allocasuarina littoralis	Black She-Oak
Araucaria columnaris	Cook Pine
Pinus radiata	Radiata Pine
Corymbia maculata	Spotted Gum
Persoonia linariifolia	Small-leaved Geebung
Microlaena stipoides	Weeping Grass
Grevillea buxifolia	Grey Spider Flower
Acmena smithii	Lilly Pilly

Table 6.2. Fauna recorded on the site during the March 2025 survey.

Scientific Name	Common Name
Colluricincla harmonica	Grey Shrikethrush
Dacelo novaeguineae	Kookaburra
Platycercus eximius	Eastern Rosella
Manorina melanocephala	Noisy Miner
Gymnorhina tibicen	Australian Magpie
Eopsaltria australis	Eastern Yellow Robin
Crinia signifera	Common Eastern Froglet
Limnodynastes dumerilii	Pobblebonk Frog

6.2 Appendix II – Likelihood of Occurrence

This appendix outlines the methods and results of the desktop assessment conducted to evaluate the likelihood of occurrence of threatened species within the study area. The purpose of this assessment is to determine which species may require further assessment as they may be impacted by the project, and those that can be reasonably excluded from further consideration because they are unlikely to occur within the study area.

The assessment was conducted using available desktop data and targeted field assessments. It specifically considers species listed as Vulnerable, Endangered, or Critically Endangered under the NSW BC Act and the Commonwealth EPBC Act.

The following process was used to identify threatened species with the potential to occur in the study area:

- Species records were obtained from the NSW BioNet Atlas within a 10 km radius of the study area, as detailed in Tables 6.2 and 6.3.
- The likelihood of each threatened species occurring within the study area was assessed based on desktop and field data, considering habitat requirements, distribution, and the number and dates of nearby records.
- Likelihood ratings were assigned according to the criteria outlined in Table 6.1.

Table 6.1. Ratings for the desktop threatened species likelihood of occurrence assessment.

Rating	Definition
HIGH	It is expected that this species occurs within the study area because there is core habitat and recent (post-2000) proximate records or knowledge that the species occurs in the local area.
MEDIUM	Species may occur within the study area because there is suitable habitat; however, there is evidence that lowers its likelihood of occurrence (known range contraction of the species in the region, no recent records within or close to the project area, substantial loss of habitat within the project area since previous records, species is naturally-rare or occurs at a low density etc.).
LOW	Species may occur, as a vagrant, within the study area; only marginally-suitable habitat is expected.
NONE	There is strong evidence that this species will not occur within the study area (i.e. there is no suitable habitat and/or the species is considered to be regionally-extinct)

Key to status:

CE = Critically Endangered
E = Endangered
EP = Endangered Population
V = Vulnerable
M = Migratory

Table 6.2. Threatened flora records within a 10 km radius of the site.

Scientific name	Common name	NSW status	Comm. status	Records	Likelihood of occurrence	Test of Significance required?
Callistemon linearifolius	Netted Bottle Brush	V		5	The development footprint is currently managed as landscaped gardens and maintained lawns around the existing dwelling. This ongoing disturbance and site management has resulted in the dense cover of exotic grasses. As a result, the likelihood of threatened flora species occurring within the development footprint is considered low. However, potentially suitable habitat exists within the adjacent bushland beyond the site boundary. Threatened species that may occur in the surrounding bushland, but were not observed on the site during the surveys, include: • *Tetratheca glandulosa*, for which suitable habitat is present and which the surveyor has observed at other sites; • *Epacris purpurascens var. purpurascens*; • *Pimelea curviflora var. curviflora*, which was observed flowering by the authors in dry sclerophyll sandstone forest at Maroota in March 2025. No threatened plant species were recorded within the areas surveyed, which are located outside the construction footprint. Surveys were conducted in March 2025, with no detections of the above species during this period. The site is also not considered suitable for Onion Orchids (Microtis spp.), due to its dry condition, and the frequent mowing of the turf area further reduces the likelihood of occurrence for other orchid species.	No
Chamaesyce psammogeton	Sand Spurge	E		16		No
Genoplesium baueri	Bauer's Midge Orchid	E	E	2		No
Grammitis stenophylla	Narrow-leaf Finger Fern	E		2		No
Grevillea caleyi	Caley's Grevillea	CE	CE	1610		No
Epacris purpurascens var. *purpurascens*		V		1		No
Eucalyptus camfieldii	Camfield's Stringybark	V	V	10		No
Eucalyptus nicholii	Narrow-leaved Black Peppermint	V	V	3		No
Kunzea rupestris		V	V	1		No

Scientific name	Common name	NSW status	Comm. status	Records	Likelihood of occurrence	Test of Significance required?
Lasiopetalum joyceae		V	V	2		No
Macadamia integrifolia	Macadamia Nut		V	6		No
Melaleuca deanei	Deane's Paperbark	V	V	1		No
Microtis angusii	Angus's Onion Orchid	E	E	165		No
Persoonia hirsuta	Hairy Geebung	E	E	1		No
Pimelea curviflora var. curviflora		V	V	5		No
Prostanthera densa	Villous Mint-bush	V	V	1		No
Rhodamnia rubescens	Scrub Turpentine	CE	CE	34		No
Syzygium paniculatum	Magenta Lilly Pilly	E	V	20		No
Tetratheca glandulosa		V		70		No

Table 6.3. Threatened fauna records within a 10 km radius of the site.

Class	Scientific name	Common name	NSW status	Comm. status	Records	Likelihood of occurrence	Test of Significance required?
Amphibia	*Heleioporus australiacus*	Giant Burrowing Frog	V	V	58	Very low	No
Amphibia	*Litoria aurea*	Green and Golden Bell Frog	E	V	3	Very low	No
Amphibia	*Pseudophryne australis*	Red-crowned Toadlet	V		152	Very low	No
Aves	*Anthochaera phrygia*	Regent Honeyeater	CE	CE	39	Very low	No
Aves	*Artamus cyanopterus cyanopterus*	Dusky Woodswallow	V		3	Possible in the trees surrounding the site but low on-site.	No
Aves	*Botaurus poiciloptilus*	Australasian Bittern	E	E	3	None	No
Aves	*Burhinus grallarius*	Bush Stone-curlew	E		38	Very low	No
Aves	*Callocephalon fimbriatum*	Gang-gang Cockatoo	E	E	3	Possible	No
Aves	*Calyptorhynchus lathami lathami*	South-eastern Glossy Black-Cockatoo	V	V	123	Possible in the trees surrounding the site.	No
Aves	*Daphoenositta chrysoptera*	Varied Sittella	V		3	None on-site	No
Aves	*Diomedea exulans*	Wandering Albatross	E	V	1	None	No

Class	Scientific name	Common name	NSW status	Comm. status	Records	Likelihood of occurrence	Test of Significance required?
Aves	*Esacus magnirostris*	Beach Stone-curlew	CE		1	None	No
Aves	*Gallinago hardwickii*	Latham's Snipe	V	V,M	1	None	No
Aves	*Glossopsitta pusilla*	Little Lorikeet	V		11	Possible in the trees surrounding the site but low on-site.	No
Aves	*Haematopus fuliginosus*	Sooty Oystercatcher	V		7	None	No
Aves	*Haliaeetus leucogaster*	White-bellied Sea-Eagle	V		54	Flying over possible	No
Aves	*Hieraaetus morphnoides*	Little Eagle	V		8	Flying over possible	No
Aves	*Hirundapus caudacutus*	White-throated Needletail	V	V,M	16	Flying over possible	No
Aves	*Ixobrychus flavicollis*	Black Bittern	V		21	None	No
Aves	*Lathamus discolor*	Swift Parrot	E	CE	32	No suitable shrubs within the property boundary.	No
Aves	*Lophoictinia isura*	Square-tailed Kite	V		6	Flying over possible	No
Aves	*Macronectes halli*	Northern Giant-Petrel	V	V	1	None	No
Aves	*Melithreptus gularis gularis*	Black-chinned Honeyeater (eastern subspecies)	V		1	No suitable shrubs within the property boundary.	No

Class	Scientific name	Common name	NSW status	Comm. status	Records	Likelihood of occurrence	Test of Significance required?
Aves	*Neophema pulchella*	Turquoise Parrot	V		2	Very unlikely	No
Aves	*Ninox connivens*	Barking Owl	V		36	Possibly foraging and open/forest fringe. No breeding habitat.	No
Aves	*Ninox strenua*	Powerful Owl	V		583	Possibly foraging and open/forest fringe. No breeding habitat.	No
Aves	*Numenius madagascariensis*	Eastern Curlew	CE	CE,M	4	None	No
Aves	*Onychoprion fuscata*	Sooty Tern	V		1	None	No
Aves	*Pandion cristatus*	Eastern Osprey	V		44	Flying over possible	No
Aves	*Petroica boodang*	Scarlet Robin	V		2	No shrub habitat on-site. Possible in surrounds.	No
Aves	*Ptilinopus regina*	Rose-crowned Fruit-Dove	V		4	Low No fruiting plants suitable – and too dry relative to typical habitat.	No
Aves	*Ptilinopus superbus*	Superb Fruit-Dove	V		6	Low No fruiting plants suitable – and too dry relative to typical habitat.	No
Aves	*Rostratula australis*	Australian Painted Snipe	E	E	3	None	No

Class	Scientific name	Common name	NSW status	Comm. status	Records	Likelihood of occurrence	Test of Significance required?
Aves	*Stictonetta naevosa*	Freckled Duck	V		1	None	No
Aves	*Thalassarche cauta*	Shy Albatross	E	E	4	None	No
Aves	*Thalassarche chrysostoma*	Grey-headed Albatross		E	1	None	No
Aves	*Thalassarche melanophris*	Black-browed Albatross	V	V	1	None	No
Aves	*Tyto novaehollandiae*	Masked Owl	V		7	No breeding trees on-site. Unlikely to have food sources onsite due to lack of prey habitat.	No
Aves	*Tyto tenebricosa*	Sooty Owl	V		2	No breeding trees on-site. Unlikely to have food sources onsite due to lack of prey habitat.	No
Aves	*Tringa nebularia*	Common Greenshank	E	E,M	1	None	No
Aves	*Xenus cinereus*	Terek Sandpiper	V	V,M	2	None	No
Insecta	*Petalura gigantea*	Giant Dragonfly	E		2	None – No open water or swamps.	No
Mammalia	*Cercartetus nanus*	Eastern Pygmy-possum	V		502	Not on-site – no suitable trees or large shrubs suitable within the site boundary.	No
Mammalia	*Chalinolobus dwyeri*	Large-eared Pied Bat	E	E	20	Possibly foraging and open/forest fringe. No breeding habitat.	No

Class	Scientific name	Common name	NSW status	Comm. status	Records	Likelihood of occurrence	Test of Significance required?
Mammalia	*Dasyurus maculatus*	Spotted-tailed Quoll	V	E	17	Unlikely	No
Mammalia	*Falsistrellus tasmaniensis*	Eastern False Pipistrelle	V		3	Possibly foraging and open/forest fringe. No breeding habitat.	No
Mammalia	*Isoodon obesulus obesulus*	Southern Brown Bandicoot (eastern)	E	E	48	None – not heath or suitable habitat. Long-nosed bandicoot possible but unlikely.	No
Mammalia	*Micronomus norfolkensis*	Eastern Coastal Free-tailed Bat	V		26	Possibly foraging and open/forest fringe. No breeding habitat.	No
Mammalia	*Miniopterus australis*	Little Bent-winged Bat	V		66	Possibly foraging and open/forest fringe. No breeding habitat.	No
Mammalia	*Miniopterus orianae oceanensis*	Large Bent-winged Bat	V		113	Possibly foraging and open/forest fringe. No breeding habitat.	No
Mammalia	*Myotis macropus*	Southern Myotis	V		56	No open water within 300m.	No
Mammalia	*Petaurus norfolcensis*	Squirrel Glider	V		27	Not on-site – no suitable trees or large shrubs suitable within the site boundary.	No
Mammalia	*Petaurus norfolcensis*	Squirrel Glider on Barrenjoey Peninsula, north of Bushrangers Hill	EP		1	Not on-site – no suitable trees or large shrubs suitable within the site boundary.	No
Mammalia	*Phascolarctos cinereus*	Koala	E	E	69	Not on-site – not trees within the site boundary.	No

Class	Scientific name	Common name	NSW status	Comm. status	Records	Likelihood of occurrence	Test of Significance required?
Mammalia	*Pseudomys novaehollandiae*	New Holland Mouse		V	3	No habitat – too exposed.	No
Mammalia	*Pteropus poliocephalus*	Grey-headed Flying-fox	V	V	229	In the area – no breeding habitat close. Unlikely to have food sources onsite due to lack of trees. Likely in neighbouring properties and bushland.	No
Mammalia	*Saccolaimus flaviventris*	Yellow-bellied Sheathtail-bat	V		6	Possibly foraging and open/forest fringe. No breeding habitat.	No
Mammalia	*Scoteanax rueppellii*	Greater Broad-nosed Bat	V		12		No
Mammalia	*Vespadelus troughtoni*	Eastern Cave Bat	V		3		No
Reptilia	*Varanus rosenbergi*	Rosenberg's Goanna	V		70	Could walk through going between habitat (heath). No termite mounds (no breeding).	No

6.3 Appendix III – Threatened Species Test of Significance (5-Part Test)

The Threatened Species Test of Significance (5-part Test) is applied to species and ecological communities listed in Schedules 1 and 2 of the BC Act. The assessment sets out factors, which when considered, allow proponents to undertake a qualitative analysis of the likely impacts of an action and to determine whether further assessment is required via a Biodiversity Development Assessment Report (BDAR) at the DA stage. All factors must be considered and an overall conclusion made based on all factors in combination. The assessment of impact has been conducted with consideration to the assessment of significance criteria from the Threatened Species Test of Significance Guidelines (OEH 2018) as outlined in the text box below.

Threatened Species Test of Significance 5-part Test

a. in the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction,

b. in the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:

i. is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or

ii. is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction,

c. in relation to the habitat of a threatened species or ecological community:

i. the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and

ii. whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and

iii. the importance of the habitat to be removed, modified, fragmented or isolated to the long term survival of the species or ecological community in the locality,

d. whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly),

e. whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process.

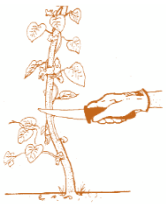
The proposed development is considered unlikely to constitute a significant impact on the species listed in Tables 7.2 and 7.3 given the following:

- the development has been situated where the existing house is proposed to be removed from and existing cleared area
- no known roosting or nesting habitat will be directly impacted
- the microbats, owls, flying foxes and cockatoos are mobile species with preferred habitat areas and could utilise the national park and vegetation fringing the site (national park and road side)
- no habitat will be isolated or fragmented
- habitat that could potentially grow if not an APZ is not currently present – and the impact of future loss is not essential to the long term survival of the potentially affected species.

Therefore, the Biodiversity Offsets Scheme (BOS) has not been triggered for Threatened Species and a BDAR is not required.

6.4 Appendix IV – Key Weed Removal Methods

Technique	Method	Equipment
Hand Removal 	Seedlings and smaller weed species where appropriate will be pulled out by hand, without risk of injury to workers. The size that this can occur varies throughout the treatment area. Generally, it ranges from post seed to approximately 300mm in height. Rolling and raking is suitable for larger infestations of Wandering Jew. The weed can be raked and stems and plants parts rolled. The clump of weed material can then be bagged and removed from site.	Tools: Gloves, Rakes, Knife and Weed Bags
Crowning 	Plants that possess rhizomes or bulbs might not respond to various removal techniques and may need to be treated with crowning. A knife, mattock or trowel is to be driven into the soil surrounding the bulb or rhizome at an angle of approximately 45 degrees with surrounding soil, so as to cut any roots that may be running off. This is to occur in 360 degrees around the bulb/rhizome. The rhizome or bulb is to be bagged and removed from the site and disposed of at an appropriate waste recycling facility Soil disturbance is to be kept to a minimum when using this technique.	Tools: Knife, mattock, trowel, impervious gloves, and all other required P.P.E.
Cut and Paint Stems 	Weed species deemed unsuitable for hand removal shall be cut. Those that have persistent of vigorous growth will be cut and painted with Roundup® Biactive Herbicide or equivalent. Juvenile and smaller weed species will be cut with secateurs at base of plant, and herbicide applied via applicator bottle. Stem to be cut horizontally as close to the ground as possible, using secateurs, loppers or a pruning saw. Horizontal cuts to be made on top of stem to prevent the herbicide running off the stump. Apply herbicide to the cut stem immediately, within 10-20 seconds, before the plant cells close and the translocation of the herbicide is limited. Herbicide is not to reach sediment or surrounding non-targeting plants.	Tools: loppers, secateurs, pruning saw, herbicide applicator/sprayer, impervious gloves, Roundup® Biactive Herbicide and all other required P.P.E.

Technique	Method	Equipment
Scrape and Painting 	More resilient weed species, where other techniques are less reliable are to be scraped with a knife or chisel and painted with undiluted Roundup® Biactive Herbicide. Works to be carried out by a contractor with a current herbicide license. Weed species will be scraped with a knife or chisel up the length of the trunk, and herbicide applied via applicator bottle. Scrape the trunk from as close to the ground as possible to approximately ¾ of the plant height. Where trunk diameters exceed approximately 5 cm a second scrape shall be made on the other side of the trunk. Apply undiluted herbicide to the cut trunk immediately, within 10-20 seconds, before the plant cells close and the translocation of the herbicide is limited. All care must be taken by the contractor not to spill herbicide onto sediment or surrounding non-targeting plants. Follow up treatment may be required. If plants resprout, scrape and paint the shoots using the same method after sufficient regrowth has occurred.	Tools: knife, chisel, protective clothing, safety glasses herbicide applicator/sprayer, impervious gloves, Roundup® Biactive Herbicide, and all other required P.P.E.
Cut with a Chainsaw and Paint 	Larger size weed species, too large for cutting with hand tools, shall be cut with a chainsaw and painted with undiluted Roundup® Biactive Herbicide. Works to be carried out by a contractor with a current chainsaw and herbicide license. Larger weed species will be cut with a chainsaw at base of plant, and herbicide applied via applicator bottle. Cut the stem horizontally as close to the ground as possible, using the chainsaw. Remove upper branches to reduce bulk of plant. If cutting at the base is impractical, cut higher to get rid of the bulk of the weed, then cut again at the base and apply herbicide. Make cuts horizontal to prevent the herbicide running off the stump. Apply undiluted herbicide to the cut trunk immediately, within 10-20 seconds, before the plant cells close and the translocation of the herbicide is limited. Ensure there is no runoff of poison. All care must be taken by the contractor not to spill herbicide into water, onto sediment, or surrounding non-targeting plants. Follow up treatment will be required. If plants resprout, cut and paint the shoots using the same method.	Tools: chainsaw, ear muffs, protective clothing, safety glasses herbicide applicator/sprayer, impervious gloves, Roundup® Biactive Herbicide, and all other required P.P.E.

Technique	Method	Equipment
Spot Spraying	The use of herbicide should be minimised wherever possible. *Cut and paint* (cut and poison) methods are preferred over herbicide spraying to reduce the risk of off-target impacts. If herbicide application is deemed essential, it must: Spot spraying involves spraying non-seeding annuals and grasses, and for regrowth of weeds once an area has been cleared or brushcut. Works to be carried out by a contractor with a current herbicide license. Herbicide will be mixed up according to the manufacturer's directions for the particular weed species being targeted. Mixed herbicide shall be applied to the targeted weed species with a backpack sprayer. All care must be taken by the contractor not to spill herbicide onto sediment or surrounding non-targeting plants.	Tools: protective clothing, safety glasses, herbicide sprayer, impervious gloves, Herbicide, and all other required P.P.E.

6.5 Appendix V – Bushland Hygiene Protocols

- Always assume that the area you are about to work in is free of the disease and therefore needs to be protected against infection.
- Always assume that the activity you are about to undertake has the potential to introduce the disease.
- Arrive at site with clean shoes, i.e., no dirt encrusted on them.
- If you arrive with shoes that are encrusted with dirt, they will have to be completely soaked in metho or disinfectant and allow a few minutes to completely soak in. NEVER scrape untreated dirt off your shoes onto the ground.
- Before you move onto the site spray the bottom of your shoes with 70% metho. Bleach solution (1% strength) or household/commercial disinfectant (as per label) are also suitable.
- Check all tools and equipment that comes in contact with soil are clean before entering the area (they should have been cleaned on site at the end of the previous work session). If there is any dirt on them, spray them with 70% metho.
- Clean all tools at the end of each work session while still on site ensuring this is done away from drainage lines and adjacent work areas. Knock or brush off encrusted dirt and completely spray with 70% metho. Replace in storage/transport containers.
- Preferably compost all weed material on site.
- Never drag vegetation with exposed roots and soil through bushland.
- When removing weeds from site, remove as much soil as possible from them in the immediate work area and carefully place vegetative material into plastic bags.
- Try not to get the bag itself dirty; don't put it on/in a muddy area.
- Always work from the lower part of a slope to the upper part.
- Always work in areas known to be free of the pathogen before working in infected areas.
- Minimise activities wherever possible when the soil is very wet.
- Vehicles should not be driven off track or into reserves (unless vehicle decontamination is carried out before and after entering a single work site).
- Only accredited supplies of plants/mulch to be used.

Maintain weed and pathogen kit on site which includes 1 bucket, 1 scrubbing brush, 1 spray bottle (metho 70% solution), 1 bottle tap water, 1 bottle methylated spirits.

6.6 Appendix VI – Protected Matters Search Results

A search of the Protected Matters Search Tool (PMST) was conducted to identify Matters of National Environmental Significance (MNES) within a 10 km radius of the site (the search area). The PMST predicts 14 threatened ecological communities, 121 threatened species and 58 migratory species occur within the search area.

One national heritage place, and no world heritage properties, Ramsar wetlands or Commonwealth marine areas occur within the search area.

Threatened species with potential relevance to the site have been assessed and habitat is not present.

No other EPBC Act matters are of relevance to the site.

Significant impact assessment

Threatened species

The threatened species identified above have been considered in accordance with the significant impact criteria for vulnerable, endangered and critically endangered species in the *Matters of National Environmental Significance Significant Impact Guidelines 1.1* (DoE 2013).

When taking into consideration all stages and components of the proposal, and all related activities and infrastructure, there is the potential for impacts, including indirect impacts, on MNES, being mainly loss of a potential foraging habitat. However, it is considered unlikely that any of such species will be adversely impacted by the proposal, because:

- Suitable breeding habitat for most of the species is absent within the site. For those species that could utilise the habitats within the site, there are not likely to be local populations present wholly within the site or reliant on the site for their survival in isolation. Any such populations present within the locality will not be rendered locally extinct by the proposed development. This is based on the large ranges of these species and the small area of habitat, and the nature and condition of the habitats present within the site.
- The site is not assessed as likely to contain habitat critical to the survival of a species.
- The site was not found to support an important population (as defined by DoE 2013) of any threatened species.
- The proposal is situated in an existing cleared area.
- The proposed mitigation measures will mitigate or reduce impacts on threatened species.

With reference to the criteria for vulnerable, endangered and critically endangered species, the proposal is not likely to:

- Lead to a long-term decrease in the size of an important population of a species
- Reduce the area of occupancy of an important population
- Fragment an existing important population into two or more populations
- Adversely affect habitat critical to the survival of a species
- Disrupt the breeding cycle of an important population
- Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that a species is likely to decline
- Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat
- Introduce disease that may cause a species to decline, or
- Interfere substantially with the recovery of any of these species

The proposed development is highly unlikely to disrupt the lifecycle (breeding, feeding, migration or resting behaviour) of an ecologically significant proportion of the population of any migratory species. Hence the proposal is not likely to have a significant impact on any listed migratory species under the EPBC Act.

Conclusion

On the basis of this assessment, it is not likely that the proposed development will have a significant impact on any MNES listed under the EPBC Act. Referral of the development application to the Commonwealth Department of Climate Change, Energy, the Environment and Water is not warranted.