Flora and Fauna Assessment for part of No 4948 Clarence Town Road, Dungog

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Revision	Details	Date	Amended By
A	Flora & Fauna Assessment	06/06/2024	John Whyte

This statement has been prepared in accordance with the Uniform Civil Procedure Rules 2005 and the Expert Witness Code of Conduct in Schedule 7 of the Uniform Civil Procedure Rules. I understand that the expert's primary role is to inform the Court and not be an advocate for either party.

Author: .....John Whyte

Signed: 

Date: .....6th of June 2024

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1. Introduction

Enviro Ecology has been engaged by Manor Homes C-/O property owner to carry out a Flora and Fauna Assessment over part of No 4948 (Lot 207 DP 1282787) Clarence Town Road, Tabbil Creek within Dungog LGA hereafter referred to as the subject property (Figure 1-1).

The proposed development is to construct a single dwelling within the subject property (Figure 1-2).

This report examines the terrestrial flora assemblages and faunal species and their habitats within the location of proposed development (Figure 1-2). The report then determines the impacts of future dwellings and associated infrastructure upon local biodiversity. It summarises proposed mitigation measures as well as the assessment under the *Environmental Planning and Assessment Act 1979* and under the (Commonwealth) *Environment Protection and Biodiversity Conservation Act 1999*.

This report uses the following terminology:

- ***Subject site*** means the area directly affected by the proposal. The area of land which is to be directly or indirectly affected by the proposed development. The subject site captures the nominated asset protection zone, proposed dwelling and the proposed onsite waste-water system.
- ***Study area*** means the subject site and any additional areas which may be affected by the proposal, either directly or indirectly. The study area should extend as far as is necessary to take all potential impacts into account. Study area is defined as the extent of the subject site boundary as shown on the aerial photograph see (Figure 1-1).
- ***Direct impacts*** are those that directly affect the habitat and individuals. They include, but are not limited to, death through predation, trampling, poisoning of the animal/plant itself and the removal of suitable habitat. When applying each factor, consideration must be given to all of the likely direct impacts of the proposed activity or development.
- ***Indirect impacts*** occur when project-related activities affect species, populations or ecological communities in a manner other than direct loss. Indirect impacts can include loss of individuals through starvation, exposure, predation by domestic and/or feral animals, loss of breeding opportunities, loss of shade/shelter, deleterious hydrological changes, increased soil salinity, erosion, inhibition of nitrogen fixation, weed invasion, fertiliser drift, or increased human activity within or directly adjacent to sensitive habitat areas.
- Subject property: Is defined as No 4948 Clarence Town Road, Dungog
- BC Act abbreviates the *Biodiversity Conservation Act 2016.*
- EPBC Act abbreviates the *Environment Protection and Biodiversity Conservation Act 1999.*
- EP&A Act abbreviates the *Environmental Planning and Assessment Act 1979*.
- IPA abbreviates Inner Protection Area
- OEH abbreviates Office of Environment & Heritage (OEH).
- OPA abbreviates Outer Protection Area
- LGA abbreviates Local Government Area.

- Threatened species refers to those flora and fauna species listed as vulnerable, endangered or critically endangered under the BC Act or EPBC Act
- EEC abbreviates Endangered Ecological Community; and
- WSUD abbreviates Water Sensitive Urban Design.

1.1 Legislative context

All proposals assessed under the *Environmental Planning and Assessment Act 1979* must include an examination of the threatened biodiversity, or their habitats, that are likely to occur within the development area or that may be indirectly affected by the construction and operation of a proposal. In the event that threatened biodiversity is within the vicinity of a proposal, the application must also include an assessment of the potential impact.

Other Commonwealth and State legislation relevant to the protection of flora, fauna and biodiversity within the study area include:

- *Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)*
- *Biodiversity Conservation Act 2016*
- *Biosecurity Act 2015*
- State Environmental Planning Policy (Biodiversity and Conservation) 2021

1.2 Site Description

The planning and cadastral details of the subject property are provided in (Table 1-1). The property is bordered by Clarence Town Road to the west and by rural residential to the north, south and east by rural residential (Figure 1-1).

Table 1-1 Site details

Location	No 4948 (Lot 207 DP 1282787) Clarence Town Road, Tabbil Creek
Topographic Map	Dungog 1:25000
Local Government Area	Dungog
Property size	4.287ha or 42840m2
Elevation	63-94m AHD
Slope	The subject property slopes to the west
Aspect	East-west

1.3 Study objectives

The objectives of this report are to:

- Conduct a fauna survey and habitat assessments to determine the likelihood of occurrence of threatened or Migratory species of animal occurring within the study area.
- Conduct a floral survey to identify any threatened species of plant present or considered likely to occur within the proposal area & determine and describe the characteristics and condition of the vegetation communities and flora.
- Determine the presence, or likelihood of occurrence, of threatened biodiversity listed under the *Biodiversity Conservation Act 2016* or *Environment Protection and Biodiversity Conservation Act 1999* occurring within the study area.
- Describe and assess likely impacts of the project on biodiversity.
- Undertake significance assessments were required for threatened biodiversity that occur or have potential habitat within the study area.
- Propose amelioration measures to mitigate or minimise impacts on the ecological values of the study area.

Figure 1-1
Subject property, study area & subject site

Study Area

Subject Property

NSW Land and Property - Lot Boundaries

Subject Site

Accomodation Building

Garage/Carport

Irrigation Area

Main Residence

Proposed Access

NOTE: Subject Site digitised from Goe-rectified Plan Images
NOT Survey Accurate on Map
For Illustration Purposes ONLY

Base Spatial Layers - NSW State Dept Open Source
Accurate as of June 2024 GDA2020

DATE : 6/06/2024
Map Version: 1_1

Scale: 1:1,000

Google Satellite Imagery 2024

Projected Coordinate System:
Name: GDA2020 MGA Zone 56
Projection: Transverse Mercator

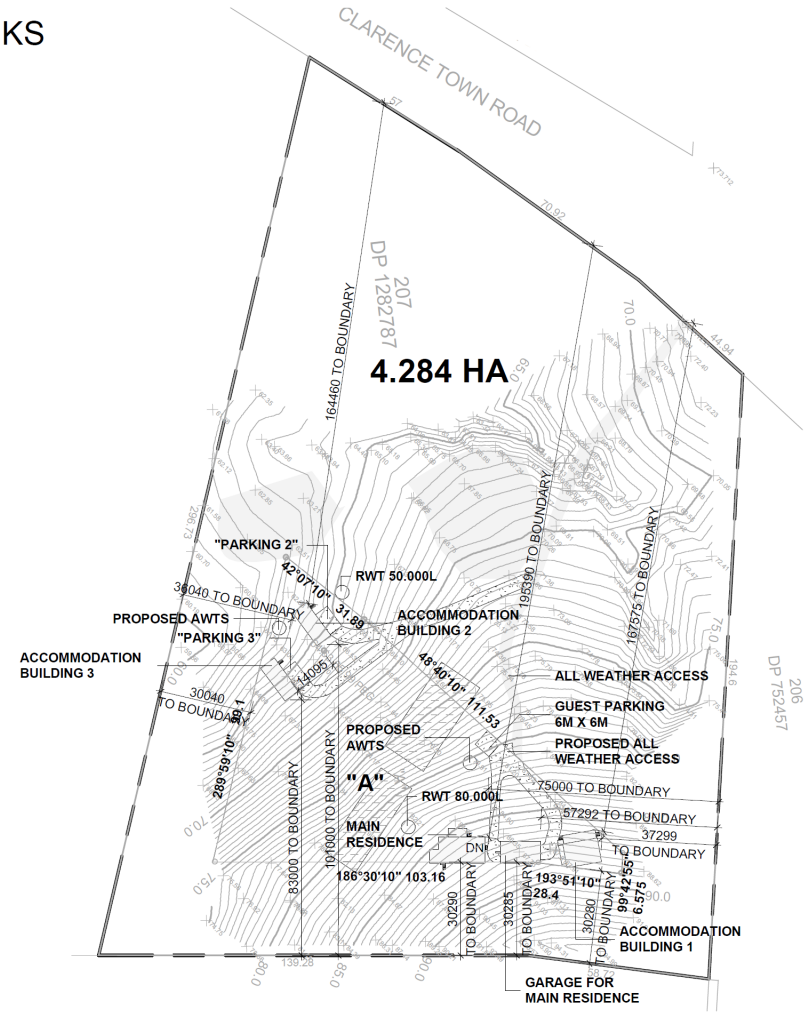
Although all care has been taken WiZarDTech accepts no responsibility from the use or inaccuracies of this map and spatial data.

Figure 1-2 Proposed development

PROPOSED RESIDENCE

AT: LOT 207 DP 1282787
4948 CLARENCE TOWN ROAD, TABBIL CREEK NSW 2420

FOR: G. MONKS



SITE OVERALL

SHEET LIST

Sheet Name	Sheet No	REV	Sheet Issue Date
TITLE SHEET & LOCATION	01		13/04/2023
SITE PLAN & GENERAL NOTES	02		13/04/2023
SITE PLAN & EARTHWORK	03		13/04/2023
MAIN RESIDENCE - FLOOR PLAN	04		13/04/2023
GARAGE & CARPORT - FLOOR PLAN	05		13/04/2023
ACCOMMODATION BUILDING 1 - FLOOR PLAN	06		13/04/2023
ACCOMMODATION BUILDING 2 - FLOOR PLAN	07		13/04/2023
ACCOMMODATION BUILDING 3 - FLOOR PLAN	08		13/04/2023
ELEVATIONS MAIN RESIDENCE	09		13/04/2023
ELEVATIONS MAIN RESIDENCE	10		13/04/2023
ELEVATIONS - GARAGE FOR MAIN RESIDENCE	11		13/04/2023
ELEVATION - ACCOMMODATION BUILDING 1	12		13/04/2023
ELEVATION - ACCOMMODATION BUILDING 1	13		13/04/2023
ELEVATION - ACCOMMODATION BUILDING 2	14		13/04/2023
ELEVATION - ACCOMMODATION BUILDING 2	15		13/04/2023
ELEVATION - ACCOMMODATION BUILDING 3	16		13/04/2023
ELEVATION - ACCOMMODATION BUILDING 3	17		13/04/2023
PERSPECTIVE	18		13/04/2023
PERSPECTIVE	19		13/04/2023

No.	DESCRIPTION	DATE	BY

BUILDER TO CHECK AND VERIFY ALL DIMENSIONS AND LEVELS PRIOR TO COMMENCEMENT OF WORK

JOB: WILLIAMS RIVER ACCOMMODATION & HORSE AGISTMENT FACILITY
CLIENT: G. MONKS
ADDRESS: 4948 CLARENCE TOWN ROAD, TABBIL CREEK NSW 2420

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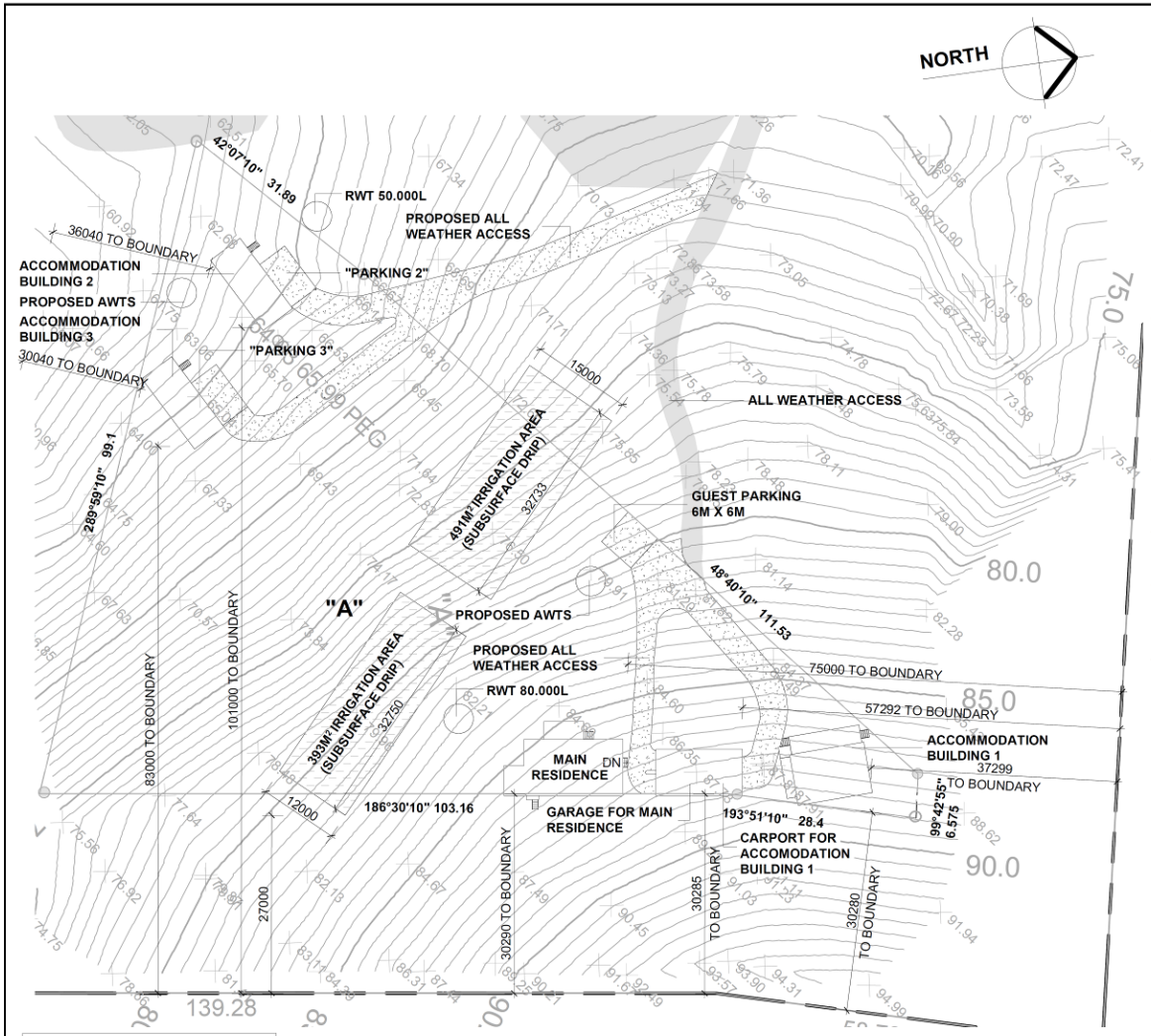
DRAWING: TITLE SHEET & LOCATION
DATE: 13/04/2023
JOB Nº: Project Status
DRAW: MTK CHECK: Planning
DRAWING N°: GSM V5
REVISION N°:
SCALE: 1 : 1500
SHEET N°: 01 of 19

Figure 1-3 Proposed development



LEGEND	
sf	SEDIMENT FENCE
sw	STORM WATER DRAINAGE
s	SEWER DRAINAGE
KO	DENOTES KERB OUTLET
WC,ET,TC	DENOTES SERVICE CONDUIT
SV	DENOTES STOP VALVE
HYRAD	DENOTES HYDRANT
DW	DISHWASHER SPACE

HOUSE SITE

GENERAL NOTES

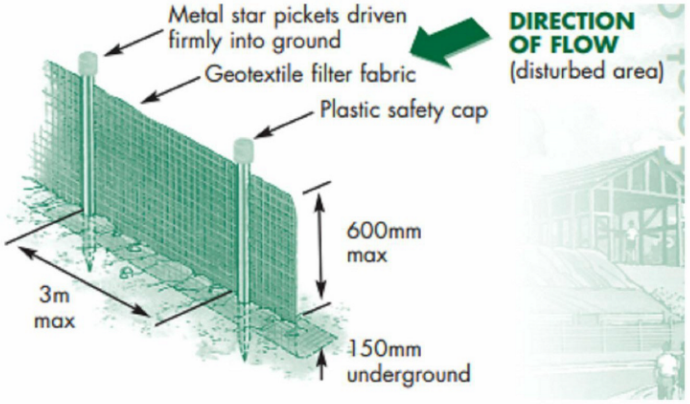
1. NO STOCKPILING OF MATERIALS IS PERMITTED ON THE VERGE BETWEEN KERB AND PROPERTY BOUNDARY. STOCK PILES SHOULD BE PROTECTED OR MOVED FROM THE SITE.
2. ROOF DRAINAGE TO BE CONNECTED TO THE APPROVED STORM WATER SYSTEM AS SOON AS POSSIBLE.
3. DEPRESSIONS LEFT IN THE FOOTPATH BY HEAVY VEHICLES ARE TO BE FILLED AS SOON AS PRACTICAL.
4. ONLY ONE EXIT POINT SHOULD BE USED AND SHOULD BE CONSTRUCTED SO AS TO PREVENT SOIL FROM REACHING THE ROAD AND TO STOP BOGGING.
5. DRAINAGE DITCHES ABOVE AND BELOW CUT AND FILLED AREAS ARE TO REDUCE EROSION FROM DISTURBED GROUND.
6. ALL WORKMANSHIP AND MATERIALS TO BE IN ACCORDANCE WITH ALL RELEVANT BUILDING CODES AND GOVERNING AUTHORITIES REQUIREMENTS.
7. THESE DRAWINGS DO NOT SHOW ANY STRUCTURAL ENGINEERING DETAILS.
8. DIMENSIONS ARE TO BE VERIFIED ON SITE PRIOR TO CONSTRUCTION. FIGURED DIMENSIONS TO TAKE PREFERENCE OVER SCALING OF DRAWINGS. DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
9. EXCAVATED MATERIALS RELOCATED ON SITE FOR GARDENS. BRICKS, CONCRETE, TIMBER AND OTHER PRODUCTS ARE TO BE SORTED AND DISPOSED TO LOCAL RECYCLING FACILITY AS PER WASTE BOARD GUIDE.
10. DO NOT KEEP SUPERSEDED DRAWINGS ON SITE.
11. WHILE EVERY EFFORT HAS BEEN MADE TO DEPICT THE PROPOSAL ACCURATELY, ANY VARIATION BETWEEN THESE DRAWINGS AND THE AGREED QUOTE, THE QUOTE IS TO TAKE PREFERENCE.
12. THIS DEVELOPMENT WILL NOT HAVE ANY AVERSE EFFECTS ON THE ENVIRONMENT OR ITS SURROUNDS.
13. THERE ARE NO TREES TO BE REMOVED WITHIN THE CONSTRUCTION AREA.
14. LEVELS TO ASSUMED HEIGHT DATUM. REFER SITE PLAN, ELEVATIONS AND SECTION.
15. NO SUBTERRANEAN INVESTIGATION OF SERVICES OF SERVICES HAS BEEN CARRIED OUT.

SEDIMENT CONTROL NOTES

1. ALL EROSION AND SEDIMENT CONTROL MEASURES INCLUDING REVEGETATION AND STORAGE OF SOIL AND TOPSOIL, SHALL BE IMPLEMENTED TO THE STANDARDS OF THE SOIL CONSERVATION OF NSW.
2. ALL DRAINAGE WORKS SHALL BE CONSTRUCTED AND STABILISED AS EARLY AS POSSIBLE DURING DEVELOPMENT.
3. SEDIMENT TRAPS SHALL BE CONSTRUCTED AROUND ALL INLET PITS, CONSISTING OF 400MM WIDE X 300MM DEEP TRENCH.
4. ALL SEDIMENT BASINS AND TRAPS SHALL BE CLEANED WHEN THE STRUCTURES ARE A MAXIMUM OF 100% FULL OF SOIL MATERIALS, INCLUDING THE MAINTENANCE PERIOD.
5. ALL DISTURBED AREAS SHALL BE REVEGETATED AS SOON AS THE RELEVANT WORKS ARE COMPLETED.
6. SOIL AND TOPSOIL STOCKPILES SHALL BE LOCATED AWAY FROM DRAINAGE LINES AND AREA WHERE WATER MAY CONCENTRATE.

CONTROL MEASURES

ALL PERSONS ENTERING THE SITE MUST BE MADE AWARE OF THESE DANGERS AND TAKE RELEVANT ACTION TO ENSURE THAT THEIR WORK AREA IS MAINTAINED AS SAFE TO PROCEED. IF YOU ARE UNABLE TO PROCEED DUE TO THE EXISTENCE OF AN UNSAFE WORK AREA, YOU MUST NOTIFY YOUR SITE SUPERVISOR IMMEDIATELY SO THAT ACTION CAN BE TAKEN TO REMEDY THE SITUATION.



No.	DESCRIPTION	DATE	BY

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DRAW: MTK CHECK: Planning
DRAWING N°: GSM V5
REVISION N°:
SCALE: 1 : 700
SHEET N°: 02 of 19

2. Methodology

This ecological assessment was based on the results of a desktop review and site inspections from the 1st of June 2024 by Mr John Whyte B. Bio.Sc (Majors Botany & Zoology) Certified Biodiversity Assessment Assessor (BAAS17082) under *Biodiversity Conservation Act* 20216 & Bio Banking Accredited 213 Scientific Licence sl100292. This assessment has been prepared to identify potential impacts as a result of the proposed activity upon biodiversity.

2.1 Licensing

All work was carried out under the appropriate licences, including a scientific licence as required under the *Biodiversity Conservation Act 2016,* and an Animal Research Authority issued by the Department of Industries and Investment formerly the Department of Industries & Investment (Agriculture).

2.2 Nomenclature

Names of plants used in this document follow Harden (Harden 1992; Harden 1993; Harden 2000; Harden 2002) with updates from PlantNet (Royal Botanic Gardens 2024). Scientific names are used in this report for species of plant. Scientific and common names of plants are listed in Appendices A and C. Names of vertebrates follow the Census of Australian Vertebrates (CAVS) database maintained by the Department of Sustainability Environment Water Population and Communities (Department of Climate Change, Energy, the Environment and Water 2024). Common names are used in the report for species of animal. Scientific names are included in species lists found in Appendices B and D.

2.3 Database searches and literature review

This assessment included a review of:

- Topographic maps & Aerial photographs
- A review of *Greater Hunter Native Vegetation Mapping. Version 4.0*, Office of Environment & Heritage (OEH 2012).
- NSW State Vegetation Type Map (DPIE 2022).
- Database searches, as summarised in Table 2-1.

Table 2-1 Database searches

Database	Search date	Area searched	Reference
Bionet Atlas of NSW Wildlife	6th of June 2024	Locality (10 km)	(Department Of Environment & Conservation 2024)
PlantNet Database	6th of June 2024	Locality (10 km)	(Royal Botanic Gardens 2024)
Protected Matters Search Tool	6th of June 2024	Locality (10 km)	(Department of Climate Change, Energy, the Environment and Water 2024)

2.4 Field Survey

Inspections of the site was undertaken on the 1st of June 2024 by Mr John Whyte B. Bio.Sc (Majors Botany & Zoology). This included:

- Three quadrats & a random meander survey recording all species of plant encountered within the study area (Figure 2-1)
- Searching for specialised fauna habitat resources such as roosting/nesting hollows, foraging resources e.g. feed trees
- Targeted surveys for flora and fauna (Sections 2.5 & 2.6)
- Opportunistic fauna surveys during the flora survey

2.5 Flora Surveys

A combination of quadrat and traverse flora surveys was used to assess native floral diversity, dominant species, condition of vegetation communities and search for Threatened species within the study area. The flora survey effort was determined to exceed the suggested minimum survey requirements of the *Threatened Biodiversity Survey and Assessment: Guidelines for Developments and Activities (Working Draft)* (refer to table 3-2, Department of Environment and Conservation 2004).

Table 2-2 Suggested survey technique and effort for plant quadrats

Survey technique	Suggested minimum effort per stratification unit
Quadrat	**1 quadrat for areas <2 ha**
	2 quadrats for area 2-50 ha
	3 quadrats for areas 51-250 ha
	5 quadrats for areas 251-500 ha
	10 quadrats for areas 5,001-1,000 ha, plus 1 additional quadrat for each extra 100 ha thereof
Random Meander	30 minutes for each quadrat sampled within the same stratification unit as the quadrat

Source: *Threatened Biodiversity Survey and Assessment: Guidelines for Developments and Activities* (Working Draft) (Department of Environment and Conservation 2004).

2.5.1 Quadrat surveys

Quadrat surveys were completed to provide a quantitative examination of species abundance in each vegetation community. Quadrat surveys are also likely to detect inconspicuous species that may be missed by random meander or transect surveys (Department of Environment and Conservation 2004).

Three vegetation quadrats were placed randomly within the vegetation within the study area in a north-southerly direction to sample vegetation; the location of quadrats is shown on (Figure 2-1). Vegetation quadrats were 400 m^2 (20 x 20 m) within which all floral species were identified and assigned a vegetative cover abundance rating based on the following modified Braun-Blanquet scale (Table 2-3).

Table 2-3 Modified Braun-Blanquet scale

Cover/abundance scale 1-6		
1	<5% - Rare or few individuals	3 or less individuals
2	<5% - Common	Consistent throughout plot
3	Cover >5% and <25%	
4	Cover >25% and <50%	
5	Cover >50% and <75%	
6	Cover >75%	

2.5.2 Random meander surveys

Random meander surveys are a variation of the transect type survey and were completed in accordance with the technique described by Cropper (1993), whereby the recorder walks in a random manner throughout the site recording all species observed. The survey is continued until no additional species are observed within a patch. Random meander surveys also allow the boundaries between various vegetation communities and condition of vegetation to be recorded and are valuable for recording species that may not occur within quadrats including, Threatened species (Department of Environment and Conservation 2004).

Individual random meander surveys were separated whenever there was a significant change in vegetation community type or condition. For each random meander survey, the vegetation community was determined based on the dominant canopy species and the structure formation in accordance with Specht (1981) with reference to existing mapped vegetation communities. A random meander was conducted throughout the entire study area.

2.5.3 Vegetation condition

The condition of vegetation communities is an important criterion to determine suitable habitats for Threatened species and the conservation status of certain ecological communities. Vegetation within the study area was assigned to one of the following condition classes (refer Table 2-4).

Table 2-4 Vegetation community condition classes

Condition Class	Criteria
Good	Vegetation still retains the species complement and structural characteristics of the pre-European equivalent. Such vegetation has usually changed very little over time and displays resilience to weed invasion due to intact groundcover.
Moderate	Vegetation generally still retains its structural integrity but has been disturbed and has lost some component of its original species complement. Weed invasion can be significant in such remnants
Poor	Vegetation that has lost most of its species and is significantly modified structurally. Often such areas now have a discontinuous canopy of the original tree cover and very few shrubs. Exotic species, such as introduced pasture grasses or weeds, replace much of the indigenous ground cover. Environmental weeds are often co dominant with the original indigenous species.

2.6 Terrestrial fauna

2.6.1 Fauna habitats

Fauna habitat assessments were undertaken to assess the likelihood of Threatened species of animal (those species identified from the literature and database review) to occur within the study area. Fauna habitat characteristics assessed included the:

- Structure and floristics of the canopy, understorey and ground vegetation, including the presence of flowering and fruiting trees providing potential foraging resources
- Presence of hollow-bearing trees providing roosting and breeding habitat for arboreal mammals, birds and reptiles
- Composition of the ground cover vegetation, leaf litter, rocky outcrops and fallen timber to provide protection for ground-dwelling mammals, reptiles and amphibians
- Presence of waterways (ephemeral or permanent) and water bodies.

The assessment of these fauna habitat characteristics enabled an overall assessment of fauna habitat condition within the study area (refer Table 2-5).

Table 2-5 Fauna Habitat Condition Classes

Fauna habitat condition class	Description
Good	A full range of fauna habitat components are usually present (e.g. old growth trees, fallen timber, feeding and roosting resources) and habitat linkages to other remnant ecosystems in the landscape are intact.
Moderate	Some fauna habitat components may be missing (e.g. old growth trees, fallen timber), although linkages with other remnant habitats in the landscape are usually intact, but sometimes degraded.
Poor	Many fauna habitat elements in low quality remnants have been lost, including old growth trees (e.g. due to past timber harvesting or land clearing) and fallen timber, and tree canopies are often highly fragmented. Habitat linkages with other remnant ecosystems in the landscape have usually been severely compromised by extensive past clearing.

2.6.1 State Environmental Planning Policy Koala Habitat Protection (2021)

State Environmental Planning Policy Koala Habitat Protection (2021) aims to encourage the “proper conservation and management of areas of natural vegetation that provide habitat for Koalas (*Phascolarctos cinereus*) to ensure a permanent free-living population over their present range and reverse the current trend of Koala population decline”. The SEPP is currently being amended by the NSW Department of Planning and Environment. Key changes to the amended SEPP relate to the following:

- Definitions of koala habitat.
- List of Koala feed tree species.
- List of councils to which the SEPP applies; and
- Various changes to the development assessment process.

Dungog Local LGA is identified in Schedule 1 of SEPP (Koala Habitat Protection) 2021 and therefore consideration of SEPP is required.

2.6.2 Fauna survey

The presence of faunal species within the study area was determined primarily through consideration of suitable habitats, with species of animal identified opportunistically during the vegetation survey, habitat assessments. Although recording Threatened species during field survey can confirm their presence in an area, a lack of Threatened species records does not necessarily indicate the absence of the species from the study area when suitable habitat is present. By the very nature of their rarity, threatened species are often difficult to detect. Suitable habitat is, therefore, an important factor to consider when determining the potential presence of Threatened species.

Due to the lack of suitable fauna habitat: ground cover vegetation, leaf litter, rocky outcrops and fallen timber within the study area, no intensive targeted surveys for ground-dwelling/arboreal mammals, reptiles, avian and amphibians were considered to be necessary.

The assessment of fauna habitats enabled an overall assessment of fauna habitat condition within the subject site.

2.6.3 Diurnal Birds

Diurnal birds were recorded within the study area over 2.5-hour observation period on the morning/afternoon on the 1st of June 2024. During the survey the entire study area was traversed, and birds were identified either from sightings or characteristic calls. The number of each species and the activity at the time of sighting (foraging, breeding, or flying) was also recorded.

Additional birds' species not recorded during this survey period were also opportunistically recorded throughout the study area whilst completing vegetation surveys and habitat assessments.

Birds were observed and identified using binoculars. Calls were generally identified in the field by the observer. If an unknown call was heard it is recorded and identified using reference libraries.

2.6.4 Amphibians

Frog searches were completed at all locations where frogs were heard vocalising to confirm species identification. Species were recorded by sightings, captures and call characteristics.

Amphibians were surveyed by vocal call identification, by using a recorder to record male calls in suitable places and then comparing these to known calls. Amphibians were also surveyed by habitat searches.

Any amphibians found are visually identified and when required to be examined are handled with Latex gloves and kept moist until release.

Species of herpetofauna were also opportunistically recorded whilst completing vegetation surveys and habitat assessments.

Additional targeted surveys were undertaken over the subject property and lands to the north to establish the size of the exiting threatened frogs' populations within the locality of the subject property.

2.6.5 Reptiles

Searches for reptiles in likely localities such as under sandstone rock, logs, rubbish debris and leaf litter throughout the study area. Surveys were undertaken during nocturnal visits to the site.

Figure 2-1
Flora and Fauna Survey Locations

Subject Property

Study Area

BAMPLOTS

20m x 20m

Hollow-bearing trees

Hollow-bearing trees

NOTE: Subject Site digitised from Goe-rectified Plan Images
NOT Survey Accurate on Map
For Illustration Purposes ONLY

Base Spatial Layers - NSW State Dept Open Source
Accurate as of June 2024 GDA2020

DATE : 6/06/2024
Map Version: 1_1

Scale: 1:1,000

Google Satellite Imagery 2024

Projected Coordinate System:
Name: GDA2020 MGA Zone 56
Projection: Transverse Mercator

2.7 Biodiversity Offset Scheme (BOS) Entry Threshold

Native vegetation and clearing native vegetation have the same meanings as in Part 5A of the Local Land Services Act 2013.

Note—

Under that Part of that Act, the clearing of dead or non-native plants on certain vulnerable land is taken to be the clearing of native vegetation.

native vegetation legislation means any of the following provisions and any regulations or other instruments or requirements issued or made under those provisions—

(a) Part 5A (Land management (native vegetation)) of, and Schedule 5A to, the Local Land Services Act 2013,

(b) Part 5B (Private native forestry) of the Local Land Services Act 2013,

(c) Part 5A (Forest agreements) and Part 5B (Integrated forestry operations approvals) of the Forestry Act 2012

Extract Local Land Service Act 2013

60B Meaning of “native vegetation”

(1) For the purposes of this Part, native vegetation means any of the following types of plants native to New South Wales—

(a) trees (including any sapling or shrub or any scrub),

(b) understorey plants,

(c) groundcover (being any type of herbaceous vegetation),

(d) plants occurring in a wetland.

(2) A plant is native to New South Wales if it was established in New South Wales before European settlement. The regulations may authorise conclusive presumptions to be made of the species of plants native to New South Wales by adopting any relevant classification in an official database of plants that is publicly accessible.

(3) For the purposes of this Part, native vegetation extends to a plant that is dead or that is not native to New South Wales if—

(a) the plant is situated on land that is shown on the native vegetation regulatory map as category 2-vulnerable regulated land, and

(b) it would be native vegetation for the purposes of this Part if it were native to New South Wales.

(4) For the purposes of this Part, native vegetation does not extend to marine vegetation (being mangroves, seagrasses or any other species of plant that at any time in its life cycle must inhabit water other than fresh water). A declaration under section 14.7 of the Biodiversity Conservation Act 2016 that specified vegetation is or is not marine vegetation also has effect for the purposes of this Part.

60C Meaning of “clearing” native vegetation

For the purposes of this Part, clearing native vegetation means any one or more of the following—

(a) cutting down, felling, uprooting, thinning or otherwise removing native vegetation,

(b) killing, destroying, poisoning, ringbarking or burning native vegetation.

https://www.environment.nsw.gov.au/topics/animals-and-plants/biodiversity-offsets-scheme/about-the-biodiversity-offsets-scheme/when-does-bos-apply

https://www.olg.nsw.gov.au/councils/land-management/biodiversity/biodiversity-assessment-and-approvals-navigator/

See extract below from threshold guide linked below

https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Animals-and-plants/Biodiversity/reviewing-bmat-tool-area-clearing-threshold-results-230189.pdf

• Groundcover in heavily disturbed ecosystems with no native overstory (i.e. derived ecosystems), which is a mix of native and exotic cover may be adjusted in line with the ruleset for calculating native vegetation extent (NVE) in these areas.

Page 7 of the attached guidelines states as follows: if there is less than 15% native groundcover – the area is assessed as non-native vegetation and is not included in NVE map. The Exotic Grassland community contained less than 15% therefore small area supporting native ground covers were not mapped onto the vegetation map.

A BOSET search was undertaken over the subject property (Appendix G) which did not identify the site as being affected by the Biodiversity Values Map.

Table 2-6 Biodiversity Threshold Report

Biodiversity Values Map and Threshold Report		
Date of Report Generation		31/05/2024 11:06 PM
1. Biodiversity Values (BV) Map - Results Summary (Biodiversity Conservation Regulation Section 7.3)		
1.1	**Does the development Footprint intersect with BV mapping?**	no
1.2	**Was ALL BV Mapping within the development footprinted added in the last 90 days?** (dark purple mapping only, no light purple mapping present)	no
1.3	**Date of expiry of dark purple 90 day mapping**	N/A
1.4	**Is the Biodiversity Values Map threshold exceeded?**	no
2. Area Clearing Threshold - Results Summary (Biodiversity Conservation Regulation Section 7.2)		
2.1	**Size of the development or clearing footprint**	2,689.9 sqm
2.2	**Native Vegetation Area Clearing Estimate (NVACE)** (within development/clearing footprint)	2,689.9 sqm
2.3	**Method for determining Minimum Lot Size**	LEP
2.4	**Minimum Lot Size** (10,000sqm = 1ha)	600,000 sqm
2.5	**Area Clearing Threshold** (10,000sqm = 1ha)	10,000 sqm
2.6	**Does the estimate exceed the Area Clearing Threshold?** (NVACE results are an estimate and can be reviewed using the Guidance)	no
REPORT RESULT: Is the Biodiversity Offset Scheme (BOS) Threshold exceeded for the proposed development footprint area? (Your local council will determine if a BDAR is required)		**no**

No BDAR is deemed to be necessary in this instance.

2.8 Limitations

Within the study area varying degrees of non-uniformity of flora and fauna habitats are encountered. Hence no sampling technique can entirely eliminate the possibility that a species is present within a study area (e.g. species of plant present in the seed bank). The conclusions in this report are based upon data acquired for the study area and the environmental field surveys and are, therefore, merely indicative of the environmental condition of the study area at the time of survey, including the presence or otherwise of species. It should also be recognised that conditions of the study area, including the presence of threatened species, can change with time.

Habitat assessments were completed for all threatened fauna species identified as a result of the database searches (Table 2-1) to determine whether or not suitable habitat for threatened fauna species occurred within the study area. This is a more conservative approach and is likely to include species that are difficult to detect.

3. Results

3.1 Vegetation mapping

Two vegetation mapping projects has mapped the vegetation within the study area these are: NSW State Vegetation Type Map (Department of Planning and Environment 2022) & the Lower Hunter Central Coast Extant Vegetation Community Map (Lower Hunter and Central Coast Regional Environmental Management Strategy 2003). Vegetation communities were aligned with the NSW State Vegetation Type Map (2022).

3.2 Vegetation communities

One native vegetation community: PCT 3244 - Lower North Spotted Gum-Mahogany-Ironbark Sheltered Forest was identified from the study area (Figure 3-1). This community was represented in two forms a Forest/Woodland variant a Scrub variant. A Detailed description of this community has been provided below.

The subject property also supports large open areas of exotic Grassland described below.

3.2.1 Plant Community Type and Determination

Each vegetation community identified within the Study Area was assigned to the closest equivalent PCT from those listed in the BioNet Vegetation Classification database (DPE 2024b). The closest equivalent PCT for each vegetation community was determined through a comparison of the floristic descriptions of PCTs in the database with the plot / transect data collected from the Development Site. In addition to floristic and structural similarity, the landscape position, soil type and other diagnostic features of the vegetation communities on the site were compared to the descriptions in the database to determine the most suitable PCT. Threatened ecological communities (TECs) as defined in NSW and Commonwealth legislation were also identified if present.

3.2.2 PCT 3244 - Lower North Spotted Gum-Mahogany-Ironbark Sheltered Forest

The canopy was dominated by *Corymbia maculata* (Spotted Gum) with the occasional occurrence of *Eucalyptus crebra* (Narrow-leaved Ironbark) & *Eucalyptus fibrosa* (Red Ironbark). Canopy trees ranged in height from approximately 8-28m. The projected foliage cover of the canopy ranged from >5-50%.

No sub-canopy trees were recorded within the forest/woodland remnants.

Within the scrub remnant of this PCT Glochidion ferdinandi (Cheese Tree) was occasionally recorded. Remnant Cheese Trees were to a height of 5m with a PFC of >5%.

The shrub layer was sparse with the following species occasionally recorded *Acacia ulicifolia* (Prickly Moses), *Acacia longissima* (Narrow-leaved Wattle), *Acacia falcata* & *Breynia oblongifolia* (Coffee Bush, Shrubs were to a height of 0.5-2m tall with a projective foliage cover of less than 5% within the forest/woodland remnant. The scrub variant had a higher dominance of shrubs and at times was exclusively dominated by *Acacia ulicifolia* (Prickly Moses) to a PFC of 30%.

The understorey within dense patches of Spotted Gum within the western portion of the study area was sparse due to dense leaf little layer, open areas of woodland were dominated almost exclusively by native *Themeda australis* (Kangaroo Grass), with the occasional occurrence of *Cymbopogon refractus* (Barbed Wire Grass), *Eragrostis browni* (Brown's Lovegrass), *Pratia purpurascens* (Whiteroot), *Aristida vagans* (Threeawn Speargrass). At times the ground layer was dominated by exotic *Sida rhombifolia* (Paddy's Lucerne), *Sonchus oleraceus, Conyza albida* (Tall Fleabane). Groundlayer was to a height of 0.1-0.3m with a PFC of >5-70%.

The scrub variant was dominated by Kangaroo Grass.

The condition of the forest/woodland & scrub variants of this community were assessed as being in moderate condition (Table 2-4).

Photograph 3-1 PCT 3244 - Lower North Spotted Gum-Mahogany-Ironbark Sheltered Forest (Forest/Woodland Variant) within the western portion of the study area

Photograph 3-2 PCT 3244 - Lower North Spotted Gum-Mahogany-Ironbark Sheltered Forest (Forest/Woodland Variant) within the western portion of the study area

Photograph 3-3 PCT 3244 - Lower North Spotted Gum-Mahogany-Ironbark Sheltered Forest (Forest/Woodland Variant) within the northern portion of the study area

Photograph 3-4 PCT 3244 - Lower North Spotted Gum-Mahogany-Ironbark Sheltered Forest (Forest/Woodland Variant) within the northern portion of the study area

Photograph 3-5 PCT 3244 - Lower North Spotted Gum-Mahogany-Ironbark Sheltered Forest (Scrub Variant) within the eastern portion of the study area

Photograph 3-6 PCT 3244 - Lower North Spotted Gum-Mahogany-Ironbark Sheltered Forest (Scrub Variant) within the eastern portion of the study area

3.2.3 Exotic Grassland

The Exotic Grassland community is the result of past historical land clearing for grazing. Trees are typically absent however may occur at the interface of forest/woodland patches. Native shrubs are typically absent however the occasional shrub may be present again at the interface of PCT 3244.

The following High threat Weed (HTW) were recorded scattered throughout the property *Olea europaea ssp. cuspidata* (African Olive), *Rubus molluccanus* (Blackberry) and *Lantana camara* (Lantana).

The ground vegetation is dominated by *Pennisetum clandestinum* (Kikuyu), *Paspalum dilatatum* (Paspalum), *Andropogon virginicus* (Whisky Grass), *Setaria gracilis* (Slender Pigeon Grass), *Chloris gayana* (Rhodes Grass), *Senecio madagascariensis* (Fireweed), *Bidens pilosa* (Farmers Friends), *Plantago Lancelata* (Plantain), *Verbena bonariensis* (Purpletop) & *Verbena brasiliensis*.

At times native species: *Themeda australis* (Kangaroo Grass), *Imperata cylindrica* (Blady Grass), *Cymbopogon refractus* (Barbed Wire Grass), *Eragrostis browni* (Brown's Lovegrass), *Aristida vagans* (Threeawn Speargrass) were recorded from the ground layer.

Photograph 3-7 Exotic Grassland within the development area of the study area

Photograph 3-8 Exotic Grassland within the development area of the study area

Photograph 3-9 Exotic Grassland within the development area of the study area

PCT Vegetation	Subject Site	Area m2
PCT 3244 (Forest/Woodland Variant)	Accomodation Building 1	12.6
PCT 3244 (Forest/Woodland Variant)	Accomodation Building 2	8.2
PCT 3244 (Forest/Woodland Variant)	Proposed Access	110.6
PCT 3244 (Forest/Woodland Variant)	Retained in Study Area	5044.4
PCT 3244 (Scrub Variant)	Retained in Study Area	847

151.7483° 151.7492° 151.75° 151.7508°

-32.4133°

-32.4142°

-32.415°

151.7475°

SITE: LOT 207 DP 1282787 4948 CLARENCE TOWN ROAD, TABBIL CREEK NSW 2420

0 10 20 30 40 50 60 70 80 160 Meters

nearmap

Figure 3-1
Field verified vegetation communities from the study area

Subject Property

Study Area

PCT 3244 - Lower North Spotted Gum-Mahogany-Ironbark Sheltered Forest

PCT 3244 (Forest/Woodland Variant)

PCT 3244 (Scrub Variant)

Vegetation Impact Areas

Vegetation Impact Areas

Subject Site

Accomodation Building

Garage/Carport

Irrigation Area

Main Residence

Proposed Access

NOTE: Subject Site digitised from Goe-rectified Plan Images
NOT Survey Accurate on Map
For Illustration Purposes ONLY

Base Spatial Layers - NSW State Dept Open Source
Accurate as of June 2024 GDA2020

DATE : 6/06/2024
Map Version: 1_3

Scale: 1:1,000

Google Satellite Imagery 2024

Projected Coordinate System:
Name: GDA2020 MGA Zone 56
Projection: Transverse Mercator

Although all care has been taken WiZarDTech accepts no responsibility from the use or inaccuracies of this map and spatial data.

3.3 Species of plant

Seventy-four (74) species of plant was recorded from within and adjacent to the study area, of which 54 species (72%) were native (Appendix A). The most diverse families recorded from the study area were Poaceae with 17 species (Appendix A).

3.4 Species of animal

3.4.1 Amphibians

No amphibious breeding habitats were identified within the study area.

No threatened frogs listed under the BC or EPBC Acts were identified within the study area, the habitat within the study area was not suitable for any threatened frog's species listed under both the BC & EPBC Acts.

3.4.2 Reptiles

One species of reptile: Garden Skink (*Lampropholis guichenoti*) was identified within the study area.

3.4.3 Birds

Nine species of bird were identified within the study area (Appendix B).

The vegetation within the study area provides limited foraging opportunities for birds.

The low diversity of tree and shrub species within the two vegetation communities provides limited nectar resources. Large foraging areas for bird species occur outside of the subject property to the nort-west, west and south-west.

No Glossy Black-cockatoo (*Calyptorhynchus lathami*) or Gang-gang Cockatoo (*Callocephalon fimbriatum*) feed trees (Allocasuarina sp) were identified from the study area.

There is no evidence of Owl roosts or breeding hollows within the subject site, no whitewash, or regurgitated pellets were found despite targeted surveys.

3.4.4 Mammals

Foraging habitat for mammals was low due to lack of Native floral diversity across the vegetation communities and provides limited seasonal foraging opportunities e.g. flowering trees, shrubs and groundcovers which fauna species would typically utilise on a seasonal basis.

The blossoms of the canopy trees within the study area may provide suitable foraging resources for the Grey-headed Flying-fox (*Pteropus poliocephalus*), this species was not however recorded from the study area or the study area during the site surveys. No suitable caves for threatened cave dwelling bats were recorded from the subject site. No Threatened microbats were recorded within the subject property despite targeted surveys being conducted.

No hollow-bearing trees were recorded from the subject site which would provide a suitable roosting site for hollow-dependent species e.g. microbats.

3.5 Fauna microhabitat features

3.5.1 Fauna habitat types

The suitability, size and configuration of the terrestrial fauna habitats were found to correlate broadly with the structure, floristics, connectivity and quality of the local vegetation community described above. These habitats mostly comprised of PCT 3244 - Lower North Spotted Gum-Mahogany-Ironbark Sheltered Forest.

The condition class of the habitats within PCT 3244 - Lower North Spotted Gum-Mahogany-Ironbark Sheltered Forest community was assessed as being in a low-moderate condition and provided a limited range of fauna habitat components e.g. fallen timber, feeding and roosting resources.

The condition class of the habitats from the exotic grassland were assessed as being in low condition.

3.5.2 Tree hollows

Hollows develop in *Eucalypts* when the tree is under some form of stress, heartwood decay is present and the tree is sufficiently large to persist when decayed (Gibbons and Lindenmayer 2002). As such, hollows are more likely to occur in older and larger trees; however, the abundance and size of hollows may vary within and between species.

Tree hollows typically provide den and nesting habitat for a range of common birds and arboreal mammal species (Gibbons and Lindenmayer 2002), including providing potential habitat for a number of Threatened species including microchiropteran bats and large forest owls. Whether or not tree hollows are used by animals, and which species use them, depends on a number of factors, including hollow characteristics (diameter, height, depth), the number of hollows in a tree, tree health, size, location and spacing (Gibbons and Lindenmayer 2002). Three hollow-bearing trees were recorded from the subject property all are to be retained (Figure 3-1).

3.5.3 Feeding resources

Fauna occurring in the project locality are likely to use a range of foraging resources including both native and exotic species. A number of floral feeding resources were found to be available that would provide some foraging resources for a range of fauna including many of the species of bird recorded and the Threatened Grey-headed Flying-fox.

Flora feeding resources can be divided into blossoms, fruits (casuals, berries and drupes) and seeds. The dominant families providing these resources within the study area include:

- Blossoms (nectar and pollen): Myrtaceae,
- Fruits: Euphorbiaceae, Oleaceae, Pittosporaceae, Solanaceae, Rosaceae, Verbenaceae.
- Seed: Poaceae, Myrtaceae, the diversity of species across these families provides floral feeding resources that would be available throughout each season for sedentary species. During spring and summer when floral resource availability peaks, it is likely that other migratory and more transient species also frequent the locality for foraging.

The floral resources outside of the subject site (including vegetative matter) are also likely to support a diverse community of invertebrates, which in-turn provide an addition foraging resource for insectivorous fauna (e.g. birds, small mammals and microbats).

Photograph 3-10 HBT 1 Spotted Gum (Trunk hollow 200mm)

Photograph 3-11 HBT 2Spotted Gum (Branch hollow 150mm)

Photograph 3-12 HBT 3 (Branch hollow x2 100 & 150mm)

3.6 State Environmental Planning Policy (Koala Habitat Protection) 2021

The site is located in the Dungog Local Government Area, which is listed under Schedule 1 of State Environmental Planning Policy (Koala Habitat Protection) 2021. The likelihood of the site to be 'potential koala habitat' or 'core koala habitat' was assessed. Under State Environmental Planning Policy (Koala Habitat Protection) 2021 the following definitions apply:

'Koala Development Application Map'- means the State Environmental Planning Policy (Koala Habitat Protection) 2021— Koala Development Application Map.

'Core koala habitat' –

(a) an area of land where koalas are present, or

(b) an area of land—

(i) which has been assessed by a suitably qualified and experienced person in accordance with the Guideline as being highly suitable koala habitat, and

(ii) where koalas have been recorded as being present in the previous 18 years. Koala habitat was assessed by inspecting all feed trees to identify indicative scratches on the trunk and droppings around the bases of feed trees.

The subject property is mapped on the Koala Development Application Map. The subject property form's part of Central Coast Koala Management Area (CCKMA). The SEPP applies to all zones within the Dungog LGA.

The subject property does not form part of an approved Koala plan of management.

One Koala Feed Tree *Eucalyptus teriticornis* (Forest Red Gum) listed under schedule 1 of the SEPP was recorded from the subject property. Four (4) Koala use trees listed under schedule 3 were also recorded from within the subject property.

Table 3-1 Koala trees recorded from the subject property

Species Name	Common Name
Corymbia maculata	Spotted Gum
Eucalyptus crebra	Narrow-leaved Ironbark
Eucalyptus fibrosa	Red Ironbark
Eucalyptus moluccana	Grey Box
Eucalyptus teriticornis	Forest Red Gum

During the recent site inspection on the 1st of June 2024 all trees were inspected using the Koala Assessment Technique (SAT). Despite a SAT assessment being undertaken no Koalas were observed during the fauna survey and there was no evidence of previous Koala habitation in the area.

The subject site is not considered to be 'Core Koala Habitat' as defined by SEPP.

As such the subject site is not considered to comprise Potential Koala Habitat as defined under SEPP no further assessment under this Policy is required.

3.7 Threatened biodiversity

This section details the threatened biodiversity recorded or likely to occur within the study area. This is based on those species recorded or predicted to occur within the locality from database searches (Table 2-1) and the nature of the habitats observed within the vicinity of the proposed works during field surveys (Appendices C and D).

For those species, populations and communities with a low/medium, medium or high likelihood of occurrence within the study area, an impact of significance assessment has been prepared (Appendices E & F).

3.7.1 Threatened ecological communities

Eight endangered ecological communities were identified from desktop review to occur within the locality of the subject site (Table 3-1).

Table 3-2 Endangered Ecological Communities known from the Locality

Scientific Name	Level of Threat
Central Hunter Valley eucalypt forest and woodland	Critically Endangered Ecological Community
Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and Southeast Queensland community	Endangered Ecological Community
Hunter Valley Weeping Myall (Acacia pendula) woodland	Critically Endangered Ecological Community
Lowland Rainforest of subtropical Australia	Critically Endangered Ecological Community
Lower Hunter Spotted Gum Ironbark Forest in the Sydney Basin Bioregion	Endangered Ecological Community
River-Flat Eucalypt Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and Southeast Corner Bioregions	Endangered Ecological Community
Swamp Oak Floodplain Forest of the New South Wales North Coast, Sydney Basin and Southeast Corner Bioregions	Endangered Ecological Community
Kurri Sand Swamp Woodland in the Sydney Basin Bioregion	Endangered Ecological Community

The floristic characteristics of the PCT 3244 - Lower North Spotted Gum-Mahogany-Ironbark Sheltered Forest was not commensurate with any listed endangered ecological communities under the BC or EPBC Acts.

3.7.2 Endangered populations

No threatened populations were identified from the desktop review to occur within the locality of the study area.

No endangered populations were identified within the study area despite suitable habitat being recorded from the study area.

3.7.3 Threatened Flora

Seventeen threatened species of plant listed under the *BC Act* and/or *EPBC Act* were predicted to occur within the locality of the study area based on database searches (refer Appendix B).

Based on targeted surveys within the study area none are considered to have suitable habitat within the study area. No further consideration is required for threatened flora species.

3.7.4 Threatened fauna

Thirty-four threatened fauna species were identified as a result of the database searches as occurring or having potential to occur within the locality of the study area (Appendix D).

Based on the habitat assessment and targeted surveys there is potential habitat within the subject site for seven threatened fauna species that may be impacted through the removal of foraging habitat (Appendix D). Impact assessments have been prepared for these species (Appendix E).

3.7.5 Migratory species

Migratory species are protected under the international agreement to which Australia is a signatory, including the Japan-Australia Migratory Bird Agreement, the China-Australia Migratory Bird Agreement and the Bonn Convention on the Conservation of Migratory Species of Wild Animals. Migratory species are considered Matters of National Environmental Significance and are protected under the *Environment Protection and Biodiversity Conservation Act 1999*. Seven migratory species were identified from the Department of Climate Change, Energy, the Environment and Water (Department of Climate Change, Energy, the Environment and Water 2022) within the locality (Appendix D). None were recorded during the site inspections. One migratory species was considered to have suitable habitat within the subject site despite not being identified from the locality (Table 3-4).

Table 3-3 Migratory Species considered to have suitable habitat within the subject site

Scientific Name	Common Name	EPBC Act
Birds		
Rhipidura rufifrons	Rufous Fantail	M

The subject site is not considered to be important habitat for any Migratory species in accordance with the EPBC Act.

3.8 Critical habitat

Critical habitat is listed under both the *Biodiversity Conservation Act 2016* and the *Environment Protection and Biodiversity Conservation Act 1999.* Critical habitat is the whole or any part or parts of an area or areas of land comprising the habitat of an endangered species, an endangered population or an endangered ecological community that is critical to the survival of the species, population or ecological community (Department of Environment and Conservation 2004).

The Directors-Generals of both the State and Federal departments of environment (Department of Environment and Climate Change and the Department of the Environment, Water, Heritage and the Arts respectively) maintain a register of critical habitat. Habitat that is not listed on this register, however consistent with the definition above, may also be considered as critical habitat.

No listed critical habitat occurs within the study area and no critical habitat is likely to be affected by the proposal.

4. Impacts

The following discussion presents an assessment of the potential impacts of the proposal on biodiversity within the subject site.

4.1 Development or activity "likely to significantly affect threatened species"

(1) For the purposes of this Part, development or an activity is *likely to 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

Significance assessments were carried out for threatened species, populations or communities listed under the *BC Act* that were known or predicted to occur in the project locality (10 kilometres from the study area) and that had a moderate to high likelihood of occurring within the study site based on suitable habitat or observation in the field.

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

The proposal will not result in clearing of native vegetation beyond the designated threshold of 1ha or 10000m2.

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

The Subject property has not been mapped as containing biodiversity value within the Biodiversity Value Map (NSW DoPE 2024).

4.2 Impacts on threatened species, endangered populations and endangered ecological communities

Seven threatened fauna species listed under the *BC Act* and/ or the *EPBC Act* were recorded, predicted to occur, or have habitat within the vicinity (10 km radius) of the study area. Impact assessments have been prepared for these species which has concluded that the proposal is not likely to have a significant impact upon threatened species, endangered populations or endangered ecological communities (Appendices E & F).

4.3 Key threatening processes

Key Threatening Process under the *Biodiversity Conservation Act 2016* (NSW National Parks and Wildlife Service 2003) that are likely to further increase within the subject site are:

- Clearing of native vegetation
- Invasion of native plant communities by exotic perennial grasses.
- Infection of native plants by *Phytophthora cinnamomi* - key threatening process listing. The proposal has potential to introduce or spread *Phytophthora cinnamomi* within the development area and into adjacent bushland. Mitigation measures are to be implemented to prevent spread of *Phytophthora cinnamomi*. Mitigation measures have been put in place to reduce the chance of infection of *Phytophthora cinnamomi* into the subject site.
- Human Caused Climate Change.

4.4 Mitigation measures

4.4.1 Animal welfare

Animal injury has potential to occur throughout various construction operations. In the event that any sick, injured or orphaned native animals are located during construction, WIRES should be contacted to assist in capture, handling and welfare of the animal (contact No: 13000 WIRES or 1300 094 737).

A suitably qualified ecologist or wildlife handler should be on site during clearing of vegetation associated with the future dwelling & creation of the asset protection zone. The qualified Ecologist is to hold a scientific licence issued by the NSW Office of Environment & Heritage and a current Animal Ethics licence issued by the Department of Industries and Investment.

Where possible, dead wood should be salvaged from felled trees and placed into retained vegetation within the study area.

4.4.2 Truck and machine wash down areas

Vehicles and other equipment to be used in future construction works clearing within the subject site and general construction equipment (such as excavators etc) are to be received completely free of soil, seeds and plant material before entering the site to prevent the introduction of exotic plant species and pathogens, equipment failing inspection should be sent away for cleaning. Appropriate records of inspections shall be maintained.

Build-up of mud, soil and organic matter present on vehicles during wet and muddy conditions shall be manually removed prior to vehicles entering/leaving the construction site.

Works and vehicular movements shall cease if wet and muddy conditions develop/persist during construction zone clearing to limit the movement of soil and organic matter onto, through and from the study area, minimising the potential for the spread of weeds.

5. Significance Assessments

5.1 Background to the Five Part Test

No threatened flora is considered likely to be impacted upon as a result of the proposed development therefore no Significance assessments are considered to be required for those species identified as containing suitable habitat within the subject site (Table 5-1).

The proposed development will not likely result in a significant impact to any threatened species of plant or animal or any listed endangered ecological communities (Table 5-1).

Table 5-1 Suitable habitat (Fauna) from the subject site

Species Name		Conservation Status		Likely to be significantly affected
		State [1]	National [2]	
Threatened Fauna				
Bird				
Lathamus discolor	Swift Parrot	V	V	No
Mammals				
Chalinolobus dwyeri	Large-eared Pied Bat	V	V	No
Falsistrellus tasmaniensis	Eastern False Pipistrelle	V		No
Miniopterus schreibersii		V		No
Miniopterus australis	Little Bent-wing Bat	V		No
Pteropus poliocephalus	Grey-headed Flying-fox	V	V	No
Mormopterus norfolkensis	Eastern Freetail-bat	V		No

Notes:

1. State conservation status: V= Vulnerable, E1 = Endangered, (*Biodiversity Conservation Act 2016* and *Fisheries Management Act 1994*). * Indicates species listed under the *Fisheries Management Act 1994.*

2. National conservation status: V = Vulnerable, (*Environment Protection and Biodiversity Conservation Act 1999*)

6. Conclusions

The development would likely result in the removal/modification of 130m2 or 0.013ha of PCT 3244 - Lower North Spotted Gum-Mahogany-Ironbark Sheltered Forest.

Targeted surveys did not identify any threatened flora, endangered ecological communities; endangered populations listed under the *BC Act* or the *EPBC Acts* within the subject site.

The proposal does not exceed the clearing of 10000m2 or 1ha of the native vegetation as such the proposal does not trigger entry into the NSW Biodiversity offset scheme (BOS) as such no biodiversity development assessment report (BDAR) is deemed necessary in this instance.

Bushfire APZ management works within PCT 3244 community would be limited to the selective tree removal and the management of invasive ground weeds.

The subject site was identified as containing sub-optimal foraging habitat for seven threatened fauna species the majority of these being microbats. Significance assessments were undertaken for these Threatened fauna species and the EEC. These assessments concluded that the proposal was unlikely to have a significant impact on these species. This was based on the following criteria:

- Retention of majority of threatened fauna habitat within the subject property
- relatively small size of foraging habitat to be removed as part of the proposal
- larger areas of better-quality vegetation were noted at the time of the survey to the north-east, east, and south-east of the subject site and within reserves and retained elsewhere within the study area.
- all species are all highly mobile and would utilise vegetation within the locality and not the subject site exclusively

As such, the project is unlikely to have a significant impact on the ecological features of the local area.

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Appendix A

Species of flora recorded

Table 7-1 Flora species recorded within the subject property

Family Name	Scientific Name	Common Name	Native
Adiantaceae			
	Cheilanthes sieberi	Mulga Fern	Y
Araceae			
	Gymnostachys anceps	Settler's Flax	Y
Asclepiadaceae			
	Gomphocarpus fruticosus	Narrow-leaved Cotton Bush	N
Asteraceae			
	Ageratina adenophora	Crofton Weed	N
	Bidens pilosa	Cobbler's Pegs	N
	Senecio madagascariensis	Fireweed	N
	Sonchus asper	Prickly Sowthistle	N
	Sonchus oleraceus	Common Sowthistle	N
Blechnaceae			
	Doodia aspera	Prickly Rasp Fern	Y
Commelinaceae			
	Commelina cyanea	Native Wandering Jew	Y
Convolvulaceae			
	Dichondra repens	Kidney Weed	Y
	Dichondra sp.		Y
Cyperaceae			
	Carex appressa	Tussock Sedge	Y
	Carex breviculmis		Y
	Cyperus eragrostis	Umbrella Sedge	N
Dennstaedtiaceae			
	Pteridium esculentum	Bracken	Y
Dilleniaceae			
	Hibbertia diffusa		Y
Epacridaceae			
	Acrotriche divaricata		Y
	Leucopogon lanceolatus	Lance Beard Heath	Y
Euphorbiaceae			
	Glochidion ferdinandi	Cheese Tree	Y
Fabaceae (Caesalpinioideae)			
	Senna pendula		N
Fabaceae (Faboideae)			
	Daviesia ulicifolia	Gorse Bitter Pea	Y
	Desmodium rhytidophyllum		Y
	Podolobium ilicifolium	Prickly Shaggy Pea	Y
Fabaceae (Mimosoideae)			
	Acacia brownii	Heath Wattle	Y
	Acacia falcata		Y
	Acacia floribunda	White Sally	Y
	Acacia longifolia	Sydney Golden Wattle	Y
	Acacia longissima	Narrow-leaved Wattle	Y
	Acacia ulicifolia	Prickly Moses	Y
Lobeliaceae			
	Pratia purpurascens	Whiteroot	Y
Lomandraceae			
	Lomandra multiflora		Y
Luzuriagaceae			
	Geitonoplesium cymosum	Scrambling Lily	Y
Malvaceae			
	Sida corrugata	Vaiable Sida	Y
	Sida rhombifolia	Paddy's Lucerne	N

Family Name	Scientific Name	Common Name	Native
Myrtaceae			
	Corymbia maculata		Y
	Eucalyptus crebra	Narrow-leaved Ironbark	Y
	Eucalyptus fibrosa	Red Ironbark	Y
	Eucalyptus paniculata	Grey Ironbark	Y
	Eucalyptus tereticornis	Forest Red Gum	Y
Oleaceae			
	Olea europaea ssp. cuspidata		N
Phormiaceae			
	Dianella caerulea		Y
Pittosporaceae			
	Bursaria spinosa	Native Blackthorn	Y
	Pittosporum undulatum	Sweet Pittosporum	Y
Plantaginaceae			
	Plantago lanceolata	Lamb's Tongues	N
Poaceae			
	Andropogon virginicus	Whisky Grass	N
	Aristida ramosa		Y
	Aristida vagans	Threeawn Speargrass	Y
	Austrostipa pubescens		Y
	Chloris gayana	Rhodes Grass	N
	Cymbopogon refractus	Barbed Wire Grass	Y
	Cynodon dactylon	Common Couch	Y
	Echinopogon caespitosus		Y
	Entolasia marginata	Bordered Panic	Y
	Entolasia stricta	Wiry Panic	Y
	Imperata cylindrica	Bladey Grass	Y
	Oplismenus aemulus		Y
	Oplismenus imbecillis		Y
	Panicum simile	Two-colour Panic	Y
	Pennisetum clandestinum	Kikuyu Grass	N
	Poa labillardierei var. labillardierei	Tussock	Y
	Setaria gracilis	Slender Pigeon Grass	N
	Themeda australis	Kangaroo Grass	Y
Polygonaceae			
	Rumex conglomeratus	Clustered Dock	N
Ranunculaceae			
	Clematis aristata		Y
	Ranunculus sessiliflorus		Y
Rubiaceae			
	Pomax umbellata		Y
Solanaceae			
	Solanum mauritianum	Wild Tobacco Bush	N
Verbenaceae			
	Clerodendrum tomentosum		Y
	Lantana camara	Lantana	N
	Verbena bonariensis	Purpletop	N
	Verbena brasiliensis		N
	Verbena rigida	Veined Verbena	N
Violaceae			
	Viola hederacea	Ivy-leaved Violet	Y

Appendix B

Species of animal recorded

Table 7-2 Fauna species recorded during surveys

Family Name	Common Name	Scientific Name	Observation Type
Reptiles			
Scincidae	Garden Skink	*Lampropholis guichenoti*	O
Birds			
Artamidae	Australian Magpie	*Gymnorhina tibicen*	O, C
Artamidae	Pied Butcherbird	*Cracticus nigrogularis*	O
Cacatuidae	Galah	*Cacatua roseicapilla*	O, C
Cacatuidae	Sulphur-crested Cockatoo	*Cacatua galerita*	O, C
Dicruridae	Magpie-lark	*Grallina cyanoleuca*	O, C
Halcyonidae	Laughing Kookaburra	*Dacelo novaeguineae*	O,
Meliphagidae	Noisy Miner	*Manorina melanocephala*	O
Psittacidae	Crimson Rosella	*Platycercus elegans*	O
Psittacidae	Rainbow Lorikeet	*Trichoglossus haematodus*	O, C

Key:

A - Anabat II	C	-	Call Identification
D - Diggings	Sk	-	Skin
E - Elliot Trap	Fl	-	Flying over study area
O - Observation	P	-	Call Playback Response
F - Feather	S	-	Habitat Search
Sp - Spotlight	Sc	-	Scat, Track

Appendix C

Threatened flora species recorded in the locality

Appendix C Threatened Flora species recorded in the locality

This appendix details the Threatened species of plant that have either been recorded in the local area based on records the Bionet *Atlas of NSW Wildlife* Office of Environment & Heritage, 2024, data received 6th of June 2024 and records from the Royal Botanical Gardens. Threatened species with habitat likely to occur in the locality were also considered based on records from the *EPBC Protected Matters Search Tool* epartment of Climate Change, Energy, the Environment and Water 2024, data received 6th of June 2024.

Table 7-3 Threatened flora species recorded in the locality

Family Name	Scientific Name	Common Name	BC Act1	EPBC Act3	ROTAP	Habitat	Likelihood of occurrence within the study area
Asclepiadaceae	*Cynanchum elegans*	White-flowered Wax Plant	E1	E	3Ei	Occurs from the Gloucester district to the Wollongong area and inland to Mt Dangar where it grows in rainforest gullies, scrub and scree slopes {Harden, 1992 #3}. This species typically occurs at the ecotone between dry subtropical forest/woodland communities {NSW National Parks and Wildlife Service, 2002 #70; James, 1997 #69}.	**Low** No suitable habitat was recorded from the subject site for this species.
Asclepiadaceae	*Tylophora woollsii*	Cryptic Forest Twiner	E1	E	2E	Occurs in the Clouds Creek area near Nymboida where it grows in wet sclerophyll forest, moist areas of dry sclerophyll forest and rainforest. Also occurs near Parramatta where it grows in dry sclerophyll forest {Harden, 1992 #3; NSW National Parks and Wildlife Service, 2002 #93}.	**Low** No suitable habitat was recorded from the subject site for this species.
Haloragaceae	*Haloragis exalata ssp. exalata*		V	V	3Va	Found in the south coast, central coast and northwest slopes botanical regions where it appears to require protected and shaded damp situations in riparian habitats {Harden, 2002 #5; Department of Environment and Climate Change, 2008 #1913}.	**Low** No suitable habitat was recorded from the subject site for this species.
Myrtaceae	*Eucalyptus glaucina*	Slaty Red Gum	V	V	3Va	Occurs from Taree to Broke where it is locally frequent but very sporadic and grows in grassy woodland on deep, moderately fertile and well-watered soil {Harden, 2002 #5}. Endemic on low coastal ranges and tablelands of central NSW, Taree to Broke, also near Casino {Brooker, 1999 #355}.	**Low** A targeted survey was undertaken for this species; despite this no individuals of this species were recorded within the site.
Myrtaceae	*Eucalyptus largeana*	Craven Grey Box	CE	CE	3R	Restricted and local, in wet forest on sloping sites in subcoastal ranges; confined to Gloucester-Craven district and near Pokolbin.	**Low** A targeted survey was undertaken for this species; despite this no individuals of this species were recorded within the site.

Family Name	Scientific Name	Common Name	BC Act1	EPBC Act3	ROTAP	Habitat	Likelihood of occurrence within the study area
Myrtaceae	*Rhodamnia rubescens*	Scrub Turpentine	CE	CE		Found in littoral, warm temperate and subtropical rainforest and wet sclerophyll forest usually on volcanic and sedimentary soils. This species is characterised as highly to extremely susceptible to infection by Myrtle Rust. Myrtle Rust affects all plant parts.	**Low** A targeted survey was undertaken for this species; despite this no individuals of this species were recorded within the site.
Myrtaceae	*Rhodomyrtus psidioides*	Native Guava	CE	CE		Rhodomyrtus psidioides, the native guava, is a shrub or small rainforest tree up to 12 m (39 ft) high, member of the botanical family Myrtaceae, native to eastern Australia	**Low** A targeted survey was undertaken for this species; despite this no individuals of this species were recorded within the site.
Myrtaceae	*Syzygium paniculatum*	Magenta Lilly Pilly	V	V	3Ri	Occurs between Buladelah and St Georges Basin where it grows in subtropical and littoral rainforest on sandy soils or stabilized dunes near the sea {Harden, 2002 #5}. On the south coast the Magenta Lilly Pilly occurs on grey soils over sandstone, restricted mainly to remnant stands of littoral (coastal) rainforest. On the central coast Magenta Lilly Pilly occurs on gravels, sands, silts and clays in riverside gallery rainforests and remnant littoral rainforest communities {Department of Environment and Climate Change, 2008 #1913}.	**Low** No suitable habitat was recorded from the subject site for this species.
Orchidaceae	*Cryptostylis hunteriana*	Leafless Tongue Orchid	V	V	3V	Occurs south from the Gibraltar Range, chiefly in coastal districts but also extends on to tablelands. Grows in swamp-heath and drier forest on sandy soils on granite & sandstone. Occurs in small, localised colonies most often on the flat plains close to the coast but also known from some mountainous areas growing in moist depressions and swampy habitats {Harden, 1993 #4; NSW National Parks and Wildlife Service, 1999 #502}.	**Low** No suitable habitat was recorded from the subject site for this species.
Orchidaceae	*Rhizanthella slateri*	Eastern Australian Underground Orchid	V	E	3K	Highly cryptic as only the flowers may occur above ground. It is more frequent in areas of soil disturbance, but further habitat characteristics or associated vegetation types are poorly known, possibly occuring in sclerophyll forests (Department of Environment and Climate Change 2008).	**Low** A targeted survey was undertaken for this species; despite this no individuals of this species were

Family Name	Scientific Name	Common Name	BC Act1	EPBC Act3	ROTAP	Habitat	Likelihood of occurrence within the study area
							recorded within the site.
Poaceae	*Arthraxon hispidus*	Hairy Joint Grass	V	V	3V	Occurs north from Gibraltar Range where it grows on the edges of rainforest and in wet sclerophyll forest. It prefers moist shady sites and is often found near creeks or swamps {Harden, 1993 #4; NSW National Parks and Wildlife Service, 2002 #93}.	**Low** A targeted survey was undertaken for this species; despite this no individuals of this species were recorded within the site.
Poaceae	*Dichanthium setosum*		V	V		Grows in woodland and grassland {Harden, 1993 #4}. On the New England Tablelands and Northwest Slopes, it grows on stony red-brown hard-setting soils over basalt, or on black soil {Department of Environment and Conservation, 2006 #1093}.	**Low** A targeted survey was undertaken for this species; despite this no individuals of this species were recorded within the site.
Polygonaceae	*Persicaria elatior*	Tall Knotweed	V	V	3V	Occurs infrequently in coastal regions where it grows in damp places especially beside streams and lakes. Also occasionally occurs in swamp forest or associated with disturbance {Department of Environment and Conservation, 2005 #762; Harden, 2000 #2}.	**Low** A targeted survey was undertaken for this species; despite this no individuals of this species were recorded within the site.
Rubiaceae	*Asperula asthenes*	Trailing Woodruff	V	V	3V	This small herb occurs only in NSW in scattered locations from Bulahdelah north to near Kempsey, with several records from the Port Stephens/Wallis Lakes area. It grows in damp sites, often along riverbanks {Department of Environment and Conservation, 2005 #762; Harden, 1992 #3}.	**Low** A targeted survey was undertaken for this species; despite this no individuals of this species were recorded within the site.
Santalaceae	*Thesium australe*	Austral Toadflax	V	V	3Vi	Grows in grassland or woodland often in damp sites. It is a semi-parasitic herb, and hosts are likely to be Themeda australis and Poa spp. {Harden, 1992 #3; Department of Environment and Climate Change,	**Low** A targeted survey was undertaken

Family Name	Scientific Name	Common Name	BC Act1	EPBC Act3	ROTAP	Habitat	Likelihood of occurrence within the study area
						2008 #1913}.	for this species; despite this no individuals of this species were recorded within the site.
Scrophulariaceae	*Euphrasia arguta*		E4	X	3X	Grows in grassy areas near rivers, recorded from Bathurst to Walcha area (possibly extinct) (NC, NT, CT, NWS, CWS botanical subdivisions) {Royal Botanic Gardens, 2005 #404}	**Low** A targeted survey was undertaken for this species; despite this no individuals of this species were recorded within the site.

1) V= Vulnerable, E1 = Endangered (BC Act) E2= Endangered Population **2)** ROTAP (Rare or Threatened Australian Plants, Briggs and Leigh 1996) is a conservation rating for Australian plants. 1 = Species only known from one collection. 2 = Species with a geographic range of less than 100km in Australia. 3 = Species with a geographic range of more than 100km in Australia, X = Species presumed extinct; no new collections for at least 50 years. E = Endangered species at risk of disappearing from the wild state if present land use and other causal factors continue to operate, V = Vulnerable species at risk of long-term disappearance through continued depletion. R = Rare, but not currently considered to be endangered. K = Poorly known species that are suspected to be threatened. C = Known to be represented within a conserved area. a = At least 1,000 plants are known to occur within a conservation reserve(s). i = Less than 1,000 plants are known to occur within a conservation reserve(s). The reserved population size is unknown. t = The total known population is reserved. + = The species has a natural occurrence overseas. **3)** V = Vulnerable, E = Endangered *(Environment Protection and Biodiversity Conservation Act 1999*).

Appendix D

Threatened fauna species recorded in the locality

Appendix D Threatened Fauna species recorded in the locality

This appendix details the Threatened species of plant that have either been recorded in the local area based on records the *Atlas of NSW Wildlife* Department of Environment & Heritage, 2024, data received 6th of June 2024 and records from the Royal Botanical Gardens. Threatened species with habitat likely to occur in the locality were also considered based on records from the *EPBC Protected Matters Search Tool* Department of Climate Change, Energy, the Environment and Water 2024, data received 6th of June 2024.

Table 7-4 Threatened fauna species recorded in the locality

Scientific Name	Common Name	BC Act	EPBC Act	Habitat	Likelihood of occurrence within the Subject site
Amphibians					
Litoria aurea	Green and Golden Bell Frog	E1	V	Has a fragmented distribution of mainly near coastal locations from Lakes Entrance (Victoria) to south of the NSW-Queensland border; as far west as Bathurst in the more elevated southern tablelands and central slopes of NSW. Various types of habitats utilised has been documented. For breeding utilises a wide range of waterbodies, including both natural and man-made structures, such as marshes, dams and stream sides, and ephemeral locations that are more often dry than wet. Is found in various small pockets of habitat in otherwise developed areas and has the tendency of often turning up in highly disturbed sites. Lotic situations such as fast flowing streams appear to be one of the few water bodies not utilised, at least for breeding purposes. Habitat attributes associated with the various waterbodies occupied by the GGBF, and that appear to make such habitat more likely to be occupied, include that the water body is shallow, still or slow flowing, ephemeral and/or widely fluctuating, unpolluted and without heavy shading. Permanent waterbodies are also known to be used and there is historical evidence of occupation of large, often deep and permanent bodies of water. There is a clear preference shown by GGBF for sites with a complexity of vegetation structure and associated terrestrial habitat attributes that appear to favour the species include extensive grassy areas and an abundance of shelter sites such as rocks, logs, tussock forming vegetation and other cover, considered to be used for foraging and shelter. Over-wintering sites may be adjacent to or some distance away from breeding sites; such sites include the bases of dense vegetation tussocks, beneath rocks, timber, within logs or beneath ground debris, including human refuse such as sheet iron, but the full range of possible habitat used for this purpose is not yet well understood {Department of Environment and Conservation, 2004 #397; Department of Environment and Conservation, 2005 #398} .	**Low** No suitable habitat was recorded from the subject site for this species.
Mixophyes balbus	Stuttering Frog	E1	V	Terrestrial species, found in rainforest, Antarctic beech forest or wet sclerophyll forest. The species depends on freshwater streams and riparian vegetation for breeding and habitation. No records are known from riparian habitat that has been disturbed {NSW Scientific Committee, 2003 #58; Cogger, 2000 #20}.	**Low** No suitable habitat was recorded from the subject site for this species.
Mixophyes iteratus	Giant Barred Frog	E1	E	Terrestrial species which occurs in rainforests, antarctic beech or wet sclerophyll forests. Feeds on insects and smaller frogs {Cogger, 2000 #20}. The species is associated with permanent flowing drainages, from shallow rocky rainforest streams to slow-moving rivers in lowland open forest. It is not known to utilise still water areas {NSW Scientific	**Low** No suitable habitat was recorded from the subject site for

				Committee, 1999, #48}. More prevalent at lower altitudes and in larger streams than its congeners, although has been recorded up to 1000 metres asl. {NSW National Parks and Wildlife Service, 1999 #502}.	this species.
Birds					
Botaurus poiciloptilus	Australasian Bittern	V		Occurs in shallow, vegetated freshwater or brackish swamps. Requires permanent wetlands with tall dense vegetation, particularly bulrushes and spikerushes. When breeding, pairs are found in areas with a mixture of tall and short sedges but will also feed in more open territory. {Garnett, 2000 #21; NSW National Parks and Wildlife Service, 2002 #320}.	**Low** No suitable habitat was recorded from the subject site for this species.
Calidris acuminata	Sharp-tailed Sandpiper		M	Occurs in a varitey of habitats: tiadal mudflat, mangrove swamps, saltmarshes, shallow fresh, brackish, salt inland swamps and lakes; flooded and irrigated paddocks, sewage farms and commercial saltfields {Pizzey, 1997 #24}.	**Low** No suitable habitat was recorded from the subject site for this species.
Calidris ferruginea	Curlew Sandpiper		M	Occurs in inter-tidal mudflats of estuaries, lagoons, mangrove channels and also around lakes, dams, floodwaters and flooded saltbush surrounding inland lakes {Morcombe, 2003 #992}.	**Low** No suitable habitat was recorded from the subject site for this species.
Callocephalon fimbriatum	Gang-gang Cockatoo	V		Occurs in wetter forests and woodland from sea level to an altitude over 2000 metres, timbered foothills and valleys, coastal scrubs, farmlands and suburban gardens {Pizzey, 1997 #24}.	**Low** No suitable habitat was recorded from the subject site for this species.
Calyptorhynchus lathami	Glossy Black-Cockatoo	V		Occurs in eucalypt woodland and forest with Casuarina/Allocasuarina spp. Characteristically inhabits forests on sites with low soil nutrient status, reflecting the distribution of key Allocasuarina species. The drier forest types with intact and less rugged landscapes are preferred by the species. Nests in tree hollows {Garnett, 2000 #21; NSW National Parks and Wildlife Service, 1999 #55}.	**Low** No suitable habitat was recorded from the subject site for this species.
Climacteris picumnus	Brown Treecreeper	V		Occurs in eucalypt woodland and adjoining vegetation. Feeds on ants, beetles and larvae on trees and from fallen timber and leaf litter. Usually nests in hollows {Garnett, 2000 #21}.	**Low** A targeted survey was undertaken for this species which failed to detect this species within the subject site.
Daphoenositta chrysoptera	Varied Sittella	V		Inhabits eucalypt forests and woodlands, especially those containing rough-barked species and mature smooth-barked gums with dead branches, mallee and Acacia woodland. 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.	**Low** A targeted survey was undertaken for this species which failed to detect this species within the subject site.
Erythrotriorchis radiatus	Red Goshawk	E1	VM	Lives in coastal and sub-coastal tall open forests and woodlands, tropical savannas traversed by wooded or forested rivers and along edges of rainforest. Nests are only built in trees taller than 20 meters which occur	**Low** No suitable habitat

				within 1 kilometre of a watercourse or wetland. Has a home range of 200 square kilometres and hunts for medium to large birds in open forests and gallery forest {Garnett, 2000 #21}.	was recorded from the subject site for this species.
Falco hypoleucos	Grey Falcon	V		Generally centred on inland drainage systems where the average rainfall is less than 500 millimetres. It is found in timbered lowland plains that are crossed by tree-lined water courses. Nests in the old nests of other birds, particularly raptors {Garnett, 2000 #21}.	**Low** No suitable habitat was recorded from the subject site for this species.
Gallinago hardwickii	Latham's Snipe		M	Occurs in freshwater or brackish wetlands generally near protective vegetation cover. This species feeds on small invertebrates, seeds and vegetation. It migrates to the northern hemisphere to breed {Garnett, 2000 #21}.	**Low** No suitable habitat was recorded from the subject site for this species.
Grantiella picta	Painted Honeyeater	V		Lives in dry forests and woodlands. Primary food is the mistletoes in the genus Amyema, though it will take some nectar and insects. Its breeding distribution is dictated by presence of mistletoes which are largely restricted to older trees. Less likely to be found in in strips of remnant box-ironbark woodlands, such as occur along roadsides and in windbreaks, than in wider blocks {Garnett, 2000 #21}.	**Low** No suitable habitat was recorded from the subject site for this species.
Hirundapus caudacutus	White-throated Needletail		M	Occurs in airspace over forests, woodlands, farmlands, plains, lakes, coasts and towns. Breeds in the northern hemisphere and migrates to Australia in October-April {Pizzey, 1997 #24}.	**Low** No suitable habitat was recorded from the subject site for this species.
Lathamus discolor	Swift Parrot	E1	E	Breeding occurs in Tasmania, majority migrates to mainland Australia in autumn, over-wintering, particularly in Victoria and central and eastern NSW, but also south-eastern Queensland as far north as Duaringa. Until recently it was believed that in New South Wales, swift parrots forage mostly in the western slope's region along the inland slopes of the Great Dividing Range but are patchily distributed along the north and south coasts including the Sydney region, but new evidence indicates that the forests on the coastal plains from southern to northern NSW are also extremely important. In mainland Australia is semi-nomadic, foraging in flowering eucalypts in eucalypt associations, particularly box-ironbark forests and woodlands. Preference for sites with highly fertile soils where large trees have high nectar production, including along drainage lines and isolated rural or urban remnants, and for sites with flowering Acacia pycnantha, is indicated. Sites used vary from year to year. {Garnett, 2000 #21}, {Swift Parrot Recovery Team, 2001 #396}.	**Low** Sub-optimal foraging habitat for this species was recorded from the subject site. An Impact Assessment has been prepared for this species (Appendix E).
Ninox strenua	Powerful Owl	V		A sedentary species with a home range of approximately 1000 hectares it occurs within open eucalypt, casuarina or callitris pine forest and woodland. It often roosts in denser vegetation including rainforest of exotic pine plantations. Generally, feeds on medium-sized mammals such as possums and gliders but will also eat birds, flying-foxes, rats and insects. Prey are generally hollow dwelling and require a shrub layer and owls are more often found in areas with more old trees and hollows than average stands (Garnett and Crowley 2000).	**Low/Medium** A targeted survey was undertaken for this species which failed to detect this species within the subject site.
Numenius madagascariensis	Eastern Curlew		M	Inhabits coastal estuaries, mangroves, mud flats and sand pits. It is a migratory shorebird which generally inhabits sea and lake shore mud flats, deltas and similar areas, where it forages for crabs and other crustaceans, clam worms and other annelids, molluscs, insects and whatever else it can dig out of the mud with its long, downward-turned bill. Its migration route	**Low** No suitable habitat was recorded from the subject site for

				ranges from its wintering grounds in Australia to its breeding grounds in northern China, Korea and Russia {Pizzey, 1997 #24}.	this species.
Ptilinopus magnificus	Wompoo Fruit-Dove	V		Occurs in rainforests, monsoon forests, adjacent eucalypt forests, fruiting trees on scrubby creeks or in open country {Garnett, 2000 #21}.	**Low** No suitable habitat was recorded from the subject site for this species.
Rostratula benghalensis	Painted Snipe	E1	VM	Inhabits shallow, vegetated, temporary or infrequently filled wetlands, including where there are trees such as Eucalyptus camaldulensis (River Red Gum), E. populnea (Poplar Box) or shrubs such as Muehlenbeckia florulenta (Lignum) or Sarcocornia quinqueflora (Samphire). Feeds at the water's edge and on mudlflats on seeds and invertebrates, including insects, worms, molluscs and crustaceans. Males incubate eggs in a shallow scrape nest {Garnett, 2000 #21}.	**Low** No suitable habitat was recorded from the subject site for this species.
Stagonopleura guttata	Diamond Firetail	V		Occurs in a range of eucalypt dominated communities with a grassy understorey including woodland, forest and mallee. Most populations occur on the inland slopes of the dividing range. Feed on seeds, mostly of grasses {Garnett, 2000 #21}.	**Low** A targeted survey was undertaken for this species which failed to detect this species within the subject site.
Xanthomyza phrygia	Regent Honeyeater	E1	EM	Occurs mostly in box-ironbark forests and woodland and prefers the wet, fertile sites such as along creek flats, broad river valleys and foothills. Riparian forests with Casuarina cunninghamiana and Amyema cambagei are important for feeding and breeding. Important food trees include Eucalyptus sideroxylon (Mugga Ironbark), E. albens (White Box), E. melliodora (Yellow Box) and E. leucoxylon (Yellow Gum) {Garnett, 2000 #21}.	**Low** A targeted survey was undertaken for this species which failed to detect this species within the subject site.
Mammals					
Chalinolobus dwyeri	Large-eared Pied Bat	V	V	Occurs in moderately wooded habitats and roosts in caves, mine tunnels and the abandoned, bottle-shaped mud nests of Fairy Martins. Thought to forage below the forest canopy for small flying insects {Churchill, 1998 #26}.	**Low** Sub-optimal foraging habitat for this species was recorded from the subject site. An Impact Assessment has been prepared for this species (Appendix E).
Dasyurus maculatus	Spotted-tailed Quoll	V	E	Occurs from the Bundaberg area in south-east Queensland, south through NSW to western Victoria and Tasmania. In NSW, it occurs on both sides of the Great Dividing Range and north-east NSW represents a national stronghold {NSW National Parks and Wildlife Service, 1999 #502}. Occurs in wide range of forest types, although appears to prefer moist sclerophyll and rainforest forest types, and riparian habitat. Most common in large unfragmented patches of forest. It has also been recorded from dry sclerophyll forest, open woodland and coastal heathland, and despite its occurrence in riparian areas, it also ranges over dry ridges. Nests in rock caves and hollow logs or trees. Feeds on a variety of prey including birds,	**Low** No suitable habitat was recorded from the subject site for this species.

				terrestrial and arboreal mammals, small macropods, reptiles and arthropods {NSW National Parks and Wildlife Service, 1999 #27; NSW National Parks and Wildlife Service, 1999 #502}.	
Macropus parma	Parma Wallaby	V		Now extinct south of Gosford and confined to high rainfall areas in the coast and ranges of central and northern NSW; from the Watagan Mountains to the Richmond and Border Ranges area, with the Washpool - Gibraltar Range and Bulga - Dingo Tops areas being areas of greatest importance. Occurs in wet sclerophyll forest and rainforest patches in moist sclerophyll forest, with a moist shrubby understorey, often associated with grassy areas. They are occasionally found in dry sclerophyll forest and rainforest edges are considered important refugia. Ecotones between open and closed forest are favoured, open areas are used for foraging, while areas of dense ground cover provide areas for shelter and protection from predators {NSW National Parks and Wildlife Service, 1999 #502}.	**Low** No suitable habitat was recorded from the subject site for this species.
Petaurus australis	Yellow-bellied Glider	V		Restricted to tall, mature eucalypt forest in high rainfall areas of temperate to sub-tropical eastern Australia. Feeds on nectar, pollen, the sap of eucalypts and sometimes insects. Preferred habitats are productive, tall open sclerophyll forests where mature trees provide helter and nesting hollows and year-round food resources are available from a mixture of eucalypt species {NSW National Parks and Wildlife Service, 1999 #44; NSW National Parks and Wildlife Service, 2003 #45}.	**Low** No suitable habitat was recorded from the subject site for this species.
Miniopterus australis	Little Bent-wing Bat	V		Feeds on small insects beneath the canopy of well-timbered habitats including rainforest, Melaleuca swamps and dry sclerophyll forests. Roosts in caves and tunnels and has specific requirements for nursery sites. Distribution becomes coastal towards the southern limit of its range in NSW. Nesting sites are in areas where limestone mining is preferred {Strahan, 1995 #185}.	**Low** Sub-optimal foraging habitat for this species was recorded from the subject site. An Impact Assessment has been prepared for this species (Appendix E).
Miniopterus schreibersii	Eastern Bent-wing Bat	V	C	Usually found in well-timbered valleys where it forages on small insects above the canopy. Roosts in caves, old mines, stormwater channels and sometimes buildings and often return to a particular nursery cave each year {Churchill, 1998 #26}.	**Low** Sub-optimal foraging habitat for this species was recorded from the subject site. An Impact Assessment has been prepared for this species (Appendix E).
Mormopterus norfolkensis	Eastern Freetail-bat	V		Thought to live in sclerophyll forest and woodland. Small colonies have been found in tree hollows or under loose bark. It feeds on insects above the forest canopy or in clearings at the forest edge {Churchill, 1998 #26}.	**Low** Sub-optimal foraging habitat for this species was recorded from the subject site. An Impact Assessment has been prepared for this species

					(Appendix E).
Myotis adversus	Large-footed Myotis	V		Colonies occur in caves, mines, tunnels, under bridges and buildings. Colonies always occur close to bodies of water where this species feeds on aquatic insects {Churchill, 1998 #26}.	**Low** No suitable habitat was recorded from the subject site for this species.
Petauroides volans	Greater Glider	V		The Greater Glider inhabits Eucalytus forests and woodlands as this species feeds excusively on Eucalyptus buds and leaves. They occupy tree hollows in the day and tree canopies at night (Department of Environment and Climate Change 2007).	**Low** No suitable habitat was recorded from the subject site for this species.
Petaurus norfolcensis	Squirrel Glider	V		Found in dry sclerophyll forest and woodland but not found in dense coastal ranges. Nests in hollows and feeds on gum of acacias, eucalypt sap and invertebrates {NSW National Parks and Wildlife Service, 1999 #39}.	**Low** No suitable habitat was recorded from the subject site for this species.
Petrogale penicillata	Brush-tailed Rock-wallaby	E1	V	Occurs in inland and sub-coastal southeastern Australia where it inhabits rock slopes. It has a preference for rocks which receive sunlight for a considerable part of the day. Windblown caves, rock cracks or tumbled boulders are used for shelter. Occur in small groups or "colonies" each usually separated by hundreds of metres {NSW National Parks and Wildlife Service, 2003 #49}.	**Low** No suitable habitat was recorded from the subject site for this species.
Phascogale tapoatafa	Brush-tailed Phascogale	V		Largely arboreal it occurs in a range of habitats which have reliable rainfall (500-2000mm) but has preference for open dry sclerophyll forest on ridges (up to 600 m alt) with little/sparse ground cover. It nests in tree hollows and feeds at dusk on arthropods and small vertebrates {Strahan, 1995 #185}.	**Low** No suitable habitat was recorded from the subject site for this species.
Phascolarctos cinereus	Koala	V		Found in sclerophyll forest. Throughout New South Wales, Koalas have been observed to feed on the leaves of approximately 70 species of eucalypt and 30 non-eucalypt species. However, in any one area, Koalas will feed almost exclusively on a small number of preferred species. The preferred tree species vary widely on a regional and local basis. Some preferred species in NSW include Forest Red Gum Eucalyptus tereticornis, Grey Gum E. punctata, Monkey Gum E. cypellocarpa and Ribbon Gum E. viminalis. In coastal areas, Tallowwood E. microcorys and Swamp Mahogany E. robusta are important food species, while in inland areas White Box E. albens, Bimble Box E. populnea and River Red Gum E. camaldulensis are favoured {NSW National Parks and Wildlife Service, 1999 #43; NSW National Parks and Wildlife Service, 2003 #31}.	**Low** Despite suitable foraging feed trees - *Eucalyptus sp f*or this species being recorded from the subject site. No individuals or evidence of occupation was recorded during targeted surveys.
Potorous tridactylus	Long-nosed Potoroo	V	V	Disjunct distribution along coastal south-east Australia from near Gladstone in Queensland to south-west Victoria and in Tasmania. Found from sea level up to 1500 metres in altitude generally in areas with rainfall greater than 760 millimetres. In NSW, it is found throughout coastal and subcoastal areas. Occurs in a range of habitats: coastal forest and woodland with a moderately dense heathy understorey, dense coastal scrubs or heath, wet and dry sclerophyll forest and sub-tropical, warm temperate and cool temperate rainforest of the eastern slopes and highlands. Often associated with gullies and forest ecotones. Open areas are used for foraging while areas of dense groundcover or understorey provide areas for shelter and protection from predators. Relatively thick ground cover is a major habitat requirement, and it seems to prefer areas	**Low** No suitable habitat was recorded from the subject site for this species.

				with light sandy soils. Feeds at dusk on roots, tubers, fungi, insects and their larvae and other soft bodied animals in the soil. Moves up and down slope as food resources become seasonally available {Johnston, 1995 #30; NSW National Parks and Wildlife Service, 1999 #502}.	
Pseudomys novaehollandiae	New Holland Mouse	V		Known to inhabit open heathlands, woodlands and forests with a heathland understorey and vegetated sand dunes It is a social animal, living predominantly in burrows shared with other individuals Distribution is patchy in time and space, with peaks in abundance during early to mid-stages of vegetation succession typically induced by fire	**Low** No suitable habitat was recorded from the subject site for this species.
Pseudomys oralis	Hastings River Mouse	E1	E	Recent sightings of the species have been made near low creek banks in tall, open eucalypt forest with dense ground cover of sedges, grasses and/or ferns {Strahan, 1995 #185}.	
Pteropus poliocephalus	Grey-headed Flying-fox	V	V	Occurs in subtropical and temperate rainforests, tall sclerophyll forests and woodlands, heaths and swamps. Urban gardens and cultivated fruit crops also provide habitat for this species. Feeds on the flowers and nectar of eucalypts and native fruits including lilly pillies. It roosts in the branches of large trees in forests or mangroves {NSW National Parks and Wildlife Service, 2001 #56; Churchill, 1998 #26}.	**Low** No suitable habitat was recorded from the subject site for this species.

1) V= Vulnerable, E1 = Endangered (BC Act) E2= Endangered Population **2)** ROTAP (Rare or Threatened Australian Plants, Briggs and Leigh 1996) is a conservation rating for Australian plants. 1 = Species only known from one collection. 2 = Species with a geographic range of less than 100km in Australia. 3 = Species with a geographic range of more than 100km in Australia, X = Species presumed extinct; no new collections for at least 50 years. E = Endangered species at risk of disappearing from the wild state if present land use and other causal factors continue to operate, V = Vulnerable species at risk of long-term disappearance through continued depletion. R = Rare, but not currently considered to be endangered. K = Poorly known species that are suspected to be threatened. C = Known to be represented within a conserved area. a = At least 1,000 plants are known to occur within a conservation reserve(s). i = Less than 1,000 plants are known to occur within a conservation reserve(s). The reserved population size is unknown. t = The total known population is reserved. + = The species has a natural occurrence overseas. **3)** V = Vulnerable, E = Endangered *(Environment Protection and Biodiversity Conservation Act 1999*).

Appendix E

BC Assessments of Significance

Assessment of Significance

The threatened species test of significance is used to determine if a development or activity is likely to significantly affect threatened species or ecological communities, or their habitats. It is applied as part of the Biodiversity Offsets Scheme entry requirements and for Part 5 activities under the *Environmental Planning and Assessment Act 1979*.

The test of significance is set out in s.7.3 of the Biodiversity Conservation Act 2016.

If the activity is likely to have a significant impact or will be carried out in a declared area of outstanding biodiversity value, the proponent must either apply the Biodiversity Offsets Scheme or prepare a species impact statement (SIS).

The environmental impact of activities that will not have a significant impact on threatened species will continue to be assessed under s.111 of the Environmental Planning and Assessment Act 1979.

If a proposed activity will have a significant impact or will be carried out in an area of outstanding biodiversity value, and the proponent does not opt in to the Biodiversity Offsets Scheme, a SIS must be prepared, and agreement sought from the Chief Executive of Office of Environment and Heritage.

The requirements of an SIS are set out in s.7.6 of the Biodiversity Conservation Regulation 2017. The proponent must also seek and comply with the Office of Environment and Heritage Chief Executive's requirements for SIS preparation.

The "subject site" is defined as the area directly affected by the proposal.

The "study area" is the subject site and any additional areas which are likely to be affected by the proposal, either directly or indirectly. The study area extends as far as is necessary to take all potential impacts into account.

The "local occurrence" of a community is that which occurs in the study area or beyond to include those areas where the movement of individuals and genetic exchange can be demonstrated

The "risk of extinction" is the likelihood that the local occurrence of the community will become extinct in either the short or long term as a result of direct or indirect impacts arising from the proposal.

The "composition" of the community includes both plant and animal species as well as its physical structure

The following 5-part test of significance relies on the ecological assessment provided in Sections 2 & 3, & Appendices C & D above and should be read as such. It is considered that the study area provides potential habitat for the following threatened species and will be assessed accordingly in the following seven-part test:

Species Name		Conservation Status		Likely to be significantly affected
		State [1]	National [2]	
Threatened Fauna				
Bird				
Lathamus discolor	Swift Parrot	V	V	No
Mammals				
Chalinolobus dwyeri	Large-eared Pied Bat	V	V	No
Falsistrellus tasmaniensis	Eastern False Pipistrelle	V		No
Miniopterus schreibersii		V		No
Miniopterus australis	Little Bent-wing Bat	V		No
Pteropus poliocephalus	Grey-headed Flying-fox	V	V	No
Mormopterus norfolkensis	Eastern Freetail-bat	V		No
Saccolaimus flaviventris	Yellow-bellied Sheathtail Bat	V		No
Scoteanax rueppellii	Greater Broad-nosed Bat	V		No

a) In the case of a threatened species, whether the action proposed 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,

Detailed flora investigations of the study area, together with habitat assessments and targeted surveys, have resulted in the identification of potential habitat for a variety of threatened species. An assessment of these species is as follows:

7.3 Test for determining whether proposed development or activity likely to significantly affect threatened species or ecological communities, or their habitats

The '5-part test of significance' is as follows.

(1) The following is to be taken into account for the purposes of determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats:

(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,

Detailed flora investigations of the study area, together with habitat assessments and targeted surveys, have resulted in the identification of potential habitat for a variety of threatened species. An assessment of these species is as follows:

***Lathamus discolor* (Swift Parrot)**

This species feeds mainly on nectar from eucalypt flowers, particularly Blue Gum (*Eucalyptus globulus*). On the mainland, the Swift Parrot congregates where winter flowering species such as Red Ironbark (*Eucalyptus sideroxylon*), White Box (*Eucalyptus albens*), Yellow Gum (*Eucalyptus leucoxylon*) and Swamp Gum (*Eucalyptus ovata*) are present (Saunders and Heinsohn 2008). The Swift Parrot is a migratory species that breeds in Tasmania and its offshore islands in summer (Swift Parrot Recovery Team 2001). In late March almost the entire population migrates to mainland Australia (Swift Parrot Recovery Team 2001). It is considered that the *Eucalyptus robusta* (Swamp Mahogany) specimens within the study area provide a potential foraging resource for this species. Despite the presence of potential habitat, this species was not recorded during the fauna survey. It is considered that the proposal is unlikely to disrupt the life cycle of this species such that a viable local population would be placed at risk of extinction.

***Chalinolobus dwyeri* (Large-eared Pied Bat)**

It is probable that the Large-eared Pied Bat forages for insects below the forest canopy. During the day these bats may roost in caves, mine tunnels and the abandoned nests of Fairy Martins (Hoye and Dwyer 1998). The Large-eared Pied Bat may also utilise tree hollows (Schultz, Coles et al. 1999). The Large-eared Pied Bat is mainly found in drier habitat including dry sclerophyll and woodland, east and west of the Great Dividing Ranges. However Hoye (Hoye and Dwyer 1998) suggest that from records of the species in subalpine woodland, moist eucalypt forest and near rainforest, it may tolerate a greater range of habitats. The distribution of this bat ranges from inland and south-eastern QLD to central-eastern and north-eastern NSW. It is considered that the study area provides potential foraging habitat for this species. Despite the presence of potential habitat within the study area, the proposal is unlikely to disrupt the life cycle of this species such that a viable local population would be placed at risk of extinction.

***Miniopterus schreibersii* (Eastern Bent-wing Bat)**

The Eastern Bentwing-bat is confined to areas where there are caves with potential temperature, humidity and physical dimensions to permit breeding. This species occupies a range of habitats, mainly near the coast and utilises caves, old mines, stormwater channels, under bridges and occasionally buildings for roosting. It is considered that the study area provides potential foraging habitat for this species. Despite the presence of potential habitat within the study area, the proposal is unlikely to disrupt the life cycle of this species such that a viable local population would be placed at risk of extinction.

***Pteropus poliocephalus* (Grey-headed Flying-fox)**

The Grey-headed Flying-fox is found in a variety of habitats including rainforest, mangroves, paperbark swamps, wet and dry sclerophyll forests and cultivated areas (Churchill 2008). Grey-headed Flying Foxes congregate in large camps of up to 200,000 individuals, depending on availability of surrounding blossoming plants, from early until late summer (Churchill 2008). Camps are commonly formed in gullies, typically not far from water and in vegetation with a dense canopy. Roost sites are an important resource where mating, birth and rearing of young occurs as well as providing refuge (Strahan 1995) These bats eat the fruit or blossoms of more than 80 species of plants. Their major food source is

eucalypt blossom and native fruits from a variety of tree species. Native figs (*Ficus spp*) account for a large percentage of the fruit eaten. They are also known to rain orchids of cultivated fruit. The Grey headed Flying-fox has a nightly feeding range of 20 to 50km from their camp (Churchill 2008).

It is considered that the study area provides potential foraging habitat for this species. The proposal is unlikely to have an adverse effect on the life cycle of this species such that a viable local population of the species is likely to be placed at risk of extinction.

Miniopterus australis **(Little Bent-wing Bat)**

The Little Bentwing-bat forages below the canopy within open forests and woodlands, feeding on small insects. It is considered that the study area provides potential foraging habitat for this species. Despite the presence of potential habitat within the study area, the proposal is unlikely to disrupt the life cycle of this species such that a viable local population would be placed at risk of extinction.

Mormopterus norfolkensis **(Eastern Freetail-bat)**

The Eastern Freetail-bat forages above and within the canopy of open forests and woodlands, feeding on small insects. The Eastern Freetail-bat is thought to roost predominantly in tree hollows and occasionally in buildings. It is considered that the study area provides potential foraging habitat for this species. It is considered that the proposal is unlikely to disrupt the life cycle of this species such that a viable local population would 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,

N/A,

(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

i.) The proposal will result in the removal/modification of 130m2 or 0.013ha of PCT 3244 - Lower North Spotted Gum-Mahogany-Ironbark Sheltered Forest which provides foraging habitat for threatened fauna species.

(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

Response:

The proposal will result in the removal/modification of 130m2 or 0.013ha of PCT 3244 - Lower North Spotted Gum-Mahogany-Ironbark Sheltered Forest which provides habitat for aforementioned threatened fauna species. Despite this the proposal will not fragment or isolate currently connected areas of habitat. Connectivity of vegetation across the study area is poor due to the highly fragmented nature of the vegetation within the subject property.

All threatened fauna species which are potentially to be impacted upon are highly mobile and capable of flight and movement across large distances and would not utilise the habitats within the study area exclusively.

Therefore, it is considered that known habitat for a threatened species within the local area and the region are unlikely to become isolated or fragmented as a result of the proposal.

(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,

Response:

All threatened fauna species which are potentially to be impacted upon are highly mobile and capable of flight and movement across large distances and would not utilise the habitats within the study area exclusively.

Therefore, it is considered that known habitat for a threatened species within the local area and the region are unlikely to become isolated or fragmented as a result of the proposal, as such it is considered that the proposal is unlikely to create an important impact on the long-term survival of threatened species in the locality and is not considered to be significant.

(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),

Response:

The proposed development or activity is not likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly) within the provisions of the *BC Act* (1995).

(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.

Response:

The proposal is likely to entail or perpetuate the following key threatening process under the *BC Act* within the site.

- Clearing of native vegetation.
- Infection of native plants by *Phytophthora cinnamomi*.
- Human Caused Climate Change.

Conclusion

The proposal will mostly result in the removal/modification of 130m2 or 0.013ha of PCT 3244 - Lower North Spotted Gum-Mahogany-Ironbark Sheltered Forest which provides sub-optimal (habitat) for threatened species.

Critical habitat will not be affected, and the proposal will not interfere with the recovery actions for threatened species. The impact to habitats for threatened species, endangered populations & endangered ecological communities from the locality is not considered to be significant.

Appendix F

EPBC Assessments of Significance

EPBC Assessment of Significance (Grey-headed Flying-fox)

Under the *Environment Protection and Biodiversity Conservation Act 1999*, an action is likely to have a significant impact on a vulnerable species if it affects an important population of the species. Under the Principle Significant Impact Guidelines (Department of the Environment and Heritage 2006) an important population is a population that is necessary for a species' long-term survival and recovery. This may include populations identified in recovery plans, and/or that are:

- key source populations either for breeding or dispersal
- populations that are necessary for maintaining genetic diversity
- populations that are near the limit of the species range.

The animals that may use the site are not considered to be part of an important population.

Will the action lead to a long-term decrease in the size of an important population of a species?

Grey-headed Flying-fox utilising the site would not constitute an important population. The proposal will remove 130m2 or 0.013ha of PCT 3244 - Lower North Spotted Gum-Mahogany-Ironbark Sheltered Forest of the central and lower Hunter which provide suitable habitat for this species. Clearing of this habitat as result of the proposal represents a small loss of the local extent of similar habitat. No Grey-headed Flying-fox camps will be affected by the proposal. As such, the proposal is unlikely to lead to a long-term decrease in the size of the local population.

Will the action reduce the area of occupancy of an important population?

Grey-headed Flying-fox utilising the site would not be part of an important population. Development of the study area will remove 130m2 or 0.013ha of PCT 3244 - Lower North Spotted Gum-Mahogany-Ironbark Sheltered Forest of the central and lower Hunter habitat, which contains suitable foraging habitat for this species. The Grey-headed Flying-fox is a highly mobile and it may travel up to 50 km each night to forage. Therefore, the local population would not be restricted to habitat resources within the site only.

Will the action fragment an existing important population into two or more populations?

Grey-headed Flying-foxes using the site for foraging purposes would not be part of an important population.

Will the action adversely affect habitat critical to the survival of a species?

No critical habitat has been listed for Grey-headed Flying-fox under the *Environment Protection and Biodiversity Conservation Act 1999*. Known Grey-headed Flying-fox camps may however be considered critical to the survival of local populations. No camps were identified within or near the study area.

Will the action disrupt the breeding cycle of an important population?

Grey-headed Flying-foxes using the study area would not be part of an important population.

Will the action modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline?

The study area contains suitable foraging resources for Grey-headed Flying-fox. The action is unlikely to significantly decrease the availability of foraging habitat in the locality as the proposal will result in the removal of 130m2 or 0.013ha of PCT 3244 - Lower North Spotted Gum-Mahogany-Ironbark Sheltered Forest of the central and lower Hunter (habitat). The large home range of this species allows offsite foraging resources to be accessed and isolation of habitat would not result from the development.

It is unlikely that the development would isolate and decrease the availability of quality habitat to the extent that the species is likely to decline.

Will the action result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species´ habitat?

It is highly unlikely that invasive species (such as introduced predators) that are harmful to the Grey-headed Flying-fox would become more established as a result of the action.

Will the action introduce disease that may cause the species to decline?

The proposal would not increase the likelihood of a disease becoming established or proliferating in the local population that would result in a decline of the species.

Will the action interfere with the recovery of the species?

No recovery or threat abatement plans have been prepared for this species. Therefore, it is considered that the proposal is unlikely to interfere within the recovery of the Grey-headed Flying-fox.

Conclusion

The Grey-headed Flying-fox is unlikely to be significantly affected by the proposal.

EPBC Assessment of Significance (Large-eared Pied Bat)

Under the *Environment Protection and Biodiversity Conservation Act 1999*, an action is likely to have a significant impact on a vulnerable species if it affects an important population of the species. Under the Principle Significant Impact Guidelines (Department of the Environment and Heritage 2006) an important population is a population that is necessary for a species' long-term survival and recovery. This may include populations identified in recovery plans, and/or that are:

- key source populations either for breeding or dispersal
- populations that are necessary for maintaining genetic diversity
- populations that are near the limit of the species range.

The animals that may use the site are not considered to be part of an important population.

Will the action lead to a long-term decrease in the size of an important population of a species?

Large-eared Pied Bats utilising the site would not constitute an important population. The proposal will remove/modify approximately 130m2 or 0.013ha of PCT 3244 - Lower North Spotted Gum-Mahogany-Ironbark Sheltered Forest of the central and lower Hunter (habitat) for this species. Clearing of this community for the proposal represents a small loss of the local extent of similar habitat. No Large-eared Pied Bat roosting sites will be affected by the proposal. As such, the proposal is unlikely to lead to a long-term decrease in the size of the local population.

Will the action reduce the area of occupancy of an important population?

Large-eared Pied Bats utilising the site would not be part of an important population. Development of the study area will remove/modify of 130m2 or 0.013ha of PCT 3244 - Lower North Spotted Gum-Mahogany-Ironbark Sheltered Forest of the central and lower Hunter (habitat), which contains sub-optimal foraging habitat for this species. The Large-eared Pied Bat is a highly mobile species. Therefore, the local population would not be restricted to habitat resources within the site only.

Will the action fragment an existing important population into two or more populations?

Large-eared Pied Bat using the site for foraging purposes would not be part of an important population.

Will the action adversely affect habitat critical to the survival of a species?

No critical habitat has been listed for Large-eared Pied Bat under the *Environment Protection and Biodiversity Conservation Act 1999*. Known Large-eared Pied Bat maternity caves may however be considered critical to the survival of local populations. No maternity caves were identified within or near the study area.

Will the action disrupt the breeding cycle of an important population?

Large-eared Pied Bats using the study area would not be part of an important population. The breeding patterns of the Large-eared Pied Bat are not likely to be disrupted as this species breeds within a maternity cave, which were absent

from the study area. As such it is considered that the proposal is unlikely to disrupt the breeding cycle of an important population of Large-eared Pied Bats.

Will the action modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline?

The study area contains foraging resources for Large-eared Pied Bat. The action is unlikely to significantly decrease the availability of foraging habitat in the locality despite the removal of 130m2 or 0.013ha of PCT 3244 - Lower North Spotted Gum-Mahogany-Ironbark Sheltered Forest of the central and lower Hunter (habitat). The large-eared Pied Bat has a large home range as such this species would not feed exclusively within the study area.

It is unlikely that the development would isolate and decrease the availability of quality habitat to the extent that the species is likely to decline.

Will the action result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species´ habitat?

It is highly unlikely that invasive species (such as introduced predators) that are harmful to the Large-eared Pied Bat would become more established as a result of the action.

Will the action introduce disease that may cause the species to decline?

The proposal would not increase the likelihood of a disease becoming established or proliferating in the local population that would result in a decline of the species.

Will the action interfere with the recovery of the species?

No recovery or threat abatement plans have been prepared for this species. Therefore, it is considered that the proposal is unlikely to interfere within the recovery of the Large-eared Pied Bat.

Conclusion

The Large-eared Pied Bat is unlikely to be significantly affected by the proposal.

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 06-Jun-2024

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar	1
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	5
Listed Threatened Species:	48
Listed Migratory Species:	14

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at https://www.dcceew.gov.au/parks-heritage/heritage

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	3
Commonwealth Heritage Places:	None
Listed Marine Species:	21
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	2
Regional Forest Agreements:	1
Nationally Important Wetlands:	None
EPBC Act Referrals:	3
Key Ecological Features (Marine):	None
Biologically Important Areas:	None
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar Wetlands) [Resource Information]

Ramsar Site Name	Proximity	Buffer Status
Hunter estuary wetlands	30 - 40km upstream from Ramsar site	In feature area

Listed Threatened Ecological Communities [Resource Information]

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.
Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.

Community Name	Threatened Category	Presence Text	Buffer Status
Central Hunter Valley eucalypt forest and woodland	Critically Endangered	Community may occur within area	In feature area
Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community	Endangered	Community may occur within area	In buffer area only
Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland	Endangered	Community may occur within area	In feature area
Lowland Rainforest of Subtropical Australia	Critically Endangered	Community likely to occur within area	In feature area
Subtropical eucalypt floodplain forest and woodland of the New South Wales North Coast and South East Queensland bioregions	Endangered	Community likely to occur within area	In feature area

Listed Threatened Species [Resource Information]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			
Anthochaera phrygia			
Regent Honeyeater [82338]	Critically Endangered	Foraging, feeding or related behaviour likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat likely to occur within area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Callocephalon fimbriatum Gang-gang Cockatoo [768]	Endangered	Species or species habitat likely to occur within area	In feature area
Calyptorhynchus lathami lathami South-eastern Glossy Black-Cockatoo [67036]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Climacteris picumnus victoriae Brown Treecreeper (south-eastern) [67062]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Erythrotriorchis radiatus Red Goshawk [942]	Endangered	Species or species habitat may occur within area	In feature area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat may occur within area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat known to occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
Melanodryas cucullata cucullata South-eastern Hooded Robin, Hooded Robin (south-eastern) [67093]	Endangered	Species or species habitat may occur within area	In feature area
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat may occur within area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area	In buffer area only
Pycnoptilus floccosus Pilotbird [525]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area	In feature area
Stagonopleura guttata Diamond Firetail [59398]	Vulnerable	Species or species habitat known to occur within area	In feature area
FROG			
Litoria aurea Green and Golden Bell Frog [1870]	Vulnerable	Species or species habitat may occur within area	In feature area
Mixophyes balbus Stuttering Frog, Southern Barred Frog (in Victoria) [1942]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Mixophyes iteratus Giant Barred Frog, Southern Barred Frog [1944]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
MAMMAL			
Chalinolobus dwyeri Large-eared Pied Bat, Large Pied Bat [183]	Endangered	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Dasyurus maculatus maculatus (SE mainland population)			
Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat known to occur within area	In feature area
Notamacropus parma			
Parma Wallaby [89289]	Vulnerable	Species or species habitat known to occur within area	In feature area
Petauroides volans			
Greater Glider (southern and central) [254]	Endangered	Species or species habitat likely to occur within area	In feature area
Petaurus australis australis			
Yellow-bellied Glider (south-eastern) [87600]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Petrogale penicillata			
Brush-tailed Rock-wallaby [225]	Vulnerable	Species or species habitat may occur within area	In feature area
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)			
Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Endangered	Species or species habitat known to occur within area	In feature area
Potorous tidactylus tridactylus			
Long-nosed Potoroo (northern) [66645]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Pseudomys novaehollandiae			
New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Pseudomys oralis			
Hastings River Mouse, Koontoo [98]	Endangered	Species or species habitat may occur within area	In buffer area only
Pteropus poliocephalus			
Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
PLANT			
Arthraxon hispidus			
Hairy-joint Grass [9338]	Vulnerable	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Asperula asthenes Trailing Woodruff [14004]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Cryptostylis hunteriana Leafless Tongue-orchid [19533]	Vulnerable	Species or species habitat may occur within area	In feature area
Cynanchum elegans White-flowered Wax Plant [12533]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Dichanthium setosum bluegrass [14159]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Eucalyptus glaucina Slaty Red Gum [5670]	Vulnerable	Species or species habitat known to occur within area	In feature area
Euphrasia arguta [4325]	Critically Endangered	Species or species habitat may occur within area	In feature area
Haloragis exalata subsp. velutina Tall Velvet Sea-berry [16839]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Persicaria elatior Knotweed, Tall Knotweed [5831]	Vulnerable	Species or species habitat may occur within area	In feature area
Rhizanthella slateri Eastern Underground Orchid [11768]	Endangered	Species or species habitat may occur within area	In buffer area only
Rhodamnia rubescens Scrub Turpentine, Brown Malletwood [15763]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
Rhodomyrtus psidioides Native Guava [19162]	Critically Endangered	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Syzygium paniculatum Magenta Lilly Pilly, Magenta Cherry, Daguba, Scrub Cherry, Creek Lilly Pilly, Brush Cherry [20307]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Vincetoxicum woollsii listed as Tylophora woollsii [40080]	Endangered	Species or species habitat may occur within area	In buffer area only

Listed Migratory Species [Resource Information]

Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
Migratory Terrestrial Species			
Cuculus optatus Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area	In feature area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area	In feature area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Symposiachrus trivirgatus as Monarcha trivirgatus](#)			
Spectacled Monarch [83946]		Species or species habitat known to occur within area	In feature area
Migratory Wetlands Species			
[Actitis hypoleucos](#)			
Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
[Calidris acuminata](#)			
Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area	In feature area
[Calidris ferruginea](#)			
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
[Calidris melanotos](#)			
Pectoral Sandpiper [858]		Species or species habitat may occur within area	In feature area
[Gallinago hardwickii](#)			
Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat likely to occur within area	In feature area
[Numenius madagascariensis](#)			
Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area	In buffer area only

Other Matters Protected by the EPBC Act

Commonwealth Lands [Resource Information]

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Commonwealth Land Name	State	Buffer Status
Commonwealth Trading Bank of Australia		
Commonwealth Land - Commonwealth Trading Bank of Australia [11368]	NSW	In buffer area only
Communications, Information Technology and the Arts - Telstra Corporation Limited		
Commonwealth Land - Australian Telecommunications Commission [15592]	NSW	In buffer area only
Commonwealth Land - Telstra Corporation Limited [11367]	NSW	In buffer area only

Listed Marine Species			[Resource Information]
Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area overfly marine area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat likely to occur within area overfly marine area	In feature area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Lathamus discolor](#) Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area overfly marine area	In feature area
[Merops ornatus](#) Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
[Monarcha melanopsis](#) Black-faced Monarch [609]		Species or species habitat known to occur within area overfly marine area	In feature area
[Motacilla flava](#) Yellow Wagtail [644]		Species or species habitat may occur within area overfly marine area	In feature area
[Myiagra cyanoleuca](#) Satin Flycatcher [612]		Species or species habitat known to occur within area overfly marine area	In feature area
[Neophema chrysostoma](#) Blue-winged Parrot [726]	Vulnerable	Species or species habitat may occur within area overfly marine area	In feature area
[Numenius madagascariensis](#) Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area	In buffer area only
[Pterodroma cervicalis](#) White-necked Petrel [59642]		Species or species habitat may occur within area	In feature area
[Rhipidura rufifrons](#) Rufous Fantail [592]		Species or species habitat known to occur within area overfly marine area	In feature area
[Rostratula australis as Rostratula benghalensis (sensu lato)](#) Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Sterna striata			
White-fronted Tern [799]		Migration route may occur within area	In buffer area only
Symposiachrus trivirgatus as Monarcha trivirgatus			
Spectacled Monarch [83946]		Species or species habitat known to occur within area overfly marine area	In feature area

Extra Information

State and Territory Reserves [Resource Information]

Protected Area Name	Reserve Type	State	Buffer Status
Killarney	Nature Reserve	NSW	In buffer area only
Monkerai	Nature Reserve	NSW	In buffer area only

Regional Forest Agreements [Resource Information]

Note that all areas with completed RFAs have been included. Please see the associated resource information for specific caveats and use limitations associated with RFA boundary information.

RFA Name	State	Buffer Status
North East NSW RFA	New South Wales	In feature area

EPBC Act Referrals [Resource Information]

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Controlled action				
Gloucester Coal Seam Methane Gas Project	2008/4432	Controlled Action	Post-Approval	In buffer area only
Tillegra Dam	2008/4551	Controlled Action	Completed	In buffer area only
Not controlled action				
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data are available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact us page.

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Appendix G

BOSET

Department of Planning and Environment

Biodiversity Values Map and Threshold Report

This report is generated using the Biodiversity Values Map and Threshold (BMAT) tool. The BMAT tool is used by proponents to supply evidence to your local council to determine whether or not a Biodiversity Development Assessment Report (BDAR) is required under the Biodiversity Conservation Regulation 2017 (Cl. 7.2 & 7.3).

The report provides results for the proposed development footprint area identified by the user and displayed within the blue boundary on the map.

There are two pathways for determining whether a BDAR is required for the proposed development:

1. Is there Biodiversity Values Mapping?
2. Is the 'clearing of native vegetation area threshold' exceeded?

Biodiversity Values Map and Threshold Report

Date of Report Generation		31/05/2024 11:06 PM
1. Biodiversity Values (BV) Map - Results Summary (Biodiversity Conservation Regulation Section 7.3)		
1.1	**Does the development Footprint intersect with BV mapping?**	no
1.2	Was ALL BV Mapping within the development footprinted added in the last 90 days? (dark purple mapping only, no light purple mapping present)	no
1.3	**Date of expiry of dark purple 90 day mapping**	N/A
1.4	**Is the Biodiversity Values Map threshold exceeded?**	no
2. Area Clearing Threshold - Results Summary (Biodiversity Conservation Regulation Section 7.2)		
2.1	**Size of the development or clearing footprint**	2,689.9 sqm
2.2	**Native Vegetation Area Clearing Estimate (NVACE)** (within development/clearing footprint)	2,689.9 sqm
2.3	**Method for determining Minimum Lot Size**	LEP
2.4	**Minimum Lot Size** (10,000sqm = 1ha)	600,000 sqm
2.5	**Area Clearing Threshold** (10,000sqm = 1ha)	10,000 sqm
2.6	**Does the estimate exceed the Area Clearing Threshold?** (NVACE results are an estimate and can be reviewed using the Guidance)	no

REPORT RESULT: Is the Biodiversity Offset Scheme (BOS) Threshold exceeded for the proposed development footprint area? (Your local council will determine if a BDAR is required)	**no**

What do I do with this report?

• If the result above indicates the BOS Threshold has been exceeded, your local council may require a Biodiversity Development Assessment Report with your development application. Seek further advice from Council. An accredited assessor can apply the Biodiversity Assessment Method and prepare a BDAR for you. For a list of accredited assessors go to: https://customer.lmbc.nsw.gov.au/assessment/AccreditedAssessor.

• If the result above indicates the BOS Threshold has not been exceeded, you may not require a Biodiversity Development Assessment Report. This BMAT report can be provided to Council to support your development application. Council can advise how the area clearing threshold results should be considered. Council will review these results and make a determination if a BDAR is required. Council may ask you to review the area clearing threshold results. You may also be required to assess whether the development is '"likely to significantly affect threatened species" as determined under the test in Section 7.3 of the *Biodiversity Conservation Act 2016*.

• If a BDAR is not required by Council, you may still require a permit to clear vegetation from your local council.

• If all Biodiversity Values mapping within your development footprint was less than 90 days old, i.e. areas are displayed as dark purple on the BV map, a BDAR may not be required if your Development Application is submitted within that 90 day period. Any BV mapping less than 90 days old on this report will expire on the date provided in Line item 1.3 above.

For more detailed advice about actions required, refer to the Interpreting the evaluation report section of the Biodiversity Values Map Threshold Tool User Guide .

Review Options:

• If you believe the Biodiversity Values mapping is incorrect please refer to our BV Map Review webpage for further information.

• If you or Council disagree with the area clearing threshold estimate results from the NVACE in Line Item 2.6 above (i.e. area of Native Vegetation within the Development footprint proposed to be cleared), review the results using the Guide for reviewing area clearing threshold results from the BMAT Tool.

Acknowledgement

I, as the applicant for this development, submit that I have correctly depicted the area that will be impacted or likely to be impacted as a result of the proposed development.

Signature: _____ Date:_____

(Typing your name in the signature field will be considered as your signature for the purposes of this form)

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Biodiversity Values Map and Threshold Tool

The Biodiversity Values (BV) Map and Threshold Tool identifies land with high biodiversity value, particularly sensitive to impacts from development and clearing.

The BV map forms part of the Biodiversity Offsets Scheme threshold, which is one of the factors for determining whether the Scheme applies to a clearing or development proposal. You have used the Threshold Tool in the map viewer to generate this BV Threshold Report for your nominated area. This report calculates results for your proposed development footprint and indicates whether Council may require you to engage an accredited assessor to prepare a Biodiversity Development Assessment Report (BDAR) for your development.

This report may be used as evidence for development applications submitted to councils. You may also use this report when considering native vegetation clearing under the State Environmental Planning Policy (Biodiversity and Conservation) 2021 - Chapter 2 vegetation in non-rural areas.

What's new? For more information about the latest updates to the Biodiversity Values Map and Threshold Tool go to the updates section on the Biodiversity Values Map webpage.

Map Review: Landholders can request a review of the BV Map where they consider there is an error in the mapping on their property. For more information about the map review process and an application form for a review go to the Biodiversity Values Map Review webpage.

If you need help using this map tool see our Biodiversity Values Map and Threshold Tool User Guide or contact the Map Review Team at map.review@environment.nsw.gov.au or on 1800 001 490.

Biodiversity Values Map

76.1 0 38.03 76.1 Metres

WGS_1984_Web_Mercator_Auxiliary_Sphere

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

Legend

- Biodiversity Values that have been mapped for more than 90 days
- Biodiversity Values added within last 90 days
- Native Vegetation Area Clearing Estimate (NVACE)
- Development area selected by proponent

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The results provided in this tool are generated using the best available mapping and knowledge of species habitat requirements.

This map is valid as at the date the report was generated. Checking the Biodiversity Values Map viewer for mapping updates is recommended.