Appendix I – Biodiversity Assessment

Biodiversity Assessment

39 Razorback Road, Running Stream

Prepared for
Pine Plantations Australia

Final V2 / January 2022

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V2	19-1-2022	JS/SB/MD	Final for Submission

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EXECUTIVE SUMMARY

MJD Environmental has been engaged by Pine Plantations Australia to prepare a Biodiversity Assessment (BA) and Test of Significance (5-Part Test) to accompany a development application to be submitted to Mid-Western Regional Council for the proposed construction of a quarry at 39 Razorback Road, Running Stream (the proposed development), to be assessed under Part 4 of the Environmental Planning & Assessment Act 1979 (EP&A Act).

The objective of this BA was also to examine the likelihood of the proposed development having a significant effect on any threatened species, populations or ecological communities listed under the *NSW Biodiversity Conservation Act 2016* (BC Act). This BA recognises the relevant requirements of the *EP&A Act 1979* as amended by the *NSW Environmental Planning and Assessment Amendment Act 1997*. Preliminary assessment was also made with regard to those threatened entities listed under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

This BA included an appraisal of the subject site to determine the appropriate assessment pathway under the BC Act, which determined that the proposal does not trigger the Biodiversity Offset Scheme (BOS) entry threshold due to the existing approval of a Timber Plantation over the land under the *Plantations and Reafforestation Act 1999*. Furthermore, a review of historical aerial photos over the land determined that the subject site was cleared of native vegetation prior to 1990, containing only pasture areas and some scattered trees. The proposed development footprint is likely to satisfy the criteria of "Low-Conservation Grassland" due to the minimal native grasses found within the area (as determined under vegetation plot surveys). The historical vegetation clearing and classification of grasslands as "Low Conservation Grasslands" indicates that this area can be classified under Section 60H of the *Local Land Services Act 2013* (LLS Act) as Category 1 – Exempt Land. Under Section 7.4(2) of the BC Act, the clearing of vegetation within Category 1 -Exempt Land is to be disregarded when assessing the total development footprint against the vegetation clearing threshold (Clause 7.2(4) of *Biodiversity Conservation Regulation 2017*). As such, a Test of Significance Assessment undertaken in accordance with Section 7.3 of the BC Act is the applicable assessment pathway for the proposed development.

The ecological field assessment found that the proposed development will remove up to:

- 24 ha of Pine Plantation/Disturbed Grassland, and
- 0.25 ha of PCT 1191: Snow Gum - Candle Bark woodland on broad valley flats of the tablelands and slopes, South Eastern Highlands Bioregion (Low Condition)

The BA Test of Significance considered whether the removal of vegetation on subject site totalling 0.25 ha would constitute a significant impact on known threatened species, populations, and ecological communities from the locality such that a local extinction may occur (5 Part Test).

This BA concluded that a significant impact would not occur to those entities assessed herewith.

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GLOSSARY OF TERMS AND ABBREVIATIONS

Term/ Abbreviation	Meaning
BC Act	Biodiversity Conservation Act 2016
BOS	Biodiversity Offset Scheme
Council	Mid-Western Regional Council
DAWE	Commonwealth Department of Agriculture, Water and the Environment
DPIE	NSW Department of Planning, Industry and Environment
DPI Water	NSW Department of Primary Industries – Water
EP&A Act	NSW Environmental Planning and Assessment Act 1979
EPBC Act	Commonwealth Environment Protection and Biodiversity Conservation Act 1999
ha	hectare
LGA	Local Government Area
OEH	NSW Office of Environment and Heritage [*former*]

1 Introduction

MJD Environmental has been engaged by Pine Plantations Australia to prepare a Biodiversity Assessment (BA) and Test of Significance (5-Part Test) to accompany a development application to be submitted to Mid-Western Regional Council for the proposed construction of a quarry (proposed development) at 39 Razorback Road, Running Stream hereafter referred to as the 'subject site' (Refer to **Figure 1**). This BA is to be assessed under Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

1.1 Description of Proposal

Plantation Pine Products Australia Pty Ltd propose to develop and operate a sand and gravel quarry on the 'Turonfels' property at 39 Razorback Road, Running Stream, approximately 8km south of Ilford within the Mid-Western Regional Council Local Government Area (LGA). The site is located approximately 1km west of the Castlereagh Highway. The quarry would extract up to 200,000 tonnes per annum over a period of up to 30 years and will include access roads, a site office, workshop and weighbridge. The quarry will be progressively rehabilitated to pasture and pine plantation with potential future use of the facilities area for forestry related activities.

1.2 Aims & Scope

This BA aims to examine the likelihood of the proposed development having a significant effect on any threatened species, populations or ecological communities listed under the *NSW Biodiversity Conservation Act 2016* (BC Act). This assessment recognises the relevant requirements of the EP&A Act, as amended by the *NSW Environmental Planning and Assessment Amendment Act 1997*. Preliminary assessment was also undertaken having regard to those threatened entities listed under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

The scope of this BA includes:

- Determine the appropriate assessment pathway under the NSW BC Act;
- identify vascular plant species occurring within the subject site, including any threatened species listed under the BC Act and/or EPBC Act;
- identify and map the extent of vegetation communities within the subject site, including any Threatened Ecological Communities (TEC) listed under the BC Act or EPBC Act;
- identify any fauna species including threatened and migratory species, populations or their habitats, occurring within the subject site and are known or likely to occur within 10 km of the subject site (locality);
- assess the potential of the proposed activity to have a significant impact on any threatened species, populations or ecological communities (or their habitats) identified from the subject site; and
- describe measures to be implemented to avoid, minimise, manage or monitor potential impacts of the proposal.

In addition to survey work within the subject site, consideration has been afforded to habitats within the subject site in order to appreciate the broader environmental context. This includes assessment of potential direct and indirect impacts.

1.3 Site Particulars

Locality	The subject site is situated at 39 Razorback Road, Running Stream, NSW.
Land Title	Lot 2 DP 569979
LGA	Mid-Western Regional Council
Area	Study Area – 151.27 ha Subject Site – 24.27 ha
Zoning	RU1 (Primary Production)
Boundaries	The subject site is situated to the south of Razorback Road, Running Stream. Large residential properties exist to the west and an existing Pine plantation to the immediate east.
Current Land Use	The subject site comprises of highly disturbed grassland due to the mass plantings of Pine trees (*Pinus* spp.). No native tree species were seen to be regenerating within the plantation area. The Study Area contains native vegetation within the southern gully and the adjacent foothills, however, this area is not to be impacted upon under this proposal.
Topography	The subject site lies predominantly on the top of an undulating hill at an elevation of 1050 metres. There are two drainage lines within the subject site that flow to the north however, these only operate during periods of heavy rainfall.

1.4 Qualifications & Licencing

Qualifications

This biodiversity assessment has been prepared by Josh Smart (B. Env. Sc.& Mgt (Honours)) and Matt Doherty (BMLC) of MJD Environmental Pty Ltd.

Licencing

Research was conducted under the following licences:

- NSW National Parks and Wildlife Service Scientific Investigation Licence SL101684 (Valid 31 January 2022).
- Animal Research Authority (Trim File No: 16/170) issued by NSW Department of Primary Industries (Valid 8 February 2022).
- Animal Care and Ethics Committee Certificate of Approval (Trim File No: 16/170) issued by NSW Department of Primary Industries (Valid 8 February 2022).

39 RAZORBACK ROAD,
RUNNING STREAM

FIGURE 1: SITE LOCATION

Legend

- Watercourse
- Contours (10m)
- Site
- Study Area
- Cadastral Boundaries

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- Bund
- Hardstand and Parking (Gravel)
- Haul Road
- Infrastructure Area
- New Dam
- Office, Crib Room and Toilets
- Quarry Pit
- Stage 1 Footprint
- Stage 2 Footprint
- Stage 3 Footprint
- Workshop Shed (20m x 12m)

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2 Biodiversity Assessment Pathway

The requirement to undertake a biodiversity assessment is a prerequisite for all Part 4 Developments (EP&A Act) in order to assess potential development impacts on threatened species and threatened ecological communities.

The NSW Biodiversity reforms have delivered a new assessment pathway based on the understanding of the amount of clearing proposed, how the proposal will avoid and minimise impacts, and if required provide a strategy to offset the impacts in the form of biodiversity credits.

The following section provides guidance on the biodiversity assessment pathway selected for this project to reflect the amount of clearing associated with the proposal.

2.1 Assessment Methodology

The current biodiversity assessment pathway for proposed development activities requires determining the extent of native vegetation clearing with consideration of the minimum lot size (as outlined in the Local Environment Plan (LEP) for the local government area (LGA)) and whether the proposal will have a significant impact on threatened species and/or threatened ecological communities.

To determine the biodiversity assessment pathway required for the development activity, the Biodiversity Offset Scheme (BOS) threshold is used to determine whether the Biodiversity Assessment Method (BAM) is used to assess the impacts of the proposal and calculate required biodiversity credits to ensure no net loss of biodiversity occurs in the locality.

The *Biodiversity Conservation Regulation 2017* outlines when clearing of native vegetation for a development exceeds the threshold, it will trigger entry into the Biodiversity Offset Scheme and the use of the BAM method.

Thresholds for triggering entry into the BOS entry include:

- Whether the amount of native vegetation being cleared exceeds a threshold area set out in Clause 7.2 (4) of the *Biodiversity Conservation Regulation 2017*; and/or
- Whether the impacts occur on an area mapped on the Biodiversity Values Map (BVM) published by the minister for the Environment.

Under the *Mid-Western Regional Local Environmental Plan 2012* (Mid-Western Regional LEP) the subject site has a minimum lot size of 100 ha. As such, the native vegetation clearing threshold for the proposed development is 1 ha (Clause 7.2 (4) of the *Biodiversity Conservation Regulation 2017*).

In the cases where the extent of native vegetation clearing does not exceed the BOS clearing threshold and the subject site is not mapped on the BVM a Test of Significance (ToS) is required to be undertaken in accordance with Section 7.3 of the BC Act.

In addition, consideration must be afforded to the *Local Land Services Act 2013* (LLS Act) where clearing of native vegetation on Category 1 – Exempt Land (within the meaning of Part 5A of the LLS Act) will occur. Under Section 7.4(2) of the BC Act, the clearing of vegetation within Category 1 - Exempt Land is to be disregarded for the purposes of determining whether a proposed development exceeds the clearing threshold and triggers the BOS.

Prior to field surveys, a desktop study was conducted, viewing the historical aerial photos over the land. It is clear that the subject site was cleared of native vegetation prior to 1990 containing only pasture areas and some scattered trees. The land subject to impact under this proposal is likely to satisfy the criteria of “Low-Conservation Grassland” due to the minimal native grasses found within the area (note vegetation plot survey results). Under such conditions and being deemed as low conservation indicates that this area can be classified under the Local Land Services Act (LLS) as Category 1 – Exempt Land. This, coupled with the existing approval over the majority of the land (including the area of the proposed quarry and ancillary components) as a Pine Plantation (**Appendix 6**) exempts this particular area from the Biodiversity Conservation Act 2016 and therefore does not

generate biodiversity offset credits nor is it taken into consideration with the total native vegetation clearing threshold.

The site which is subject to the proposed development is not mapped as an area of high biodiversity value on the NSW Environment, Energy and Science (EES – formerly OEH) BVM. It should be noted that the creek line to the south of the subject site is mapped on the BVM, however, this creek is not to be impacted upon under the proposed development.

Therefore, a Test of Significance (5-Part Test), undertaken in accordance with Section 7.3 of the BC is the is the applicable assessment pathway for the proposed development.

3 Methodology

This biodiversity assessment has been prepared in accordance with Section 7.3 of the BC Act. All vegetation survey methods have been carried out in accordance with the NSW Department of Planning, Industry and Environment (DPIE) Biodiversity Assessment Methodology (BAM 2020). Additional fauna surveys have utilised the *Threatened Biodiversity Survey and Assessment: Guidelines for development and activities* (DECC 2004), to inform fauna surveys that were carried out during field works.

The techniques employed to inform this impact assessment are described in further detail below.

3.1 Desktop Assessment

A review of ecological information was undertaken to provide context and understanding of ecological values occurring on the subject site.

Online database searches involving a 10-km buffer around the subject site were undertaken from the:

- NSW BioNet Atlas (accessed 19th October 2021); and
- EPBC Act Protected Matters Search (accessed 19th October 2021).

3.2 Field Survey

Field surveys were undertaken on the 13th and 14th of July 2021. The prevailing weather conditions during the survey are presented in a **Table 1** below.

Table 1 Prevailing Weather Conditions

Date	Min Temp (°C)	Max Temp (°C)	Rain (mm)	Wind (km/h)	Sunrise-Sunset
13th July 2021	0.7	16.7	0	Calm to 8km/h	0655-1704
14th July 2021	1.4			Calm	0654-1705

Sources: http://www.bom.gov.au/climate/dwo/IDCJDW0200.shtml

http://www.ga.gov.au/bin/geodesy/run/sunrisenset

3.2.1 Vegetation & Significant Flora Survey

Desktop analysis of regional mapping of the subject site and its surrounds utilised large-scale vegetation mapping projects and aerial photography, including:

- Preliminary consultation of regional vegetation community mapping to determine the broad categorisation of the subject site; and
- GIS analysis including - Aerial Photograph Interpretation (API) and consultation of topographic map (Scale 1:25,000) layers for the subject site.

The vegetation field surveys were carried out in accordance with the BAM 2020 with additional assessment methods to assist in gaining an overview of biodiversity values of the site.

The following methods were used to inform the vegetation survey:

- Broad vegetation identification, delineation and stratification into vegetation zones carried out by detailed random meander methods (Cropper 1993);
- Collection of plot/transect based full floristic data as per Section 5 of the BAM, recording the following;
    - Identification of all flora species to genus where identification attributes were present;
    - Composition, Structure attributes within 20x20 plot; and
    - function attributes within the 20X50m plot.
- Collection of subject site landscape attributes that included, landform, aspect, soil type, detailed descriptions of the vegetation condition, current land use and the current impacts.

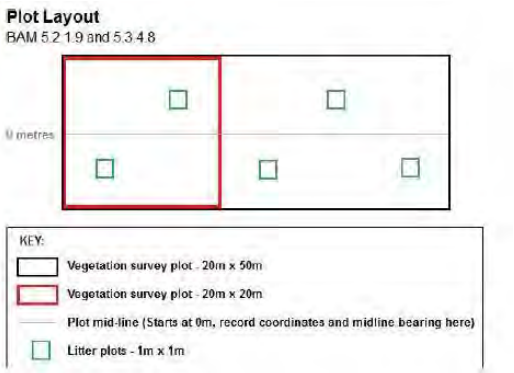


Plate 1: Plot Lay out (BAM Stage 1 Operational Manual DPIE 2020)

Two BAM floristic 20x 50m plot/transect were established within the subject site. Refer to **Figure 2**.

Due to a lack of habitat coupled with routine herbicide use/treatment for management of the pine plantation, no formal significant threatened flora survey or targeted searches were undertaken. The subject site was traversed by one MJD Environmental ecologist (13th July 2021) for the purposes of producing a description of native vegetation present and to assess the potential for threatened flora species to occur within the subject site. Vegetation was assessed for the suitability of habitat for cryptic species outside their detectible periods, while comprehensive searches of the site verified presence/absence of more conspicuous species.

A full compilation of flora species recorded during survey is provided in **Appendix 2**.

3.2.2 Fauna Survey

A desktop assessment of the potential use of the subject site by threatened fauna species (as listed under the BC Act and EPBC Act) identified from the vicinity was undertaken prior to the commencement of field surveys (Refer to **Section 3.1**).

Fauna habitat values were assessed during flora surveys. Native vegetation was recorded including one threatened ecological community (in a disturbed condition) with some residing significant terrestrial habitat features including hollow bearing trees and wombat burrows.

Refer to **Figure 2** showing the location of all vegetation surveys. A list of flora species detected during surveys is provided as **Appendix 2**.

Secondary Indications and Incidental Observations

Opportunistic sightings of secondary indications (scratches, scats, diggings, tracks etc.) of resident fauna were noted. Such indicators included:

- Distinctive scats left by mammals;
- Scratch marks made by various types of arboreal animals;
- Nests made by various guilds of birds;
- Feeding scars on Eucalyptus trees made by Gliders;
- Whitewash, regurgitation pellets and prey remains from Owls;
- Auditory recognition of bird and frog calls;
- Skeletal material of vertebrate fauna; and
- Searches for indirect evidence of fauna (such as scats, nests, burrows, hollows, tracks, and diggings).

3.2.3 Habitat Survey

An assessment of the relative habitat value present within the subject site was undertaken. This assessment focused primarily on the identification of specific habitat types and resources in the subject site favoured by known threatened species from the locality. The assessment also considered the potential value of the subject site (and surrounds) for all major guilds of native flora and fauna. Habitat assessment included:

- presence, size and types of tree hollows;
- presence of rocks, logs, caves, rocky outcrops, leaf litter, overhangs and crevices;
- vegetation complexity, structure and quality;
- presence of freshwater or estuarine aquatic habitats, noting permanency;
- connectivity to adjacent areas of habitat;
- extent and types of disturbance;
- presence of foraging opportunities such as flowering eucalypts, fruits, seeds or other nectar bearing native plants; and
- presence and abundance of various potential prey species.

Habitat assessment was based on the specific habitat requirements of each threatened fauna species with regard to home range, feeding, roosting, breeding, movement patterns and corridor requirements. Consideration was given to contributing factors including topography, soil, light and hydrology for threatened flora and assemblages.

3.3 Limitations

Limitations associated with this BA are presented herewith. The limitations have been taken into account specifically in relation to threatened species assessments, results and conclusions.

In these instances, a precautionary approach has been adopted; whereby ‘assumed presence’ of known and expected threatened species, populations and ecological communities has been made where relevant and scientifically justified to ensure a holistic assessment.

Seasonality & Conditions

Threatened flora species should be surveyed within their respective flowering periods to ensure accurate identification.

The flowering and fruiting plant species that attract some nomadic or migratory threatened species, often fruit or flower in cycles spanning a number of years. Furthermore, these resources might only be

accessed in some areas during years when resources more accessible to threatened species fail. As a consequence, threatened species may be absent from some areas where potential habitat exists for extended periods and this might be the case for nomadic and opportunistic species.

Data Availability & Accuracy

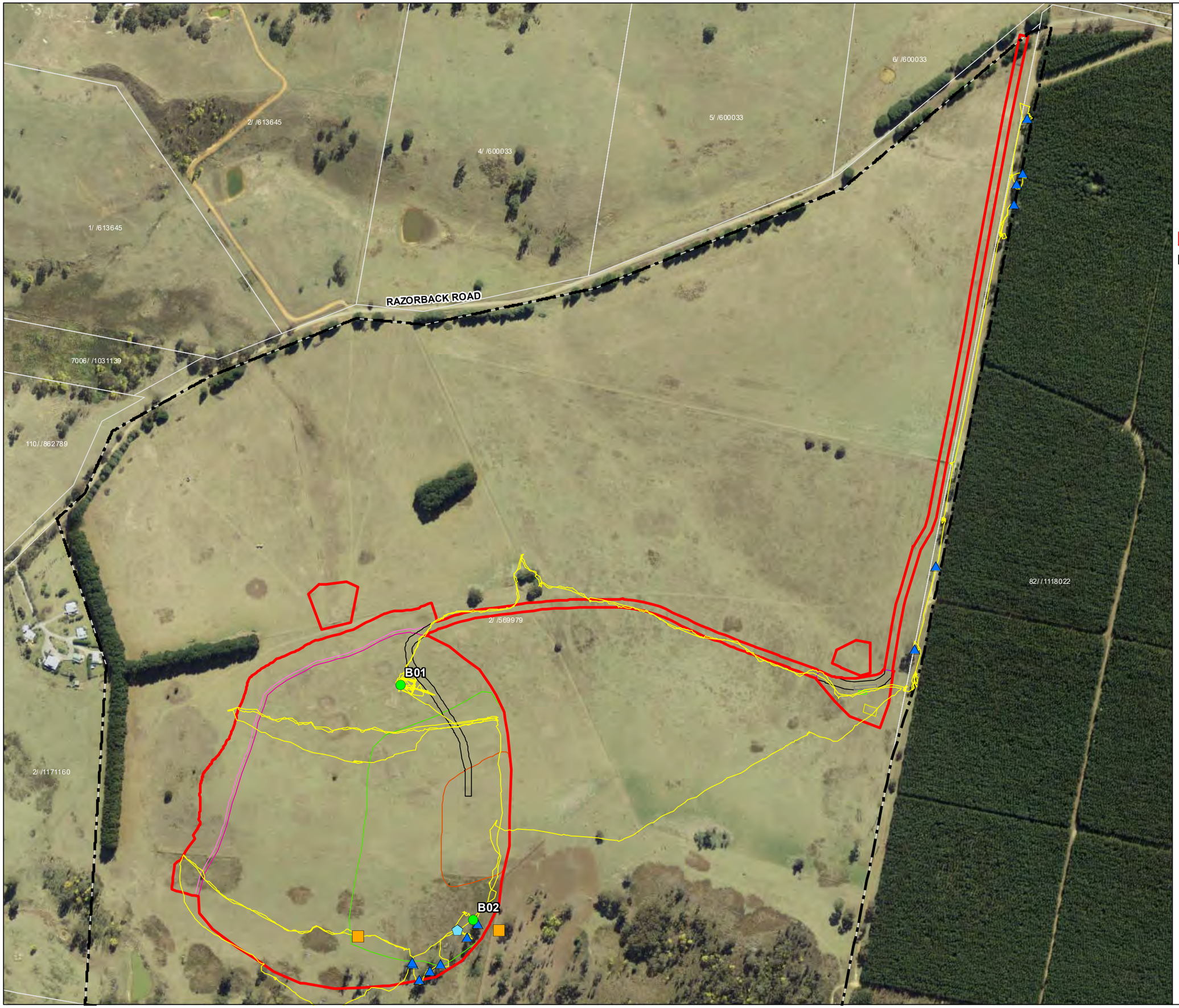
The collated threatened flora and fauna species records provided by Bionet Species Sightings Search of NSW Wildlife are known to vary in accuracy and reliability. This is usually due to the reliability of information provided to the National Parks and Wildlife Service (NPWS) for collation and/or the need to protect specific threatened species locations. During the review of threatened species records sourced from EES BioNet Atlas, consideration has been given to the date and accuracy of each threatened species record in addition to an assessment of habitat suitability within the subject site.

Similarly, EPBC Protected Matters Searches provide a list of threatened species and communities that have been recorded within 10 km of the subject site, or which have suitable habitat within the wider area, and are subject to the same inherent inaccuracy issues as the State derived databases.

In order to address these limitations in respect to data accuracy, threatened species records have only been used to provide a guide to the types of species that occur within the locality of the subject site. Consequently, habitat assessment and the results of surveys conducted within the subject site have been used to assess the likelihood of occurrence of threatened species, populations and ecological communities to occur therein.

39 RAZORBACK ROAD,
RUNNING STREAM

FIGURE 2: FIELD SURVEY AND RESULTS



Legend

- Survey Transect
- BAM Plot
- Hollow Bearing Tree
- Kestral Nest
- Wombat Burrow
- Site
- Study Area
- Cadastral Boundaries

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- Bund
- Hardstand and Parking (Gravel)
- Haul Road
- Infrastructure Area
- New Dam
- Office, Crib Room and Toilets
- Quarry Pit
- Stage 1 Footprint
- Stage 2 Footprint
- Stage 3 Footprint
- Workshop Shed (20m x 12m)

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Aerial: © Department of Customer Service 2020 | Data: MJD Environmental, Borgs, Spatial Services (2021) | Datum/Projection: GDA 2020 MGA Zone 56 | Date: 11/11/2021| Version 1 | Z:\21068 - 39 Razorback Road, Running Stream | This plan should not be relied upon for critical design dimensions.

4 Results

4.1 Desktop Assessment

Using the NSW BioNet Atlas (accessed 19th October 2021), and EPBC Act Protected Matters Search (accessed 19th October 2021), a list of potentially occurring threatened species, populations and ecological communities from the locality of the subject site (10 km radius) has been compiled (**Table 2**). A total of 107 entities have been recorded, of which 21 threatened flora species, 48 fauna species, 7 ecological community, 13 migratory species and 18 marine species have either been detected or have the potential to occur within the locality.

Note: Included in **Table 2** below are the numbers of records (not the number of individuals) for each species within the locality taken from the NSW BioNet Atlas. The EPBC Act Protected Matters Search Tool (PMST) does not provide number of records within the locality. Therefore, the record count is related only to those BC Act listed species that were detected within 10 km of the subject site. It is also noted that due to the terrestrial nature of the subject site, pelagic marine species were not considered under this ecological assessment and have not been included in the list.

Table 2 Threatened Flora & Fauna Database Search Results.

Scientific Name	Common Name	BC Act	EPBC Act	No. of Records	Notes & Source
Threatened Ecological Communities					
Monaro Tableland Cool Temperate Grassy Woodland in the South Eastern Highlands Bioregion		CE		P	Recorded within 10km of the Subject site[1]
Montane Peatlands and Swamps of the New England Tableland, NSW North Coast, Sydney Basin, South East Corner, South Eastern Highlands and Australian Alps bioregions		E	E	K	Recorded within 10km of the Subject site[1];
Tableland Basalt Forest in the Sydney Basin and South Eastern Highlands Bioregions		E		P	Recorded within 10km of the Subject site[1]
Werriwa Tablelands Cool Temperate Grassy Woodland in the South Eastern Highlands and South East Corner Bioregions		CE		P	Recorded within 10km of the Subject site[1]
White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and		CE	CE	K	Recorded within 10km of the Subject site[1]; Community likely to occur within area[2]
Grey Box (*Eucalyptus microcarpa*) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia		-	E		Community may occur within area[2]
Natural Temperate Grassland of the South Eastern Highlands		-	CE	K	Community likely to occur within area[2]
Flora					
Acacia bynoeana	Bynoe's Wattle	-	V	-	Species or species habitat may occur within area[2]
Caladenia attenuata	Duramana Fingers	-	CE	-	Species or species habitat known to occur within area[2]
Dichanthium setosum	bluegrass		V		Species or species habitat likely to occur within area[2]
Eucalyptus aggregata	Black Gum	V	V	1	Recorded within 10km of the Subject site[1] Species or species habitat likely to occur within area[2]

Scientific Name	Common Name	BC Act	EPBC Act	No. of Records	Notes & Source
Eucalyptus cannonii	Capertee Stringybark	V	-	82	Recorded within 10km of the Subject site[1]
Eucalyptus pulverulenta	Silver-leafed Gum	V	V	1	Recorded within 10km of the Subject site[1]; Species or species habitat likely to occur within area[2]
Euphrasia arguta	-	-	CE	-	Species or species habitat may occur within area[2]
Grevillea obtusiflora		E	E	15	Recorded within 10km of the Subject site[1]; Species or species habitat known to occur within area[2]
Homoranthus darwinioides	-	-	V	-	Species or species habitat likely to occur within area[2]
Lepidium hyssopifolium	Basalt Pepper-cress, Peppercress, Rubble Peppercress, Pepperweed	-	E	-	Species or species habitat may occur within area[2]
Leucochrysum albicans subsp. tricolor	Hoary Sunray, Grassland Paper-daisy	-	E	-	Species or species habitat may occur within area[2]
Persoonia marginata	Clandulla Geebung	V	V	40	Species or species habitat known to occur within area[2]
Phebalium bifidum	-	E		1	Recorded within 10km of the Subject site[1];
Pomaderris brunnea	Rufous Pomaderris	-	V	-	Species or species habitat known to occur within area[2]
Pomaderris cotoneaster	Cotoneaster Pomaderris	-	E	-	Species or species habitat may occur within area[2]
Prasophyllum petilum	Tarengo Leek Orchid	E	E	2	Species or species habitat known to occur within area[2]
Prostanthera stricta	Mount Vincent Mint-bush	V	V	28	Recorded within 10km of the Subject site[1] Species or species habitat known to occur within area[2]
Rhizanthella slateri	Eastern Underground Orchid	-	E	-	Species or species habitat may occur within area[2]
Swainsona recta	Small Purple-pea	V	E	7	Recorded within 10km of the Subject site[1] Species or species habitat likely to occur within area[2]
Thesium australe	Austral Toadflax	-	V	-	Species or species habitat likely to occur within area[2]
Veronica blakelyi		V	-	1	Recorded within 10km of the Subject site[1]
Birds					
Anthochaera phrygia	Regent Honeyeater	CE	CE	7	Recorded within 10km of the Subject site[1]; Breeding known to occur within area[2]
Artamus cyanopterus cyanopterus	Dusky Woodswallow	V	-	7	Recorded within 10km of the Subject site[1]
Botaurus poiciloptilus	Australasian Bittern	-	E	-	Species or species habitat may occur within area[2]

Scientific Name	Common Name	BC Act	EPBC Act	No. of Records	Notes & Source
Calidris ferruginea	Curlew Sandpiper	-	CE	-	Species or species habitat may occur within area[2]
Callocephalon fimbriatum	Gang-gang Cockatoo	V	-	24	Recorded within 10km of the Subject site[1];
Calyptorhynchus lathami	Glossy Black-Cockatoo	V	-	2	Recorded within 10km of the Subject site[1]
Chthonicola sagittata	*Speckled Warbler*	V	-	8	Recorded within 10km of the Subject site[1]
Climacteris picumnus victoriae	Brown Treecreeper (eastern subspecies)	V	-	16	Recorded within 10km of the Subject site[1]
Falco subniger	Black Falcon	V	-	1	Recorded within 10km of the Subject site[1]
Falco hypoleucos	Grey Falcon	-	V	-	Species or species habitat likely to occur within area[2]
Glossopsitta pusilla	Little Lorikeet	V	-	17	Recorded within 10km of the Subject site[1]
Grantiella picta	Painted Honeyeater	V	V	2	Recorded within 10km of the Subject site[1] Species or species habitat known to occur within area[2]
Hieraaetus morphnoides	Little Eagle	V	-	3	Recorded within 10km of the Subject site[1]
Hirundapus caudacutus	White-throated Needletail	-	V	1	Species or species habitat known to occur within area[2]
Lathamus discolor	Swift Parrot	-	CE	-	Species or species habitat known to occur within area[2]
Leipoa ocellata	Malleefowl	-	V	-	Species or species habitat likely to occur within area[2]
Lophoictinia isura	Square-tailed Kite	V	-	1	Recorded within 10km of the Subject site[1]
Melanodryas cucullata cucullata	Hooded Robin (south-eastern form)	V	-	4	Recorded within 10km of the Subject site[1]
Melithreptus gularis gularis	Black-chinned Honeyeater (eastern subspecies)	V	-	2	Recorded within 10km of the Subject site[1]
Neophema pulchella	Turquoise Parrot	V	-	1	Recorded within 10km of the Subject site[1]
Ninox connivens	Barking Owl	V	-	1	Recorded within 10km of the Subject site[1]
Ninox strenua	Powerful Owl	V	-	10	Recorded within 10km of the Subject site[1]
Numenius madagascariensis	Eastern Curlew		CE	-	Species or species habitat may occur within area[2]
Petroica boodang	Scarlet Robin	V	-	10	Recorded within 10km of the Subject site[1]
Polytelis swainsonii	Superb Parrot	-	V	-	Species or species habitat likely to occur within area[2]
Rostratula australis	Australian Painted Snipe	-	E	-	Species or species habitat likely to occur within area[2]
Stagonopleura guttata	Diamond Firetail	V	-	15	Recorded within 10km of the Subject site[1]
Tyto tenebricosa	Sooty Owl	V	-	1	Recorded within 10km of the Subject site[1]

Scientific Name	Common Name	BC Act	EPBC Act	No. of Records	Notes & Source
Mammals					
Chalinolobus dwyeri	Large-eared Pied Bat	V	V	5	Recorded within 10km of the Subject site[1]; Species or species habitat known to occur within area[2]
Dasyurus maculatus	Spotted-tailed Quoll	V	E	5	Recorded within 10km of the Subject site[1] Species or species habitat known to occur within area[2]
Falsistrellus tasmaniensis	Eastern False Pipistrelle	V	-	6	Recorded within 10km of the Subject site[1]
Nyctophilus corbeni	Corben's Long-eared Bat	-	V	-	Species or species habitat may occur within area[2]
Miniopterus orianae oceanensis	Large Bent-winged Bat	V	-	24	Recorded within 10km of the Subject site[1]
Petauroides volans	Greater Glider	-	V	26	Recorded within 10km of the Subject site[1] Species or species habitat known to occur within area[2]
Petaurus norfolcensis	Squirrel Glider	V	-	1	Recorded within 10km of the Subject site[1]
Petrogale penicillata	Brush-tailed Rock-wallaby	-	V	-	Species or species habitat likely to occur within area[2]
Phascolarctos cinereus	Koala	V	V	17	Recorded within 10km of the Subject site[1] Species or species habitat known to occur within area[2]
Pseudomys novaehollandiae	New Holland Mouse	-	V	-	Species or species habitat may occur within area[2]
Pteropus poliocephalus	Grey-headed Flying-fox	V	V	2	Recorded within 10km of the Subject site[1]; Foraging, feeding or related behaviour known to occur within area[2]
Saccolaimus flaviventris	Yellow-bellied Sheathtail-bat	V	-	3	Recorded within 10km of the Subject site[1]
Scoteanax rueppellii	Greater Broad-nosed Bat	V	-	1	Recorded within 10km of the Subject site[1]
Vespadelus troughtoni	Eastern Cave Bat	V	-	5	Recorded within 10km of the Subject site[1]
Herpetofauna					
Aprasia parapulchella	Pink-tailed Worm-lizard	-	V	-	Species or species habitat likely to occur within area[2]
Delma impar	Striped Legless Lizard	-	V	-	Species or species habitat may occur within area[2]
Heleioporus australiacus	Giant Burrowing Frog	-	V	-	Species or species may occur within area[2]
Hoplocephalus bungaroides	Broad-headed Snake	-	V	-	Species or species habitat may occur within area[2]
Litoria booroolongensis	*Booroolong Frog*	E	E	156	Recorded within 10km of the Subject site[1] Species or species habitat known to occur within area[2]

Scientific Name	Common Name	BC Act	EPBC Act	No. of Records	Notes & Source
Varanus rosenbergi	Rosenberg's Goanna	V		1	Recorded within 10km of the Subject site[1]
Listed Migratory Species					
Migratory Marine Birds					
Apus pacificus	Fork-tailed Swift	-	M	-	Species or species habitat likely to occur within area[2]
Migratory Terrestrial Birds					
Hirundapus caudacutus	White-throated Needletail	-	M, V	1	Recorded within 10km of the Subject site[1] Species or Species habitat known to occur within area[2]
Monarcha melanopsis	Black-faced Monarch	-	M	-	Species or Species may occur within area[2]
Motacilla flava	Yellow Wagtail	-	M	-	Species or Species habitat may occur within area[2]
Myiagra cyanoleuca	Satin Flycatcher	-	M	-	Species or Species habitat known to occur within area[2]
Rhipidura rufifrons	Rufous Fantail	-	M	-	Species or Species habitat known to occur within area[2]
Migratory Wetlands Birds					
Actitis hypoleucos	Common Sandpiper	-	M	-	Species or Species habitat may occur within area[2]
Calidris acuminata	Sharp-tailed Sandpiper	-	M	-	Species or Species habitat may occur within area[2]
Calidris ferruginea	Curlew Sandpiper	-	M, CE	-	Species or Species habitat may occur within area[2]
Calidris melanotos	Pectoral Sandpiper	-	M	-	Species or Species may occur within area[2]
Gallinago hardwickii	Latham's Snipe	-	M	-	Species or Species habitat known to occur within area[2]
Numenius madagascariensis	Eastern Curlew	-	M, CE	-	Species or Species may occur within area[2]
Pandion haliaetus	Osprey	-	M	-	Species or Species may occur within area[2]
Listed Marine Species					
Birds					
Actitis hypoleucos	Common Sandpiper	-	A	-	Species or species habitat may occur within area[2]
Apus pacificus	Fork-tailed Swift	-	A	-	Species or species habitat likely to occur within area[2]
Ardea ibis	Cattle Egret	-	A	-	Species or species habitat may occur within area[2]
Calidris acuminata	Sharp-tailed Sandpiper	-	A	-	Species or species habitat may occur within area[2]
Calidris ferruginea	Curlew Sandpiper	-	A, CE	-	Species or species habitat may occur within area[2]
Calidris melanotos	Pectoral Sandpiper	-	A	-	Species or species habitat may occur within area[2]
Chrysococcyx osculans	Black-eared Cuckoo	-	A	-	Species or species habitat known to occur within area[2]
Gallinago hardwickii	Latham's Snipe	-	A	-	Species or species habitat known to occur within area[2]

Scientific Name	Common Name	BC Act	EPBC Act	No. of Records	Notes & Source
Haliaeetus leucogaster	White-bellied Sea-Eagle	-	A	-	Species or species habitat likely to occur within area[2]
Hirundapus caudacutus	White-throated Needletail	-	A, V	1	Recorded within 10km of the Subject site[1] Species or species habitat known to occur within area[2]
Lathamus discolor	Swift Parrot	-	A, CE	-	Species or species habitat known to occur within area[2]
Merops ornatus	Rainbow Bee-eater	-	A	-	Species or species habitat may occur within area[2]
Monarcha melanopsis	Black-faced Monarch	-	A	-	Species or species habitat may occur within area[2]
Motacilla flava	Yellow Wagtail	-	A	-	Species or species habitat may occur within area[2]
Myiagra cyanoleuca	Satin Flycatcher	-	A	-	Species or species habitat known to occur within area[2]
Numenius madagascariensis	Eastern Curlew	-	A, CE	-	Species or species habitat may occur within area[2]
Pandion haliaetus	Osprey	-	A	-	Species or species habitat may occur within area[2]
Rhipidura rufifrons	Rufous Fantail	-	A	-	Species or species habitat known to occur within area[2]
Rostratula benghalensis (sensu lato)	Painted Snipe	-	A, E	-	Species or species habitat likely to occur within area[2]

Key:

V = Vulnerable
E = Endangered
M = Migratory
CE = Critically Endangered
A= Marine

K = Known where there are confirmed records, specimens or otherwise verified sightings in any CMA subregion overlapping the search area

P = Predicted where there is high expectation by relevant experts that a species is likely to be present in any CMA subregion overlapping the search area, based on known presence of suitable habitat and distribution with adjoining subregions

1 – NSW BioNet Atlas, Office of Environment and Heritage (Accessed 19-10-2021).
2 - Commonwealth Protected Matters Search Tool, Department of the Environment (Accessed 19-10-2021)

4.2 Flora Survey

4.2.1 Vegetation Mapping & Delineation

The majority of the vegetation observed within the subject site exists in a high disturbed state due to the mass plantation of Pine trees for plantation purposes throughout the Study Area.

Small patches of vegetated areas do exist within the southern extent towards the creek, this area has been identified as remnant *PCT 1191 - Snow Gum - Candle Bark woodland on broad valley flats of the tablelands and slopes, South Eastern Highlands Bioregion*. The extent of PCT 1191 has been classified as being in 'Low' condition due to the high disturbance within the area, with predominantly all the understorey vegetation consisting of weeds with scattered natives. PCT 1191 contains large mature trees with multiple hollows, with the species assemblage of the remnant overstorey forming the basis for the justification of the assigned PCT. The extent of remnant PCT 1191 is not located within the extent of the approved, managed pine plantation and, as such, has been assessed as 'native vegetation' under this BA.

The extant vegetation within the subject site has been described below. Refer to **Figure 3**. A summary of vegetation presented in Table 3 below.

Table 3 Vegetation Community Areas

Vegetation Community	TEC	Area (ha)
Pine Plantation/Disturbed Grassland	**No**	24.0 ha
PCT 1191 - Snow Gum - Candle Bark woodland on broad valley flats of the tablelands and slopes, South Eastern Highlands Bioregion (Low)	**No**	0.25 ha

Pine Plantation/Disturbed Grassland	
Condition Class	Disturbed
Vegetation Zone	VZ1
Area within Development Area	24.0 ha
Vegetation Formation / Class	Grassland
Survey Effort	Random meander
Floristic Description	This vegetation community was observed throughout the majority of the subject site and comprises of some native grasses, however, the mass pine plantings throughout this area have led to significant dieback and large areas of bare ground. No native trees exist within this area. This vegetation zone consists primarily of *Pinus spp.* (Pine Tree) saplings that have recently been planted. Due to the ground disturbance, the bare ground only entailed a sparse abundance of native species. Native tree species were wholly absent from this area with only shrubs and grasses occurring. Native species include *Cassinia sifton* (Sifton Bush), *Hibbertia obtusifolia* (Hoary Guinea Flower), *Panicum effusum* (Hairy Panic), *Anthosanche scabra* (Wheatgrass), *Poa sieberiana* (Snow Grass), *Rytidosperma pallidum* (Red Anther Wallaby Grass), *Microlaeana stipoides* (Weeping Grass), *Austrostipa densiflora*, *Lomandra filiformis* subsp. *coriacea* and *Oxalis perrenans*. Exotic species were also abundant, including *Rubus fruiticosus* (Blackberry), *Hypochaeris radicata* (Catsear), *Brassica rapa* (Field Mustard), *Conyza canadensis* (Conyza), *Atriplex prostrata, Cirsium vulgare* (Spear Thistle), *Senecio jacobaea* (Ragwort), *Trifolium, repens* (White Clover) and *Dactylis glomerata* (Cocksfoot). Due to this vegetation community showing signs of disturbance, it has been classified as being in disturbed condition.
Associated with Threatened Ecological Communities (TEC)	No
	No

Plate 1. Pine Plantation/Disturbed Grassland

PCT 1191 - Snow Gum - Candle Bark woodland on broad valley flats of the tablelands and slopes, South Eastern Highlands Bioregion	
Condition Class	Low
Vegetation Zone	VZ2
Area within Development Area	0.25 ha
Vegetation Formation / Class	KF_CH3 Grassy Woodland
Survey Effort	Detailed Walkover
Floristic Description	This vegetation community was observed within the southern extent of the subject site. This vegetation exists as scattered trees along the footslopes of the southern drainage line. PCT allocation confidence is considered low for this vegetation low due to the heavily modified and disturbed understorey. Native trees species occurring within this area were limited to old, mature *Eucalyptus rubida* (Candle Bark) comprising of multiple hollows. Other tree age cohorts were limited to saplings and juveniles due to past land use. Other tree species observed included *Eucalyptus viminalis* (Ribbon Gum) and *Eucalyptus pauciflora* (Snow Gum) and *Eucalyptus dives* (Broad-leaved Peppermint). The shrub layer is limited to *Cassinia sifton*, *Acacia melanoxylon, Hibbertia obtusifolia* and *Acacia dealbata* (Silver Wattle). Native groundcover species detected include *Chrysocephalum apiculatum* (Common Everlasting), *Pteridium esculentum*, *Craspedia variabilis* (Common Billy Button), *Lomandra filiformis subsp. coriacea*, *Veronica plebeia* (Trailing Speedwell) and *Ranunculus lappaceus* (Common Buttercup). Exotic species were also abundant, including *Rubus fruiticosus* (Blackberry), *Hypochaeris radicata* (Catsear), *Brassica rapa* (Field Mustard), *Conyza canadensis* (Conyza), *Atriplex prostrata, Cirsium vulgare* (Spear Thistle), *Senecio jacobaea* (Ragwort), *Trifolium, repens* (White Clover) and *Dactylis glomerata* (Cocksfoot).
Associated with Threatened Ecological Communities (TEC)	No
	No

PCT 1191 - Snow Gum - Candle Bark woodland on broad valley flats of the tablelands and slopes, South Eastern Highlands Bioregion

Plate 2. PCT 1191 - Snow Gum - Candle Bark woodland on broad valley flats of the tablelands and slopes, South Eastern Highlands Bioregion

39 RAZORBACK ROAD, RUNNING STREAM

FIGURE 3: VEGETATION

Legend

- Site
- Study Area
- Cadastral Boundaries

Plant Community Types

- Pine Plantation/Disturbed Grassland
- PCT 1191: Snow Gum - Mountain Gum tussock grass-herb forest of the South Eastern Highlands Bioregion (Moderate Condition)

D20211021_ProjectDesign

- Bund
- Hardstand and Parking (Gravel)
- Haul Road
- Infrastructure Area
- New Dam
- Office, Crib Room and Toilets
- Quarry Pit
- Stage 1 Footprint
- Stage 2 Footprint
- Stage 3 Footprint
- Workshop Shed (20m x 12m)

N
W E
S

0 70 140 280

Meters

1:5,200

MJD Environmental

Aerial: © Department of Customer Service 2020 | Data: MJD Environmental, Borgs, Spatial Services (2021) | Datum/Projection: GDA 2020 MGA Zone 56 | Date: 11/11/2021| Version 1 | Z:\21068 - 39 Razorback Road, Running Stream | This plan should not be relied upon for critical design dimensions.

4.3 Fauna Survey

The following section provides the fauna results from the subject site survey. A total of ten (10) fauna species were observed opportunistically during the survey period. A full list of the fauna species recorded within the subject site is provided as **Appendix 2**.

4.3.1 Avifauna

Species common to open, disturbed landscapes constituted the majority of observations during field surveys. Species observed include Noisy Miner (*Manorina melanocephala*), Australian Magpie (*Cracticus tibicen*), Australian Raven (*Corvus coronoides*), and Galah (*Eolophus roseicapillus*).

4.3.1 Herpetofauna

No species of herpetofauna were observed during field surveys.

4.4 Habitat Survey

Arboreal and Terrestrial Habitat

The fauna habitat within the subject site is sparse, largely limited to the stand of remnant overstorey trees to the southeast of the proposed development footprint. Conversely, the majority of the proposed development footprint has been disturbed through management of the pine plantation and thus does not contain any remnant overstorey trees. Seven (7) hollow-bearing trees were observed within the stand of PCT 1191 to the south of the subject site. Although there was an absence in hollow logs, some denning habitat were detected within the subject site in the form of wombat burrows. Native grass tussocks may also provide marginal habitat for native reptiles such as skinks. Birds foraging for insects on the open grass and grazing mammals are the only species likely to utilise this habitat on a frequent basis. Groundcover vegetation could potentially provide foraging habitat for grazing animals and cover for construction of burrows or nests amongst the dense grass.

Connectivity

The subject site constitutes of disturbed grasslands with heavy ground disturbance from the mass plantings of *Pinus spp.* and does not contain consistent grass cover to create a safe corridor for many animals. A highly fragmented and disturbed corridor lies within the gully to the immediate south of the subject site. This area is to be retained and will not be impacted upon under the proposed development. In summary, it is highly unlikely that any native corridors will be further fragmented nor impacted upon under this proposal.

5 Impact Assessment

The following section provides an overview of the potential direct and indirect impacts associated with the proposed development. This overview has been used to inform a likelihood of occurrence determination and assess the potential for impacts to occur to threatened species, populations and ecological communities. In such instances, this has determined the need for further Test of Significance (5-part test).

5.1 Potential Impacts

Based on the ecological survey results for the subject site, the following direct and indirect impacts have been generated to inform the impact assessment related to the proposal.

Direct Impacts

The ecological field assessment found that the proposal will remove up to:

- 24 ha of Pine Plantation/Disturbed Grassland, and
- 0.25 ha of PCT 1191: Snow Gum - Candle Bark woodland on broad valley flats of the tablelands and slopes, South Eastern Highlands Bioregion (Low Condition)

Flora

No threatened flora was detected during field surveys.

Fauna

Up to seven (7) hollow bearing trees were recorded within the subject site and may be removed for the proposed development. The proposal will also remove multiple wombat burrows observed within the subject site during the field survey.

Indirect Impacts

The proposal may result in the following indirect impacts associated with the construction and operation of the quarry:

- Introduction and dispersal of exotic flora species from machinery.
- Potential for increased sediment flows in the event insufficient erosion and sediment control are installed throughout the duration of construction of the proposed development.

5.2 Threatened Species & Communities Likelihood of Occurrence Assessment

Threatened flora and fauna species (listed under the BC Act and/or EPBC Act) that have been gazetted and recorded within a 10 kilometres radius of the subject site have been considered within the likelihood of occurence assessment contained in **Table 4**. Each species / community is considered for its likelihood to occur on the subject site and scale of impact arising from the proposal. Where a potential for impact is considered, the entity has been nominated for further assessment in accordance with Section 7.3(1) of the BC Act (5 Part Test) in **Appendix 3**.

'**Species / Community**' – Lists each threatened species / EEC known from the locality (10 km radius). The status and number of records along with source and notes for each threatened entity under the BC Act and the EPBC Act are also provided.

'**Habitat / Species Descriptions**' – for up to date threatened species profiles including habitat descriptions and other key ecological information reference is made to the following online resources:

- NSW OEH Threatened Species Profile Search - http://www.environment.nsw.gov.au/threatenedSpeciesApp/
- Commonwealth Biodiversity: Species Profile and Threats Database (SPRAT) - http://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl

'**Likelihood of Occurrence on Subject site**' – Assesses the likelihood of each locally recorded species and EEC to occur within the Subject site, using knowledge of each species' habitat and lifecycle requirements and with regard the habitat types present within the Subject site, results of the literature review and database searches and field investigations. The location and number of records of the species (NSW Bionet Species Sightings Search) were also considered in determining the probability of occurrence.

'**Potential for Impact**' – Assesses the likelihood of impacts to each species / community that would result from the proposed development, considering direct and indirect short and long-term impacts.

Database searches were conducted of the NSW Bionet Atlas Species Sightings Search (19-10-2021) and Commonwealth Protected Matters Search Tool (19-10-2021).

Note: Pelagic marine species (bird, reptile, fish, mammal) recorded on the Protected Matters have not been listed or assessed herewith.

Table 4 Likelihood of Occurrence and Impact Assessment

Scientific Name	Common Name	BC Act	EPBC Act	No. of Records	Habitat Description	Likelihood of Occurrence	Potential Impacts	ToS Required
Threatened Ecological Communities								
Monaro Tableland Cool Temperate Grassy Woodland in the South Eastern Highlands Bioregion		CE		P	Monaro Grassy Woodland (MGW) occurs in the Southern Tablelands of NSW, occupying broad valley floors and slopes and low rises of the moderately undulating tablelands on a wide variety of substrates including basalt, fine-grained sedimentary rocks, granite, acid volcanics and alluvium. Monaro Tablelands Cool Temperate Grassy Woodland is a woodland to low open woodland community. It is characterised by a sparse to very sparse tree (woodland to open woodland) layer dominated by *Eucalyptus pauciflora* (snow gum) either as a single species or with any of *Acacia melanoxylon* (blackwood), *E. rubida* (candlebark), *E. stellulata* (black sallee) and/or *E. viminalis* (ribbon gum) as co-dominants. Other tree species may occur within the community, although very infrequently and always as canopy sub-dominants.	Low. Not recorded within Study area nor does the subject site occur within the EECs geographic range.	Low	No
Montane Peatlands and Swamps of the New England Tableland, NSW North Coast, Sydney Basin, South East Corner, South Eastern Highlands and Australian Alps bioregions		E	E	K	The Montane Peatlands and Swamps EEC is currently known from parts of the Local Government Areas of Armidale Dumaresq, Bega Valley, Bellingen, Blue Mountains, Bombala, Cooma-Monaro, Eurobodalla, Gloucester, Greater Argyle, Guyra, Hawkesbury, Lithgow, Oberon,	Recorded within the area, however, no areas of peatlands nor swamps were detected within the subject site.	Low	No

Scientific Name	Common Name	BC Act	EPBC Act	No. of Records	Habitat Description	Likelihood of Occurrence	Potential Impacts	ToS Required
					Palerang, Severn, Shoalhaven, Snowy River, Tenterfield, Tumbarumba, Tumut, Upper Lachlan and Wingecarribee but may occur elsewhere in these bioregions. The community is currently known from conservation reserves including Werrikimbee, Barrington, Kanangra-Boyd, Monga, Wadbilliga, South East Forests and Kosciuszko National Parks. The Montane Peatlands community is associated with accumulated peaty or organic-mineral sediments on poorly drained flats in the headwaters of streams. It occurs on undulating tablelands and plateaux, above 400-500 m elevation, generally in catchments with basic volcanic or fine-grained sedimentary substrates or, occasionally, granite.			
Tableland Basalt Forest in the Sydney Basin and South Eastern Highlands Bioregions		E	-	P	Tableland Basalt Forest is currently found in the Eastern Highlands and Southern and Central Tablelands, covering the local government areas of Bathurst Regional, Goulburn Mulwaree, Oberon, Palerang, Shoalhaven, Upper Lachlan and Wingecarribee. Typically occurs on loam or clay soils associated with basalt or, less commonly, alluvium, fine-grained sedimentary rocks, granites and similar substrates that produce relatively fertile soils. Its distribution spans altitudes from approximately 600 m to 900 m above sea level, usually on undulating or hilly terrain. Mean annual rainfall varies from approximately 750 mm up to 1100 mm across the distribution of the community.	An onsite inspection confirmed this community does not occur within the subject site.	Low	No

Scientific Name	Common Name	BC Act	EPBC Act	No. of Records	Habitat Description	Likelihood of Occurrence	Potential Impacts	ToS Required
Werriwa Tablelands Cool Temperate Grassy Woodland in the South Eastern Highlands and South East Corner Bioregions		CE	-	P	Werriwa Grassy Woodlands (WGW) occur in the Southern Tablelands of NSW, occupying broad valley floors and gentle slopes and low rises of the moderately undulating Southern Tablelands of NSW. It has been commonly recorded on a wide variety of substrates including basalt, fine-grained sedimentary rocks, granite, acid volcanics and alluvium but rarely on steep ridge lines on the tablelands. Geographically, it occurs on the eastern fall of the Great Dividing Range between Golspie in the north and Majors Creek in the south. The community has been recorded as far to the east as Marulan and as far west as Carwoola. Werriwa Tablelands Cool Temperate Grassy Woodland ranges in structure from woodland to low open woodland. It is characterised by a sparse to very sparse (woodland to open woodland) tree layer dominated by *Eucalyptus pauciflora* (Snowgum) either in single species stands or with *E. rubida* (Candlebark) as a co-dominant. Other tree species have been recorded within the community, although very infrequently and always as canopy sub-dominants.	Low. An onsite inspection confirmed this community does not occur within the subject site.	Low	No
White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney		CE	CE	K	The Box – Gum Grassy Woodland and Derived Grassland ecological community occurs in an arc along the western slopes and tablelands of the Great Dividing Range from Southern Queensland	Recorded adjacent to the Study Area. Reviewing and adjustment of this proposal has led to the complete	Low	No

Scientific Name	Common Name	BC Act	EPBC Act	No. of Records	Habitat Description	Likelihood of Occurrence	Potential Impacts	ToS Required
Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and					through NSW to central Victoria (Beadle 1981). It occurs in the Brigalow Belt South, Nandewar, New England Tableland, South Eastern Queensland, Sydney Basin, NSW North Coast, South Eastern Highlands, South East Corner, NSW South Western Slopes, Victorian Midlands and Riverina Bioregions (Environment Australia 2000).	avoidance of this EEC under this proposal.		
Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia		-	E	-	Generally occurs in landscapes of low-relief such as flat to undulating plains, low slopes and rises and, to a lesser extent, drainage depressions and flats. The ecological community may extend to more elevated hillslopes on the fringes of its range where it intergrades with other woodland or dry sclerophyll forest communities. This ecological community often occurs on productive soils derived from alluvial or colluvial materials but may occur on a range of substrates. Soils include: duplex soils; red-brown earths; gradational soils; non-calceric and calceric browns with variable textures including sandy clay loam, clay loam, sandy loam, loam, heavy clay; and loams with quartzite surface stones and rocky outcroppings in the Mount Lofty Ranges. Gilgai topography may be present. The ecological community tends to occupy drier sites within the belt of grassy woodlands in south-eastern Australia. The Grey Box (*E. microcarpa*) Grassy woodlands and Derived Native Grasslands of South Eastern Australia ecological community occurs from	Low. An onsite inspection confirmed this community does not occur within the subject site.	Low	No

Scientific Name	Common Name	BC Act	EPBC Act	No. of Records	Habitat Description	Likelihood of Occurrence	Potential Impacts	ToS Required
					central-western NSW, through northern and central Victoria into South Australia. The core distribution of the ecological community lies within the NSW South Western Slopes, Riverina, Victorian Midlands and Murray Darling Depression bioregions but occurrences of the national ecological community may also extend into some of the adjoining bioregions.			
Natural Temperate Grassland of the South Eastern Highlands		-	CE	K	Natural Temperate Grassland of the South Eastern Highlands occurs at altitudes between 250m to 1200m in and around the South Eastern Highlands. The ecological community occurs on a wide range of topographic positions and on soils derived from a variety of substrates, including granites, basalts, sediments, colluvium and alluvium.	Low. An onsite inspection confirmed this community does not occur within the subject site.	Low	No
Flora								
Acacia bynoeana	Bynoe's Wattle, Tiny Wattle	-	V	-	The species is currently known from about 30 locations, with the size of the populations at most locations being very small (1-5 plants). Occurs in heath or dry sclerophyll forest on sandy soils. Seems to prefer open, sometimes slightly disturbed sites such as trail margins, edges of roadside spoil mounds and in recently burnt patches. Associated overstorey species include Red Bloodwood, Scribbly Gum, Parramatta Red Gum, Saw Banksia and Narrow-leaved Apple.	Low. No potential habitat for this species occurs within the study area	Low	No

Scientific Name	Common Name	BC Act	EPBC Act	No. of Records	Habitat Description	Likelihood of Occurrence	Potential Impacts	ToS Required
Caladenia attenuata	Duramana Fingers	-	CE	-	Caladenia attenuata is endemic to NSW. It has a highly restricted distribution, having been recorded from 2 localities within the Bathurst Ilford region with an area of occupancy estimated to be 8 square kilometres.	Moderate. Moderate potential habitat for this species occurs within the study area.	Moderate	Yes
Dichanthium setosum	bluegrass	-	V	-	Bluegrass occurs on the New England Tablelands, North West Slopes and Plains and the Central Western Slopes of NSW, extending to northern Queensland. It occurs widely on private property, including in the Inverell, Guyra, Armidale and Glen Innes areas. Associated with heavy basaltic black soils and red-brown loams with clay subsoil. Often found in moderately disturbed areas such as cleared woodland, grassy roadside remnants and highly disturbed pasture. (Often collected from disturbed open grassy woodlands on the northern tablelands, where the habitat has been variously grazed, nutrient-enriched and water-enriched).	Low. No potential habitat for this species occurs within the study area	Low	No

Scientific Name	Common Name	BC Act	EPBC Act	No. of Records	Habitat Description	Likelihood of Occurrence	Potential Impacts	ToS Required
Eucalyptus aggregata	Black Gum	V	V	1	In NSW Black Gum occurs in the South Eastern Highlands Bioregion and on the western fringe of the Sydney Basin Bioregion. Black Gum has a moderately narrow distribution, occurring mainly in the wetter, cooler and higher parts of the tablelands, for example in the Blayney, Crookwell, Goulburn, Braidwood and Bungendore districts. Grows in the lowest parts of the landscape, on alluvial soils, on cold, poorly-drained flats and hollows adjacent to creeks and small rivers. Also occurs as isolated paddock trees in modified native or exotic pastures and particularly in TSRs.	Low. No potential habitat for this species occurs within the study area	Low	No

Scientific Name	Common Name	BC Act	EPBC Act	No. of Records	Habitat Description	Likelihood of Occurrence	Potential Impacts	ToS Required
Eucalyptus cannonii	Capertee Stringybark	V	-	82	The Capertee Stringybark is predominantly restricted to the central tablelands and slopes of NSW between the Golden Highway in the north, and the Mitchell Highway in the south. The species' distribution is bounded from east of Bathurst, to Wallerwang near Lithgow, north along the western edge of Wollemi National Park and north-west to Mudgee; isolated occurrences are known from a short way north of Goulburn River National Park between Dunedoo and Merriwa. Associated eucalypt species are diverse: *Eucalyptus viminalis, Eucalyptus mannifera, Eucalyptus polyanthemos, Eucalyptus rossii, Eucalyptus blakelyi, Eucalyptus oblonga, Eucalyptus sparsifolia, Eucalyptus bridgesiana, Eucalyptus dalrympleana, Eucalyptus melliodora, Eucalyptus dives* and *Angophora floribunda*.	Low. All trees were inspected during field surveys. Furthermore, no potential habitat for this species occurs within the study area	Low	No
Eucalyptus pulverulenta	Silver-leafed Gum	V	V	1	The Silver-leafed Gum is found in two quite separate areas, the Lithgow to Bathurst area and the Monaro (Bredbo to Bombala). Grows in shallow soils as an understorey plant in open forest, typically dominated by Brittle Gum (*Eucalyptus mannifera*), Red Stringybark (*E. macrorhynca*), Broad-leafed Peppermint (*E. dives*), Silvertop Ash (*E. sieberi*) and Apple Box (*E. bridgesiana*).	Low. All trees were inspected during field surveys. Furthermore, no potential habitat for this species occurs within the study area	Low	No
Euphrasia arguta	-	-	CE	-	The current known populations of *Euphrasia arguta* are located in the Nundle State Forest in eucalypt forest	Low. No potential habitat for this species occurs within the study area	Low	No

Scientific Name	Common Name	BC Act	EPBC Act	No. of Records	Habitat Description	Likelihood of Occurrence	Potential Impacts	ToS Required
					with a mixed grass and shrub understorey (D Binns pers. comm. February 2009). This area is located at the junction of the New England Tableland, NSW North Coast, and Nandewar Bioregions. here are no known occurrences of *Euphrasia arguta* in a conservation reserve. The majority of *E. arguta* plants are located in Nundle State Forest. A small part of the largest population of *E. arguta* is located on private land that is adjacent to the State Forest. The land is currently used for rough grazing by sheep or cattle.			
Grevillea obtusiflora		E	E	15	Subspecies *obtusiflora* is restricted to Clandulla State Forest near Kandos. Subspecies obtusiflora occurs as scattered groups in the understorey of low open eucalypt forest at altitudes of around 730 metres above sea level. Species growing in association with subspecies obtusiflora include E*ucalyptus crebra, E. dealbata, E. tenella, Callistemon linearis, Acacia buxifolia, Acacia elongata, Leucopogon sp., Caustis flexuosa, Dianella* sp. and *Patersonia* sp. Subspecies obtusiflora flowers sparsely in winter and spring with flowering peaking in October. Fruits, seeds and seedlings have not been recorded, indicating that it may be wholly dependent on root suckering for reproduction. The flower shape indicates it is mainly pollinated by birds, with bees being potential secondary pollinators. Subpopulation structure and isolation may affect pollination within and	Low. No potential habitat for this species occurs within the study area	Low	No

Scientific Name	Common Name	BC Act	EPBC Act	No. of Records	Habitat Description	Likelihood of Occurrence	Potential Impacts	ToS Required
					between sub-populations to cause lack of fruit set. Other causes of failure to produce seed may be genetically influenced.			
Homoranthus darwinioides	-	-	V	-	Rare in the central tablelands and western slopes of NSW, occurring from Putty to the Dubbo district. It is found west of Muswellbrook between Merriwa and Bylong, and north of Muswellbrook to Goonoo SCA. Grows in in various woodland habitats with shrubby understoreys, usually in gravely sandy soils. Landforms the species has been recorded growing on include flat sunny ridge tops with scrubby woodland, sloping ridges, gentle south-facing slopes, and a slight depression on a roadside with loamy sand. Associated species include *Callitris endlicheri, Eucalyptus crebra, E. fibrosa, E. trachyphloia, E. beyeri subsp. illaquens, E. dwyeri, E. rossii, Leptospermum divaricatum, Melaleuca uncinata, Calytrix tetragona, Allocasuarina* spp. and *Micromyrtus* spp.	Low. No potential habitat for this species occurs within the study area	Low	No
Lepidium hyssopifolium	Basalt Pepper-cress, Peppercress, Rubble Peppercress, Pepperweed	-	E	-	In NSW, the Aromatic Peppercress has a small population near Bathurst, one populations at Bungendore, and one near Crookwell. The species occurs in a variety of habitats including woodland with a grassy understorey and grassland. Appears to respond to disturbance, having appeared after soil disturbance at one site.	Low. No potential habitat for this species occurs within the study area	Low	No

Scientific Name	Common Name	BC Act	EPBC Act	No. of Records	Habitat Description	Likelihood of Occurrence	Potential Impacts	ToS Required
Leucochrysum albicans subsp. *tricolor*	Hoary Sunray, Grassland Paper-daisy	-	E	-	Endemic to south-eastern Australia, where it is currently known from three geographically separate areas in Tasmania, Victoria and south-eastern NSW and ACT. In NSW it currently occurs on the Southern Tablelands adjacent areas in an area roughly bounded by Albury, Bega and Goulburn, with a few scattered localities know from beyond this region. Occurs in a wide variety of grassland, woodland and forest habitats, generally on relatively heavy soils. Can occur in modified habitats such as semi-urban areas and roadsides. Highly dependent on the presence of bare ground for germination. In some areas, disturbance is required for successful establishment.	Low. Little potential habitat for this species occurs within the study area coupled with no records within the surrounding area.	Low	No
Persoonia marginata	Clandulla Geebung	V	V	40	The Clandulla Geebung occurs between Kandos and Clarence in the western Blue Mountains. Populations are largely disjunct and include Clandulla, Ben Bullen and Sunny Corner State Forests; isolated populations have also been recorded from Turon and Gardens of Stone National Parks. Grows in dry sclerophyll forest and woodland communities on sandstone. May initially respond favourably to disturbance, with greater densities found along the edges of tracks and in areas disturbed by forestry activities.	Low. No potential habitat for this species occurs within the study area in the form of sandstone substrate.	Low	No

Scientific Name	Common Name	BC Act	EPBC Act	No. of Records	Habitat Description	Likelihood of Occurrence	Potential Impacts	ToS Required
Phebalium bifidum	-	E		1	*Phebalium bifidum* is restricted to the Capertee Valley, south east of Kandos in the Sydney Basin bioregion, NSW. The species is extremely rare, in being known from only four disjunct sites from within the Valley. *Phebalium bifidum* is not known from any conservation reserve. *Phebalium bifidum* is a shrub between 0.2-1.5 m high. The branchlets are erect to spreading and densely covered in glossy, scale-like hairs, which vary in colour when young from cream with a scattering of rust-colour scales to uniformly rust-colour, discolouring to matt-grey with age. Leaves of sexually mature shoots ('adult leaves') are Y-shaped, bilobed, 3.5-14 mm long with a distinctly impressed midvein. The upper surface is dark green when fresh, fading to olive or greyish green when dried. Inflorescence appear in clusters of 2-11. The five-petaled flowers are cream to bright lemon yellow on the upper-surface with creamy scales changing to rust-colour scales at the tip of the petals lower surface.	Low. No potential habitat for this species occurs within the study area	Low	No
Pomaderris brunnea	Rufous Pomaderris	-	V	-	Brown Pomaderris is found in a very limited area around the Colo, Nepean and Hawkesbury Rivers, including the Bargo area and near Camden. It also occurs near Walcha on the New England tablelands and in far eastern Gippsland in Victoria. Brown Pomaderris grows in moist woodland or forest on clay and alluvial soils of flood plains and creek lines. The species has been found in association with *Eucalyptus amplifolia*,	Low. No potential habitat for this species occurs within the study area coupled with no records within the surrounding area.	Low	No

Scientific Name	Common Name	BC Act	EPBC Act	No. of Records	Habitat Description	Likelihood of Occurrence	Potential Impacts	ToS Required
					Angophora floribunda, Acacia parramattensis, Bursaria spinosa and *Kunzea ambigua*.			
Pomaderris cotoneaster	Cotoneaster Pomaderris	-	E	-	Cotoneaster Pomaderris has a very disjunct distribution, being known from the Nungatta area, northern Kosciuszko National Park (near Tumut), the Tantawangalo area in South-East Forests National Park and adjoining freehold land, Badgery's Lookout near Tallong, Bungonia State Conservation Area, the Yerranderie area, Kanangra-Boyd National Park, the Canyonleigh area and Ettrema Gorge in Morton National Park. Cotoneaster Pomaderris has been recorded in a range of habitats in predominantly forested country. The habitats include forest with deep, friable soil, amongst rock beside a creek, on rocky forested slopes and in steep gullies between sandstone cliffs.	Low. No potential habitat for this species occurs within the study area coupled with no records within the surrounding area.	Low	No
Prasophyllum petilum	Tarengo Leek Orchid	E	E	2	Natural populations of the Tarengo Leek Orchid are known from a total of five sites in NSW. These area at Boorowa, Captains Flat, Ilford, Delegate and a newly recognised population c.10 k SE of Muswellbrook. It also occurs at Hall in the Australian Capital Territory. This species has also been recorded at Bowning Cemetery where it was experimentally introduced, though it is not known whether this population has persisted. Grows in open sites within Natural	Moderate. Moderate potential habitat for this species occurs within the study area.	Moderate	Yes

Scientific Name	Common Name	BC Act	EPBC Act	No. of Records	Habitat Description	Likelihood of Occurrence	Potential Impacts	ToS Required
					Temperate Grassland at the Boorowa and Delegate sites. Also grows in grassy woodland in association with River Tussock (*Poa labillardierei*), Black Gum (*Eucalyptus aggregata*) and tea-trees (*Leptospermum* spp.) at Captains Flat and within the grassy groundlayer dominated by Kanagroo Grass under Box-Gum Woodland at Ilford (and Hall, ACT).			
Prostanthera stricta	Mount Vincent Mint-bush	V	V	28	*Prostanthera stricta* occurs from Mt Vincent to Genowlan Mountain in the Capertee Valley. *Prostanthera* aff. *stricta* is found at Dingo Creek and the Widden and Baerami Valleys in the Upper Hunter. An erect, bushy, aromatic shrub growing to 1-2m. It has hairy aromatic branches which are elongated and cylindrical, and small (7-14 mm by 4-6 mm) leaves which are lance-like with the upper surface covered by hairs. The leaf stalk is very short (approx. 0.5 mm). Leaves dark coloured on the upper surface, whitish underneath, the midrib and lateral veins prominent underneath and impressed above, giving the surface a puckered appearance. Flowers are pale mauve to deep purple, rarely white, 6-9 mm long, occurring in compact arrangements on the upper end of branches which gives the plant a distinctive appearance.	Low. No potential habitat for this species occurs within the study area in the form of sandstone substrate.	Low	No

Scientific Name	Common Name	BC Act	EPBC Act	No. of Records	Habitat Description	Likelihood of Occurrence	Potential Impacts	ToS Required
Rhizanthella slateri	Eastern Underground Orchid	-	E	-	The Eastern Underground Orchid occurs from south-east Queensland to south-east NSW. In NSW, currently known from fewer than 10 locations, including near Bulahdelah, the Watagan Mountains, the Blue Mountains, Wiseman's Ferry area, Agnes Banks and near Nowra. Habitat requirements are poorly understood and no particular vegetation type has been associated with the species, although it is known to occur in sclerophyll forest.	Low. No potential habitat for this species occurs within the study area. This species requires high leaf litter which retains moisture within the topsoil.	Low	No
Swainsona recta	Small Purple-pea	V	E	7	Populations of the Small Purple-pea still exist in the Queanbeyan and Wellington-Mudgee areas. Over 80% of the southern population grows on a railway easement. Before European settlement Small Purple-pea occurred in the grassy understorey of woodlands and open-forests dominated by Blakely's Red Gum (*Eucalyptus blakelyi*), Yellow Box (*E. melliodora*), Candlebark Gum (*E. rubida*) and Long-leaf Box (*E. goniocalyx*). Grows in association with understorey dominants that include Kangaroo Grass (*Themeda australis*), Poa tussocks (*Poa* spp.) and spear-grasses (*Austrostipa* spp.).	Moderate. Moderate potential habitat for this species occurs within the study area.	Moderate	Yes
Thesium australe	Austral Toadflax	-	V	-	Austral Toad-flax is found in very small populations scattered across eastern NSW, along the coast, and from the Northern to Southern Tablelands. It is also found in Tasmania and Queensland and in eastern Asia. Although originally described from material collected in the SW Sydney area, populations have not	Low. No potential habitat for this species occurs within the study area	Low	No

Scientific Name	Common Name	BC Act	EPBC Act	No. of Records	Habitat Description	Likelihood of Occurrence	Potential Impacts	ToS Required
					been seen in a long time. It may persist in some areas in the broader region. Occurs in grassland on coastal headlands or grassland and grassy woodland away from the coast.			
Veronica blakelyi		V	-	1	*Veronica blakeyi* is restricted to the western Blue Mountains, near Clarence, near Mt Horrible, on Nullo Mountain and in the Coricudgy Range. Occurs in eucalypt forest, often in moist and sheltered areas. Associated canopy species include *Eucalyptus dives, E. dalrympleana, E. rossii* and *E. pauciflora*.	Low. No potential habitat for this species occurs within the study area	Low	No

Scientific Name	Common Name	BC Act	EPBC Act	No. of Records	Habitat Description	Likelihood of Occurrence	Potential Impacts	ToS Required
Birds								
Anthochaera phrygia	Regent Honeyeater	CE	CE	7	The Regent Honeyeater mainly inhabits temperate woodlands and open forests of the inland slopes of south-east Australia. Birds are also found in drier coastal woodlands and forests in some years. Range is between north-eastern Victoria and south-eastern Queensland. There are only three known key breeding regions remaining: north-east Victoria (Chiltern-Albury), and in NSW at Capertee Valley and the Bundarra-Barraba region. In the last 10 years Regent Honeyeaters have been recorded in urban areas around Albury where woodlands tree species such as Mugga Ironbark and Yellow Box were planted 20 years ago. The Regent Honeyeater is a generalist forager, although it feeds mainly on the nectar from a relatively small number of eucalypts that produce high volumes of nectar.	Low potential habitat for this species occurs within the subject site. Potential for seasonal foraging to occur on local tree species	Low	No

Scientific Name	Common Name	BC Act	EPBC Act	No. of Records	Habitat Description	Likelihood of Occurrence	Potential Impacts	ToS Required
Artamus cyanopterus cyanopterus	Dusky Woodswallow	V	-	7	The Dusky Woodswallow is a woodland dependant bird. It is found in woodlands and dry open sclerophyll forests, usually dominated by eucalypts, including mallee associations. It has also been recorded in shrublands and heathlands and various modified habitats, including regenerating forests. Common habitat requirements are an open understorey with sparse eucalypt saplings, acacias and other shrubs, including heath. The ground cover may consist of grasses, sedges or open ground, often with coarse woody debris. Birds are also often observed in farm land, road sides and golf courses, usually at the edges of forest or woodland or wind breaks with dead timber.	Low. No potential habitat for this species occurs within the study area	Low	No
Botaurus poiciloptilus	Australasian Bittern	-	E	-	Favours permanent freshwater wetlands with tall, dense vegetation, particularly bullrushes (*Typha* spp.) and spike rushes (*Eleocharis* spp.). Hides during the day amongst dense reeds or rushes and feed mainly at night on frogs, fish, yabbies, spiders, insects and snails. Feeding platforms may be constructed over deeper water from reeds trampled by the bird; platforms are often littered with prey remains. Breeding occurs in summer from October to January; nests are built in secluded places in densely-vegetated wetlands on a platform of reeds; there are usually six olive-brown eggs to a clutch.	Low. No potential habitat for this species occurs within the study area	Low	No

Scientific Name	Common Name	BC Act	EPBC Act	No. of Records	Habitat Description	Likelihood of Occurrence	Potential Impacts	ToS Required
Calidris ferruginea	Curlew Sandpiper	-	CE	-	In Australia, Curlew Sandpipers occur around the coasts and are also quite widespread inland, though in smaller numbers. Records occur in all states during the non-breeding period, and also during the breeding season when many non-breeding one year old birds remain in Australia rather than migrating north. Curlew Sandpipers mainly occur on intertidal mudflats in sheltered coastal areas, such as estuaries, bays, inlets and lagoons, and also around non-tidal swamps, lakes and lagoons near the coast, and ponds in saltworks and sewage farms. They are also recorded inland, though less often, including around ephemeral and permanent lakes, dams, waterholes and bore drains, usually with bare edges of mud or sand. They occur in both fresh and brackish waters. Occasionally they are recorded around floodwaters.	Low. No potential habitat for this species occurs within the study area	Low	No

Scientific Name	Common Name	BC Act	EPBC Act	No. of Records	Habitat Description	Likelihood of Occurrence	Potential Impacts	ToS Required
Callocephalon fimbriatum	Gang-gang Cockatoo	V	-	24	The Gang-gang Cockatoo is distributed from southern Victoria through south- and central-eastern New South Wales. In New South Wales, the Gang-gang Cockatoo is distributed from the south-east coast to the Hunter region, and inland to the Central Tablelands and south-west slopes. It occurs regularly in the Australian Capital Territory. It is rare at the extremities of its range, with isolated records known from as far north as Coffs Harbour and as far west as Mudgee. In spring and summer, generally found in tall mountain forests and woodlands, particularly in heavily timbered and mature wet sclerophyll forests. In autumn and winter, the species often moves to lower altitudes in drier more open eucalypt forests and woodlands, particularly box-gum and box-ironbark assemblages, or in dry forest in coastal areas and often found in urban areas. Feeds on eucalypt seeds.	Low. No potential habitat for this species occurs within the study area	Low	No
Calyptorhynchus lathami	Glossy Black-Cockatoo	V	-	2	The Glossy Black-Cockatoo is uncommon although widespread throughout suitable forest and woodland habitats, from the central Queensland coast to East Gippsland in Victoria, and inland to the southern tablelands and central western plains of NSW, with a small population in the Riverina. An isolated population exists on Kangaroo Island, South Australia. Inhabits open forest and woodlands of the coast and the Great Dividing Range where stands of sheoak occur. Black Sheoak (*Allocasuarina littoralis*) and	Low. No potential habitat for this species occurs within the study area	Low	No

Scientific Name	Common Name	BC Act	EPBC Act	No. of Records	Habitat Description	Likelihood of Occurrence	Potential Impacts	ToS Required
					Forest Sheoak (*A. torulosa*) are important foods. Inland populations feed on a wide range of sheoaks, including Drooping Sheoak, *Allocasuaraina diminuta*, and *A. gymnathera*. Belah is also utilised and may be a critical food source for some populations. In the Riverina, birds are associated with hills and rocky rises supporting Drooping Sheoak, but also recorded in open woodlands dominated by Belah (*Casuarina cristata*). Feeds almost exclusively on the seeds of several species of she-oak (*Casuarina* and *Allocasuarina* species), shredding the cones with the massive bill. Dependent on large hollow-bearing eucalypts for nest sites. A single egg is laid between March and May.			
Chthonicola sagittata	*Speckled Warbler*	V	-	8	The Speckled Warbler has a patchy distribution throughout south-eastern Queensland, the eastern half of NSW and into Victoria, as far west as the Grampians. The species is most frequently reported from the hills and tablelands of the Great Dividing Range, and rarely from the coast. The Speckled Warbler lives in a wide range of Eucalyptus dominated communities that have a grassy understorey, often on rocky ridges or in gullies. Typical habitat would include scattered native tussock grasses, a sparse shrub layer, some eucalypt regrowth and an open canopy. Large, relatively undisturbed remnants are required for the species to persist in an area.	Moderate. Potential habitat for this species occurs within the study area	Low	No

Scientific Name	Common Name	BC Act	EPBC Act	No. of Records	Habitat Description	Likelihood of Occurrence	Potential Impacts	ToS Required
Climacteris picumnus victoriae	Brown Treecreeper (eastern subspecies)	V	-	16	The Brown Treecreeper is endemic to eastern Australia and occurs in eucalypt forests and woodlands of inland plains and slopes of the Great Dividing Range. It is less commonly found on coastal plains and ranges. The western boundary of the range of the species runs approximately through Corowa, Wagga Wagga, Temora, Forbes, Dubbo and Inverell. The eastern subspecies lives in eucalypt woodlands through central NSW and in coastal areas with drier open woodlands. Found in eucalypt woodlands (including Box-Gum Woodland) and dry open forest; mainly inhabits woodlands dominated by stringybarks or other rough-barked eucalypts, usually with an open grassy understorey; also found in mallee and River Red Gum (*Eucalyptus camaldulensis*) Forest bordering wetlands with an open understorey of acacias, saltbush, lignum, cumbungi and grasses; usually not found in woodlands with a dense shrub layer; fallen timber is an important habitat component for foraging.	Low. No potential habitat for this species occurs within the study area	Low	No
Falco subniger	Black Falcon	V	-	1	The Black Falcon is widely, but sparsely, distributed in New South Wales, mostly occurring in inland regions. In New South Wales there is assumed to be a single population that is continuous with a broader continental population, given that falcons are highly mobile, commonly travelling hundreds of kilometres. Populations are likely to occur in most substantial reserve of flat, open habitats in the arid and semi-arid zones,	Low. No potential habitat for this species occurs within the study area	Low	No

Scientific Name	Common Name	BC Act	EPBC Act	No. of Records	Habitat Description	Likelihood of Occurrence	Potential Impacts	ToS Required
					particularly those with riparian habitats. The Black Falcon inhabits woodland, shrubland and grassland in the arid and semi-arid zones, especially wooded (eucalypt dominated) watercourses; it also uses agricultural land with scattered remnant trees. The Falcon is often associated with streams or wetlands, visiting them in search of prey. It uses standing dead trees as lookout posts.			
Falco hypoleucos	Grey Falcon	-	V	-	The Grey Falcon is sparsely distributed in NSW, chiefly throughout the Murray-Darling Basin, with the occasional vagrant east of the Great Dividing Range. Usually restricted to shrubland, grassland and wooded watercourses of arid and semi-arid regions, although it is occasionally found in open woodlands near the coast. Also occurs near wetlands where surface water attracts prey.	Low. No potential habitat for this species occurs within the study area	Low	No
Glossopsitta pusilla	Little Lorikeet	V	-	17	The Little Lorikeet is distributed widely across the coastal and Great Divide regions of eastern Australia from Cape York to South Australia. NSW provides a large portion of the species' core habitat, with lorikeets found westward as far as Dubbo and Albury. Forages primarily in the canopy of open Eucalyptus forest and woodland, yet also finds food in Angophora, Melaleuca and other tree species. Riparian habitats are particularly used, due to higher soil fertility and hence greater productivity. Isolated flowering trees in open country, e.g. paddocks, roadside remnants and urban trees also	Low. Little potential habitat for this species occurs within the subject site in the form of small hollows and seasonal foraging from seven (7) eucalyptus trees. It should be noted that the area to the south contains more native trees.	Low	No

Scientific Name	Common Name	BC Act	EPBC Act	No. of Records	Habitat Description	Likelihood of Occurrence	Potential Impacts	ToS Required
					help sustain viable populations of the species.			
Grantiella picta	Painted Honeyeater	V	V	2	The greatest concentrations of the bird and almost all breeding occurs on the inland slopes of the Great Dividing Range in NSW, Victoria and southern Queensland. During the winter it is more likely to be found in the north of its distribution. Inhabits Boree, Brigalow and Box-Gum Woodlands and Box-Ironbark Forests. A specialist feeder on the fruits of mistletoes growing on woodland eucalypts and acacias. Prefers mistletoes of the genus Amyema.	Low. No potential habitat for this species occurs within the study area due to the lack of mistletoes.	Low	No
Hieraaetus morphnoides	Little Eagle	V	-	3	The Little Eagle is found throughout the Australian mainland excepting the most densely forested parts of the Dividing Range escarpment. It occurs as a single population throughout NSW. Occupies open eucalypt forest, woodland or open woodland. Sheoak or Acacia woodlands and riparian woodlands of interior NSW are also used. Nests in tall living trees within a remnant patch, where pairs build a large stick nest in winter.	Low. No potential habitat for this species occurs within the study area	Low	No
Hirundapus caudacutus	White-throated Needletail	-	V	1	The White-throated Needletail is widespread in across the coast of eastern and south-eastern Australia, and Tasmania. White-throated Needletails only occur as vagrants in the Northern Territory and in Western Australia. In Australia, the White-throated Needletail is almost exclusively aerial, from heights of less than 1 m up to more than 1000 m above the ground. Because they are	Low. No potential habitat for this species occurs within the study area	Low	No

Scientific Name	Common Name	BC Act	EPBC Act	No. of Records	Habitat Description	Likelihood of Occurrence	Potential Impacts	ToS Required
					aerial, it has been stated that conventional habitat descriptions are inapplicable (Cramp 1985), but there are, nevertheless, certain preferences exhibited by the species. They are probably recorded most often above wooded areas, including open forest and rainforest, and may also fly between trees or in clearings, below the canopy, but they are less commonly recorded flying above woodland.			
Lathamus discolor	Swift Parrot	-	CE	-	The Swift Parrot breeds in Tasmania during spring and summer, migrating in the autumn and winter months to south-eastern Australia from Victoria and the eastern parts of South Australia to south-east Queensland. In NSW mostly occurs on the coast and south west slopes. Migrates to the Australian south-east mainland between March and October. On the mainland they occur in areas where eucalypts are flowering profusely or where there are abundant lerp (from sap-sucking bugs) infestations. Favoured feed trees include winter flowering species such as Swamp Mahogany (*Eucalyptus robusta*), Spotted Gum (*Corymbia maculata*), Red Bloodwood (*C. gummifera*), Mugga Ironbark (*E. sideroxylon*), and White Box (*E. albens*). Commonly used lerp infested trees include Inland Grey Box (*E. microcarpa*), Grey Box (*E. moluccana*) and Blackbutt (*E. pilularis*).	Low. Little potential habitat for this species occurs within the study area in the form of seasonal bloom of some Eucalyptus spp. Furthermore, the area nor surrounding area is mapped on the Important Areas Mapping.	Low	No

Scientific Name	Common Name	BC Act	EPBC Act	No. of Records	Habitat Description	Likelihood of Occurrence	Potential Impacts	ToS Required
Leipoa ocellata	Malleefowl	-	V	-	The stronghold for this species in NSW is the mallee in the south west centred on Mallee Cliffs NP and extending east to near Balranald and scattered records as far north as Mungo NP. West of the Darling River a population also occurs in the Scotia mallee including Tarawi NR and Scotia Sanctuary, and is part of a larger population north of the Murray River in South Australia. The population in central NSW has been significantly reduced through land clearance and fox predation and now occurs chiefly in Yathong, Nombinnie and Round Hill NRs and surrounding areas, though birds continue to survive in Loughnan NR. Predominantly inhabit mallee communities, preferring the tall, dense and floristically-rich mallee found in higher rainfall (300 - 450 mm mean annual rainfall) areas. Utilises mallee with a spinifex understorey, but usually at lower densities than in areas with a shrub understorey. Less frequently found in other eucalypt woodlands, such as Inland Grey Box, Ironbark or Bimble Box Woodlands with thick understorey, or in other woodlands such dominated by Mulga or native Cypress Pine species. Prefers areas of light sandy to sandy loam soils and habitats with a dense but discontinuous canopy and dense and diverse shrub and herb layers.	Low. No potential habitat for this species occurs within the study area	Low	No

Scientific Name	Common Name	BC Act	EPBC Act	No. of Records	Habitat Description	Likelihood of Occurrence	Potential Impacts	ToS Required
Lophoictinia isura	Square-tailed Kite	V	-	1	The Square-tailed Kite ranges along coastal and subcoastal areas from south-western to northern Australia, Queensland, NSW and Victoria. In NSW, scattered records of the species throughout the state indicate that the species is a regular resident in the north, north-east and along the major west-flowing river systems. Found in a variety of timbered habitats including dry woodlands and open forests. Shows a particular preference for timbered watercourses. In arid north-western NSW, has been observed in stony country with a ground cover of chenopods and grasses, open acacia scrub and patches of low open eucalypt woodland.	Low. No potential habitat for this species occurs within the study area	Low	No
Melanodryas cucullata cucullata	Hooded Robin (south-eastern form)	V	-	4	The Hooded Robin is widespread, found across Australia, except for the driest deserts and the wetter coastal areas - northern and eastern coastal Queensland and Tasmania. However, it is common in few places, and rarely found on the coast. Prefers lightly wooded country, usually open eucalypt woodland, acacia scrub and mallee, often in or near clearings or open areas. Requires structurally diverse habitats featuring mature eucalypts, saplings, some small shrubs and a ground layer of moderately tall native grasses. Often perches on low dead stumps and fallen timber or on low-hanging branches, using a perch-and-pounce method of hunting insect prey.	Low. No potential habitat for this species occurs within the study area	Low	No

Scientific Name	Common Name	BC Act	EPBC Act	No. of Records	Habitat Description	Likelihood of Occurrence	Potential Impacts	ToS Required
Melithreptus gularis gularis	Black-chinned Honeyeater (eastern subspecies)	V	-	2	The eastern subspecies extends south from central Queensland, through NSW, Victoria into south eastern South Australia, though it is very rare in the last state. In NSW it is widespread, with records from the tablelands and western slopes of the Great Dividing Range to the north-west and central-west plains and the Riverina. It is rarely recorded east of the Great Dividing Range, although regularly observed from the Richmond and Clarence River areas. It has also been recorded at a few scattered sites in the Hunter, Central Coast and Illawarra regions, though it is very rare in the latter. Occupies mostly upper levels of drier open forests or woodlands dominated by box and ironbark eucalypts, especially Mugga Ironbark (*Eucalyptus sideroxylon*), White Box (*E. albens*), Inland Grey Box (*E. microcarpa*), Yellow Box (*E. melliodora*), Blakely's Red Gum (*E. blakelyi*) and Forest Red Gum (*E. tereticornis*). Also inhabits open forests of smooth-barked gums, stringybarks, ironbarks, river sheoaks (nesting habitat) and tea-trees	Low. No potential habitat for this species occurs within the study area	Low	No
Neophema pulchella	Turquoise Parrot	V	-	1	The Turquoise Parrot's range extends from southern Queensland through to northern Victoria, from the coastal plains to the western slopes of the Great Dividing Range. Lives on the edges of eucalypt woodland adjoining clearings, timbered ridges and creeks in farmland.	Low. No potential habitat for this species occurs within the study area	Low	No

Scientific Name	Common Name	BC Act	EPBC Act	No. of Records	Habitat Description	Likelihood of Occurrence	Potential Impacts	ToS Required
Ninox connivens	Barking Owl	V	-	1	The Barking Owl is found throughout continental Australia except for the central arid regions and now occurs in a wide but sparse distribution in NSW. Core populations exist on the western slopes and plains (especially the Pilliga) and in some northeast coastal and escarpment forests. Sometimes extend their home range into urban areas, hunting birds in garden trees and insects attracted to streetlights. Inhabits woodland and open forest, including fragmented remnants and partly cleared farmland. It is flexible in its habitat use, and hunting can extend in to closed forest and more open areas. Sometimes able to successfully breed along timbered watercourses in heavily cleared habitats (e.g. western NSW) due to the higher density of prey on these fertile soils. Roost in shaded portions of tree canopies, including tall midstorey trees with dense foliage such as Acacia and Casuarina species.	Low. Little potential habitat for this species occurs within the study area in regard to large hollows and potential prey.	Low	No
Ninox strenua	Powerful Owl	V	-	10	The Powerful Owl is endemic to eastern and south-eastern Australia, mainly on the eastern side of the Great Dividing Range, from south-eastern Queensland to Victoria. The Powerful Owl is found in open forests and woodlands, as well as along sheltered gullies in wet forests with dense understoreys, especially along watercourses. Will sometimes be found in open areas near forests such as farmland, parks and suburban areas, as	Low. Little potential habitat for this species occurs within the study area in regard to large hollows and potential prey.	Low	No

Scientific Name	Common Name	BC Act	EPBC Act	No. of Records	Habitat Description	Likelihood of Occurrence	Potential Impacts	ToS Required
					well as in remnant bushland patches. Needs old growth trees to nest.			
Numenius madagascariensis	Eastern Curlew		CE	-	Within Australia, the Eastern Curlew has a primarily coastal distribution. The species is found in all states and rarely inland. The Eastern Curlew is most commonly associated with sheltered coasts, especially estuaries, bays, harbours, inlets and coastal lagoons, with large intertidal mudflats or sandflats, often with beds of seagrass. Occasionally, the species occurs on ocean beaches (often near estuaries), and coral reefs, rock platforms, or rocky islets. The birds are often recorded among saltmarsh and on mudflats fringed by mangroves, and sometimes use the mangroves. The birds are also found in saltworks and sewage farms.	Low. No potential habitat for this species occurs within the study area	Low	No
Petroica boodang	Scarlet Robin	V	-	10	The Scarlet Robin is found from south east Queensland to south east South Australia and also in Tasmania and south west Western Australia. In NSW, it occurs from the coast to the inland slopes. After breeding, some Scarlet Robins disperse to the lower valleys and plains of the tablelands and slopes. Some birds may appear as far west as the eastern edges of the inland plains in autumn and winter. The Scarlet Robin lives in dry eucalypt forests and woodlands. The understorey is usually open and grassy with few scattered shrubs. This species lives in both mature and regrowth vegetation. It occasionally occurs in mallee or wet	Low. Little potential habitat occurs within the subject site. This species requires well timbered areas with fallen logs.	Low	No

Scientific Name	Common Name	BC Act	EPBC Act	No. of Records	Habitat Description	Likelihood of Occurrence	Potential Impacts	ToS Required
					forest communities, or in wetlands and tea-tree swamps. Scarlet Robin habitat usually contains abundant logs and fallen timber: these are important components of its habitat. The Scarlet Robin breeds on ridges, hills and foothills of the western slopes, the Great Dividing Range and eastern coastal regions; this species is occasionally found up to 1000 metres in altitude. The Scarlet Robin is primarily a resident in forests and woodlands, but some adults and young birds disperse to more open habitats after breeding. In autumn and winter many Scarlet Robins live in open grassy woodlands, and grasslands or grazed paddocks with scattered trees.			
Polytelis swainsonii	Superb Parrot	-	V	-	The Superb Parrot is found throughout eastern inland NSW. On the South-western Slopes their core breeding area is roughly bounded by Cowra and Yass in the east, and Grenfell, Cootamundra and Coolac in the west. Birds breeding in this region are mainly absent during winter, when they migrate north to the region of the upper Namoi and Gwydir Rivers. The other main breeding sites are in the Riverina along the corridors of the Murray, Edward and Murrumbidgee Rivers where birds are present all year round. Inhabit Box-Gum, Box-Cypress-pine and Boree Woodlands and River Red Gum Forest. In the Riverina the birds nest in the hollows of large trees (dead or alive) mainly in tall riparian River Red Gum Forest or Woodland. On the South	Low. Little potential habitat for this species occurs within the study area	Low	No

Scientific Name	Common Name	BC Act	EPBC Act	No. of Records	Habitat Description	Likelihood of Occurrence	Potential Impacts	ToS Required
					West Slopes nest trees can be in open Box-Gum Woodland or isolated paddock trees. Species known to be used are Blakely's Red Gum, Yellow Box, Apple Box and Red Box.			
Rostratula australis	Australian Painted Snipe	-	E	-	Most records of the Australian Painted Snipe are from the south east, particularly the Murray Darling Basin, with scattered records across northern Australia and historical records from around the Perth region in Western Australia. In NSW many records are from the Murray-Darling Basin including the Paroo wetlands, Lake Cowal, Macquarie Marshes, Fivebough Swamp and more recently, swamps near Balldale and Wanganella. Other important locations with recent records include wetlands on the Hawkesbury River and the Clarence and lower Hunter Valleys. Prefers fringes of swamps, dams and nearby marshy areas where there is a cover of grasses, lignum, low scrub or open timber. Nests on the ground amongst tall vegetation, such as grasses, tussocks or reeds.	Low. No potential habitat for this species occurs within the study area	Low	No
Stagonopleura guttata	Diamond Firetail	V	-	15	The Diamond Firetail is endemic to south-eastern Australia, extending from central Queensland to the Eyre Peninsula in South Australia. It is widely distributed in NSW, with a concentration of records from the Northern, Central and Southern Tablelands, the Northern, Cental and South Western Slopes and the North West Plains and Riverina. Not commonly found in coastal districts, though there are	Moderate. Moderate potential habitat exists within the southern portion of the subject site.	Moderate	Yes

Scientific Name	Common Name	BC Act	EPBC Act	No. of Records	Habitat Description	Likelihood of Occurrence	Potential Impacts	ToS Required
					records from near Sydney, the Hunter Valley and the Bega Valley. This species has a scattered distribution over the rest of NSW, though is very rare west of the Darling River. Found in grassy eucalypt woodlands, including Box-Gum Woodlands and Snow Gum Eucalyptus pauciflora Woodlands. Also occurs in open forest, mallee, Natural Temperate Grassland, and in secondary grassland derived from other communities. Often found in riparian areas (rivers and creeks), and sometimes in lightly wooded farmland.			
Tyto tenebricosa	Sooty Owl	V	-	1	Occupies the easternmost one-eighth of NSW, occurring on the coast, coastal escarpment and eastern tablelands. Territories are occupied permanently. Occurs in rainforest, including dry rainforest, subtropical and warm temperate rainforest, as well as moist eucalypt forests. Roosts by day in the hollow of a tall forest tree or in heavy vegetation; hunts by night for small ground mammals or tree-dwelling mammals such as the Common Ringtail Possum (*Pseudocheirus peregrinus*) or Sugar Glider (*Petaurus breviceps*). Nests in very large tree-hollows.	Low. No potential habitat for this species occurs within the study area	Low	No
Mammals								
Chalinolobus dwyeri	Large-eared Pied Bat	V	V	5	Found mainly in areas with extensive cliffs and caves, from Rockhampton in Queensland south to Bungonia in the NSW Southern Highlands. It is generally rare with a very patchy distribution in	Low. No potential habitat for this species occurs within the study area	Low	No

Scientific Name	Common Name	BC Act	EPBC Act	No. of Records	Habitat Description	Likelihood of Occurrence	Potential Impacts	ToS Required
					NSW. There are scattered records from the New England Tablelands and North West Slopes. Roosts in caves (near their entrances), crevices in cliffs, old mine workings and in the disused, bottle-shaped mud nests of the Fairy Martin (*Petrochelidon ariel*), frequenting low to mid-elevation dry open forest and woodland close to these features. Found in well-timbered areas containing gullies.			
Dasyurus maculatus	Spotted-tailed Quoll	V	E	5	Recorded across a range of habitat types, including rainforest, open forest, woodland, coastal heath and inland riparian forest, from the sub-alpine zone to the coastline. Individual animals use hollow-bearing trees, fallen logs, small caves, rock outcrops and rocky-cliff faces as den sites.	Low. No potential habitat for this species occurs within the study area	Low	No
Falsistrellus tasmaniensis	Eastern False Pipistrelle	V	-	6	The Eastern False Pipistrelle is found on the south-east coast and ranges of Australia, from southern Queensland to Victoria and Tasmania. Prefers moist habitats, with trees taller than 20 m. Generally roosts in eucalypt hollows, but has also been found under loose bark on trees or in buildings.	Moderate. Moderate potential habitat exists within the southern portion of the subject site.	Moderate	Yes

Scientific Name	Common Name	BC Act	EPBC Act	No. of Records	Habitat Description	Likelihood of Occurrence	Potential Impacts	ToS Required
Nyctophilus corbeni	Corben's Long-eared Bat	-	V	-	Overall, the distribution of the Corben's Long-eared Bat coincides approximately with the Murray Darling Basin with the Pilliga Scrub region being the distinct stronghold for this species. Inhabits a variety of vegetation types, including mallee, bulloke Allocasuarina leuhmanni and box eucalypt dominated communities, but it is distinctly more common in box/ironbark/cypress-pine vegetation that occurs in a north-south belt along the western slopes and plains of NSW and southern Queensland. Roosts in tree hollows, crevices, and under loose bark.	Low. No potential habitat for this species occurs within the study area	Low	No
Miniopterus orianae oceanensis	Large Bent-winged Bat	V	-	24	Large Bent-winged Bats occur along the east and north-west coasts of Australia. Caves are the primary roosting habitat, but also use derelict mines, storm-water tunnels, buildings and other man-made structures. Form discrete populations centred on a maternity cave that is used annually in spring and summer for the birth and rearing of young. Maternity caves have very specific temperature and humidity regimes. At other times of the year, populations disperse within about 300 km range of maternity caves. Cold caves are used for hibernation in southern Australia. Breeding or roosting colonies can number from 100 to 150,000 individuals. Hunt in forested areas, catching moths and other flying insects above the tree tops.	Moderate. Moderate potential habitat exists within the southern portion of the subject site.	Moderate	Yes

Scientific Name	Common Name	BC Act	EPBC Act	No. of Records	Habitat Description	Likelihood of Occurrence	Potential Impacts	ToS Required
Petauroides volans	Greater Glider	-	V	26	The greater glider is restricted to eastern Australia, occurring from the Windsor Tableland in north Queensland through to central Victoria (Wombat State Forest), with an elevational range from sea level to 1200 m above sea level. The greater glider favours forests with a diversity of eucalypt species, due to seasonal variation in its preferred tree species. Roosts in tree hollows and is more common in areas abundant in tree hollows.	Low. No potential habitat for this species occurs within the study area	Low	No
Petaurus norfolcensis	Squirrel Glider	V	-	1	The species is widely though sparsely distributed in eastern Australia, from northern Queensland to western Victoria. Inhabits mature or old growth Box, Box-Ironbark woodlands and River Red Gum forest west of the Great Dividing Range and Blackbutt-Bloodwood forest with heath understorey in coastal areas. Prefers mixed species stands with a shrub or Acacia midstorey.	Low. No potential habitat for this species occurs within the study area	Low	No
Petrogale penicillata	Brush-tailed Rock-wallaby	-	V	-	The range of the Brush-tailed Rock-wallaby extends from south-east Queensland to the Grampians in western Victoria, roughly following the line of the Great Dividing Range. However, the distribution of the species across its original range has declined significantly in the west and south and has become more fragmented. In NSW they occur from the Queensland border in the north to the Shoalhaven in the south, with the population in the Warrumbungle Ranges being the western limit. Occupy rocky	Low. No potential habitat for this species occurs within the study area	Low	No

Scientific Name	Common Name	BC Act	EPBC Act	No. of Records	Habitat Description	Likelihood of Occurrence	Potential Impacts	ToS Required
					escarpments, outcrops and cliffs with a preference for complex structures with fissures, caves and ledges, often facing north. Browse on vegetation in and adjacent to rocky areas eating grasses and forbs as well as the foliage and fruits of shrubs and trees.			
Phascolarctos cinereus	Koala	V	V	17	The Koala has a fragmented distribution throughout eastern Australia from north-east Queensland to the Eyre Peninsula in South Australia. In NSW it mainly occurs on the central and north coasts with some populations in the west of the Great Dividing Range. Inhabit eucalypt woodlands and forests.	Low. No potential habitat for this species occurs within the study area	Low	No
Pseudomys novaehollandiae	New Holland Mouse	-	V	-	The New Holland Mouse has a fragmented distribution across Tasmania, Victoria, NSW and Queensland. The species is now largely restricted to the coast of central and northern NSW, with one inland occurrence near Parkes. The New Holland Mouse has been found from coastal areas and up to 100 km inland on sandstone country. The species has been recorded from sea level up to around 900 m above sea level. Soil type may be an important indicator of suitability of habitat for the New Holland Mouse, with deeper top soils and softer substrates being preferred for digging burrows (Wilson & Laidlaw 2003). In Victoria, the species has been recorded on deep siliceous podsols, sandy clay, loamy sands, sand dunes and coastal dunes. Due to the largely granivorous diet of the species,	Low. No potential habitat for this species occurs within the study area	Low	No

Scientific Name	Common Name	BC Act	EPBC Act	No. of Records	Habitat Description	Likelihood of Occurrence	Potential Impacts	ToS Required
					sites where the New Holland Mouse is found are often high in floristic diversity, especially leguminous perennials. The mouse is known to inhabit open heathland, open woodland with a heathland understorey and vegetated sand dunes.			
Pteropus poliocephalus	Grey-headed Flying-fox	V	V	2	Grey-headed Flying-foxes are generally found within 200 km of the eastern coast of Australia, from Rockhampton in Queensland to Adelaide in South Australia. In times of natural resource shortages, they may be found in unusual locations. Occur in subtropical and temperate rainforests, tall sclerophyll forests and woodlands, heaths and swamps as well as urban gardens and cultivated fruit crops. Roosting camps are generally located within 20 km of a regular food source and are commonly found in gullies, close to water, in vegetation with a dense canopy.	Low. No potential habitat for this species occurs within the study area	Low	No
Saccolaimus flaviventris	Yellow-bellied Sheathtail-bat	V	-	3	The Yellow-bellied Sheathtail-bat is a wide-ranging species found across northern and eastern Australia. In the most southerly part of its range - most of Victoria, south-western NSW and adjacent South Australia - it is a rare visitor in late summer and autumn. There are scattered records of this species across the New England Tablelands and North West Slopes. Roosts singly or in groups of up to six, in tree hollows and buildings; in treeless areas they are known to utilise mammal burrows.	Moderate. Moderate potential habitat exists within the southern portion of the subject site.	Moderate	Yes

Scientific Name	Common Name	BC Act	EPBC Act	No. of Records	Habitat Description	Likelihood of Occurrence	Potential Impacts	ToS Required
					Forages in most habitats across its very wide range, with and without trees; appears to defend an aerial territory.			
Scoteanax rueppellii	Greater Broad-nosed Bat	V	-	1	The Greater Broad-nosed Bat is found mainly in the gullies and river systems that drain the Great Dividing Range, from north-eastern Victoria to the Atherton Tableland. It extends to the coast over much of its range. In NSW it is widespread on the New England Tablelands, however does not occur at altitudes above 500 m. Utilises a variety of habitats from woodland through to moist and dry eucalypt forest and rainforest, though it is most commonly found in tall wet forest. Although this species usually roosts in tree hollows, it has also been found in buildings. Forages after sunset, flying slowly and directly along creek and river corridors at an altitude of 3 - 6 m. Open woodland habitat and dry open forest suits the direct flight of this species as it searches for beetles and other large, slow-flying insects; this species has been known to eat other bat species.	Low. No potential habitat for this species occurs within the study area	Low	No
Vespadelus troughtoni	*Eastern Cave Bat*	V	-	5	The Eastern Cave Bat is found in a broad band on both sides of the Great Dividing Range from Cape York to Kempsey, with records from the New England Tablelands and the upper north coast of NSW. The western limit appears to be the Warrumbungle Range, and there is a single record from southern NSW, east of the ACT. A cave-roosting species that is	Low. No potential habitat for this species in the form of caves occurs within the study area	Low	No

Scientific Name	Common Name	BC Act	EPBC Act	No. of Records	Habitat Description	Likelihood of Occurrence	Potential Impacts	ToS Required
					usually found in dry open forest and woodland, near cliffs or rocky overhangs; has been recorded roosting in disused mine workings, occasionally found along cliff-lines in wet eucalypt forest and rainforest.			
Herpetofauna								
Aprasia parapulchella	Pink-tailed Worm-lizard	-	V	-	There is a concentration of populations in the Canberra/Queanbeyan Region. Other populations have been recorded near Cooma, Yass, Bathurst, Albury and West Wyalong. This species is also found in the Australian Capital Territory. Inhabits sloping, open woodland areas with predominantly native grassy groundlayers, particularly those dominated by Kangaroo Grass (*Themeda australis*). Sites are typically well-drained, with rocky outcrops or scattered, partially-buried rocks. Commonly found beneath small, partially-embedded rocks and appear to spend considerable time in burrows below these rocks; the burrows have been constructed by and are often still inhabited by small black ants and termites.	Low. No potential habitat for this species occurs within the study area	Low	No
Delma impar	Striped Legless Lizard	-	V	-	The Striped Legless Lizard occurs in the Southern Tablelands, the South West Slopes and possibly on the Riverina. Populations are known in the Goulburn, Yass, Queanbeyan, Cooma and Tumut areas. Found mainly in Natural Temperate Grassland but has also been captured in grasslands that have a high exotic component. Habitat is where	Low. No potential habitat for this species occurs within the study area	Low	No

Scientific Name	Common Name	BC Act	EPBC Act	No. of Records	Habitat Description	Likelihood of Occurrence	Potential Impacts	ToS Required
					grassland is dominated by perennial, tussock-forming grasses such as Kangaroo Grass Themeda australis, spear-grasses Austrostipa spp. and poa tussocks *Poa* spp., and occasionally wallaby grasses Austrodanthonia spp. Sometimes present in modified grasslands with a significant content of exotic grasses. Usually found where soils are predominantly basalt with a high clay content and a propensity for cracking. Favoured habitat typically contains little bare ground, with plant litter to a depth of approximately 3 cm.			
Heleioporus australiacus	Giant Burrowing Frog	-	V	-	The Giant Burrowing Frog is distributed in south eastern NSW and Victoria, and appears to exist as two distinct populations: a northern population largely confined to the sandstone geology of the Sydney Basin and extending as far south as Ulladulla, and a southern population occurring from north of Narooma through to Walhalla, Victoria. Found in heath, woodland and open dry sclerophyll forest on a variety of soil types except those that are clay based.	Low. No potential habitat for this species occurs within the study area	Low	No
Hoplocephalus bungaroides	Broad-headed Snake	-	V	-	The Broad-headed Snake is largely confined to Triassic and Permian sandstones, including the Hawkesbury, Narrabeen and Shoalhaven groups, within the coast and ranges in an area within approximately 250 km of Sydney. Nocturnal. Shelters in rock crevices and under flat sandstone rocks on exposed cliff edges during autumn, winter and	Low. No potential habitat for this species occurs within the study area	Low	No

Scientific Name	Common Name	BC Act	EPBC Act	No. of Records	Habitat Description	Likelihood of Occurrence	Potential Impacts	ToS Required
					spring. Moves from the sandstone rocks to shelters in crevieces or hollows in large trees within 500m of escarpments in summer. Feeds mostly on geckos and small skinks; will also eat frogs and small mammals occasionally.			
Litoria booroolongensis	*Booroolong Frog*	E	E	156	The Booroolong Frog is a medium sized tree frog, with adults growing to about 5 cm. Their body-colour may be grey, olive or brown with indistinct black markings. The abdomen is white. The skin usually has a slightly warty appearance. The fingers and toes have well developed discs, and the toes are strongly webbed. The call is a soft, purring 'craww craww craww'. Lives along permanent streams with some fringing vegetation cover such as ferns, sedges or grasses.	Moderate. Some potential habitat for this species occurs within the study area within the creek to the immediate south. However, it should be noted that this area is not to be impacted upon under this proposal.	Low	Yes
Varanus rosenbergi	Rosenberg's Goanna	V		1	Rosenberg's Goanna occurs on the Sydney Sandstone in Wollemi National Park to the north-west of Sydney, in the Goulburn and ACT regions and near Cooma in the south. Found in heath, open forest and woodland. Associated with termites, the mounds of which this species nests in and requires a large habitat range.	Low. No potential habitat for this species occurs within the study area	Low	No

Key:

V = Vulnerable M = Migratory A= Marine
E = Endangered CE = Critically Endangered P=Protected

K = Known where there are confirmed records, specimens or otherwise verified sightings in any CMA subregion overlapping the search area

P = Predicted where there is high expectation by relevant experts that a species is likely to be present in any CMA subregion overlapping the search area, based on known presence of suitable habitat and distribution with adjoining subregions

The following species are being assessed in **Appendix 3** under the 5 Part Test of Significance (BC Act) based on the likelihood of occurrence results contained in **Table 4**.

Flora

Caladenia attenuata – Duramana Fingers

Prasophyllum petilum – Tarengo Leek Orchid

Swainsonia recta – Small Purple-pea

Fauna

Birds

Stagonopleura guttata – Diamond Firetail

Hollow-dwelling Bats

Falsistrellus tasmaniensis – Eastern False Pipistrelle

Miniopterus orianae oceanensis – Large Bent-winged Bat

Saccolaimus flaviventris – Yellow-bellied Sheathtail-bat

Herpetofauna

Litoria booroolongensis – Booroolong Frog

Results of the 5-part Test(s) for the above species determined that the proposal is unlikely to have a significant impact on threatened species or ecological communities such that a local extinction would occur.

5.3 Other Legislative Considerations

5.3.1 Key Threatening Processes

A Key Threatening Process (KTP) is defined in the BC Act as a process that "adversely affects threatened species or ecological communities, or it could cause species or ecological communities that are not threatened to become threatened." KTPs are listed under Schedule 4 of the BC Act and may adversely affect threatened species, populations or ecological communities or could cause species, populations or ecological communities that are not threatened to become threatened.

Nine (9) KTP's have the potential to operate within the subject site and require consideration under the subject site proposal:

1. Anthropogenic Climate Change
2. Competition and grazing by the feral European Rabbit (*Oryctolagus cuniculus*)
3. Invasion of native plant communities by exotic perennial grasses
4. Introduction and establishment of Exotic Rust Fungi of the order Pucciniales pathogenic on plants of the family Myrtaceae
5. Loss and/or degradation of sites used for hill-topping by butterflies
6. Infection of native plants by *Phytophthora cinnamomi*
7. Predation by the European Red Fox (*Vulpes vulpes*)

8. Clearing of native Vegetation

9. Removal of Hollow-bearing Trees

Anthropogenic Climate Change

Modification of the environment by humans is considered to contribute to Climate Change and as a result has been listed as a KTP. Several activities involved in construction and operation of the proposed quarry (e.g. vehicle and machinery exhaust fumes) are actions that can result in minor contribution to greenhouse gas emissions. These actions may indirectly impact upon known or potentially occurring threatened species as the distribution of these species is affected by the local climate of the area in which they occur.

The proposal seeks to disturb up to 24.0 ha of low quality (disturbed) vegetation primarily consisting of Pine Trees and 0.25 ha of low condition native woodland. The proposal is likely to make a negligible contribution to anthropogenic climate change due to the loss of vegetation (carbon storage), coupled with increased human activities. The loss of vegetation within the subject site represents an extremely small decrease in carbon storage potential, and as such impacts from human activity would contribute only by small amounts and would cause little impact on locally occurring threatened species, populations or ecological communities.

Competition and grazing by the feral European Rabbit (Oryctolagus cuniculus)

Signs of this KTP were detected during surveys, with suitable foraging habitat occurs throughout the subject site.

The proposal seeks to disturb up to 24.0 ha of low quality (disturbed) vegetation primarily consisting of Pine Trees and 0.25 ha of low condition native woodland. It is considered that this KTP is likely to continue to operate in the locality, however the proposal is unlikely to generate additional significant foraging areas for this species and is more likely to reduce foraging areas due to the development. As such, the proposal is unlikely to contribute to an increase in abundance and activity of the European Rabbit.

Invasion of native plant communities by exotic perennial grasses

This KTP is currently operating within the subject site in a moderate abundance within the subject site and surrounding area. The proposal seeks to disturb up to 24.0 ha of low quality (disturbed) vegetation primarily consisting of Pine Trees and 0.25 ha of low condition native woodland. The removal of the vegetation in which this KTP is present, may reduce its effects. Conversely the development and associated landscaping may also provide further opportunity for this KTP to establish. However, the development is overall unlikely to cause this KTP to occur within the subject site beyond current levels.

Introduction and establishment of Exotic Rust Fungi of the order Pucciniales pathogenic on plants of the family Myrtaceae;

The exotic rust pathogen of the order *Pucciniales* spores can be dispersed by wind, water-splash, on plant material (including seed), on people and their clothing and on equipment and has been known to infect plants of the family Myrtaceae. There was no evidence observed of Exotic Rust Fungus impact within the subject site during the survey period. There is potential for that contamination of the subject site with the pathogen to occur from vehicle / machinery movements during construction and operation of the proposed development. Due to this risk of contamination, it is considered the proposal has potential to contribute to this KTP, although only within an isolated, highly disturbed landscape. It is also noted that there are high levels of vehicle activity in the area surrounding the subject site due to the currently operating pine plantation and nearby Castlereagh Highway. The increase in risk that could be solely accounted to the proposed development is comparatively minor when comparing against the existing levels of disturbance and vehicle activity within the locality.

Loss and/or degradation of sites used for hill-topping by butterflies

No butterfly species were observed during field surveys within the study area; however the subject site is primarily located along the top and eastern face of an undulating hill. The proposal seeks to disturb up to 24.0 ha of low quality (disturbed) vegetation primarily consisting of Pine Trees and 0.25 ha of low condition native woodland. It is unlikely this proposal will cause significant impacts to the mating habitat of butterflies due to the low quantity and quality of tussock grasses within the subject site. Furthermore, large, grassed fields on top of undulating hills are abundant within the surrounding area. On this basis it is considered that the proposal will not lead to an increase in the activity or prevalence of this KTP.

Infection of native plants by Phytophthora cinnamomi.

The soil born pathogen *Phytophthora cinnamomi* spreads in plant roots and has been known to infect a number of native plants. There was no evidence of *P. cinnamomi* impact observed within the subject site during the survey period. Given the proposal will increase vehicle/machinery movements within the subject site during construction and operations, it is possible that contamination of the subject site with the pathogen may occur. Due to this risk of contamination, it is considered that the proposal has potential to contribute to this KTP, although only within an isolated, highly disturbed landscape. It is also noted that there are high levels of vehicle activity in the area surrounding the subject site due to the currently operating pine plantation and nearby Castlereagh Highway. The increase in risk due to the development is comparatively minor when the existing levels of disturbance and vehicle activity are accounted for.

Predation by the European Red Fox Vulpes vulpes (Linnaeus, 1758)

No signs of this KTP were detected during surveys, however suitable foraging habitat occurs throughout the subject site.

The proposal will remove or modify patches of vegetation that may offer hunting habitat for the fox. The area of hunting habitat within the subject site will therefore be reduced in-line with the development footprint. As such it is considered that while this KTP is likely to operate within the subject site, the proposal is unlikely to contribute to an increase in abundance and activity of the European Red Fox.

Clearing of native vegetation

The NSW Scientific Committee final determination for listing 'clearing of native vegetation' as a KTP lists nine factors that have the potential to impact species distribution or result in extinction. These factors are:

1) Destruction of habitat resulting in loss of local populations of individual species;
2) fragmentation;
3) expansion of dryland salinity;
4) riparian zone degradation;
5) increased greenhouse gas emissions;
6) increased habitat for invasive species;
7) loss of leaf litter layer;
8) loss or disruption of ecological function; and
9) changes to soil biota.

The proposal seeks to disturb up to 24.0 ha of low quality (disturbed) vegetation primarily consisting of Pine Trees and 0.25 ha of low condition native woodland. This loss of vegetation will represent a small loss of habitat for potential threatened species in the area. However, the habitat lost as a result of the proposal is very unlikely to be of significance for the continued survival of threatened species in the locality.

The proposal will not affect habitat connectivity in any significant way, as the subject site is part of a large, disturbed grass field that has been approved to form part of an operational, managed pine plantation. Due to the size and location of the proposed development in the broader landscape, combined with the semi-forested corridor along the creek within the south of the site, the proposal will not significantly impact on connectivity for the surrounding area.

The subject site lies within a disturbed grassland and does not intersect any defined creek lines. As such, it is unlikely the proposal will have an impact on riparian areas.

The subject site exists as a disturbed grassland in poor condition, the ground is predominantly bare with little vegetation cover. It is unlikely the proposal will further affect dry land salinity.

The proposal will have a minor impact on increasing greenhouse gas emissions and a minor loss of ground cover vegetation due to vegetation removal associated with construction of site infrastructure and staging of the proposed quarry.

The proposal may have a minor impact on ecological function and soil biota. However, it should be noted that the subject site's ecological function and soil biota has been previously impacted via historical disturbance and land clearing works in the area.

On this basis, it is not considered the KTP will be increased in the locality such that a species / vegetation community decline and / or extinction will occur due from the proposed extent of vegetation clearing.

Loss of Hollow-bearing Trees

The proposal intersects seven (7) hollow bearing trees that have been recorded within the subject site. At the time of field surveys, some of the hollows were currently being utilised by Galahs and Long-Billed Corellas. All hollow-bearing trees are located within the extents of PCT 1191, with the remaining grasses devoid of overstorey trees and associated hollows. In order to mitigate the removal of hollow-bearing trees, nest boxes may be placed within the southern creek to replace the hollows to be removed. Removal of hollow-bearing trees within the subject sites will be supervised by a qualified ecologist to inspect hollows and relocate native fauna as required.

5.3.2 Commonwealth EPBC Act

An EPBC Act Protected Matters Search (accessed 19-10-2021) was undertaken to generate a list of Matters of National Environmental Significance (MNES) located within 10 km of the subject site. An assessment of those MNES relevant to biodiversity has been undertaken in accordance with the *EPBC Act Policy Statement 1.1 Significant Impact Guidelines Matters of National Environmental Significance* (DoE, 2013). The MNES protected under national environment law include:

- Listed threatened species;
- Listed threatened communities;
- Listed migratory species;
- Ramsar wetlands of international importance;
- Commonwealth marine environment;
- World heritage properties;
- National heritage places;
- The Great Barrier Reef Marine Park;
- Nuclear actions; and
- A water resource, in relation to coal seam gas development and large coal mining development.

Listed Threatened Species

A total of 49 threatened species listed under the EPBC Act have been recorded on the protected matters search. A likelihood of occurrence assessment for these MNES has been completed in **Section 5.2**.

Listed Threatened Communities

A total of three (3) threatened ecological communities listed under the EPBC Act have been recorded on the protected matters search. A likelihood of occurrence assessment for these MNES has been completed in **Section 5.2**.

Listed Migratory Species

The protected matters search nominated 13 migratory species or species habitat that may occur with the 10km subject site buffer search area. Although migratory species may intermittently be present on subject site, no habitat on the subject site is critical to the survival of a listed migratory species. Therefore, it is unlikely that the proposal over the subject site will impact migratory species.

Listed Marine Species

The protected matters search nominated 19 marine species or species habitat that may occur with the 10km subject site buffer search area. Although migratory species may intermittently be present on subject site, no habitat on the subject site is critical to the survival of a listed migratory species. Therefore, it is unlikely that the proposal over the subject site will impact migratory species.

Wetlands of International Significance (declared Ramsar wetlands):

The subject site is not part of nor within close proximity to any Wetlands of International Importance. The closest wetland has been identified as the Macquarie Marsh that is located 200km – 300km upstream from the subject site.

Commonwealth Marine Areas:

The subject site is not part of or within close proximity to any Commonwealth Marine Area.

World Heritage Properties:

The subject site is not a World Heritage area and is not in close proximity to any such area.

National Heritage Places:

The subject site is not within a National Heritage area, however, it is located within proximity to the Greater Blue Mountains Area.

Great Barrier Reef Marine Parks:

The subject site is not part of or within close proximity to any Great Barrier Reef Marine Park.

Nuclear Actions:

The proposal over the subject site is not and does not form part of a Nuclear action.

Water Resources in relation to Coal Mining and CSG:

The proposal over the subject site is not and does not form part of a Coal Mining/CSG action.

Summary

In summary the proposed action is unlikely to have an impact to MNES assessed in this report and as such Commonwealth referral under the EPBC Act is not required.

5.3.3 SEPP (Koala Habitat Protection) 2021

The *State Environmental Planning Policy (Koala Habitat Protection) 2021* commenced on 17 March 2021 to replace and repeal the State Environmental Planning Policy (Koala Habitat protection) 2020.

The principles of the Koala SEPP 2021 are to:

- Help reverse the decline of koala populations by ensuring koala habitat is properly considered during the development assessment process.
- Provide a process for councils to strategically manage koala habitat through the development of koala plans of management.

The Koala SEPP 2021 reinstates the policy framework of SEPP Koala Habitat Protection 2019 to 83 Local Government Areas (LGA) in NSW. At this stage:

- In nine of these LGAs – Metropolitan Sydney (Blue Mountains, Campbelltown, Hawkesbury, Ku-Ring-Gai, Liverpool, Northern Beaches, Hornsby, Wollondilly) and the Central Coast LGA – Koala SEPP 2021 applies to **all zones**.
- In all other identified LGAs, Koala SEPP 2021 **does not apply** to land zoned RU1 Primary Production, RU2 Rural Landscape or RU3 Forestry.

The SEPP applies in accordance with *Part 2 Clause 11 – Development assessment process – no approved koala plan of management for land.*

(1) This clause applies to land to which this policy applies if the land –

a) Has an area of at least 1 hectare (including adjoining land within the same ownership; and

The lot in which the subject land occurs is >1ha.

b) Does not have an approved koala plan of management applying to the land.

No koala plan of management occurs within the Mid-Western Regional LGA.

Due to the proposal lying within RU1 – Primary Production Land, the Koala SEPP 2021 does not apply.

Furthermore, within the subject site, there are only nine (9) eucalyptus trees that are proposed to be removed with only two (2) being classed as Koala Feed Trees listed under Schedule 2 of the Koala SEPP 2021 for the relevant koala management area. Each tree was inspected during field work with no secondary signs of Koala usage or visitations.

A daytime survey was undertaken over the subject site within areas where the tree species listed in Schedule 2 Koala SEPP 2021 were found. No koala individuals or secondary indications of presence were recorded on or around any of the trees within the subject site during the survey.

No koala records occur within 2.5km of the subject site within the last 18 years. Furthermore, no koala records occur within the surrounding area of up to 20km.

Due to the absence of recorded koala sightings within the area within the last 18 years; the disturbed, fragmented nature of the lands surrounding the subject site and the parcels of retained higher quality vegetation within the area surrounding the proposed development footprint; the subject site is not considered to serve as an important ecological function for koalas, nor considered to be important to the recovery of the koala population.

6 Recommendations

The following recommendations have been generated with due consideration of the proposed disturbance of up to 24.0 ha of low quality (disturbed) vegetation primarily consisting of Pine Trees and 0.25 ha of low condition native woodland. The intent is to minimise the effect of clearing and potential for any indirect impacts to occur.

General Mitigation Measures for the Construction Phase

The following mitigation measures have been recommended to ensure best practice environmental management throughout the construction phase, including appropriate location and management of construction materials:

- All contractors will be specifically advised of the designated work area. The following activities are not to occur outside of designated work areas to minimise environmental impacts:
  - Storage and mixing of materials;
  - Liquid disposal;
  - Machinery repairs and/or refuelling;
  - Combustion of any material; and
  - Any filling or excavation including trenching, topsoil skimming and/or surface excavation.
- All construction vehicles/machinery are to use the designated access from main roads.
- Vehicle and machinery speeds will be limited to reduce the potential of fauna strike and to reduce dust generation;
- Plant and machinery will be cleaned of any foreign soil and seed prior to being transported to the subject site to prevent the potential spread of weeds and *Phytophthora cinnamomi*;
- If machinery is transported from an area of confirmed infection of *Phytophthora cinnamomi* to the subject site, stringent wash down must be completed before leaving the area, removing all soil and vegetative material from cabins, trays, and under carriages;
- All liquids (fuel, oil, cleaning agents, etc.) will be stored appropriately and disposed of at suitably licensed facilities. Spill management procedures will be implemented as required;
- Rubbish will be collected and removed from the subject site; and
- During the creation of access tracks, erosion or sediment measures will be considered and installed as required.
- Ensure the extent of clearing is clearly marked in the field prior to the commencement of vegetation clearing.
  Ensure that only the minimum vegetation clearing required is undertaken.

Erosion and Sedimentation Control

Erosion and sediment control measures shall be implemented in accordance with the approved Sediment and Erosion control plan to be prepared prior to commencement of civil works on subject site. In general, erosion and sediment control measures include:

- Identification of potential erosion areas;
- Installation and maintenance of flow, erosion, sediment and nutrient control within the subject site during construction and operation as required;
- Separation of ‘dirty’ construction water from the ‘clean’ natural overland flow water;
- Coordinated work practices aimed at minimising land disturbance;
- Minimise vegetation disturbance to surrounding retained vegetation; and
- Routine subject site inspections of drains, channels, sediment control structures and water quality.

Pre-clearance Survey

The proponent is to engage a suitably qualified ecologist to undertake pre-clearance surveys prior to any vegetation clearing works occurring on site.

- Prior to the commencement of any vegetation removal, a preclearance survey will be conducted by the Project Ecologist to identify significant habitat features, which include but are not limited to:
    - Tree hollows
    - Nests
    - Arboreal termite terraria
    - Any areas observed to be currently utilised by BC Act or EPBC Act listed threatened fauna
- During the pre-clearance survey, any significant habitat features or trees that are known to have resident fauna present and all hollow-bearing trees will be:
    - Marked around the trunk of the tree at approximately 1.5 metres high with a 'H' marked several sides of the trunk using fluorescent spray marking paint; and/ or
    - Marked with highly visible flagging tape.
- Prior to any earth works within the subject site, it is recommended that an exclusion management procedure be created by a suitably experienced ecologist to exclude the Common Wombats (*Vombatus ursinus*) that currently live within the proposed development footprint. Tasks within this plan should include;
    - A survey over the entirety of the subject site to detect all burrows,
    - Observations of current or recent usage (i.e. presence of recent scats, recent diggings),
    - A nocturnal survey event to ensure wombats enter/leave the burrows
    - If wombats are seen exiting the burrows, large rubber mats should be placed over the burrows hindering the wombats from entering again. The rubber mats will also allow any wombats remaining within the burrows to escape. This survey should be conducted within the days leading up to earthworks to ensure the integrity of the rubber mats.
    - A qualified ecologist be present and supervise the removal/digging of the burrows by suitable machinery such as an excavator

Hollow Bearing Tree Felling and Removal

- Tree removal is to be strictly limited to the the extent of vegetation approved for removal under the relevant consent;
- Where generated, mulch/tub grindings generated from the removal of vegetation on the subject site is to be reused on the subject site; and
- Felled trees must be stockpiled and processed within marked clearing boundaries.
- All removal of hollow-bearing trees or significant habitat features is to be supervised by the Project Ecologist;
- Hollow bearing trees or trees containing significant habitat features are to be knocked with an excavator bucket followed by a waiting and observation period to alert any resident fauna that have not moved on from the tree and to encourage the fauna to vacate;
- All trees are to be slowly lowered (soft felled) where possible - machinery will ease the tree down to ground level by controlling the speed at which the tree descends to the ground, this will reduce impact to tree hollows and any potential fauna that may still be present during the removal process. Alternatively, trees may be sectionally dismantled or a similar technique that involves slowly lowering potential habitat (hollow limbs, termitaria) to the ground;
- Following felling and when safe, the supervising Project Ecologist shall inspect the tree and hollows for displaced fauna;

- The Project Ecologist is to confirm and record the number and size class of 'potential' hollows previously identified during pre-clearance surveys;
- In the case of any displaced fauna, Project Ecologist is to contact local wildlife carer;
- Trees must be left in situ for a minimum of one night before being removed, mulched or stockpiled, to allow any displaced fauna not observed during the post felling inspection to safely escape under the cover of darkness;
- Felled trees must be stockpiled and processed within marked clearing boundaries;
- Tree hollows are to be salvaged and stockpiled for reuse as fauna habitat wherever possible.

7 Conclusion

MJD Environmental has been engaged by Pine Plantations Australia to prepare BA and Test of Significance (5-Part Test) to accompany a development application to be submitted to Mid-Western Regional Council under Part 4 of the EP&A Act for the proposed construction of a quarry at 39 Razorback Road, Running Stream.

The objective of the BA was also to examine the likelihood of the proposal having a significant effect on any threatened species, populations or ecological communities listed under the BC Act. This BA recognises the relevant requirements of the *EP&A Act* as amended by the *NSW Environmental Planning and Assessment Amendment Act 1997*. Preliminary assessment was also made with regard to those threatened entities listed under the Commonwealth EPBC Act.

This BA included an appraisal of the subject site to determine the appropriate assessment pathway under the BC Act, which determined that the proposal does not trigger the BOS entry threshold due to the existing approval of a Timber Plantation over the land under the *Plantations and Reafforestation Act 1999*. Furthermore, a review of historical aerial photos over the land determined that the subject site was cleared of native vegetation prior to 1990, containing only pasture areas and some scattered trees. The proposed development footprint is likely to satisfy the criteria of "Low-Conservation Grassland" due to the minimal native grasses found within the area (as determined under vegetation plot surveys). The historical vegetation clearing and classification of grasslands as "Low Conservation Grasslands" indicates that this area can be classified under Section 60H of the LLS Act as Category 1 – Exempt Land. Under Section 7.4(2) of the BC Act, the clearing of vegetation within Category 1 -Exempt Land is to be disregarded when assessing the total development footprint against the vegetation clearing threshold (Clause 7.2(4) of *Biodiversity Conservation Regulation 2017*). As such, a Test of Significance Assessment undertaken in accordance with Section 7.3 of the BC Act was determined to be applicable assessment pathway for the proposed development.

The ecological field assessment found that the proposal will remove up to:

- 24.0 ha of Pine Plantation/Disturbed Grassland, and
- 0.25 ha of PCT 1191: Snow Gum - Candle Bark woodland on broad valley flats of the tablelands and slopes, South Eastern Highlands Bioregion (Low Condition)

The BA Test of Significance considered whether the removal of vegetation on subject site totalling 0.25 ha, would constitute a significant impact on known threatened species, populations, and ecological communities from the locality such that a local extinction may occur (5 Part Test).

This assessment concluded that a significant impact would not occur to those entities assessed herewith.

8 References & Bibliography

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Appendix 1 Plan of Proposal

Path: C:\Users\Deaneb\OneDrive - BORG PTY LTD\General\7.0_GIS\02_Projects\NSW_Running Stream_Razorback Rd_007340-01T\Prelims_Fig01_QuarryDesign.aprx

Figure: 1

Proposed Razorback Quarry - General Arrangement

Pine Plantation Products Australia
39 Razorback Road, Running Stream NSW

N

Source: © Department of Customer Service 2020, VGT - 2020, Wedgetail Project Consulting - 2020, NSW DFSI - 2021

User: deaneb | Version 1

Date: 22/10/2021 2:53 PM

Scale: 1:10,000

0 50 100 150 200 250 Metres

space URBAN
Space Urban Pty Ltd
ABN: 43 644 377 293

Appendix 2 Flora & Fauna Species List

Fauna List	
Birds	
Anthus novaeseelandiae	Australasian Pipit
Cacatua tenuirostris	Long-billed Corella
Corvus coronoides	Australian Raven
Eolophus roseicapilla	Galah
Falco cenchroides	Nankeen Kestrel
Falco berigora	Brown Falcon
Gymnorhina tibicen	Australian Magpie
Manorina melanocephala	Noisy Miner
Mammals	
Macropus giganteus	Eastern Grey Kangaroo
Vombatus ursinus	Common Wombat

* = non-native species

(V) = listed as Vulnerable under the BC & EPBC Acts

Flora List		
Family	**Scientific Name**	**Common Name**
Asteraceae	*Cassinia sifton*	
	Chrysocephalum apiculatum	Common Everlasting
	*Cirsium vulgare**	Spear Thistle
	*Conyza canadensis**	
	Craspedia variabilis	Common Billy-buttons
	*Hypochaeris radicata**	Catsear
	*Senecio jacobaea**	Ragwort
	*Taraxacum officinale**	Dandelion
Brassicaceae	*Brassica rapa**	
Chenopodiaceae	*Atriplex prostrata**	
Dennstaedtiaceae	*Pteridium esculentum*	Bracken
Dilleniaceae	*Hibbertia obtusifolia*	Hoary Guinea Flower
Fabaceae - Faboideae	*Trifolium repens**	White Clover
Fabaceae - Mimosoideae	*Acacia dealbata*	Silver Wattle
Lomandraceae	*Lomandra filiformis subsp. coriacea*	Wattle Matt-rush
Myrtaceae	*Eucalyptus pauciflora*	White Sally
	Eucalyptus rubida	Candlebark
	Eucalyptus viminalis	Ribbon Gum
Oxalidaceae	*Oxalis perennans*	
Plantaginaceae	*Veronica plebeia*	Trailing Speedwell
Poaceae	*Anthosachne scabra*	Wheatgrass, Common Wheatgrass
	Austrostipa densiflora	Foxtail Speargrass
	*Dactylis glomerata**	Cocksfoot
	Microlaena stipoides	Weeping Grass
	Panicum effusum	Hairy Panic
	Poa sieberiana	Snowgrass
	Rytidosperma pallidum	Redanther Wallaby Grass; Silvertop Wallaby Grass
Ranunculaceae	*Ranunculus lappaceus*	Common Buttercup
Rosaceae	*Rubus fruticosus**	Blackberry complex

* = non-native species
(V) = listed as Vulnerable under the BC & EPBC Acts

Appendix 3 Test of Significance 5-Part Test

Section 7.3 of the BC Act lists five factors that must be taken into account in the determination of whether proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats (threatened biota) listed under the BC Act. The '5-part test' is used to determine whether there is likely to be a significant effect on threatened species, populations or ecological communities, or their habitats and thus whether the Biodiversity Offset Scheme will apply to the proposed development in which case a Biodiversity Development Assessment will be required.

The significance of the impacts on those threatened species which have been recorded within the subject site or are likely to occur and are likely to utilise habitat to be potentially impacted by the proposal have been assessed.

The following threatened entities have been considered:

Flora

Caladenia attenuata – Duramana Fingers

Prasophyllum petilum – Tarengo Leek Orchid

Swainsonia recta - Small Purple-pea

Fauna

Birds

Stagonopleura guttata - Diamond Firetail

Hollow-dwelling Bats

Falsistrellus tasmaniensis – Eastern False Pipistrelle

Miniopterus orianae oceanensis - Large Bent-winged Bat

Saccolaimus flaviventris - Yellow-bellied Sheathtail-bat

Herpetofauna

Litoria booroolongensis - Booroolong Frog

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.

Flora

Caladenia attenuata – Duramana Fingers

Prasophyllum petilum – Tarengo Leek Orchid

Swainsonia recta - Small Purple-pea

No threatened flora species were detected during field surveys; however it should be noted that field surveys were conducted outside the flowering period for the listed species. Although some potential habitat occurs within the subject site in the form of open grassland with a small patch of open forest within the southern limit, the recent presence of heavy machinery for the mass planting of Pine trees

over the entire subject site has resulted in high disturbance within the soil, leading to mostly bare ground.

On this basis, it is considered that the area of clearing unlikely to impact this species and would not lead to an adverse effect on the life cycle such that a viable local population of this species is likely to be placed at risk of extinction.

Fauna

Birds

Stagonopleura guttata - Diamond Firetail

This species was not observed within the study area during surveys. The species is widely distributed within the region, with records of a 10km BioNet Atlas search indicating 15 sightings of the species within the locality.

A small portion of potential habitat lies within the southern limit of the subject site in the form of moderately intact understorey vegetation with a sparse native canopy. It should be noted that this area does continue outside of the subject site into areas to be retained under this proposal.

On this basis, it is considered that the area of clearing unlikely to impact this species and would not lead to an adverse effect on the life cycle such that a viable local population of this species is likely to be placed at risk of extinction.

Hollow-dwelling Bats

Falsistrellus tasmaniensis – Eastern False Pipistrelle

Miniopterus orianae oceanensis - Large Bent-winged Bat

Saccolaimus flaviventris - Yellow-bellied Sheathtail-bat

A total of seven (7) hollow-bearing trees were detected within the proposed footprint. Some of the observed hollows were deemed suitable as potential habitat for hollow-dwelling bats. Although some potential habitat occurs within the subject site in the form of open grassland with a small patch of open forest within the southern limit, the greater surroundings entail similar habitat as well as potential hollows.

On this basis, it is considered that the area of clearing unlikely to impact this species and would not lead to an adverse effect on the life cycle such that a viable local population of this species is likely to be placed at risk of extinction.

Herpetofauna

Litoria booroolongensis - Booroolong Frog

Under the proposal, there is no associated vegetation with this species to be impacted upon. Some associated vegetation does occur within the southern creek line within the Study Area however, it is expected not to be impacted upon.

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.

No Endangered Ecological Communities have been recorded within the subject site being.

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;

The proposal will remove no more than 0.25ha of native vegetation in the form of PCT 1191 - Snow Gum - Candle Bark woodland on broad valley flats of the tablelands and slopes, South Eastern Highlands Bioregion which is representative of a forest or woodland structure. All of which represent potential habitat for threatened species assessed under this 5-part test.

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

The proposal to construct a sand and gravel quarry will require the removal of native vegetation. In context to the surrounding environment, a majority of the study area contains similar vegetation, it is anticipated that the proposed quarry will not lead to isolation nor the destruction of habitat corridors within the area. Under this proposal, the moderate-quality vegetated creek within the southern portion of the Study Area is to be retained and will not be impacted upon.

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.

The habitat to be removed for the threatened species is considered to form part of a home range for species or groups as either foraging and / or roosting habitat or maintenance of genetic exchange. Higher quality vegetation that is considered to provide better quality foraging and roosting habitat and opportunity genetic exchange (including dispersal agents) specific to the individual species ecology assessed currently persists within the surrounding locality, in particular, within the southern creek line.

On a wider scale the subject site forms a large portion of disturbed grassland that has been approved and is currently operating as a Pine tree plantation. On this basis, the habitat to be removed is not considered significant for the long-term survival of the threatened entities assessed herewith.

d) Whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value

No declared areas of outstanding biodiversity value occur within the subject site.

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

A Key Threatening Process (KTP) is listed under Schedule 4 of the BC Act. KTPs considered relevant to the proposal is described in **Section 5.3.1**. This assessment concluded that the proposal was unlikely to trigger KTPs currently not operating on subject site and/or not significantly contribute to or increase the activity of a KTP operating on the subject site.

Appendix 4 BioNet Search Results

Data from the BioNet Atlas website, which holds records from a number of custodians. The data are only indicative and cannot be considered a comprehensive inventory, and contain errors and omissions. Species listed under the Sensitive Species Data Policy may have their locations denatured (^ rounded to 0.1°C; ^^ rounded to 0.01°C. Copyright th State of NSW through the Department of Planning, Industry and Environment. Search criteria : Licensed Report of all Valid Records of Threatened (listed on BC Act 2016) or Commonwealth listed Entities in selected area [North: -32.90 West: 149.60 East: 150.01 South: -33.23] returned a total of 568 records of 44 species.
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Kingdom	Class	Family	Species Code	Scientific Name	Exotic	Common Name	NSW status	Comm. status	Records
Animalia	Amphibia	Hylidae	3168	*Litoria booroolongensis*		Booroolong Frog	E1,P	E	156
Animalia	Reptilia	Varanidae	2287	*Varanus rosenbergi*		Rosenberg's Goanna	V,P		1
Animalia	Aves	Apodidae	0334	*Hirundapus caudacutus*		White-throated Needletail	P	V,C,J,K	1
Animalia	Aves	Accipitridae	0225	*Hieraaetus morphnoides*		Little Eagle	V,P		3
Animalia	Aves	Accipitridae	0230	*Lophoictinia isura*		Square-tailed Kite	V,P,3		1
Animalia	Aves	Falconidae	0238	*Falco subniger*		Black Falcon	V,P		1
Animalia	Aves	Cacatuidae	0268	*Callocephalon fimbriatum*		Gang-gang Cockatoo	V,P,3		24
Animalia	Aves	Cacatuidae	0265	*^^Calyptorhynchus lathami*		Glossy Black-Cockatoo	V,P,2		2
Animalia	Aves	Psittacidae	0260	*Glossopsitta pusilla*		Little Lorikeet	V,P		17
Animalia	Aves	Psittacidae	0302	*Neophema pulchella*		Turquoise Parrot	V,P,3		1
Animalia	Aves	Strigidae	0246	*Ninox connivens*		Barking Owl	V,P,3		1
Animalia	Aves	Strigidae	0248	*Ninox strenua*		Powerful Owl	V,P,3		10
Animalia	Aves	Tytonidae	9924	*Tyto tenebricosa*		Sooty Owl	V,P,3		1
Animalia	Aves	Climacteridae	8127	*Climacteris picumnus victoriae*		Brown Treecreeper (eastern subspecies)	V,P		16
Animalia	Aves	Acanthizidae	0504	*Chthonicola sagittata*		Speckled Warbler	V,P		8
Animalia	Aves	Meliphagidae	0603	*Anthochaera phrygia*		Regent Honeyeater	E4A,P	CE	7
Animalia	Aves	Meliphagidae	0598	*Grantiella picta*		Painted Honeyeater	V,P	V	2
Animalia	Aves	Meliphagidae	8303	*Melithreptus gularis gularis*		Black-chinned Honeyeater (eastern subspecies)	V,P		2
Animalia	Aves	Neosittidae	0549	*Daphoenositta chrysoptera*		Varied Sittella	V,P		5

Animalia	Aves	Artamidae	8519	*Artamus cyanopterus cyanopterus*	Dusky Woodswallow	V,P		7
Animalia	Aves	Petroicidae	8367	*Melanodryas cucullata cucullata*	Hooded Robin (south-eastern form)	V,P		4
Animalia	Aves	Petroicidae	0380	*Petroica boodang*	Scarlet Robin	V,P		10
Animalia	Aves	Estrildidae	0652	*Stagonopleura guttata*	Diamond Firetail	V,P		15
Animalia	Mammalia	Dasyuridae	1008	*Dasyurus maculatus*	Spotted-tailed Quoll	V,P	E	5
Animalia	Mammalia	Phascolarctidae	1162	*Phascolarctos cinereus*	Koala	V,P	V	17
Animalia	Mammalia	Petauridae	1137	*Petaurus norfolcensis*	Squirrel Glider	V,P		1
Animalia	Mammalia	Pseudocheiridae	1133	*Petauroides volans*	Greater Glider	P	V	26
Animalia	Mammalia	Pteropodidae	1280	*Pteropus poliocephalus*	Grey-headed Flying-fox	V,P	V	2
Animalia	Mammalia	Emballonuridae	1321	*Saccolaimus flaviventris*	Yellow-bellied Sheathtail-bat	V,P		3
Animalia	Mammalia	Vespertilionidae	1353	*Chalinolobus dwyeri*	Large-eared Pied Bat	V,P	V	5
Animalia	Mammalia	Vespertilionidae	1372	*Falsistrellus tasmaniensis*	Eastern False Pipistrelle	V,P		6
Animalia	Mammalia	Vespertilionidae	1361	*Scoteanax rueppellii*	Greater Broad-nosed Bat	V,P		1
Animalia	Mammalia	Vespertilionidae	1025	*Vespadelus troughtoni*	Eastern Cave Bat	V,P		5
Animalia	Mammalia	Miniopteridae	3330	*Miniopterus orianae oceanensis*	Large Bent-winged Bat	V,P		24
Plantae	Flora	Fabaceae (Faboideae)	3056	*Swainsona recta*	Small Purple-pea	E1	E	7
Plantae	Flora	Lamiaceae	3435	*Prostanthera stricta*	Mount Vincent Mint-bush	V	V	28
Plantae	Flora	Myrtaceae	4038	*Eucalyptus aggregata*	Black Gum	V	V	1
Plantae	Flora	Myrtaceae	8326	*Eucalyptus cannonii*	Capertee Stringybark	V		82
Plantae	Flora	Myrtaceae	4163	*Eucalyptus pulverulenta*	Silver-leafed Gum	V	V	1
Plantae	Flora	Orchidaceae	9478	*^^Prasophyllum petilum*	Tarengo Leek Orchid	E1,P,2	E	2
Plantae	Flora	Plantaginaceae	14712	*Veronica blakelyi*		V		1
Plantae	Flora	Proteaceae	5387	*Grevillea obtusiflora*		E1	E	15

Plantae	Flora	Proteaceae	5464	*Persoonia marginata*	Clandulla Geebung	V,P	V	40
Plantae	Flora	Rutaceae	11729	*Phebalium bifidum*		E1,P		1

Appendix 5 EPBC Protected Matters Search

Australian Government

Department of Agriculture, Water and the Environment

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.

Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information is available about Environment Assessments and the EPBC Act including significance guidelines, forms and application process details.

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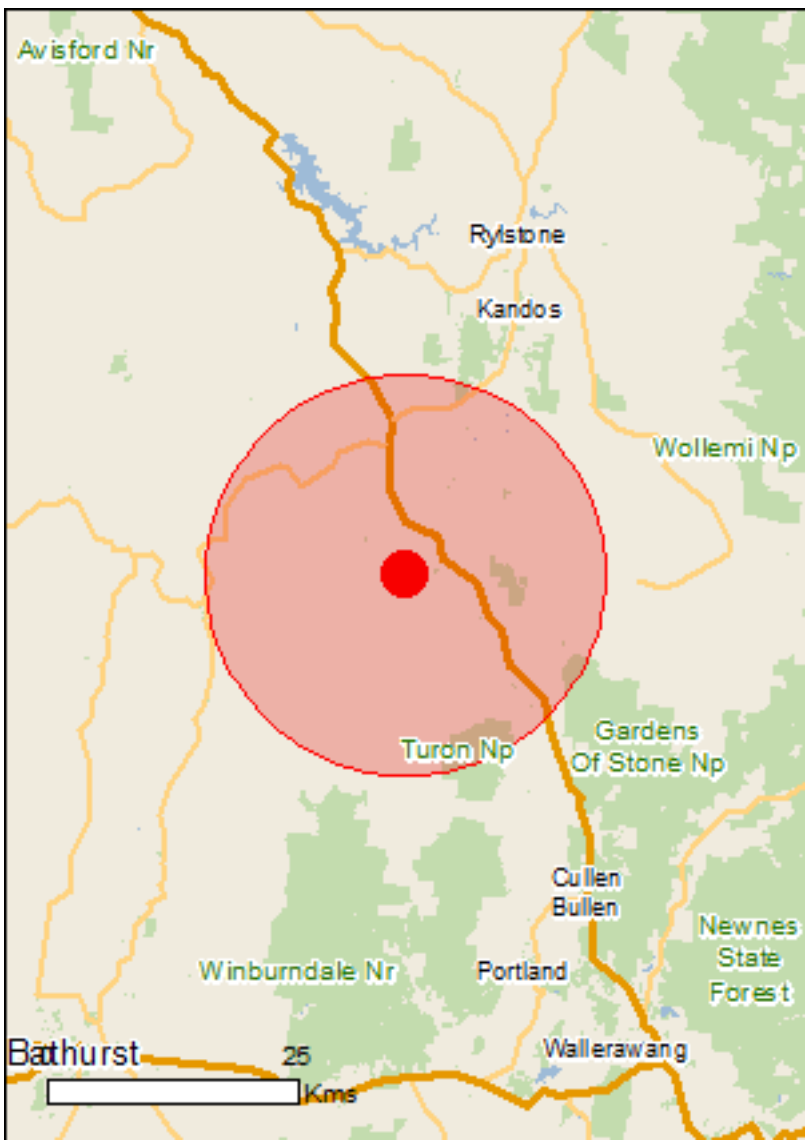
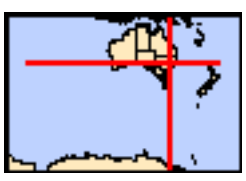


Coordinates

Buffer: 20.0Km



Summary

Matters of National Environmental 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:	1
National Heritage Places:	1
Wetlands of International Importance:	4
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	3
Listed Threatened Species:	49
Listed Migratory Species:	13

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 http://www.environment.gov.au/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 Land:	2
Commonwealth Heritage Places:	None
Listed Marine Species:	19
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None

Extra Information

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

State and Territory Reserves:	5
Regional Forest Agreements:	None
Invasive Species:	35
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

World Heritage Properties		[Resource Information]
Name	State	Status
Greater Blue Mountains Area	NSW	Declared property

National Heritage Properties		[Resource Information]
Name	State	Status
Natural		
The Greater Blue Mountains Area	NSW	Listed place

Wetlands of International Importance (Ramsar)	[Resource Information]
Name	Proximity
Banrock station wetland complex	800 - 900km upstream
Riverland	800 - 900km upstream
The coorong, and lakes alexandrina and albert wetland	900 - 1000km upstream
The macquarie marshes	200 - 300km upstream

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.

Name	Status	Type of Presence
Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia	Endangered	Community may occur within area
Natural Temperate Grassland of the South Eastern Highlands	Critically Endangered	Community may occur within area
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	Community likely to occur within area

Listed Threatened Species		[Resource Information]
Name	Status	Type of Presence
Birds		
Anthochaera phrygia Regent Honeyeater [82338]	Critically Endangered	Breeding known to occur within area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat known to occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area

Name	Status	Type of Presence
Leipoa ocellata Malleefowl [934]	Vulnerable	Species or species habitat likely to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Polytelis swainsonii Superb Parrot [738]	Vulnerable	Species or species habitat likely to occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area
Fish		
Galaxias rostratus Flathead Galaxias, Beaked Minnow, Flat-headed Galaxias, Flat-headed Jollytail, Flat-headed Minnow [84745]	Critically Endangered	Species or species habitat may occur within area
Maccullochella macquariensis Trout Cod [26171]	Endangered	Species or species habitat may occur within area
Maccullochella peelii Murray Cod [66633]	Vulnerable	Species or species habitat may occur within area
Macquaria australasica Macquarie Perch [66632]	Endangered	Species or species habitat known to occur within area
Prototroctes maraena Australian Grayling [26179]	Vulnerable	Species or species habitat may occur within area
Frogs		
Heleioporus australiacus Giant Burrowing Frog [1973]	Vulnerable	Species or species habitat may occur within area
Litoria booroolongensis Booroolong Frog [1844]	Endangered	Species or species habitat known to occur within area
Insects		
Paralucia spinifera Bathurst Copper Butterfly, Purple Copper Butterfly, Bathurst Copper, Bathurst Copper Wing, Bathurst-Lithgow Copper, Purple Copper [26335]	Vulnerable	Species or species habitat likely to occur within area
Mammals		
Chalinolobus dwyeri Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat known to occur within area
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
Nyctophilus corbeni Corben's Long-eared Bat, South-eastern Long-eared Bat [83395]	Vulnerable	Species or species habitat may occur within area
Petauroides volans Greater Glider [254]	Vulnerable	Species or species habitat known to occur within area
Petrogale penicillata Brush-tailed Rock-wallaby [225]	Vulnerable	Species or species habitat likely to occur within area

Name	Status	Type of Presence
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)		
Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Vulnerable	Species or species habitat known to occur within area
Pseudomys novaehollandiae		
New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat may occur within area
Pteropus poliocephalus		
Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour may occur within area
Plants		
Acacia bynoeana		
Bynoe's Wattle, Tiny Wattle [8575]	Vulnerable	Species or species habitat may occur within area
Caladenia attenuata		
Duramana Fingers [87595]	Critically Endangered	Species or species habitat known to occur within area
Dichanthium setosum		
bluegrass [14159]	Vulnerable	Species or species habitat likely to occur within area
Eucalyptus aggregata		
Black Gum [20890]	Vulnerable	Species or species habitat likely to occur within area
Eucalyptus pulverulenta		
Silver-leaved Mountain Gum, Silver-leaved Gum [21537]	Vulnerable	Species or species habitat likely to occur within area
Euphrasia arguta		
[4325]	Critically Endangered	Species or species habitat may occur within area
Grevillea obtusiflora		
Grey Grevillea [23811]	Endangered	Species or species habitat known to occur within area
Homoranthus darwinioides		
[12974]	Vulnerable	Species or species habitat likely to occur within area
Lepidium hyssopifolium		
Basalt Pepper-cress, Peppercress, Rubble Pepper-cress, Pepperweed [16542]	Endangered	Species or species habitat may occur within area
Leucochrysum albicans subsp. tricolor		
Hoary Sunray, Grassland Paper-daisy [89104]	Endangered	Species or species habitat may occur within area
Persoonia marginata		
Clandulla Geebung [10852]	Vulnerable	Species or species habitat known to occur within area
Pomaderris brunnea		
Rufous Pomaderris, Brown Pomaderris [16845]	Vulnerable	Species or species habitat known to occur within area
Pomaderris cotoneaster		
Cotoneaster Pomaderris [2043]	Endangered	Species or species habitat may occur within area
Prasophyllum petilum		
Tarengo Leek Orchid [55144]	Endangered	Species or species habitat known to occur within area
Prasophyllum sp. Wybong (C.Phelps ORG 5269)		
a leek-orchid [81964]	Critically Endangered	Species or species habitat may occur within area

Name	Status	Type of Presence
Prostanthera stricta		
Mount Vincent Mintbush [17616]	Vulnerable	Species or species habitat known to occur within area
Rhizanthella slateri		
Eastern Underground Orchid [11768]	Endangered	Species or species habitat may occur within area
Swainsona recta		
Small Purple-pea, Mountain Swainson-pea, Small Purple Pea [7580]	Endangered	Species or species habitat likely to occur within area
Thesium australe		
Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat likely to occur within area
Reptiles		
Aprasia parapulchella		
Pink-tailed Worm-lizard, Pink-tailed Legless Lizard [1665]	Vulnerable	Species or species habitat likely to occur within area
Delma impar		
Striped Legless Lizard, Striped Snake-lizard [1649]	Vulnerable	Species or species habitat may occur within area
Hoplocephalus bungaroides		
Broad-headed Snake [1182]	Vulnerable	Species or species habitat may occur within area

Listed Migratory Species [Resource Information]

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Migratory Marine Birds		
Apus pacificus		
Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Migratory Terrestrial Species		
Hirundapus caudacutus		
White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Monarcha melanopsis		
Black-faced Monarch [609]		Species or species habitat may occur within area
Motacilla flava		
Yellow Wagtail [644]		Species or species habitat may occur within area
Myiagra cyanoleuca		
Satin Flycatcher [612]		Species or species habitat known to occur within area
Rhipidura rufifrons		
Rufous Fantail [592]		Species or species habitat known to occur within area
Migratory Wetlands Species		
Actitis hypoleucos		
Common Sandpiper [59309]		Species or species habitat may occur within area
Calidris acuminata		
Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris ferruginea		
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area

Name	Threatened	Type of Presence
Calidris melanotos		
Pectoral Sandpiper [858]		Species or species habitat may occur within area
Gallinago hardwickii		
Latham's Snipe, Japanese Snipe [863]		Species or species habitat known to occur within area
Numenius madagascariensis		
Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pandion haliaetus		
Osprey [952]		Species or species habitat may occur within area

Other Matters Protected by the EPBC Act

Commonwealth Land [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.

Name
Commonwealth Land - Australian Telecommunications Commission
Commonwealth Land - Commonwealth Trading Bank of Australia

Listed Marine Species [Resource Information]

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Birds		
Actitis hypoleucos		
Common Sandpiper [59309]		Species or species habitat may occur within area
Apus pacificus		
Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea ibis		
Cattle Egret [59542]		Species or species habitat may occur within area
Calidris acuminata		
Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris ferruginea		
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos		
Pectoral Sandpiper [858]		Species or species habitat may occur within area
Chrysococcyx osculans		
Black-eared Cuckoo [705]		Species or species habitat known to occur within area
Gallinago hardwickii		
Latham's Snipe, Japanese Snipe [863]		Species or species habitat known to occur within area
Haliaeetus leucogaster		
White-bellied Sea-Eagle [943]		Species or species

Name	Threatened	Type of Presence
		habitat likely to occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat may occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pandion haliaetus Osprey [952]		Species or species habitat may occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Endangered*	Species or species habitat likely to occur within area

Extra Information

State and Territory Reserves	[Resource Information]
Name	State
Capertee	NSW
Gardens of Stone	NSW
Mugii Murum-ban	NSW
Turon	NSW
Winburndale	NSW

Invasive Species	[Resource Information]

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resouces Audit, 2001.

Name	Status	Type of Presence
Birds		

Name	Status	Type of Presence
Acridotheres tristis Common Myna, Indian Myna [387]		Species or species habitat likely to occur within area
Alauda arvensis Skylark [656]		Species or species habitat likely to occur within area
Anas platyrhynchos Mallard [974]		Species or species habitat likely to occur within area
Carduelis carduelis European Goldfinch [403]		Species or species habitat likely to occur within area
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Passer domesticus House Sparrow [405]		Species or species habitat likely to occur within area
Passer montanus Eurasian Tree Sparrow [406]		Species or species habitat likely to occur within area
Pycnonotus jocosus Red-whiskered Bulbul [631]		Species or species habitat likely to occur within area
Streptopelia chinensis Spotted Turtle-Dove [780]		Species or species habitat likely to occur within area
Sturnus vulgaris Common Starling [389]		Species or species habitat likely to occur within area
Turdus merula Common Blackbird, Eurasian Blackbird [596]		Species or species habitat likely to occur within area
Mammals		
Bos taurus Domestic Cattle [16]		Species or species habitat likely to occur within area
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Capra hircus Goat [2]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Feral deer Feral deer species in Australia [85733]		Species or species habitat likely to occur within area
Lepus capensis Brown Hare [127]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area

Name	Status	Type of Presence
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Rattus rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
Sus scrofa Pig [6]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
Asparagus asparagoides Bridal Creeper, Bridal Veil Creeper, Smilax, Florist's Smilax, Smilax Asparagus [22473]		Species or species habitat likely to occur within area
Chrysanthemoides monilifera Bitou Bush, Boneseed [18983]		Species or species habitat may occur within area
Cytisus scoparius Broom, English Broom, Scotch Broom, Common Broom, Scottish Broom, Spanish Broom [5934]		Species or species habitat likely to occur within area
Genista monspessulana Montpellier Broom, Cape Broom, Canary Broom, Common Broom, French Broom, Soft Broom [20126]		Species or species habitat likely to occur within area
Genista sp. X Genista monspessulana Broom [67538]		Species or species habitat may occur within area
Lycium ferocissimum African Boxthorn, Boxthorn [19235]		Species or species habitat likely to occur within area
Nassella neesiana Chilean Needle grass [67699]		Species or species habitat likely to occur within area
Nassella trichotoma Serrated Tussock, Yass River Tussock, Yass Tussock, Nassella Tussock (NZ) [18884]		Species or species habitat likely to occur within area
Opuntia spp. Prickly Pears [82753]		Species or species habitat likely to occur within area
Pinus radiata Radiata Pine Monterey Pine, Insignis Pine, Wilding Pine [20780]		Species or species habitat may occur within area
Rubus fruticosus aggregate Blackberry, European Blackberry [68406]		Species or species habitat likely to occur within area
Salix spp. except S.babylonica, S.x calodendron & S.x reichardtii Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow [68497]		Species or species habitat likely to occur within area
Senecio madagascariensis Fireweed, Madagascar Ragwort, Madagascar Groundsel [2624]		Species or species habitat likely to occur within area

Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World and National Heritage properties, Wetlands of International and National Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

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.

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

Where very little information is available for 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 reliable distribution mapping methods are used to update these distributions as time permits.

Only selected species covered by the following provisions of the EPBC Act have been mapped:

- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers

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

- non-threatened seabirds which have only been mapped for recorded breeding sites
- seals which have only been mapped for breeding sites near the Australian continent

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

Coordinates

-33.05869 149.871

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 6 Pine Plantation Approval

OUT19/12313
19/2541

NSW GOVERNMENT | Department of Primary Industries

Chris Berry
2 Lowes Mount Rd
OBERON, NSW 2787

Dear Mr Berry,

Re: Authorisation of timber plantation under the *Plantations and Reafforestation Act 1999*

Your application for Authorisation, Registered Number LI1901P, lodged under the *Plantations and Reafforestation Act 1999* has been approved. All details are explained in the attached notice.

All establishment, management and harvesting operations must be carried out in accordance with the *Plantations and Reafforestation (Code) Regulation 2001* unless stated otherwise in the conditions of Authorisation.

Section 22 (3) of the *Plantations and Reafforestation Act 1999* requires that the Minister must cancel any plantation (or any part of a plantation) that has not been planted within 3 years of the date of the authorisation unless a satisfactory reason for the delay has been provided by the plantation owner. Should you not be able to complete planting within the 3 year period, please advise in writing with a request for an extension of time.

The assessment process included a search for places and objects of Aboriginal cultural heritage, and any identified sites have been mapped and must be managed in accordance with the relevant code provisions. The Due Diligence Code of practice, approved under amendments to the National Parks and Wildlife Regulation 2009, for the plantations industry allows a period of 12 months for completion of any soil disturbance activities. After this period you will be required to undertake a search of the Aboriginal Heritage Information Management System to determine if any new sites have been registered within your plantation area prior to any operations which will cause soil disturbance. Search requests can be lodged at
http://www.environment.nsw.gov.au/licences/HowToObtainAHIMSData.htm

As a plantation manager/owner, you may have certain obligations under the *Rural Fires Act 1997* to prevent bushfires. I recommend you contact your local District Fire Control Officer to ensure these requirements are met.

For any enquiries about this Authorisation please contact James Crooks on (02) 4887 3208.

Yours faithfully

James Crooks
Plantation Assessment Officer
Plantation Regulation Unit

09 September 2019

OUT19/12312
19/2541

NSW GOVERNMENT | Department of Primary Industries

Authorisation for timber plantation

issued under the *Plantations and Reafforestation Act 1999*

Registered number	**LI1901P**

Plantation application

Applicant name(s)	**Chris Berry**
Postal address	2 Lowes Mount Road Oberon 2787
Property address	**39 Razorback Rd, Running Stream 2850**
Land and area under application	Lot 2 DP569979, Lot 82 DP1118022, Lot 72 DP755778, Lot 1 DP1144832

Authorisation

Class of plantation	Timber plantation
Made on (date)	The date of the signature below.
Authorisation	[√] granted in accordance with the Code and the attached Plantation Plan (Attachment 1) [ ] granted in accordance with the Code and subject to conditions described in Attachment 1 and the attached Plantation Plan [ ] Refused. See Attachment 2
Authorisation to operate from	The date of the signature below.
Duration	The authorisation of a plantation remains in force unless it is cancelled by the Minister in accordance with this Act.
Right of appeal	If you are dissatisfied with this decision, under section 24 of the *Plantation and Reafforestation Act 1999* you have the right to appeal to the Land and Environment Court within 28 days after which you receive this notice.

Signed

on behalf of the consent authority

Signature

Name

JAMES CROOKS
PLANTATIONS ASSESSMENT OFFICER, DEPARTMENT OF PRIMARY INDUSTRIES

by delegation from the Hon JOHN BARILARO MP as Minister for Industry and Trade

Date **09 September 2019**

Plantation Regulation Unit - Department of Primary Industries
PO Box 957 MOSS VALE, NSW 2577
Tel: 02 4877 3208
ABN 72 189 919 072
https://www.dpi.nsw.gov.au/forestry/forestry-operations/plantation-forestry