OzArk Environment & Heritage

Biodiversity Development Assessment Report: Barina Quarry, Collector

Prepared by Dr David Orchard, #BAAS21028

Final Report February 2026

OzArk Environment & Heritage

Document control

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1	05/08/2025	D. Orchard	Final issued with development application
2	02/02/2026	D. Orchard	Final amended in response to Conservation Programs and Heritage Regulator (CPHR)

Summary

OzArk Environment & Heritage (OzArk) has been engaged by Irwin Environmental Management (the client) on behalf of Collector Resources Pty Limited (the proponent) to prepare a Biodiversity Development Assessment Report (BDAR) regarding the modification of Barina Quarry. As the project is a modification to a State Significant Development (SSD), entry into the NSW Biodiversity Offsets Scheme (BOS) is automatically triggered.

A proposed modification (the project) would allow for recommencement and continuation of operations, along with the following modifications:

- An extension to operations for 15 years (excluding rehabilitation which could be completed beyond the term of extended operations).
- Establishment of additional stockpiling areas.
    - i South Stockpile Area. A new stockpiling area between Pits 1 and 2. This area has been the subject of ancillary activities associated with the Quarry (by a previous owner and operator) and ongoing property management. The area is considered modified and of low biodiversity value.
    - ii North Stockpile Area. Conversion of an area allocated to overburden emplacement (to the north of Pit 1) along with a small extension to the north and east.
    - iii Overburden Emplacement Stockpile Area. Modification to the Pit 2 Overburden Emplacement to allow for supplementary stockpiling of Quarry product.
- Importation of clean fill materials for use as engineered fill for the construction of internal roads and stockpiling areas.
- Relocation of mobile and modular crushing and screening operations to either Pit 2 (preferred option) or the new Stockpile area (secondary option). It is also proposed to add a small washing circuit for the production of manufactured sand products.
- Removal of the distinction between laden and unladen movements (allowing for laden trucks to enter the Quarry site with clean fill and leave with quarry products).
- Relocation of the Quarry office, weighbridge and amenities onto the South Stockpile Area, inclusion of workshops and a small laydown area on Lot A DP86342, and realignment of some internal roads between the Quarry entrance, relocated facilities and stockpile areas.

The proponent intends to stage impacts and offsetting requirements associated with the project. The project will be divided into eight stages, designated 1a, 1b, 2a, 2b, 2c, 2d, 3a, and 3b. Separate BAM Calculator (BAM-C) cases have been completed for each of these stages. The proponent would acquit the offset obligation for each stage before commencement of any clearing activities within each stage.

Vegetation within the subject land has been assessed as aligning with the BioNet Vegetation Classification Plant Community Type (PCT) 3747 - Southern Tableland Western Hills Scribbly Gum Forest. This PCT has been assigned to six vegetation zones, amounting to 4.94 ha. The occurrence of the PCT does not fit any Threatened Ecological Community

(TEC) listed under the *Biodiversity Conservation Act* 2016 (BC Act) or the *Environment Protection and Conservation Act* 1999 (EPBC Act).

Two threatened fauna species were positively identified within the subject land (Scarlet Robin and Squirrel Glider), both of which are listed as Vulnerable under the BC Act. Four BC Act-listed Vulnerable bat species (Eastern False Pipistrelle, Large Bent-winged Bat, Yellow-bellied Sheathtail-bat and Greater Broad-nosed Bat) were tentatively identified as present, based on ultrasonic recordings, however, no suitable habitat for breeding was identified for the Large Bent-winged Bat. An expert report (Capital Ecology, 2026) identified habitat for the Pink-tailed Legless Lizard within the site. No further threatened or migratory species or populations were detected.

Final offset requirements are summarised in **Table E1** and **E2** below.

Table E1 Impacts that require an offset – ecosystem credits

PCT	TEC	Impact area (ha)	Number of ecosystem credits required
PCT 3747 - Southern Tableland Western Hills Scribbly Gum Forest	No	4.94 ha	Stage 1a: 5 Stage 1b: 7 Stage 2a: 27 Stage 2b: 15 Stage 2c: 12 Stage 2d: 18 Stage 3a: 20 Stage 3b: 1 **Total: 105**

Table E2 Impacts that require an offset – species credits

Common name	Scientific name	Loss of habitat (ha) or individuals	Number of species credits required
Squirrel Glider	*Petaurus norfolcensis*	4.94 ha	Stage 1a: 6 Stage 1b: 8 Stage 2a: 30 Stage 2b: 18 Stage 2c: 14 Stage 2d: 19 Stage 3a: 24 Stage 3b: 1 **Total: 120**
Pink-tailed Legless Lizard	*Aprasia parapulchella*	1.33 ha[1]	Stage 1a: 2 Stage 1b: 1 Stage 2a: 2 Stage 2b: 1 Stage 2c: 4

Common name	Scientific name	Loss of habitat (ha) or individuals	Number of species credits required
			Stage 2d: 14 Stage 3a: 24 Stage 3b: 0 **Total: 48**

[1]Note that this value for the whole of the subject land varies slightly from the sum of the individual stages (**Table 26**) due to rounding applied to data entered into the BAM-C.

The significance of the proposed impact to EPBC Act-listed threatened, migratory, wetland and marine species, populations and communities predicted to occur within a 10 km search area was assessed. No significant impact to any EPBC-listed entity was identified. The residual ecological impacts would be adequately mitigated and offset using the management actions recommended and the offset requirements detailed within this BDAR. Therefore, an EPBC Act referral of the project to the Federal Department of Climate Change, Energy, the Environment and Water is not required.

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Shortened forms

AOBV	Areas of Outstanding Biodiversity Value
BAM	Biodiversity Assessment Method
BAM-C	Biodiversity Assessment Method Calculator
BC Act	*Biodiversity Conservation Act 2016* (NSW)
BC Regulation	*Biodiversity Conservation Regulation 2017* (NSW)
BDAR	Biodiversity Development Assessment Report
BOAMS	Biodiversity Offsets and Agreement Management System
BOS	Biodiversity Offsets Scheme
DA	Development Application
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DNVRM	Draft Native Vegetation Regulatory Map
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Cwlth)
HTE	high threat exotic
IBRA	Interim Biogeographic Regionalisation for Australia
LLS Act	*Local Land Services Act 2013* (NSW)
MNES	matters of national environmental significance
NPW Act	*National Parks and Wildlife Act 1974* (NSW)
NSW	New South Wales
OTG	offset trading group
PCT	plant community type
SAII	serious and irreversible impact
SEARs	Secretary's Environmental Assessment Requirements
SSD	State Significant Development
TBDC	Threatened Biodiversity Data Collection
TEC	threatened ecological community
Vegetation SEPP	*State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017* (NSW)
VI	Vegetation Integrity

Declarations

i. Certification under clause 6.15 *Biodiversity Conservation Act 2016*

I certify that this report has been prepared based on the requirements of, and information provided under, the Biodiversity Assessment Method and clause 6.15 of the *Biodiversity Conservation Act 2016* (BC Act).

Signature:

Date: 02/02/2026

BAM Assessor Accreditation no: **#BAAS21028**

This BDAR has been prepared to meet the requirements of BAM 2020.

ii. Details and experience of author/s and contributors

Authors and contributors

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Name	BAM Assessor Accreditation no. (if relevant)	Position/Role	Tasks performed	Relevant qualifications
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OzArk operates under NSW Department of Planning, Industry and Environment (DPIE) Scientific License 101908, NSW Department of Primary Industries (DPI) Accreditation as an Animal Research Establishment (accreditation number 53103), and the Secretary's Animal Care and Ethics Committee Animal Research Authority RVF21/954.

iii. Conflict of interest

I declare that I have considered the circumstances and there is no actual, perceived or potential conflict of interest

This declaration has been made in the interests of full disclosure to the decision-maker. Full disclosure has also been provided to the client.

Signature:

Date: 02/02/2026

BAM Assessor Accreditation no: **#BAAS21028**

Stage 1: Biodiversity assessment

1. Introduction

1.1 Proposed development

1.1.1 Development overview

OzArk Environment & Heritage (OzArk) has been engaged by Irwin Environmental Management (the client) on behalf of Collector Resources Pty Limited (the proponent) to prepare a Biodiversity Development Assessment Report (BDAR) regarding the modification of Barina Quarry.

The proponent owns and operates the Barina Quarry, located on Lot 3 DP1177623, Lot 33 DP750008 and Lot A DP1177623, Collector Road, Collector NSW, within the Queanbeyan-Palerang Regional Local Government Area (LGA).

The operations are approved under a State Significant Development (SSD) consent approved by Orders of the Land & Environment Court on 28 May 2001 (DA1-01-2000). The approval permits a production of up to 300,000 tonnes per annum (tpa) with a maximum monthly production of 40,000 tonnes.

The approved activities are summarised as follows.

- Completion of extraction from an initial open cut (Pit 1) to a floor elevation of 716 metres (m) Australian Height Datum (AHD) and floor area of 1.5 hectares (ha)
- Extraction by drill and blast methods from a second open cut (Pit 2) to a maximum depth of 714 m AHD.
- Delivery and disposal of overburden to emplacements north of Pit 1 and 2.
- In-pit crushing and screening operations utilising a primary jaw crusher, one or more cone crushers and a variety of stationary and vibrating screens.
- Transport from the Quarry of up to 134 vehicle movements per day and 20 vehicle movements per hour.
- Hours of operation commencing at 7.00 am to 6.00 pm Monday to Saturday.

The approved disturbance area of the Quarry incorporates additional features in the form of stripped and excavated land, drainage lines, dams, bunds and cut batters associated with the operations on the existing Quarry site preceding DA 1-01-2000. These areas have been included within the approved disturbance footprint of the Quarry (refer to **Figure 1**).

1.1.2 Operational History and Current Status

Operations under DA 1-01-2000 commenced in 2005, with extraction in Pit 1 completed before transitioning to Pit 2 from which extraction was undertaken intermittently for several years. Crushing and screening was undertaken within Pit 1 with products stockpiled within

Pit 1 and on lands to the immediate north of Pit 1. Extraction and other operations effectively ceased in 2008, with Pit 2 approximately 2 ha in area and maximum depth of 778 m AHD, and the Quarry was placed into care & maintenance since. The extents of disturbance compared to the approved disturbance footprint are identified on **Figure 1**.

Collector Resources acquired the property and DA 1-01-2000 in 2016, however, operational control only reverted to the Applicant in 2019. While initially intending to recommence extraction operations in 2020, these plans were postponed pending the completion of further feasibility and quarry planning work.

A modification to DA 1-01-2000 was approved in November 2023 under Section 4.56 of the *Environmental Planning & Assessment Act* 1979 for a 12-month extension to operations. DA 1-01-2000 (MOD 2) made no change to the overall operations of the Quarry, however, introduced conditions requiring satisfactory completion of road upgrades and an independent environmental audit prior to recommencement.

1.1.3 Location

The Barina Quarry is located at the 2692 Collector Road, east of Collector and approximately 39 kilometres (km) southwest of Goulburn, in the Queanbeyan-Palerang Regional LGA. The subject land comprises of land across multiple lots, or portions thereof including Lot 3 DP750008; Lot 204 DP750008 and Lot A DP86342. A total disturbance footprint, additional to that already approved, of 5.36 ha within these lots has been identified. The proposed development site map is shown in **Figure 3** and the location map is shown in **Figure 4**.

1.1.4 Proposed development and the subject land

A proposed modification (the project) would allow for recommencement and continuation of operations, along with modifications, which are identified on **Figure 2**, as follows.

- An extension to operations for 15 years (excluding rehabilitation which could be completed beyond the term of extended operations).
- Establishment of additional stockpiling areas.
    - South Stockpile Area. A new stockpiling area between Pits 1 and 2. This area has been the subject of ancillary activities associated with the Quarry (by a previous owner and operator) and ongoing property management. The area is considered modified and of low biodiversity value.
    - North Stockpile Area. Conversion of an area allocated to overburden emplacement (to the north of Pit 1) along with a small extension to the north and east.
    - Overburden Emplacement Stockpile Area. Modification to the Pit 2 Overburden Emplacement to allow for supplementary stockpiling of Quarry product.
- Importation of clean fill materials for use as engineered fill for the construction of internal roads and stockpiling areas.

- Relocation of mobile and modular crushing and screening operations to either Pit 2 (preferred option) or the new Stockpile area (secondary option). It is also proposed to add a small washing circuit for the production of manufactured sand products.
- Removal of the distinction between laden and unladen movements (allowing for laden trucks to enter the Quarry site with clean fill and leave with quarry products).
- Relocation of the Quarry office, weighbridge and amenities onto the South Stockpile Area, inclusion of workshops and a small laydown area on Lot A DP86342, and realignment of some internal roads between the Quarry entrance, relocated facilities and stockpile areas.

Figure 5 shows the boundary of the subject land which has been divided into development stages. The construction and operation footprints are considered synonymous in this case. The total area of the new disturbance, i.e. additional to that already approved by DA 1-101-2000, is 5.36 ha.

Figure 4 provides additional landscape context for the project. The subject land is situated in the foothills of a well-timbered range otherwise surrounded by cleared pastoral country. The subject land falls largely within the “Midgee” soil landscape (DPIE, 2025), defined chiefly by stony, acid yellow earths and yellow podzols or chromosols. The underlying geology is described as undifferentiated Ordovician and Silurian sediments. Lithologically, the landscape tends to be dominated by sedimentary (sandstone, siltstone, greywacke) or metamorphic (phyllite, shale, slate, quartzite) rocks.

The subject land surrounds the existing Barina Quarry and has been subject to considerable historical disturbance, which has resulted in much of the site being dominated by derived or partly derived communities. Areas of the site that have retained their canopies are in variable condition but, despite prior disturbance, retain relatively high species richness and abundance.

1.1.5 Staging of Impacts

The proponent intends to stage impacts and offsetting requirements associated with the project. The project will be divided into eight stages, designated 1a, 1b, 2a, 2b, 2c, 2d, 3a, and 3b. Separate BAM Calculator (BAM-C) cases have been completed for each of these stages (**Appendix I**). The proponent would acquit the offset obligation for each stage before commencement of any clearing activities within each stage. The proponent has outlined an indicative timeframe for these stages that would extend to 2035 (**Appendix G**), noting that while stages 1a, 1b and 3b will be required immediately, the timing of the remaining stages will be influenced by how quickly the stockpile area is developed within the re-purposed Pit 2 Overburden Emplacement.

1.2 Biodiversity Offsets Scheme entry

As the project is a modification to an SSD, entry into the NSW Biodiversity Offsets Scheme (BOS) is automatically triggered.

1.3 Excluded impacts

No excluded impacts (e.g. Category 1 – Exempt Land) have been identified in this assessment. Some areas not requiring offsets by virtue of lacking native vegetation have been identified and these may be considered Category 1 land; however, it has not been considered necessary to pursue land categorisation in this case. The Draft Native Vegetation Regulatory Map (DNVRM) identifies the site as Category 2 – Vulnerable Regulated Land.

1.4 Matters of National Environmental Significance

The EPBC Act protected matters search has identified no world heritage property, no national heritage place, no wetlands of international importance, two Threatened Ecological Communities (TECs), 39 threatened species, eight migratory species and 18 marine species that could potentially occur in the 10 km search area (**Appendix D**).

No significant impact on any Matters of national environmental significance (MNES) entity is likely (**Appendix D**). Moreover, the assessment of the potential impacts of this project on MNES entities did not identify a need for referral of this development to the Commonwealth, and the project has not been identified as a controlled action.

1.5 Information sources

The following information sources were used in the development of this BDAR:

- BAM 2020
- NSW Government Web Map Service layers for NSW Imagery (compiled imagery, NSW Property, NSW Base Map and NSW Topographic Map) (https://www.spatial.nsw.gov.au/).
- EPBC Protected Matters Search Tool (https://www.dcceew.gov.au/environment/epbc/protected-matters-search-tool)
- NSW State Vegetation Type Map C2.0.M2.1 (https://datasets.seed.nsw.gov.au/dataset/nsw-state-vegetation-type-map) and earlier versions.
- NSW DPI threatened fish indicative distribution maps (www.dpi.nsw.gov.au/fishing/species-protection/threatened-species-distributions-in-nsw/freshwater-threatened-species-distribution-maps)
- NSW BioNet Wildlife Atlas Vegetation classification (https://www.environment.nsw.gov.au/research/Visclassification.htm)
- NSW BioNet Threatened Biodiversity Data Collection (www.bionet.nsw.gov.au/)
- NSW BioNet Atlas (www.bionet.nsw.gov.au/)
- Register of Declared Areas of Outstanding Biodiversity Value (https://www.environment.nsw.gov.au/topics/animals-and-plants/biodiversity/areas-of-outstanding-biodiversity-value/area-of-outstanding-biodiversity-value-register)
- PlantNET, NSW Flora Online (www.plantnet.rbgsyd.nsw.gov.au/)
- NSW Biodiversity Values Map and Threshold Tool (https://www.lmbc.nsw.gov.au/Maps/index.html?viewer=BOSETMap)

- Vulnerable Lands – Steep or Highly Erodible, Protected Riparian and Special Category land Mapping (https://datasets.seed.nsw.gov.au/dataset/vulnerable-land-protected-riparian73a9e)
- Acid Sulfate Soils Risk mapping (https://datasets.seed.nsw.gov.au/dataset/acid-sulfate-soils-risk0196c)
- Australian Government Directory of Important Wetlands of Australia (https://www.environment.gov.au/water/wetlands/australian-wetlands-database/directory-important-wetlands)
- NSW wetlands mapping (https://datasets.seed.nsw.gov.au/dataset/nsw-wetlands047c7)

2. Methods

2.1 Site context methods

2.1.1 Landscape features

Online mapping tools used to understand the general nature of the subject land and its landscape features are described in **Section 1.5**. Initial field investigations (including completion of vegetation plots) on the site and publicly accessible surrounding areas were conducted from 23-24 November 2022 to verify or clarify findings from the desktop research. Additional inspections of the site and surrounding areas were conducted in the course of completing targeted surveys for flora and fauna (see **Section 2.3** and **2.4**).

2.1.2 Native vegetation cover

Native vegetation cover, assessed as the proportion of the assessment area retaining native vegetation, was assessed by consulting aerial imagery of the surrounding landscape from multiple sources, including Google and Six Maps. Limited ground-truthing outside of the subject land was undertaken owing to the large assessment area (1500 m buffer) and lack of permission to access certain properties. Where vegetation could not be ground-truthed, remnant trees were assumed to be native unless it could be clearly determined that this was not the case. Likewise, grasslands were typically assumed to be native unless clear evidence of extensive disturbance (e.g. ploughing) was noted.

Native vegetation is defined to include woody vegetation and non-woody vegetation, including regrowth and plantations, comprised of plants native to NSW.

2.2 Native vegetation, threatened ecological communities and vegetation integrity methods

2.2.1 Existing information

Existing information sources were reviewed to contextualise the assessment area, identify entities for targeted surveys of native vegetation and threatened ecological communities, predict possible constraints, refine field survey methodology and assist with assessing the impacts of the proposed development. Information sources consulted are provided in **Section 1.5.** Identification of PCTs and TECs was based largely on field assessment but made reference to existing sources where necessary. These sources included the State Vegetation Type Map (NSW DCCEEW, 2024a), the BioNet Vegetation Classification Database (VCD; NSW DCCEEW, 2024b), and species records in the Australian Virtual Herbarium (AVH; 2025) and Atlas of Living Australia (ALA; 2025).

2.2.2 Mapping native vegetation extent

Native vegetation mapping on the subject land was conducted via field assessment, comprising rapid traverses to identify broad vegetation types and subsequent finer-scale mapping based on transects and floristic plots. Vegetation was stratified into zones based on

structural and compositional attributes identified in situ and by Vegetation Integrity (VI) plots entered into the BAM-C.

2.2.3 Plot-based vegetation survey

Plot-based vegetation surveys were combined with vegetation integrity surveys (see **Section 2.2.4**) to allow for the simultaneous identification of vegetation communities and characterisation of the condition state of each community. Provisional mapping of vegetation communities was conducted during the initial rapid traverses of the site. Subsequently, plots were conducted in each vegetation zone identified in this provisional mapping, with a view to confirming the accuracy of this initial mapping or revising and refining it as necessary. Plots were randomly located within each zone, typically by walking a random distance into each zone and aligning each plot in a random direction. Where necessary, plots were located so as to capture relevant attributes within the zone (e.g. tree hollows), as per subsection 4.3.4(3c) of the BAM. Plot details are given in **Appendix E** and displayed in **Figure 8**. Note that, owing to the wider initial survey area, many plots were completed that were not ultimately required in the assessment.

2.2.4 Vegetation integrity survey

Vegetation integrity surveys were conducted on 23-24 November 2022 using the methodology outlined in subsection 4.3.4 of the BAM. Plots were conducted as nested 20 x 20 m floristic (composition) plots within 20 x 50 m structure and function plots. Sufficient plots were conducted in each zone to meet or exceed the requirements identified in Table 3 (subsection 4.3.4) of the BAM. Randomisation was carried out as described in Section 2.2.3 of this report.

2.3 Threatened flora survey methods

2.3.1 Review of existing information

Candidate threatened flora species requiring survey were identified by entering plot data from the vegetation surveys into the BAM-C. The Threatened Biodiversity Data Collection (TBDC) was used to identify which vegetation communities within the site were most likely to support each species. While other sources of information – including the NSW Threatened Species profiles and records in the Australian Virtual Herbarium – were used to familiarise surveyors with the habitat requirements of each species, this additional information was not used to reduce the area of the site surveyed for each species. Instead, surveys were conducted across all vegetation communities identified in the TBDC as being associated with each species. Additional information sources used in preparation for these field studies are identified in **Section 1.5**.

2.3.2 Habitat constraints assessment

The BAM-C does not identify any formal habitat constraints as being relevant to any of the candidate threatened flora species. No surveys for habitat constraints were considered necessary.

2.3.3 Field surveys

Formal targeted flora surveys were undertaken on the 29th of October 2024. These surveys involved walking parallel transects across the subject land at spacings of up to 10 m, as per the guidelines for surveying threatened flora species under the BAM (DPIE, 2020a; **Figure 8**). The October 2024 survey targeted the species credit flora species Hoary Sunray (*Leucochrysum albicans subsp. tricolor*) and Lemon Zieria (*Zieria citriodora*). A summary of the targeted threatened flora species survey effort is provided in **Table 1** and depicted in **Figure 8**. All detected flora species are listed in **Appendix E**.

Table 1 Summary of targeted threatened flora species survey methods and effort undertaken.

Species	October 2024	TOTAL
Leucochrysum albicans subsp. tricolor Hoary Sunray	• 8.75 km parallel botanical transects (6.3 person hours)	• **8.75 km parallel botanical transects (6.3 person hours)**
Pomaderris pallida Pale Pomaderris	• 8.75 km parallel botanical transects (6.3 person hours)	• **8.75 km parallel botanical transects (6.3 person hours)**
Zieria citriodora Lemon Zieria	• 8.75 km parallel botanical transects (6.3 person hours)	• **8.75 km parallel botanical transects (6.3 person hours)**

Blue shading = approved survey month.

2.4 Threatened fauna survey methods

2.4.1 Review of existing information

The following information was reviewed to inform the assessment of threatened fauna species, habitat constraints and microhabitats:

- BAM Calculator.
- Threatened fauna records within the assessment area available on the NSW BioNet Atlas of NSW Wildlife (NSW DCCEEW 2025c).
- Vegetation associations reports for the South Eastern Highlands bioregion – Monaro subregion
- Habitat constraints listed in the TBDC (NSW DCCEEW 2025c).

2.4.2 Habitat constraints assessment

Field searches were undertaken to assess the habitat constraints for the candidate threatened fauna species. Searches included field observation of habitat constraints identified from the desktop review of the TBDC and recording of the presence, quality and/or suitability of micro-habitats present, including:

- Hollow-bearing trees or stags
- Koala use trees within the Central and Southern Tablelands Koala Management Area
- Nests, particularly large stick nests suitable for Little Eagle (*Hieraaetus morphnoides*)
- Aquatic habitats suitable for amphibians
- Rocky habitats suitable for reptiles such as boulders or rocky outcrops
- Outcrops, crevices, caves, tunnels and other man-made structures suitable for threatened microbat species
- Collection of site photographs to assess the condition of habitats present and consultation with the relevant BAM approved experts regarding the quality of habitats potentially suitable for threatened microbat species

The results of the field-based habitat constraints assessment were used to inform the assessment of the confirmed candidate threatened species assessment in the BAM-C. The location of the surveys is shown in **Figure 8**.

2.4.3 Field surveys

Targeted fauna surveys were conducted on the 4th-7th of November 2024, the 3rd-6th February 2025, and the 3rd-4th of March 2025. The targeted fauna methodology followed the BAM Survey Guides where available (e.g., for Koalas; DPE, 2022a, Frogs; DPIE, 2020c, Reptiles; DPE 2022b, and Microbats; DPIE, 2021) and where not available the TBDC and/or Australian Government Guidelines were followed (DEWHA 2010, DSEWPC, 2011).

A summary of field survey methods for targeted threatened fauna species is provided in **Table 2,** depicted in **Figure 8** and described in further detail in **Section 5.3** of this report. All detected fauna species are listed in **Appendix E**. Further information on the Pink-tailed Legless Lizard habitat assessment is provided in the expert report included in **Appendix H**.

2.5 Weather conditions

Table 3 documents weather conditions at the time of surveys. Limitations relating to weather are discussed in **Section 2.6**.

2.6 Limitations

The flora species credit species Lemon Zieria (*Zieria citriodora*) and Hoary Sunray (*Leucochrysum albicans* subsp. *tricolor*) were surveyed simultaneously.

Weather conditions were not always optimal for frog surveys. However, water was present in dams during all targeted fauna surveys and on one of the targeted frog survey days a very heavy afternoon rain/hailstorm provided ideal conditions for frog surveys and loud choruses of non-threatened frogs were heard within several of the dams.

Table 2 Summary of targeted threatened fauna species survey methods and effort undertaken.

Species	October 2024	November 2024	February 2025	March 2025	TOTAL
Aprasia parapulchella[1] Pink-tailed Legless Lizard		• 4 days of rock turning (12.33 km, 953 rocks/logs turned)			• **4 days of rock turning (12.33 km, 953 rocks/logs turned)**
Callocephalon fimbriatum Gang-gang Cockatoo		• 4 days of birding (17.2 person hours, 17.98 km) • 4 hollow watches at dusk (4.55 hours, 1 person hours)			• **4 days of birding (17.2 person hours, 17.98 km)** • **4 hollow watches at dusk (4.55 hours, 1 person hours)**
Calyptorhynchus lathami lathami[2] South-eastern Glossy Black-Cockatoo				• 2 days of birding (4.72 person hours, 5.77 km)	• **2 days of birding (4.72 person hours, 5.77 km)**
Cercartetus nanus Eastern Pygmy-possum		• 4 nights of spotlighting (17.22 person hours, 22.57 km) • 4 hollow watches at dusk (4.55 hours, 1 person hours)	• 3 nights of spotlighting (2.15 person hours, 2.62 km) • 14 camera traps for 26 nights (364 camera trap nights). Honey water was replenished once in February.	• 2 nights of spotlighting (1.3 person hours, 5.03 km) • 14 camera traps for three nights (42 camera trap nights). Honey water was replenished once in March.	• **9 nights of spotlighting (20.67 person hours, 30.22 km)** • **406 camera trap nights** • **4 hollow watches at dusk (4.55 hours, 1 person hours)**
Hieraaetus morphnoides Little Eagle	• 1 day of birding/nest searches (3.3 person hours, 4.48 km)				• **1 day of birding/nest searches (3.3 person hours, 4.48 km)**
Keyacris scurra Key's Matchstick Grasshopper		• 4 days of insect netting (11.17 person hours, 12.5 km)		• 1 day of insect netting (4.5 person hours, 7 km)	• **5 days of insect netting (15.67 person hours, 19.5 km)**

Species	October 2024	November 2024	February 2025	March 2025	TOTAL
Litoria castanea Yellow-spotted Tree Frog		• 4 nights of frogging (9.12 person hours, 11.87 km) and call playback (34 locations) • 4 nights of tadpole searches			• **4 nights of frogging (9.12 person hours, 11.87 km) and call playback (34 locations)** • **4 nights of tadpole searches**
Litoria raniformis Southern Bell Frog		• 4 nights of frogging (9.12 person hours, 11.87 km) and call playback (34 locations) • 4 nights of tadpole searches			• **4 nights of frogging (9.12 person hours, 11.87 km) and call playback (34 locations)** • **4 nights of tadpole searches**
Lophoictinia isura Square-tailed Kite	• 1 day of birding/nest searches (3.3 person hours, 4.48 km)	• 4 days of birding/nest searches (17.2 person hours, 17.98 km)			• **5 days of birding/nest searches (20.5 person hours, 22.46 km)**
Miniopterus orianae oceanensis Large Bent-winged Bat			• 37 passive trap nights (1-3 bat loggers for 1-25 nights)		• **37 passive trap nights**
Myotis macropus Southern Myotis			• 37 passive trap nights (1-3 bat loggers for 1-25 nights)	• 4 passive trap nights (1-3 bat loggers for 1-3 nights)	• **41 passive trap nights**
Ninox connivens Barking Owl			• 4 nights of audio call playback	• 2 nights of audio call playback	• **6 nights of audio call playback**
Ninox strenua Powerful Owl			• 4 nights of audio call playback	• 2 nights of audio call playback	• **6 nights of audio call playback**
Petauroides volans Southern Greater Glider		• 4 nights of spotlighting (17.22 person hours, 22.57 km)	• 3 nights of spotlighting (2.15 person hours, 2.62 km)	• 2 nights of spotlighting (1.3 person hours, 5.03 km)	• **9 nights of spotlighting (20.67 person hours, 30.22 km)** • **406 camera trap nights**

Species	October 2024	November 2024	February 2025	March 2025	TOTAL
		• 4 hollow watches at dusk (4.55 hours, 1 person hours)	• 14 camera traps for 26 nights (364 camera trap nights). Honey water was replenished once in February.	• 14 camera traps for three nights (42 camera trap nights). Honey water was replenished once in March.	• **4 hollow watches at dusk (4.55 hours, 1 person hours)**
Petaurus norfolcensis Squirrel Glider		• 4 nights of spotlighting (17.22 person hours, 22.57 km) • 4 hollow watches at dusk (4.55 hours, 1 person hours)	• 3 nights of spotlighting (2.15 person hours, 2.62 km) • 14 camera traps for 26 nights (364 camera trap nights). Honey water was replenished once in February.	• 2 nights of spotlighting (1.3 person hours, 5.03 km) • 14 camera traps for three nights (42 camera trap nights). Honey water was replenished once in March.	• **9 nights of spotlighting (20.67 person hours, 30.22 km)** • **406 camera trap nights** • **4 hollow watches at dusk (4.55 hours, 1 person hours)**
Petrogale penicillata Brush-tailed Rock-wallaby	• 1 day of scat/suitable habitat search (3.3 person hours, 4.48 km)	• 4 days of scat/suitable habitat search (17.2 person hours, 17.98 km) • 4 days of diurnal walking transects (11.17 person hours, 12.5 km) • 4 nights of spotlighting (17.22 person hours, 22.57 km)	• 4 days of diurnal walking transects (8.2 person hours, 11.94 km) • 3 nights of spotlighting (2.15 person hours, 2.62 km)	• 2 days of diurnal walking transects (4.72 person hours, 5.77 km) • 2 nights of spotlighting (1.3 person hours, 5.03 km)	• **5 days of scat/suitable habitat search (20.5 person hours, 27.05 km)** • **10 days diurnal transects (24.09 person hours, 30.21 km)** • **9 nights of spotlighting (20.67 person hours, 30.22 km)**
Phascogale tapoatafa Brush-tailed Phascogale			• 3 nights of spotlighting (2.15 person hours, 2.62 km) • 14 camera traps for 26 nights (364	• 2 nights of spotlighting (1.3 person hours, 5.03 km) • 14 camera traps for three nights (42	• **406 camera trap nights** • **5 nights of spotlighting (3.45 person hours, 7.65 km)**

Species	October 2024	November 2024	February 2025	March 2025	TOTAL
			camera trap nights). Honey water was replenished once in February.	camera trap nights). Honey water was replenished once in March.	
Phascolarctos cinereus Koala		• 2 SAT surveys • 4 nights of spotlighting (17.22 person hours, 22.57 km)	• 1 SAT survey • 3 nights of spotlighting (2.15 person hours, 2.62 km)	• 2 nights of spotlighting (1.3 person hours, 5.03 km)	• **3 SAT surveys** • **9 nights of spotlighting (20.67 person hours, 30.22 km)**
Synemon plana Golden Sun Moth		• 4 days of insect netting (11.17 person hours, 12.5 km)			• **4 days of insect netting (11.17 person hours, 12.5 km)**

Blue shading = approved survey month. [1]At the time the survey plan was devised, November was an approved survey month for this species. Assessment requirements for this species were subsequently addressed via an expert report (Appendix H). [2]At the time the survey plan was devised, the survey months indicated were within the approved survey window for this species. Furthermore, the breeding season for this species occurs from March-August (Morcombe & Stewart, 2024), overlapping the targeted survey effort.

Table 3 Environmental conditions during threatened species surveys

Survey undertaken (e.g. method / targeted species)	Date	Time	Temperature (°C, min. & max.)	Wind (light, mod…)	Rainfall (mm)
Rock/log turning transects					
Aprasia parapulchella - Pink-tailed Legless Lizard	4/11/2024 to 7/11/2024	Early afternoon to sunset	20.1 to 28.5	Light breeze	0
Birding transects					
Callocephalon fimbriatum - Gang-gang Cockatoo *Calyptorhynchus lathami lathami* - South-eastern Glossy Black-Cockatoo *Lophoictinia isura* - Square-tailed Kite *Hieraaetus morphnoides* - Little Eagle	4/11/2024 to 7/11/2024	Early afternoon to sunset	20.1 to 28.5	Light breeze	0
	3/02/2025 to 06/02/2025	Early afternoon to sunset	24.3 to 34.4	Gentle breeze	24 mm on the 6th
	03/03/2025 to 04/03/2025	All day	12.9 to 31.9	Gentle breeze	0
Spotlighting transects					
Cercartetus nanus - Eastern Pygmy-possum *Petauroides volans* - Southern Greater Glider *Petaurus norfolcensis* - Squirrel Glider *Phascogale tapoatafa* - Brush-tailed Phascogale *Phascolarctos cinereus* - Koala	4/11/2024 to 7/11/2024	Sunset to late evening	11.4 to 27.2	Light breeze	0
	4/02/2025 to 06/02/2025	Sunset to late evening	23.7 to 27.7	Gentle breeze	24 mm on the 6th
	03/03/2025 to 04/03/2025	Sunset to late evening	20 to 25.8	Gentle breeze	0
Habitat constraints transects					
Petrogale penicillata - Brush-tailed Rock-wallaby	29/10/2024	Early to late afternoon	23.1 to 25.6	Gentle breeze	0
	4/11/2024 to 7/11/2024	Early afternoon to sunset	20.1 to 28.5	Light breeze	0
	4/02/2025 to 06/02/2025	Early afternoon to sunset	24.3 to 34.4	Gentle breeze	24 mm on the 6th
	03/03/2025 to 04/03/2025	All day	12.9 to 31.9	Gentle breeze	0
Frogging transects (includes call playbacks and tadpole searches)					

Survey undertaken (e.g. method / targeted species)	Date	Time	Temperature (°C, min. & max.)	Wind (light, mod…)	Rainfall (mm)
Litoria castanea - Yellow-spotted Tree Frog *Litoria raniformis* - Southern Bell Frog	4/11/2024 to 7/11/2024	Sunset to late evening	11.4 to 27.2	Light breeze	0
	4/02/2025 to 06/02/2025	Sunset to late evening	23.7 to 27.7	Gentle breeze	24 mm on the 6th
Call playbacks					
Ninox connivens - Barking Owl *Ninox strenua* - Powerful Owl	4/02/2025 to 06/02/2025	Sunset to late evening	23.7 to 27.7	Gentle breeze	24 mm on the 6th
	03/03/2025 to 04/03/2025	Sunset to late evening	24 to 26.2	Gentle breeze	0
Nest searches					
Lophoictinia isura - Square-tailed Kite *Hieraaetus morphnoides* - Little Eagle	29/10/2024	Early to late afternoon	10.4 to 24	Gentle breeze	0
Nocturnal passive ultrasonic recording					
Miniopterus orianae oceanensis - Large Bent-winged Bat *Myotis macropus* - Southern Myotis	03/02/2025 to 04/03/2025	Night	12.3 to 21.2	Gentle breeze with occasional light breezes	2.6 mm across the recording period
Insect netting transects					
Keyacris scurra - Key's Matchstick Grasshopper *Synemon plana* - Golden Sun Moth	4/11/2024 to 7/11/2024	Late afternoon	19.6 to 26	Light breeze	0
	4/03/2025	Early to late afternoon	25.8 to 27.1	Gentle breeze	0
Botanical survey transects					
Leucochrysum albicans var. tricolor - Hoary Sunray *Pomaderris pallida* - Pale Pomaderris *Zieria citriodora* - Lemon Zieria	29/10/2024	Morning to later afternoon	7.2 to 24	Gentle breeze	0

3. Site context

3.1 Assessment area

The assessment area was established by buffering the development footprint by 1500 m. This area is shown in **Figure 4.**

3.2 Landscape features

Landscape features identified within the subject land and assessment area are shown on **Figure 3** and **Figure 4**, respectively. A discussion of relevant landscape features is provided below.

3.2.1 IBRA bioregions and IBRA subregions

The subject land falls within the Monaro subregion of the South Eastern Highlands Bioregion as per the Interim Biogeographic Regionalisation of Australia (IBRA) (Thackway & Cresswell, 1995). The subregion is characterised by geology, landforms, soil types and vegetation as described in **Table 4**.

Table 4 Description of the Monaro subregion (NSW NPWS 2003)

Bioregion	South Eastern Highlands
Subregion	Monaro
Geology	Block faulted ranges and closed lake basins in Silurian and Devonian acid fine grained sedimentary and metamorphic rocks with some granites. Extensive areas of thin Tertiary basalt flows over lake and river sediments.
Landforms	Sloping plateau rising from 600 to 1300 m north to south. Structural ridges of more resistant rock. Stepped plains on basalt with intervening low areas of granite or sedimentary rocks. Numerous shallow lakes and swamps, a few permanent many are closed basins and periodically dry. Area is in rainshadow with rainfall 450-700mm.
Soils	Harsh yellow texture contrast soils in general. Shallow red brown to black stony loams on basalt.
Vegetation	Snow gum, ribbon gum, candle-bark gum, broad-leaved peppermint and mountain gum open woodlands with Kangaroo grass understorey. White gum, mottled gum on hills. Brown barrel and black ash forests in east with west facing patches of dwarf casuarina heathland. Extensive grasslands of snow grass, spear grass and wallaby grass on the driest plains with clumps of snow gum amongst rocky outcrops.

3.2.2 Rivers, streams, estuaries and wetlands

At least 15 watercourses are mapped within the assessment area; none intersect the development footprint. The most notable of these is Currawang Creek, a Strahler 4th order minor, perennial stream, located 0.43 km southwest of the subject land.

The remaining watercourses are Strahler 1st (n=11) or Strahler 2nd (n=3) order minor, non-perennial streams and were generally not observed to possess water during the surveys besides the occasional stagnant pond.

3.2.3 Habitat connectivity

The subject land, an approved quarry, is situated amongst agricultural land used for primary production. The subject land is zoned as RU1 Primary Production and is located on the edge of a patch of dense remnant vegetation. This patch of remnant vegetation extends north, east, and south of the subject land, and includes a 108-ha patch of vegetation zoned as C2 Environmental Conservation (approximately 500 m northeast of the subject land). As the subject land is located on the edge of this vegetation patch, the project will narrow, but not sever, habitat connectivity within the assessment area.

3.2.4 Karst, caves, crevices, cliffs, rocks or other geological features of significance

No karst formations or well-defined cliffs occur on the subject land. Minor crevices occur within the quarry wall, which may be considered to constitute a cliff, though no naturally occurring cliffs were recorded within or near the site. Rocky habitat occurs throughout, with outcrops, embedded rock, and loose surface rock occurring across much of the site and surrounding lands.

3.2.5 Areas of outstanding biodiversity value

The site does not contain any currently listed Areas of Outstanding Biodiversity Value (AOBV).

3.2.6 NSW (Mitchell) landscape

Landscapes with relatively homogenous geomorphology, soils and broad vegetation types in NSW have been classified and mapped at a 1:250,000 scale. These landscapes are referred to as NSW (Mitchell) Landscapes (Mitchell, 2002).

The subject land falls within the Gundary Plains landscape and the wider assessment area falls within the Lake George Complex landscape. The characteristics of these landscapes are described below.

Gundary Plains

Wide open valleys with abandoned terraces and Quaternary lakebeds on lower Devonian siltstone, sandstone, andesite and quartz felspar porphyry. General elevation 75m, local relief <30m. Yellow, hard setting texture-contrast soils with distinct bleached A2 horizons. Grasslands of spear grass (*Austrostipa* sp.) and kangaroo grass (*Themeda triandra*) with small clumps of sparse snow gum (*Eucalyptus pauciflora*) on rounded rocky hills and sandy lunettes of former lakes.

Lake George Complex

Closed drainage basins of Quaternary lakes and swamps set within block faulted ranges. Extensive Tertiary quartz gravel, sand, and mud overlying Silurian-Devonian gneissic granite and Silurian quartz sandstone and mudstone. General elevation 700m, local relief of lake beds <50m, rounded hills stand above the plain to 900m. Eastern margins with well-developed sandy lunettes. Maximum lake depths about 7m, may be dry for periods of years or vary in water level over decades. Evidence of much greater extent and depth during the Pleistocene ice ages. Self-mulching grey clays on the lakebeds, yellow earths on the lunettes. Wet tussock grasslands of spear grass (*Austrostipa* sp.) and *Poa* sp. with kangaroo

grass (*Themeda triandra*) on lake margins, now extensively altered by exotics. Clumps of sparse stunted snow gums (*Eucalyptus pauciflora*) on low hills and sandy lunettes. Common reed (*Phragmites australis*) around freshwater seepage areas on lake margins.

3.2.7 Additional landscape features identified in SEARs

No additional landscape features have been identified as being relevant to the project.

3.2.8 Soil hazard features

This subsection only applies to vegetation clearing projects (i.e. development that requires approval from the Native Vegetation Panel under Part 5A of the LLS Act, or the Vegetation SEPP). This excludes the present project.

3.3 Native vegetation cover

The subject land is situated in the lower slopes of a well-timbered range that supports a large, continuous area of native vegetation. The surrounding plain appears to be largely used for grazing of livestock but does contain some areas of native grassland and wetland associated with drainage lines. Where agricultural land could be reliably determined by ground-truthing or aerial imagery to support non-native pastures, these areas were excluded from the mapping of native cover. Also excluded were built infrastructure (roads, buildings and similar) and non-native plantings. Where uncertainty exists, native vegetation has been assumed present.

Table 5 summarises the extent of native vegetation cover within the assessment area. **Figure 4** shows native vegetation cover within the assessment area.

Table 5 Native vegetation cover in the assessment area

Assessment area (ha)	1073.32
Total area of native vegetation cover (ha)	838.36
Percentage of native vegetation cover (%)	78.11
Class (0-10, >10-30, >30-70 or >70%)	>70%

4. Native vegetation, threatened ecological communities and vegetation integrity

4.1 Native vegetation extent

The subject land totals 5.36 ha. Of this area, 4.94 ha supports native vegetation in the form of remnant woodlands and derived shrublands or grasslands. Native vegetation extent within the subject land is shown in Figure 9.

4.1.1 Changes to the mapped native vegetation extent

Native vegetation recorded *in situ* aligns closely with the aerial imagery. No substantial changes from the apparent vegetation cover in the aerial imagery were required.

4.1.2 Areas that are not native vegetation

Small areas of the subject land have been cleared of native vegetation for track formation or other built infrastructure. Dam surfaces that do not support vegetation are also considered to be 'cleared' in this assessment. These areas are shown as cleared land in Figure 9.

4.2 Plant community types

4.2.1 Overview

Vegetation within the subject land has been assessed as aligning with the BioNet Vegetation Classification PCTs identified within **Table 6** and their extent is shown in **Figure 10**. Note that the area values given in **Table 6** reflect the rounded values included in outputs from the BAM-C. Detailed descriptions of each PCT are provided in the following subsections.

Table 6 PCTs identified within the subject land

PCT ID	PCT name	Subject land area (ha)
3747	Southern Tableland Western Hills Scribbly Gum Forest	4.94
	Total area	**4.94**

4.2.2 PCT 3747 - Southern Tableland Western Hills Scribbly Gum Forest

4.2.2.1 PCT overview

Table 7 PCT 3747 – Southern Tableland Western Hills Scribbly Gum Forest

PCT ID	3747
PCT name	Southern Tableland Western Hills Scribbly Gum Forest
Vegetation formation	KF_CH5B Dry Sclerophyll Forests (Shrubby sub-formation)
Vegetation class	Southern Tableland Dry Sclerophyll Forests

Per cent cleared value (%)	65.05
Extent within subject land (ha)	4.94

Examples of this community that have not experienced significant disturbance form open forests or woodlands variously dominated by Scribbly Gum (*Eucalyptus rossii*) or Red Stringybark (*Eucalyptus macrorhyncha*), sometimes with Black She-oak (*Allocasuarina littoralis*) or Black Wattle (*Acacia decurrens*). Other tree species, including Broad-leaved Peppermint (*Eucalyptus dives*) and Argyle Apple (*Eucalyptus cinerea*), occur where this PCT grades into neighbouring communities. A sparse to moderately dense mid-layer is present and commonly contains wattles (e.g. *Acacia terminalis*, *A. gunnii*), heaths (most commonly Daphne Heath, *Brachyloma daphnoides*), *Cassinia* species (*C. sifton* and *C. aculeata*), Silver Tea-Tree (*Gaudium multicaule*), Narrow-Leaved Geebung (*Persoonia linearis*), and other small shrubs including Hoary Guinea Flower (*Hibbertia obtusifolia*) and Showy Parrot-Pea (*Dillwynia sericea*). The understorey varies considerably across the local extent of the community. It includes grassy areas dominated by Redanther Wallaby Grass (*Rytidosperma pallidum*) and areas with only sparse grasses in which there is typically high cover of Common Raspwort (*Gonocarpus tetragynus*). A diverse assortment of less abundant graminoids and forbs also occurs within this community.

Less well-preserved examples of this community within the site may lack a eucalypt canopy, retaining only a layer of Black Wattle, or may lack a canopy entirely. Where the canopy is wholly absent, an open, shrubby community often predominates. Small areas of low grassland occur in more extensively modified areas of the site and in association with seeps and depressions.

4.2.2.2 Condition states

This PCT was recorded in six condition states within the site, each assigned to a separate vegetation zone: 3747_Good, 3747_Moderate, 3747_AcaciaShrubland, 3747_Derived, 3747_Quarry, and 3747_WetGrassland. These zones are discussed below and mapped in **Figure 12**.

Best Condition (3747_Good)

Photo 1 Zone 3747_Good

Description: Open forest or woodland in which Scribbly Gum (*Eucalyptus rossii*) is typically dominant, often with Red Stringybark (*Eucalyptus macrorhyncha*) and sometimes with Black She-oak (*Allocasuarina littoralis*) and/or Black Wattle (*Acacia decurrens*). Red Stringybark is occasionally locally dominant, typically in areas of no more than 0.1 ha in size. Trees are present in a range of age classes, including some large. Narrow-leaved Geebung (*Persoonia linearis*) is sparsely present as a sub-canopy tree or large shrub. A shrubby midstorey is typically present but may be sparse. Common components of this layer include Sunshine Wattle (*Acacia terminalis*) and *Cassinia* species, though Silver Tea-Tree (*Gaudium multicaule*) may be locally abundant. A lower shrub layer is often present and typically contains Hoary Guinea Flower (*Hibbertia obtusifolia*) along with a range of heaths (e.g. *Brachyloma daphnoides*, *Leucopogon virgatus*, and *Melichrus urceolatus*), pea flowers (e.g. *Dillwynia sericea* and *Pultenaea subspicata*), and other small shrubs. Forbs, particularly Common Raspwort (*Gonocarpus tetragynus*), may be abundant. Orchids in the genera *Thelymitra*, *Microtis*, and *Diuris* were recorded in this zone during the survey. Many examples of this community contain a dense, grassy understorey in which Red-anther Wallaby Grass (*Rytidosperma pallidum*) is usually overwhelmingly dominant.

Moderate Condition (3747_Moderate)

Photo 2 Zone 3747_Moderate

Description: Open forest or woodland in which Scribbly Gum (*Eucalyptus rossii*) is typically dominant. Owing to historical disturbance, including construction of contour banks, no large trees (≥50 cm diameter at breast height) remain within the zone. Regrowth from surrounding, similarly disturbed woodland communities extends into this zone, resulting in minor occurrences of Broad-leaved Peppermint (*Eucalyptus dives*) and Argyle Apple (*Eucalyptus cinerea*) within the patch, typically as very young trees. Black Wattle (*Acacia decurrens*) forms occasional thickets within this zone. Midstorey diversity is relatively high but is largely dominated by the opportunistic coloniser Sifton Bush (*Cassinia sifton*), with Narrow-leaved Geebung (*Persoonia linearis*) and a suite of heaths and pea bushes also present. The ground is largely bare and stony. Scattered wallaby grasses (*Rytidosperma* spp.) and Snowgrass (*Poa sieberiana*) dominate the extremely sparse grass component of the zone. Moderate forb diversity remains within the zone but total forb cover is low.

Acacia Shrubland Condition (3747_AcaciaShrubland)

Photo 3 Zone 3747_AcaciaShrubland

Description: Copses or thickets of Black Wattle (*Acacia decurrens*) resulting from the clearing of prior forest or woodland communities. In rare cases, regrowth of Scribbly Gum (*Eucalyptus rossii*) or Red Stringybark (*Eucalyptus macrorhyncha*) is present. This zone tends to be dominated by species that thrive on disturbance, including Sifton Bush (*Cassinia sifton*) and Common Bracken (*Pteridium esculentum*). A grass layer dominated by Weeping Grass (*Microlaena stipoides*), Snowgrass (*Poa sieberiana*), or wallaby grasses (*Rytidosperma* spp.) is often present. Native species diversity is often low.

Acacia Shrubland Condition (3747_Derived)

Photo 4 Zone 3747_Derived

Description: Derived shrubland or shrubby grassland resulting from the clearing of prior woodlands or forests. Minor regrowth of Black Wattle (*Acacia decurrens*) occurs in this zone, as do scattered saplings of Scribbly Gum (*Eucalyptus rossii*) and Red Stringybark (*Eucalyptus macrorhyncha*) where this zone verges on remnant woodlands. The dominant shrub in this zone tends to be Daphne Heath (*Brachyloma daphnoides*), though some areas instead possess Sifton Bush (*Cassinia sifton*) or Sunshine Wattle (*Acacia terminalis*). Grassier sites are dominated by Redanther Wallaby Grass (*Rytidosperma pallidum*), Yanganbil (*Austrostipa bigeniculata*), or wiregrasses (*Aristida* spp.). Species diversity remains relatively high in this zone (21-26 native species per plot) and some areas retain species that are sensitive to disturbance, including orchids in the genera *Thelymitra* and *Diuris*.

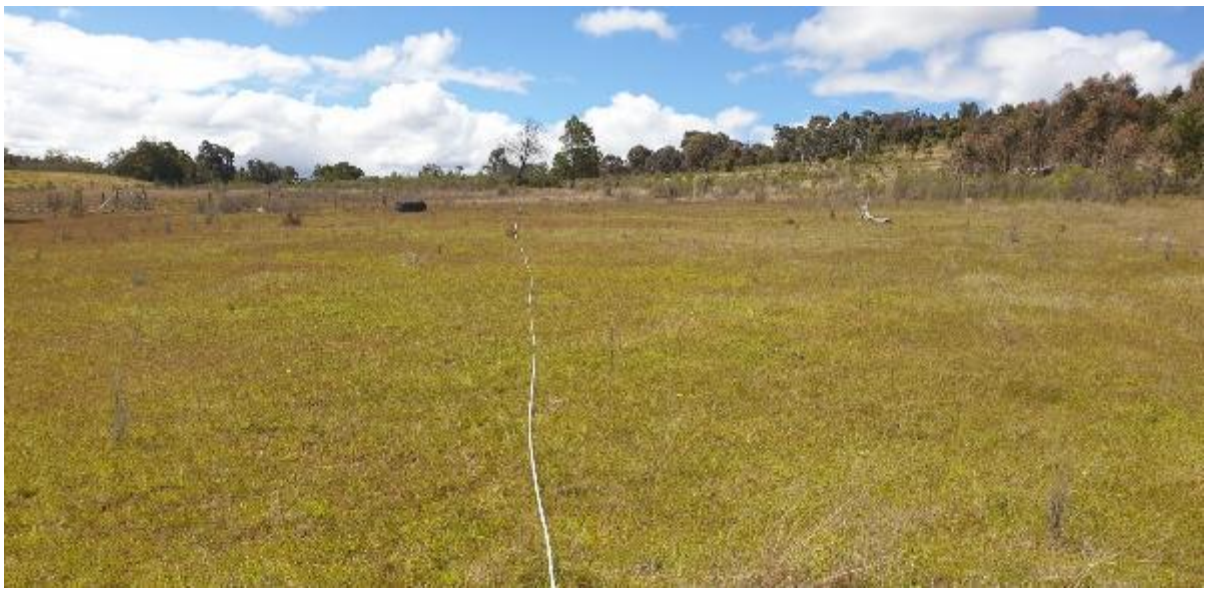
Quarried Condition (3747_Quarry)

Photo 5 Zone 3747_Quarry

Description: Highly disturbed shrubland in areas directly or indirectly impacted by quarrying or built infrastructure. Typically, a species-poor shrubland dominated by Sifton Bush (*Cassinia sifton*), sometimes with Black Wattle (*Acacia decurrens*) and/or Silver Wattle (*Acacia dealbata*). Common Raspwort (*Gonocarpus tetragynus*) persists in these areas and is typically joined by a small number of wet-area graminoids and forbs, associated with cracks and depressions in the substrate. These species include Common Bog-Rush (*Schoenus apogon*), Toad Rush (*Juncus bufonius*), and Swamp Isotome (*Isotoma fluviatilis*). Wallaby grasses (*Rytidosperma* spp.) are patchy but dominate the sparse grass component of the zone.

Wet Grassland Condition (3747_WetGrassland)

Photo 6 Zone 3747_WetGrassland



Description: Open, highly disturbed grassland surrounded by patches of remnant Scribbly Gum (*Eucalyptus rossii*), Red Stringybark (*Eucalyptus macrorhyncha*), Black Wattle (*Acacia decurrens*), and Apple Box (*Eucalyptus bridgesiana*) forest. It is assumed that the grassland results from the clearing of a former community containing combinations of these species. At the time of the initial survey, this area was extremely wet and formed a wetland or wet grassland community dominated by Common Bog-Rush (*Schoenus apogon*) and Weeping Grass (*Microlaena stipoides*). Other wetland species within the zone include the rush *Juncus subsecundus*, club-rushes (*Isolepis* spp.), and Swamp Isotome (*Isotoma fluviatilis*). Some seedlings of Sifton Bush (*Cassinia sifton*) and Black Wattle occur around the margins of the zone.

4.2.2.3 Justification of PCT selection

Good and Moderate condition states

Examples of the community in good or moderate condition were assigned to a PCT by filtering the BioNet Vegetation Classification Database by the relevant IBRA subregion and the dominant species within the community, namely:

- Canopy: *Eucalyptus rossii*, *Eucalyptus macrorhyncha*, *Allocasuarina littoralis*, *Acacia decurrens.*
- Midstorey: *Acacia terminalis*, *Acacia gunnii, Brachyloma daphnoides, Cassinia aculeata, Gaudium [=Leptospermum] multicaule, Persoonia linearis, Hibbertia obtusifolia, Dillwynia sericea.*
- Groundlayer: *Rytidosperma pallidum, Gonocarpus tetragynus*.

This search returned only two perfect (15/15) matches, PCTs 3747 and 3738. Three PCTs scoring 14/15 and five scoring 13/15 were also retained for further consideration. Despite the strong overlap in species, many PCTs could be excluded from consideration based on the relative proportion of each canopy species:

- PCT 3738 could be excluded from consideration as the most abundant species in this PCT is Brittle Gum (*Eucalyptus mannifera*; 53% of plots), a species not recorded within the site, and as Scribbly Gum (*Eucalyptus rossii*), which is dominant within the site, occurs in only 12% of PCT 3738 plots.
- PCT 3534 is dominated by Red Stringybark (*Eucalyptus macrorhyncha*; 96% of plots) and often contains Scribbly Gum (*Eucalyptus rossii*; 40% of plots), broadly in line with observations, but is more likely to contain Long-leaved Box (*Eucalyptus goniocalyx*; 70% of plots) and Red Box (*Eucalyptus polyanthemos*; 55% of plots), species not recorded within the site.
- PCT 3643 only rarely contains Red Stringybark (*Eucalyptus macrorhyncha*; 6% of plots) or Scribbly Gum (*Eucalyptus rossii*; 17% of plots) and almost always contains Silvertop Ash (*Eucalyptus sieberi*; 89%). Silvertop Ash occurs to the north of the site but not within the vegetation communities that would be impacted by the project.
- PCT 3373 often contains Red Stringybark (*Eucalyptus macrorhyncha*; 43% of plots) but only rarely contains Scribbly Gum (*Eucalyptus rossii*; 13% of plots), the dominant species within the site. The most commonly recorded species within this PCT is Yellow Box (*Eucalyptus melliodora*; 56% of plots), which does not occur within the site.
- PCT 3492 only infrequently contains Red Stringybark (*Eucalyptus macrorhyncha*; 33% of plots) or Scribbly Gum (*Eucalyptus rossii*; 22% of plots), and is instead dominated by species that do not occur within the site, namely Blue-leaved Stringybark (*Eucalyptus agglomerata*; 76% of plots) and Grey Gum (*Eucalyptus punctata*; 55% of plots).
- PCT 3731 often contains Scribbly Gum (*Eucalyptus rossii*; 69% of plots) but rarely contains Red Stringybark (*Eucalyptus macrorhyncha*; 10% of plots) and commonly supports a number of species that do not occur within the site, e.g. Grey Gum (*Eucalyptus punctata*; 88% of plots), Narrow-leaved Stringybark (*Eucalyptus sparsifolia*; 64% of plots), and Capertee Stringybark (*Eucalyptus cannonii*; 64% of plots).

- PCT 3744 often contains Scribbly Gum (*Eucalyptus rossii*; 46% of plots) but rarely contains Red Stringybark (*Eucalyptus macrorhyncha*; 4% of plots). It is dominated by Broad-leaved Peppermint (*Eucalyptus dives*; 88% of plots), a species occurring in neighbouring communities and only rarely extending into this zone, and Brittle Gum (*Eucalyptus mannifera*; 78% of plots), a species not recorded within the site.
- PCT 3374, likewise, is dominated by Broad-leaved Peppermint (*Eucalyptus dives*; 94% of plots), only infrequently containing Red Stringybark (*Eucalyptus macrorhyncha*; 35% of plots) and almost never containing Scribbly Gum (*Eucalyptus rossii*; 4% of plots).

Two PCTs were identified that contain the core canopy species in relatively appropriate abundances:

- PCT 3737: Scribbly Gum (82% of plots), Red Stringybark (32% of plots), Black She-oak (32% of plots), Black Wattle (3% of plots).
- PCT 3747: Scribbly Gum (84% of plots), Red Stringybark (86% of plots), Black She-oak (4% of plots), Black Wattle (5% of plots).

PCT 3737 was ultimately excluded as it is considered not to occur within the Monaro IBRA subregion and as it is not known to contain Sunshine Wattle (*Acacia terminalis*), a relatively common species within the site.

On the basis of the above, PCT 3747 was identified as the strongest match to the recorded vegetation in good-condition remnants. Moderate-condition remnants could be assigned to PCT 3737 on the same basis, as the canopy composition is broadly similar to the good-condition remnant. While moderate zones did include isolated examples of Broad-leaved Peppermint (*Eucalyptus dives*) and Argyle Apple (*Eucalyptus cinerea*), these species are allowed for by PCT 3747 (23% and 3% of plots, respectively).

Acacia Shrubland, Derived, and Quarried condition states

The remaining zones are highly disturbed. While zone 3747_AcaciaShrubland contains sufficient regrowth of Scribbly Gum and Red Stringybark to support assigning that zone to the same PCT, eucalypt species are largely absent from the remaining zones. These areas are often also dominated by common, disturbance-tolerant species or opportunistic colonisers, impeding PCT determination. A significant species list could be compiled for the “derived” condition state, and the dominant species in this zone were used to filter the BioNet Vegetation Classification database, along with the relevant IBRA subregion:

- Canopy: *Acacia decurrens.*
- Midstorey: *Hibbertia obtusifolia, Leptospermum multicaule, Melichrus urceolatus, Dillwynia sericea, Rhytidosporum procumbens, Persoonia linearis, Cassinia arcuata, Cassinia sifton, Brachyloma daphnoides.*
- Groundlayer: *Austrostipa bigeniculata, Gonocarpus tetragynus, Rytidosperma pallidum, Aristida jerichoensis*.

This search returned only three strong (≥13/15) matches, PCTs 3534, 3747, and 3738. This, together with the immediate proximity of remnant examples of PCT 3747, provided evidence to support assigning the derived zone to PCT 3747.

Zone 3747_Quarry is species-poor and is composed mainly of opportunistic colonisers. It was assigned to PCT 3747 largely on the basis of proximity to remnant examples of that PCT, as it occurs either immediately adjacent to these remnants or within 200 m of these

remnants and with no closer candidate PCT. It is often continuous with zone 3747_Derived and contains several of the most common species recorded in that zone, including *Gonocarpus tetragynus* and *Cassinia sifton*.

Wet Grassland condition state

The most suitable PCT for the “wet grassland” condition state resists easy identification. Although the zone occupies a narrow area that has been used as a track between remnant examples of PCT 3747 and is bracketed in the north and south by zone 3747_Derived, it supports a distinctive species assemblage and consideration was given to the possibility that another PCT might exist that better describes the zone. The BioNet Vegetation Classification database was filtered by the relevant IBRA subregion and the ten most abundant species within the zone:

- Groundlayer: *Microlaena stipoides, Euchiton sphaericus, Schoenus apogon, Isolepis cernua, Schenkia australis, Isolepis inundata, Luzula meridionalis, Aristida jerichoensis, Rytidosperma pilosum, Drosera hookeri*

This search did not return any matches stronger than 8/11 and the closest candidate PCTs were woodland or forest communities that align only weakly with remnant canopy species immediately adjacent to the site:

- PCT 3376 may allow for the minor presence of Apple Box (*Eucalyptus bridgesiana*; 32% of plots) in surrounding woodland remnants but does not account for the local dominance of Red Stringybark (*Eucalyptus macrorhyncha*; 11% of plots) and Scribbly Gum (*Eucalyptus rossii*; 13% of plots) in areas immediately adjacent to and encroaching into this zone.
- PCT 3542 allows for the local abundance of Red Stringybark (*Eucalyptus macrorhyncha*; 96% of plots) and for the minor presence of Apple Box (*Eucalyptus bridgesiana*; 22% of plots), but not for the frequent local occurrence of Scribbly Gum (*Eucalyptus rossii*; 2% of plots).

No wetland communities with a stronger match than 6/11 were returned and these either do not occur within the relevant IBRA subregion (PCT 3934) or are dominated by species that do not occur locally (PCT 3930). All other returned PCTs scoring ≥5/11 were woodland or forest communities. It was considered unlikely that any other woodland PCT would historically have been confined to the narrow (c. 45 m) gap between remnant examples of PCT 3747 and that it was more likely that the observed variation was a result of the longstanding disturbance associated with use of the site as a vehicle track and the consequent tendency for water to become impounded in that area, altering the floristics of the site. On this basis and considering the absence of any clearly superior or more plausible match, it was considered appropriate to assign this area to PCT 3747.

4.2.2.4 Alignment with BC Act-listed TECs

PCT 3747 is not associated with any BC Act-listed TEC in the BioNet Vegetation Classification database. Comparison of the recorded vegetation with TECs known to occur in the wider region did not identify any TEC aligning closely with the vegetation within the site.

4.2.2.5 Alignment with EPBC Act-listed TECs

PCT 3747 is not associated with any EPBC Act-listed EC in the BioNet Vegetation Classification database. Comparison of the recorded vegetation with TECs known to occur in the wider region did not identify any EC aligning closely with the vegetation within the site.

4.3 Vegetation zones

Vegetation zones were initially delineated based on broad structural elements, e.g. the presence or absence of a canopy and the degree of disturbance to each stratum. Zones were further refined based on vegetation integrity scores derived from BAM VI plots. Zones are described in **Table 8** and mapped in **Figure 12**.

Patch size classes were identified in accordance with subsection 4.3.2 of the BAM. Specifically, areas of native vegetation that were continuous or that were not separated by gaps of >100 m (woody vegetation) or 30 m (non-woody vegetation) were assigned to a single patch. The majority of the site supports native vegetation, either as remnant woodland or as secondary grassland/shrubland, and all vegetation zones are contiguous with one another. All zones could therefore be assigned to a single patch.

As the single patch belongs to the largest patch size class (>100 ha), it was not considered necessary to map this patch beyond the limits of the assessment area. Vegetation zones and patches are detailed in **Table 8** and mapped in **Figure 12.**

Table 8 Vegetation zones and patch sizes

Vegetation zone ID	PCT ID number and name	Condition / other defining feature	Area (ha)	Patch size class (select multiple if areas of native vegetation are discontinuous)	No. vegetation integrity plots required	No. vegetation integrity plots completed	No. vegetation integrity plots used in assessment	Plot IDs of vegetation integrity plots used in assessment
3747_AcaciaShrubland	3747-Southern Tableland Western Hills Scribbly Gum Forest	Acacia Shrubland	0.19	☐ <5 ha ☐ 5–24 ha ☐ 25–100 ha ☒ >100 ha	1	1	1	BA08
3747_Derived	3747-Southern Tableland Western Hills Scribbly Gum Forest	Derived	3.29	☐ <5 ha ☐ 5–24 ha ☐ 25–100 ha ☒ >100 ha	2	4	4	BA01 BA04 BA12 BA13
3747_Good	3747-Southern Tableland Western Hills Scribbly Gum Forest	Good	0.81	☐ <5 ha ☐ 5–24 ha ☐ 25–100 ha ☒ >100 ha	1	5	5	BA02 BA05 BA06 BA07 BA14
3747_Moderate	3747-Southern Tableland Western Hills Scribbly Gum Forest	Moderate	0.36	☐ <5 ha ☐ 5–24 ha ☐ 25–100 ha ☒ >100 ha	1	1	1	BA10
3747_Quarry	3747-Southern Tableland Western Hills Scribbly Gum Forest	Quarry	0.14	☐ <5 ha ☐ 5–24 ha ☐ 25–100 ha ☒ >100 ha	1	1	1	BA15
3747_WetGrassland	3747-Southern Tableland Western Hills Scribbly Gum Forest	Wet Grassland	0.15	☐ <5 ha ☐ 5–24 ha ☐ 25–100 ha ☒ >100 ha	1	1	1	BA09

4.4 Vegetation integrity (vegetation condition)

4.4.1 Vegetation integrity survey plots

Table 3 in the BAM identifies the minimum number of plots required for each vegetation zone. This minimum requirement was met or exceeded for all vegetation zones within the disturbance footprint. In total, 15 plots were conducted during the initial site visit. Of these, two were removed from the final assessment. Plot BA03 was omitted as it was situated within a Broad-leaved Peppermint (*Eucalyptus dives*) community that was excluded from the final impact footprint. Plot BA11 was omitted as it was considered to be less representative of the vegetation within the impact footprint than the nearby BA10.

In the final disturbance footprint, only one vegetation zone exceeds 2 ha in size (3747_Derived) and therefore only one of the vegetation zones requires more than a single plot. The 13 plots used in the final analysis exceed the minimum requirement of seven plots for the assessment.

4.4.2 Scores

Table 9 Vegetation integrity scores

Vegetation zone ID	Composition condition score	Structure condition score	Function condition score (where relevant)	Vegetation integrity score	Hollow bearing trees present?
3747_AcaciaShrubland	43.4	77.8	22.6	42.4	No
3747_Derived	74.8	54.3	15.9	40.1	No
3747_Good	74	95.6	83.9	84.0	Yes
3747_Moderate	85.3	46.4	46.6	58.1	No
3747_Quarry	27.6	22.2	15	21.0	No
3747_WetGrassland	50.9	36.2	0	12.3	No

4.4.3 Use of benchmark data

Benchmark data was not modified from the default data contained in the BAM-C.

5. Habitat suitability for threatened species

5.1 Identification of threatened species for assessment

5.1.1 Ecosystem credit species

In total, 26 ecosystem credit species were generated by the BAM-C for stages 1a-3b of the project. The requirement for species to be retained for further assessment was based on observations made during the field assessment, current NSW DCCEEW information of habitat constraints of the species, and professional judgement (**Table 10**).

Two species were excluded from further assessment for all stages of the project due to the following habitat constraints:

- Black-necked Stork (*Ephippiorhynchus asiaticus*): Absence of shallow wetlands or similar waterbodies within 300 m of the subject land., open freshwater or saline wetlands or shallow edges of deeper wetlands within 300m of these swamps.
- White-bellied Sea-Eagle (*Haliaeetus leucogaster*): Absence of suitably large waterways or waterbodies within 1 km of the subject land.

Furthermore, one species was excluded from further assessment from only stage 1a of this project due to habitat constraints:

- Glossy Black-cockatoo (*Calyptorhynchus lathami*): Absence of food trees, namely *Allocasuarina* or *Casuarina* species within the stage 1a area.

The remaining species were either detected (Scarlet Robin), or tentatively identified on the ultrasonic bat recordings (Eastern False Pipistrelle, Large Bent-winged Bat, Greater Broad-nosed Bat, Yellow-bellied Sheath-tailed Bat) or assumed to be present and retained for further assessment (see **Table 10**).

Table 10 Predicted ecosystem credit species

Common name	Scientific name	Listing status		Dual credit species	Sources	Species retained for further assessment?	Reason for exclusion from further assessment	Vegetation zone ID species retained within, including PCT ID	Sensitivity to gain class
		BC Act	EPBC Act						
Black Falcon	*Falco subniger*	Vulnerable	Not listed	No	☒ BAM-C ☒ TBDC ☐ Previous survey ☐ Current survey	Yes	NA	3747_AcaciaShrubland 3747_Derived 3747_Good 3747_Moderate 3747_Quarry	Moderate

Common name	Scientific name	Listing status		Dual credit species	Sources	Species retained for further assessment?	Reason for exclusion from further assessment	Vegetation zone ID species retained within, including PCT ID	Sensitivity to gain class
		BC Act	EPBC Act						
								3747_WetGrassland	
Brown Treecreeper (eastern subspecies)	*Climacteris picumnus victoriae*	Vulnerable	Vulnerable	No	☒ BAM-C ☒ TBDC ☐ Previous survey ☐ Current survey	Yes	NA	3747_AcaciaShrubland 3747_Derived 3747_Good 3747_Moderate 3747_Quarry 3747_WetGrassland	High
Diamond Firetail	*Stagonopleura guttata*	Vulnerable	Vulnerable	No	☒ BAM-C ☒ TBDC ☐ Previous survey ☐ Current survey	Yes	NA	3747_AcaciaShrubland 3747_Derived 3747_Good 3747_Moderate 3747_Quarry 3747_WetGrassland	Moderate
Dusky Woodswallow	*Artamus cyanopterus cyanopterus*	Vulnerable	Not listed	No	☒ BAM-C ☒ TBDC ☐ Previous survey ☐ Current survey	Yes	NA	3747_AcaciaShrubland 3747_Derived 3747_Good 3747_Moderate 3747_Quarry 3747_WetGrassland	Moderate
Eastern False Pipistrelle	*Falsistrellus tasmaniensis*	Vulnerable	Not listed	No	☒ BAM-C ☒ TBDC ☐ Previous survey ☐ Current survey	Yes	NA	3747_AcaciaShrubland 3747_Derived 3747_Good 3747_Moderate	High

Common name	Scientific name	Listing status		Dual credit species	Sources	Species retained for further assessment?	Reason for exclusion from further assessment	Vegetation zone ID species retained within, including PCT ID	Sensitivity to gain class
		BC Act	EPBC Act						
								3747_Quarry 3747_WetGrassland	
Flame Robin	*Petroica phoenicea*	Vulnerable	Marine	No	☒ BAM-C ☒ TBDC ☐ Previous survey ☐ Current survey	Yes	NA	3747_AcaciaShrubland 3747_Derived 3747_Good 3747_Moderate 3747_Quarry 3747_WetGrassland	Moderate
Gang-gang Cockatoo	*Callocephalon fimbriatum*	Endangered	Endangered	Yes	☒ BAM-C ☒ TBDC ☐ Previous survey ☐ Current survey	Yes	NA	3747_AcaciaShrubland 3747_Derived 3747_Good 3747_Moderate 3747_Quarry 3747_WetGrassland	Moderate
Grey-headed Flying-fox	*Pteropus poliocephalus*	Vulnerable	Vulnerable	Yes	☒ BAM-C ☒ TBDC ☐ Previous survey ☐ Current survey	Yes	NA	3747_AcaciaShrubland 3747_Derived 3747_Good 3747_Moderate 3747_Quarry 3747_WetGrassland	High
Large Bent-winged Bat	*Miniopterus orianae oceanensis*	Vulnerable	Not listed	Yes	☒ BAM-C ☒ TBDC ☐ Previous survey ☐ Current survey	Yes	NA	3747_AcaciaShrubland 3747_Derived 3747_Good 3747_Moderate	High

Common name	Scientific name	Listing status		Dual credit species	Sources	Species retained for further assessment?	Reason for exclusion from further assessment	Vegetation zone ID species retained within, including PCT ID	Sensitivity to gain class
		BC Act	EPBC Act						
								3747_Quarry 3747_WetGrassland	
Little Eagle	*Hieraaetus morphnoides*	Vulnerable	Not listed	Yes	☒ BAM-C ☒ TBDC ☐ Previous survey ☐ Current survey	Yes	NA	3747_AcaciaShrubland 3747_Derived 3747_Good 3747_Moderate 3747_Quarry 3747_WetGrassland	Moderate
Little Lorikeet	*Glossopsitta pusilla*	Vulnerable	Not listed	No	☒ BAM-C ☒ TBDC ☐ Previous survey ☐ Current survey	Yes	NA	3747_AcaciaShrubland 3747_Derived 3747_Good 3747_Moderate 3747_Quarry 3747_WetGrassland	High
Olive Whistler	*Pachycephala olivacea*	Vulnerable	Not listed	No	☒ BAM-C ☒ TBDC ☐ Previous survey ☐ Current survey	Yes	NA	3747_AcaciaShrubland 3747_Derived 3747_Good 3747_Moderate 3747_Quarry 3747_WetGrassland	Moderate
Rosenberg's Goanna	*Varanus rosenbergi*	Vulnerable	Not listed	No	☒ BAM-C ☒ TBDC ☐ Previous survey ☐ Current survey	Yes	NA	3747_AcaciaShrubland 3747_Derived 3747_Good 3747_Moderate	High

Common name	Scientific name	Listing status		Dual credit species	Sources	Species retained for further assessment?	Reason for exclusion from further assessment	Vegetation zone ID species retained within, including PCT ID	Sensitivity to gain class
		BC Act	EPBC Act						
								3747_Quarry 3747_WetGrassland	
Scarlet Robin	*Petroica boodang*	Vulnerable	Not listed	No	☒ BAM-C ☒ TBDC ☐ Previous survey ☐ Current survey	Yes	NA	3747_AcaciaShrubland 3747_Derived 3747_Good 3747_Moderate 3747_Quarry 3747_WetGrassland	Moderate
South-eastern Glossy Black-Cockatoo	*Calyptorhynchus lathami lathami*	Vulnerable	Vulnerable	Yes	☒ BAM-C ☒ TBDC ☐ Previous survey ☐ Current survey	Yes*	*This species has been excluded from further assessment within stage 1a of the project. This is due to the absence of *Allocasuarina* and/or *Casuarina* species within this section of the subject land. This species is retained for further assessment within all other stages of the project.	3747_AcaciaShrubland 3747_Derived 3747_Good 3747_Moderate 3747_Quarry 3747_WetGrassland	High
South-eastern Hooded Robin	*Melanodryas cucullata cucullata*	Endangered	Endangered	No	☒ BAM-C ☒ TBDC ☐ Previous survey ☐ Current survey	Yes	NA	3747_AcaciaShrubland 3747_Derived 3747_Good 3747_Moderate 3747_Quarry	Moderate

Common name	Scientific name	Listing status		Dual credit species	Sources	Species retained for further assessment?	Reason for exclusion from further assessment	Vegetation zone ID species retained within, including PCT ID	Sensitivity to gain class
		BC Act	EPBC Act						
								3747_WetGrassland	
Southern Whiteface	*Aphelocephala leucopsis*	Vulnerable	Vulnerable	No	☒ BAM-C ☒ TBDC ☐ Previous survey ☐ Current survey	Yes	NA	3747_AcaciaShrubland 3747_Derived 3747_Good 3747_Moderate 3747_Quarry 3747_WetGrassland	Low
Speckled Warbler	*Chthonicola sagittata*	Vulnerable	Not listed	No	☒ BAM-C ☒ TBDC ☐ Previous survey ☐ Current survey	Yes	NA	3747_AcaciaShrubland 3747_Derived 3747_Good 3747_Moderate 3747_Quarry 3747_WetGrassland	High
Spotted-tailed Quoll	*Dasyurus maculatus*	Vulnerable	Endangered	No	☒ BAM-C ☒ TBDC ☐ Previous survey ☐ Current survey	Yes	NA	3747_AcaciaShrubland 3747_Derived 3747_Good 3747_Moderate 3747_Quarry 3747_WetGrassland	High
Square-tailed Kite	*Lophoictinia isura*	Vulnerable	Not listed	Yes	☒ BAM-C ☒ TBDC ☐ Previous survey ☐ Current survey	Yes	NA	3747_AcaciaShrubland 3747_Derived 3747_Good 3747_Moderate	Moderate

Common name	Scientific name	Listing status		Dual credit species	Sources	Species retained for further assessment?	Reason for exclusion from further assessment	Vegetation zone ID species retained within, including PCT ID	Sensitivity to gain class
		BC Act	EPBC Act						
								3747_Quarry 3747_WetGrassland	
Swift Parrot	*Lathamus discolor*	Endangered	Critically Endangered	Yes	☒ BAM-C ☒ TBDC ☐ Previous survey ☐ Current survey	Yes	NA	3747_AcaciaShrubland 3747_Derived 3747_Good 3747_Moderate 3747_Quarry 3747_WetGrassland	Moderate
Varied Sittella	*Daphoenositta chrysoptera*	Vulnerable	Not listed	No	☒ BAM-C ☒ TBDC ☐ Previous survey ☐ Current survey	Yes	NA	3747_AcaciaShrubland 3747_Derived 3747_Good 3747_Moderate 3747_Quarry 3747_WetGrassland	Moderate
White-throated Needletail	*Hirundapus caudacutus*	Vulnerable	Vulnerable CAMBA JAMBA ROKAMBA	No	☒ BAM-C ☒ TBDC ☐ Previous survey ☐ Current survey	Yes	NA	3747_AcaciaShrubland 3747_Derived 3747_Good 3747_Moderate 3747_Quarry 3747_WetGrassland	High
Yellow-bellied Sheathtail-bat	*Saccolaimus flaviventris*	Vulnerable	Not listed	No	☒ BAM-C ☒ TBDC ☐ Previous survey ☐ Current survey	Yes	NA	3747_AcaciaShrubland 3747_Derived 3747_Good 3747_Moderate	High

Common name	Scientific name	Listing status		Dual credit species	Sources	Species retained for further assessment?	Reason for exclusion from further assessment	Vegetation zone ID species retained within, including PCT ID	Sensitivity to gain class
		BC Act	EPBC Act						
								3747_Quarry 3747_WetGrassland	
Black-necked Stork	*Ephippiorhynchus asiaticus*	Endangered	Not listed	No	☒ BAM-C ☒ TBDC ☐ Previous survey ☐ Current survey	No	The subject land does not occur within shallow, open freshwater or saline wetlands or shallow edges of deeper wetlands within 300m of these swamps. Similarly, the subject land does not occur within shallow lakes, lake margins and estuaries within 300m of these waterbodies	3747_AcaciaShrubland 3747_Derived 3747_Good 3747_Moderate 3747_Quarry 3747_WetGrassland	Moderate
White-bellied Sea-Eagle	*Haliaeetus leucogaster*	Vulnerable	Marine	Yes	☒ BAM-C ☒ TBDC ☐ Previous survey ☐ Current survey	No	The subject land does not occur within 1km of rivers, lakes, large dams or creeks, wetlands and coastlines.	3747_AcaciaShrubland 3747_Derived 3747_Good 3747_Moderate 3747_Quarry 3747_WetGrassland	High

5.1.2 Species credit species

The below flora species credit species (**Table 11**) and fauna species credit species (**Table 12**) were required to be assessed as being present or absent on the subject land. No species credit species was added to the list automatically generated by the BAM-C. Assessment for each species has been carried out based on the outcomes of observations made during the field assessment, targeted surveys and current NSW DCCEEW information

of habitat constraints of the species. The full habitat assessment for each species is listed in **Appendix D**. The targeted survey effort is summarised in **Section 2.3** and **2.4**.

Stage 1a-3b species polygons for the single species detected is provided in **Figure 13**.

Table 11 Predicted flora species credit species

Common name	Scientific name	Listing status		Sources	Species retained for further assessment?	Reason for exclusion from further assessment	Vegetation zone ID species retained within, including PCT ID
		BC Act	EPBC Act				
Hoary Sunray	*Leucochrysum albicans* subsp. *tricolor*	Endangered	Endangered	☒ BAM-C ☒ TBDC ☐ Previous survey ☐ Current survey	Yes	N/A	3747_AcaciaShrubland 3747_Derived 3747_Good 3747_Moderate 3747_Quarry 3747_WetGrassland
Pale Pomaderris	*Pomaderris pallida*	Vulnerable	Vulnerable	☒ BAM-C ☒ TBDC ☐ Previous survey ☐ Current survey	No	Geographical limitation. Subject land is not south of Queanbeyan.	N/A
Lemon Zieria	*Zieria citriodora*	Endangered	Vulnerable	☒ BAM-C ☒ TBDC ☐ Previous survey ☐ Current survey	Yes	N/A	3747_AcaciaShrubland 3747_Derived 3747_Good 3747_Moderate 3747_Quarry 3747_WetGrassland

Table 12 Predicted fauna species credit species

Common name	Scientific name	Listing status		Dual credit species	Sources	Species retained for further assessment?	Reason for exclusion from further assessment	Vegetation zone ID species retained within, including PCT ID
		BC Act	EPBC Act					
Pink-tailed Legless Lizard	*Aprasia parapulchella*	Vulnerable	Vulnerable	No	☒ BAM-C ☒ TBDC ☐ Previous survey ☐ Current survey	Yes	N/A	3747_AcaciaShrubland 3747_Derived 3747_Good 3747_Moderate 3747_Quarry 3747_WetGrassland
Gang-gang Cockatoo	*Callocephalon fimbriatum*	Endangered	Endangered	Yes	☒ BAM-C ☒ TBDC ☐ Previous survey ☐ Current survey	Yes	N/A	3747_AcaciaShrubland 3747_Derived 3747_Good 3747_Moderate 3747_Quarry 3747_WetGrassland
South-eastern Glossy Black-Cockatoo	*Calyptorhynchus lathami lathami*	Vulnerable	Vulnerable	Yes	☒ BAM-C ☒ TBDC ☐ Previous survey ☐ Current survey	Yes	N/A	3747_AcaciaShrubland 3747_Derived 3747_Good 3747_Moderate 3747_Quarry 3747_WetGrassland
Eastern Pygmy-possum	*Cercartetus nanus*	Vulnerable	Not listed	No	☒ BAM-C ☒ TBDC ☐ Previous survey ☐ Current survey	Yes	N/A	3747_AcaciaShrubland 3747_Derived 3747_Good 3747_Moderate 3747_Quarry 3747_WetGrassland

Common name	Scientific name	Listing status		Dual credit species	Sources	Species retained for further assessment?	Reason for exclusion from further assessment	Vegetation zone ID species retained within, including PCT ID
		BC Act	EPBC Act					
White-bellied Sea-Eagle	*Haliaeetus leucogaster*	Vulnerable	Not listed	Yes	☒ BAM-C ☒ TBDC ☐ Previous survey ☐ Current survey	No	Habitat constraint. Subject land is not within 1 km of a suitable waterbody.	N/A
Little Eagle	*Hieraaetus morphnoides*	Vulnerable	Not listed	Yes	☒ BAM-C ☒ TBDC ☐ Previous survey ☐ Current survey	Yes	N/A	3747_AcaciaShrubland 3747_Derived 3747_Good 3747_Moderate 3747_Quarry 3747_WetGrassland
Swift Parrot	*Lathamus discolor*	Endangered	Critically Endangered	Yes	☒ BAM-C ☒ TBDC ☐ Previous survey ☐ Current survey	No	Habitat constraint. Subject land is not included in important habitat mapping for this species.	N/A
Yellow-spotted Tree Frog	*Litoria castanea*	Critically Endangered	Critically Endangered	No	☒ BAM-C ☒ TBDC ☐ Previous survey ☐ Current survey	Yes	N/A	3747_AcaciaShrubland 3747_Derived 3747_Good 3747_Moderate 3747_Quarry 3747_WetGrassland
Southern Bell Frog	*Litoria raniformis*	Vulnerable	Vulnerable	No	☒ BAM-C ☒ TBDC ☐ Previous survey ☐ Current survey	Yes	N/A	3747_AcaciaShrubland 3747_Derived 3747_Good 3747_Moderate 3747_Quarry 3747_WetGrassland

Common name	Scientific name	Listing status		Dual credit species	Sources	Species retained for further assessment?	Reason for exclusion from further assessment	Vegetation zone ID species retained within, including PCT ID
		BC Act	EPBC Act					
Square-tailed Kite	*Lophoictinia isura*	Vulnerable	Not listed	Yes	☒ BAM-C ☒ TBDC ☐ Previous survey ☐ Current survey	Yes	N/A	3747_AcaciaShrubland 3747_Derived 3747_Good 3747_Moderate 3747_Quarry 3747_WetGrassland
Large Bent-winged Bat	*Miniopterus orianae oceanensis*	Vulnerable	Not listed	Yes	☒ BAM-C ☒ TBDC ☐ Previous survey ☐ Current survey	No	Habitat constraint. Subject land does not contain caves, tunnels, mines, culverts, or other areas of potential breeding habitat.	N/A
Southern Myotis	*Myotis macropus*	Vulnerable	Not listed	No	☒ BAM-C ☒ TBDC ☐ Previous survey ☐ Current survey	Yes	N/A	3747_AcaciaShrubland 3747_Derived 3747_Good 3747_Moderate 3747_Quarry 3747_WetGrassland
Barking Owl	*Ninox connivens*	Vulnerable	Not listed	No	☒ BAM-C ☒ TBDC ☐ Previous survey ☐ Current survey	Yes	N/A	3747_AcaciaShrubland 3747_Derived 3747_Good 3747_Moderate 3747_Quarry 3747_WetGrassland
Powerful Owl	*Ninox strenua*	Vulnerable	Not listed	No	☒ BAM-C ☒ TBDC ☐ Previous survey ☐ Current survey	Yes	N/A	3747_AcaciaShrubland 3747_Derived 3747_Good 3747_Moderate

Common name	Scientific name	Listing status		Dual credit species	Sources	Species retained for further assessment?	Reason for exclusion from further assessment	Vegetation zone ID species retained within, including PCT ID
		BC Act	EPBC Act					3747_Quarry 3747_WetGrassland
Southern Greater Glider	*Petauroides volans*	Endangered	Endangered	No	☒ BAM-C ☒ TBDC ☐ Previous survey ☐ Current survey	Yes	N/A	3747_AcaciaShrubland 3747_Derived 3747_Good 3747_Moderate 3747_Quarry 3747_WetGrassland
Squirrel Glider	*Petaurus norfolcensis*	Vulnerable	Not listed	No	☒ BAM-C ☒ TBDC ☐ Previous survey ☐ Current survey	Yes	N/A	3747_AcaciaShrubland 3747_Derived 3747_Good 3747_Moderate 3747_Quarry 3747_WetGrassland
Brush-tailed Rock-wallaby	*Petrogale penicillata*	Endangered	Vulnerable	No	☒ BAM-C ☒ TBDC ☐ Previous survey ☐ Current survey	Yes	N/A	3747_AcaciaShrubland 3747_Derived 3747_Good 3747_Moderate 3747_Quarry 3747_WetGrassland
Brush-tailed Phascogale	*Phascogale tapoatafa*	Vulnerable	Not listed	No	☒ BAM-C ☒ TBDC ☐ Previous survey ☐ Current survey	Yes	N/A	3747_AcaciaShrubland 3747_Derived 3747_Good 3747_Moderate

Common name	Scientific name	Listing status		Dual credit species	Sources	Species retained for further assessment?	Reason for exclusion from further assessment	Vegetation zone ID species retained within, including PCT ID
		BC Act	EPBC Act					3747_Quarry 3747_WetGrassland
Koala	*Phascolarctos cinereus*	Endangered	Endangered	No	☒ BAM-C ☒ TBDC ☐ Previous survey ☐ Current survey	Yes	N/A	3747_AcaciaShrubland 3747_Derived 3747_Good 3747_Moderate 3747_Quarry 3747_WetGrassland
Grey-headed Flying-fox	*Pteropus poliocephalus*	Vulnerable	Vulnerable	Yes	☒ BAM-C ☒ TBDC ☐ Previous survey ☐ Current survey	No	Habitat constraint. Subject land does not support a breeding camp.	N/A
Golden Sun Moth	*Synemon plana*	Vulnerable	Vulnerable	No	☒ BAM-C ☒ TBDC ☐ Previous survey ☐ Current survey	Yes	N/A	3747_AcaciaShrubland 3747_Derived 3747_Good 3747_Moderate 3747_Quarry 3747_WetGrassland

5.2 Presence of candidate species credit species

Table 13 Determining the presence of candidate flora species credit species on the subject land

Common name	Scientific name	Listing status		Method used to determine presence	Present?	Further assessment required? (BAM Subsections 5.2.5 and 5.2.6)
		BC Act	EPBC Act			
Hoary Sunray	*Leucochrysum albicans* subsp. *tricolor*	Endangered	Endangered	Targeted threatened species survey	No	No
Lemon Zieria	*Zieria citriodora*	Endangered	Vulnerable	Targeted threatened species survey	No	No

Table 14 Determining the presence of candidate fauna species credit species on the subject land

Common name	Scientific name	Listing status		Method used to determine presence	Present?	Further assessment required? (BAM Subsections 5.2.5 and 5.2.6)
		BC Act	EPBC Act			
Pink-tailed Legless Lizard	*Aprasia parapulchella*	Vulnerable	Vulnerable	Expert report	Yes	Yes
Gang-gang Cockatoo	*Callocephalon fimbriatum*	Endangered	Endangered	Targeted threatened species survey	No	No
South-eastern Glossy Black-Cockatoo	*Calyptorhynchus lathami lathami*	Vulnerable	Vulnerable	Targeted threatened species survey	No	No
Eastern Pygmy-possum	*Cercartetus nanus*	Vulnerable	Not listed	Targeted threatened species survey	No	No
Little Eagle	*Hieraaetus morphnoides*	Vulnerable	Not listed	Targeted threatened species survey	No	No
Yellow-spotted Tree Frog	*Litoria castanea*	Critically Endangered	Critically Endangered	Targeted threatened	No	No

Common name	Scientific name	Listing status		Method used to determine presence	Present?	Further assessment required? (BAM Subsections 5.2.5 and 5.2.6)
		BC Act	EPBC Act			
				species survey		
Southern Bell Frog	*Litoria raniformis*	Vulnerable	Vulnerable	Targeted threatened species survey	No	No
Square-tailed Kite	*Lophoictinia isura*	Vulnerable	Not listed	Targeted threatened species survey	No	No
Southern Myotis	*Myotis macropus*	Vulnerable	Not listed	Targeted threatened species survey	No	No
Barking Owl	*Ninox connivens*	Vulnerable	Not listed	Targeted threatened species survey	No	No
Powerful Owl	*Ninox strenua*	Vulnerable	Not listed	Targeted threatened species survey	No	No
Southern Greater Glider	*Petauroides volans*	Endangered	Endangered	Targeted threatened species survey	No	No
Squirrel Glider	*Petaurus norfolcensis*	Vulnerable	Not listed	Targeted threatened species survey	Yes	Yes
Brush-tailed Rock-wallaby	*Petrogale penicillata*	Endangered	Vulnerable	Targeted threatened species survey	No	No
Brush-tailed Phascogale	*Phascogale tapoatafa*	Vulnerable	Not listed	Targeted threatened species survey	No	No
Koala	*Phascolarctos cinereus*	Endangered	Endangered	Targeted threatened species survey	No	No
Golden Sun Moth	*Synemon plana*	Vulnerable	Vulnerable	Targeted threatened	No	No

Common name	Scientific name	Listing status		Method used to determine presence	Present?	Further assessment required? (BAM Subsections 5.2.5 and 5.2.6)
		BC Act	EPBC Act			
				species survey		

5.3 Threatened species surveys

Table 15 Threatened species surveys for candidate flora species credit species on the subject land

Common name	Scientific name	Threatened flora species surveys				Present	Further assessment required (BAM Subsections 5.2.5 and 5.2.6)
		Survey method (transects or grids)	Timing of survey – within recommended period? (BAM-C / TBDC)		Effort (hours & no. people)		
Hoary Sunray	*Leucochrysum albicans subsp. tricolor*	Botanical transects	☒ Yes Oct 2024	☐ No	8.75 km (one person, 6.3 hours)	No	No
Lemon Zieria	*Zieria citriodora*	Botanical transects	☒ Yes Oct 2024	☐ No	(one person, 6.3 hours)	No	No

Flora surveys were conducted by means of parallel transects across the whole of the subject land at spacings of 5-10 m. This is in line with published survey guidelines (*Surveys for all species were conducted according to the method described in Surveying threatened plants and their habitats: NSW survey guide for the Biodiversity Assessment Method*; DPIE 2020a), which state that spacings of 5 m and 10 m are suitable for forbs and small shrubs in dense and open habitats respectively.

Table 16 Threatened species surveys for candidate fauna species credit species on the subject land

Common name	Scientific name	Threatened fauna species surveys				Present	Further assessment required (BAM Subsections 5.2.5 and 5.2.6)
		Survey method (e.g. harp trap, Elliott trap, bioacoustics, etc.)	**Timing of survey – within recommended period?** (BAM-C / TBDC)		**Effort** (hours & no. people)		
Pink-tailed Legless Lizard[1]	*Aprasia parapulchella*	Herpetological transects and rock/log turning	☐ Yes Nov 2024 / Early afternoon to sunset	☒ No Expert report now recommended for this species[1]	4 days (12.33 km and 953 rocks/logs turned) by one herpetologist	As targeted surveys are no longer accepted for this species, an expert report was instead used to determine presence/absence (**Section 5.4**).	
Gang-gang Cockatoo	*Callocephalon fimbriatum*	Diurnal birding transects and dusk hollow watching	☒ Yes Nov 2024 / Early afternoon to dusk	☐ No	4 days of birding (17.98 km) by two people 4 hollow watches at dusk (4.55 hours) by two people	No	No
Gang-gang Cockatoo	*Callocephalon fimbriatum*	Diurnal birding transects	☐ Yes	☒ No Feb & Mar 2025 / Early afternoon to dusk	6 days of birding (17.98 km) by two people	No	No
South-eastern Glossy Black-Cockatoo[2]	*Calyptorhynchus lathami lathami*	Diurnal birding transects and dusk hollow watching	☐ Yes	☒ No Nov 2024, Feb & Mar 2025 / Early afternoon to sunset	10 days of birding (35.69 km) by two people 4 hollow watches at dusk (4.55 hours) by two people	No	No
Eastern Pygmy-possum	*Cercartetus nanus*	Nocturnal spotlighting transects and dusk hollow watching	☒ Yes Nov 2024, Feb & Mar 2025 / night	☐ No	4 nights of spotlighting (22.57 km) by two people 4 hollow watches at dusk (4.55 hours) by two people	No	No

Common name	Scientific name	Threatened fauna species surveys				Present	Further assessment required (BAM Subsections 5.2.5 and 5.2.6)
		Survey method (e.g. harp trap, Elliott trap, bioacoustics, etc.)	**Timing of survey – within recommended period?** (BAM-C / TBDC)		**Effort** (hours & no. people)		
Eastern Pygmy-possum	*Cercartetus nanus*	Nocturnal spotlighting transects and nocturnal camera trapping	☒ Yes Feb & Mar 2025 / night	☐ No	5 nights of spotlighting (7.65 km) by two people 319 camera trap nights by 14 cameras	No	No
Little Eagle	*Hieraaetus morphnoides*	Diurnal birding transects and nest searching	☒ Yes Oct 2024 / Morning to sunset	☐ No	1 day of birding and nest search (4.48 km) by a person	No	No
Little Eagle	*Hieraaetus morphnoides*	Diurnal birding transects	☐ Yes	☒ No Nov 2024, Feb & Mar 2025 / Early afternoon to sunset	10 days of birding (35.69 km) by two people	No	No
Yellow-spotted Tree Frog	*Litoria castanea*	Nocturnal frogging transects, bioacoustics (call playback), and tadpole searching	☒ Yes Nov 2024 / night	☐ No	4 nights of frogging (11.87 km) and call playback (34 locations) by two people 4 nights of tadpole searches by two people	No	No
Southern Bell Frog	*Litoria raniformis*	Nocturnal frogging transects, bio acoustics (call playback), and tadpole searching	☒ Yes Nov 2024 / night	☐ No	4 nights of frogging (11.87 km) and call playback (34 locations) by two people 4 nights of tadpole searches by two people	No	No
Square-tailed Kite	*Lophoictinia isura*	Nest searching	☒ Yes Oct 2024 / Morning to sunset	☐ No	1 day of search (4.48 km) by a person	No	No

Common name	Scientific name	Threatened fauna species surveys				Present	Further assessment required (BAM Subsections 5.2.5 and 5.2.6)
		Survey method (e.g. harp trap, Elliott trap, bioacoustics, etc.)	**Timing of survey – within recommended period?** (BAM-C / TBDC)		**Effort** (hours & no. people)		
Square-tailed Kite	*Lophoictinia isura*	Diurnal birding transects	☒ Yes Nov 2024 / Morning to sunset	☐ No	4 days of birding (17.98 km) by two people	No	No
Square-tailed Kite	*Lophoictinia isura*	Diurnal birding transects	☐ Yes	☒ No Feb & Mar 2025 / Morning to sunset	6 days of birding (17.71 km) by two people	No	No
Large Bent-winged Bat	*Miniopterus orianae oceanensis*	Bioacoustics (nocturnal passive ultrasonic recording)	☒ Yes Feb 2025 / night	☐ No	37 passive trap nights (three locations)	No	No
Large Bent-winged Bat	*Miniopterus orianae oceanensis*	Bioacoustics (nocturnal passive ultrasonic recording)	☐ Yes	☒ No Mar 2025 / night	4 passive trap nights (three locations)	No	No
Southern Myotis	*Myotis macropus*	Bioacoustics (nocturnal passive ultrasonic recording)	☒ Yes Feb & Mar 2025 / night	☐ No	41 passive trap nights (three locations)	No	No
Barking Owl	*Ninox connivens*	Bioacoustics (audio call playback)	☒ Yes Feb & Mar 2025 / night	☐ No	6 nights of audio call playback (one location) by a person	No	No
Powerful Owl	*Ninox strenua*	Bioacoustics (audio call playback)	☒ Yes Feb & Mar 2025 / night	☐ No	6 nights of audio call playback (one location) by a person	No	No
Southern Greater Glider	*Petauroides volans*	Nocturnal spotlighting transects and dusk hollow watching	☒ Yes Nov 2024, Feb & Mar 2025 / night	☐ No	4 nights of spotlighting (22.57 km) by two people	No	No

Common name	Scientific name	Threatened fauna species surveys				Present	Further assessment required (BAM Subsections 5.2.5 and 5.2.6)
		Survey method (e.g. harp trap, Elliott trap, bioacoustics, etc.)	**Timing of survey – within recommended period?** (BAM-C / TBDC)		**Effort** (hours & no. people)		
					4 hollow watches at dusk (4.55 hours) by two people		
Southern Greater Glider	*Petauroides volans*	Nocturnal spotlighting transects and nocturnal camera trapping	☒ Yes Feb & Mar 2025 / night	☐ No	5 nights of spotlighting (7.65 km) by two people 319 camera trap nights by 14 cameras	No	No
Squirrel Glider	*Petaurus norfolcensis*	Nocturnal spotlighting transects and dusk hollow watching	☒ Yes Nov 2024, Feb & Mar 2025 / night	☐ No	4 nights of spotlighting (22.57 km) by two people 4 hollow watches at dusk (4.55 hours) by two people	No	No
Squirrel Glider	*Petaurus norfolcensis*	Nocturnal spotlighting transects and nocturnal camera trapping	☒ Yes Feb & Mar 2025 / night	☐ No	5 nights of spotlighting (7.65 km) by two people 319 camera trap nights by 14 cameras	Yes	No
Brush-tailed Rock-wallaby	*Petrogale penicillata*	Scat and suitable habitat search transects	☒ Yes Oct & Nov 2024 / Morning to sunset	☐ No	5 days of scat and suitable habitat search (27.05 km) by two people	No	No
Brush-tailed Rock-wallaby	*Petrogale penicillata*	Nocturnal spotlighting transects	☒ Yes Nov 2024 / night	☐ No	4 nights of spotlighting (17.22 km) by two people	No	No
Brush-tailed Rock-wallaby	*Petrogale penicillata*	Nocturnal spotlighting transects and camera trapping	☒ Yes Feb & Mar 2025 / night	☐ No	5 nights of spotlighting (7.65 km) by two people 29 camera trap nights	No	No

Common name	Scientific name	Threatened fauna species surveys				Present	Further assessment required (BAM Subsections 5.2.5 and 5.2.6)
		Survey method (e.g. harp trap, Elliott trap, bioacoustics, etc.)	**Timing of survey – within recommended period?** (BAM-C / TBDC)		**Effort** (hours & no. people)		
Brush-tailed Phascogale	*Phascogale tapoatafa*	Nocturnal spotlighting transects and camera trapping	☒ Yes Feb & Mar 2025 / night	☐ No	5 nights of spotlighting (7.65 km) by two people 319 camera trap nights (14 cameras)	No	No
Koala	*Phascolarctos cinereus*	Spot Assessment Technique (SAT) survey	☒ Yes Nov 2024 & Feb 2025 / Morning to afternoon	☐ No	3 SAT surveys by a person	No	No
Koala	*Phascolarctos cinereus*	Nocturnal spotlighting transects	☒ Yes Nov 2024, Feb & Mar 2025 / night	☐ No	9 nights of spotlighting (30.22 km) by two people	No	No
Golden Sun Moth	*Synemon plana*	Diurnal insect netting transects	☒ Yes Nov 2024 / mid-morning to afternoon	☐ No	4 days of insect netting (12.5 km) by a person	No	No
Golden Sun Moth	*Synemon plana*	Diurnal insect netting transects	☐ Yes	☒ No Mar 2025 / mid-morning to afternoon	1 day of insect netting (7 km) by a person	No	No

[1]At the time the survey plan was devised, November was an approved survey month for this species. Following the decision to remove the survey window for this species, an expert report was commissioned to determine presence or absence (see **Section 5.4**).

[2]At the time the survey plan was devised, the survey months indicated were within the approved survey window for this species. Furthermore, the breeding season for this species occurs from March-August (Morcombe & Stewart, 2024), overlapping the targeted survey effort.

Surveys were designed to meet the requirements specified in published guidelines where these are available. Where guidelines specific to the BAM are not available, Commonwealth guidelines were adopted instead. Survey protocols were drawn from the following sources:

- Koala (*Phascolarctos cinereus*): Biodiversity Assessment Method Survey Guide (DPE, 2022a).
- Threatened Reptiles: Biodiversity Assessment Method Survey Guide (DPE, 2022b).
- Survey guidelines for Australia's threatened mammals: Guidelines for detecting mammals listed as threatened under the Environment Protection and Biodiversity Conservation Act 1999 (DSEWPC, 2011).
- 'Species credit' threatened bats and their habitats: NSW guide for the Biodiversity Assessment Method (DPIE, 2021).
- Background Paper to EPBC Act Policy Statement 3.12 – Nationally Threatened Species and Ecological Communities: Significant Impact Guidelines for the Critically Endangered Golden Sun Moth (*Synemon plana*) (Australian Government Department of the Environment, Water, Heritage and the Arts, 2009).
- NSW Survey Guide for Threatened Frogs: A guide for the survey of threatened frogs and their habitats for the Biodiversity Assessment Method (DPIE, 2020c).
- Survey guidelines for Australia's threatened birds: Guidelines for detecting birds listed as threatened under the EPBC Act (DEWHA, 2010)
- The Threatened Biodiversity Data Collection (TBDC), which contains specific guidelines for nocturnal birds.

5.4 Expert reports

An expert report was commissioned in order to determine whether the site contained suitable habitat for the Pink-tailed Legless Lizard (*Aprasia parapulchella*). This expert report (**Appendix H**; Capital Ecology, 2025) was used to determine the species polygon and offsetting requirements for this species. Where the site contains suitable habitat for the Pink-tailed Legless Lizard, or falls within a 50 m buffer of suitable habitat, the species has been assumed present and offsets applied.

5.5 More appropriate local data (where relevant)

Local data was not sourced in the preparation of this BDAR.

5.6 Area or count, and location of suitable habitat for a species credit species (a species polygon)

Two species credit species – the Squirrel Glider (*Petaurus norfolcensis*) and Pink-tailed Legless Lizard (*Aprasia parapulchella*) – are considered to be present on the subject land. Species polygons for these species are provided in **Figure 13**. For the Squirrel Glider, the polygon aligns with the full extent of PCT 3747 on the subject land, omitting only tracks, cleared land, and areas similarly lacking native vegetation. For the Pink-tailed Legless Lizard, the polygon includes all patches of PCT 3747 within a 50-metre buffer of areas identified as suitable habitat by an expert report (**Appendix H**; Capital Ecology, 2026). The species polygons are described in **Table 17**.

Table 17 Results for present species (recorded within the subject land)

Common name	**Scientific name**	**Biodiversity risk weighting** (BAM-C & TBDC*)	**SAII entity**** (BAM-C & TBDC)	**Habitat constraints / microhabitats present on the subject land / vegetation zone**	**Abundance – No. individual plants present on subject land** (flora with unit of measure of count)	**Extent (ha) of suitable habitat present on site** (flora or fauna with unit of measure of area)	**TBDC species specific recommendations e.g. buffers, general comments** (where relevant)	**Habitat condition** (vegetation integrity score for each vegetation zone in the polygon – area species only)
Squirrel Glider	*Petaurus norfolcensis*	High (2)	No	Not restricted by presence or absence of habitat constraints. 3747_AcaciaShrubland (whole zone) 3747_Derived (whole zone) 3747_Good (whole zone) 3747_Moderate (whole zone) 3747_Quarry (whole zone) 3747_WetGrassland (whole zone)	N/A	4.94	None given.	3747_AcaciaShrubland: 42.4 3747_Derived: 40.1 3747_Good: 84.0 3747_Moderate: 58.1 3747_Quarry: 21.0 3747_WetGrassland: 12.3
Pink-tailed Legless Lizard	*Aprasia parapulchella*	High (2)	No	3747_Derived (part) 3747_Good (part) 3747_Moderate (part) 3747_Quarry (part)	N/A	1.33	Within 50 m of rocky areas.	3747_Derived: 40.1 3747_Good: 84.0 3747_Moderate: 58.1 3747_Quarry: 21.0

6. Identifying prescribed impacts

Table 18 identifies prescribed impacts relevant to the project. Species lists for each prescribed impact were derived by considering the species credit species known to be present and ecosystem credit species known or assumed to be present and comparing their known habitat requirements to the habitat available within the site. Prescribed impacts are considered in detail in **Section 8.3** of this report.

Table 18 Prescribed impacts identified

Feature	Present	Description of feature characteristics and location	Threatened entities that use, are likely to use, or are part of the habitat feature. Where relevant, threatened species or fauna that are part of a TEC or EC, that are at risk of vehicle strike
Karst, caves, crevices, cliffs, rocks or other geological features of significance	☒Yes / ☐No	Rocks of various sizes occur within the subject land, including loose surface rock and larger outcrops.	This habitat feature is suitable habitat for threatened reptiles including the species credit species Pink-tailed Legless Lizard (*Aprasia parapulchella*). No additional species credit species or ecosystem credit species generated by the BAM-C are likely to use this habitat feature.
Human-made structures	☒Yes / ☐No	One human-made structure – a large machinery shed – occurs within the southern section (stage 1b) of the subject land. The proponent does not intend to remove this shed.	No impacts to any threatened entity are anticipated and no further assessment is required.
Non-native vegetation	☒Yes / ☐No	Minor areas of non-native vegetation occur within the site, typically where opportunistic weeds have colonised disturbed ground.	This habitat is likely to be of limited value to any threatened species. The following ecosystem credit species predicted to occur on the subject land make use of open and potentially disturbed areas: • Black Falcon (*Falco subniger*) • Dusky Woodswallow (Artamus cyanopterus cyanopterus) • Eastern False Pipistrelle (*Falsistrellus tasmaniensis*) • Large Bent-winged Bat (*Miniopterus orianae oceanensis*) • Little Eagle (Hieraaetus morphnoides) • Rosenberg's Goanna (*Varanus rosenbergi*) • Square-tailed Kite (*Lophoictinia isura*)

Feature	Present	Description of feature characteristics and location	Threatened entities that use, are likely to use, or are part of the habitat feature. Where relevant, threatened species or fauna that are part of a TEC or EC, that are at risk of vehicle strike
			• White-throated Needletail (*Hirundapus caudacutus*) • Yellow-bellied Sheathtail-bat (*Saccolaimus flaviventris*) However, given that areas of non-native vegetation are typically associated with deposits of construction material or debris, or occur within or adjacent to formed tracks, the potential for the loss of this habitat to impact these species is minimal.
Habitat connectivity	☒Yes / ☐No	Considering the subject land is located on the edge of a patch of dense remnant vegetation, minor impacts to connectivity would result from the project (see **Section 3.2.3**).	This is unlikely to adversely impact mobile, aerial species (e.g. most birds and bats) but may introduce minor impediments to the movement of ground-dwelling species, e.g. the species credit Pink-tailed Legless Lizard (*Aprasia parapulchella*) and ecosystem credit Rosenberg's Goanna (*Varanus rosenbergi*). Impacts to these species will be offset via species and ecosystem credits.
Waterbodies, water quality and hydrological processes	☒Yes / ☒No	The subject land contains small dams or areas of impounded water that may provide some habitat for threatened species.	No specifically aquatic species were identified as being at risk of impacts from this project; however, reductions in water availability may impact any ecosystem credit species assumed present.
Wind turbine strikes (wind farm development only)	☐Yes / ☒ No	N/A	N/A
Vehicle strikes	☐Yes / ☐No	An increase in overall traffic movement is anticipated due to construction works and quarrying activities. Maintaining suitably low speed limits (20km/hr) on site will help to mitigate resultant impacts.	All ecosystem credit species and species credit species are susceptible to vehicle strike to varying degrees.

Stage 2: Impact assessment (biodiversity values and prescribed impacts)

7. Avoid and minimise impacts

7.1 Avoid and minimise direct and indirect impacts

7.1.1 Project location

The project is located on an existing quarry site, with areas previously cleared and used historically for agriculture and more recently for extractive industries. The existing quarry site constrains the location of elements in the project. The majority of the project occurs within highly modified vegetation. Areas that were determined during the initial survey to support high-quality vegetation were largely excluded from the final design, though not all examples of remnant woodland in good condition have been avoided.

The proponent intends to avoid impacts to hollow-bearing trees where possible. It is unlikely that all hollows will be retained.

7.1.2 Project design

The Proponent originally intended to include an additional 6.0 ha of land to extend the stockpile areas. These areas included the land in between the currently proposed South Stockpile Area and Pit 2, as well as additional areas to the north and east of the North Stockpile Area (shown as blue hashed area on **Figure 14**).

These areas were ultimately reduced to the currently proposed areas as:

1. The repurposing of the Pit 2 Overburden Emplacement for additional stockpiling reduced the requirement for new disturbance, and
2. By using imported fill material to construct the proposed stockpile areas, the effective surface area available for stockpiling can be increased (by avoiding the requirement to terrace the area).

Considering the increased area available for stockpiling through the inclusion of previously approved disturbance footprints and more effective design, the Proponent has been able to reduce impacts to native vegetation.

The retained stockpile areas of the project represent the minimum area required for the maintenance of effective stockpiles for the broader range of quarry products now proposed.

Other design components which reduce the direct impact on native vegetation are as follows.

- The Proponent has minimised the additional stockpiling areas by placing processing operations (crushing, screening and washing) within the approved extraction area disturbance footprints.

- Similarly, the Proponent has allocated an area of the South Stockpile Area for Quarry offices, amenities, weighbridge and car park, thereby avoiding the need for additional disturbance.
- Existing infrastructure on Lot A, contained within Development Stage 1B has been incorporated into the project as this provides critical laydown, fuel storage and maintenance areas which do not require construction elsewhere.
- The project will rely upon existing haul roads between Pit 1, Pit 2 and the Pit 2 Overburden Emplacement such that the approved alignments for these may be avoided.
- The new internal access road contained within Development Stage 1A would be aligned to avoid the majority (and possibly all) hollow bearing trees.

7.2 Avoid and minimise prescribed impacts

7.2.1 Project location

The project is located on an existing quarry site, with areas previously cleared and used historically for agriculture and more recently for extractive industries. The existing quarry site constrains the location of elements in the project. As such, the following prescribed impacts have been avoided or minimised: habitat connectivity, waterbodies, water quality, hydrology and vehicle strike. Residual prescribed impacts to crevices, cliffs (quarry wall), rocks, and non-native vegetation remain. The non-native vegetation primarily exists as edge habitat in disturbed areas and is unlikely to be of value to threatened species (see **Section 8.3.2**)

7.2.2 Project design

See **Section 7.1.2** above. In specific reference to prescribed impacts, by consolidating the stockpile area, impacts have been avoided to areas of scattered surface rock. In addition, the operating quarry will create and retain additional waterbodies.

7.3 Other measures considered

Consideration was given to retaining the extraction face of Pit 1 intact. However, it is a requirement of the previous Conditions of Consent that this area be levelled and rehabilitated, therefore the extraction face cannot be retained.

7.4 Summary of measures to avoid and minimise impacts

Table 19 summarises the measures taken to avoid and minimise direct, indirect and prescribed impacts.

Table 19 Avoidance and minimisation measures for direct, indirect and prescribed impacts

Action	Outcome (Describe the outcome of implementing the measure, with reference to specific entities identified in Sections 4 and 5)	Timing	Responsibility
Stockpiles have been redesigned and consolidated	Reduced impact to PCT 3747, waterbodies, and surface rock	Design	Proponent
Wherever possible, hollow-bearing trees will be avoided	Reduced impacts to hollow-dependent fauna, including threatened species such as the Squirrel Glider	Design	Proponent
Additional waterbodies will be created	Additional habitat for protected fauna such as waterbirds, frogs and freshwater turtles	Design	Proponent

8. Impact assessment

8.1 Direct impacts

8.1.1 Residual direct impacts

Table 20 identifies impacts expected to occur on the subject land after steps taken to avoid and minimise (residual impacts).

Table 20 Summary of residual direct impacts

Direct impact (Describe the impact on PCT/TEC/EC or threatened species and their habitat)	**BC Act status**	**EPBC Act status**	**SAII entity**	**Project phase/timing of impact** (e.g. construction, operation, rehabilitation)	**Extent** (ha, number of individuals)
PCT 3747	Not listed	Not listed	No	Construction and operation	4.94 ha
Squirrel Glider (*Petaurus norfolcensis*)	Vulnerable	Not listed	No	Construction and operation	4.94 ha of habitat
Pink-tailed Legless Lizard (*Aprasia parapulchella*)	Vulnerable	Vulnerable	No	Construction and operation	1.33 ha of habitat[1]

[1]Note that this value for the whole of the subject land varies slightly from the sum of the individual stages (**Table 26**) due to rounding applied to data entered into the BAM-C.

8.1.2 Change in vegetation integrity score

Table 21 document anticipated changes in vegetation integrity for residual direct impacts on native vegetation identified on the subject land.

Table 21 Impacts to vegetation integrity

Vegetation zone	**PCT ID**	**Management zone**	**Area** (ha)	**Before development**				**After development**				**Change**
				Composition	**Structure**	**Function**	**VI score**	**Composition**	**Structure**	**Function**	**VI score**	**Change in VI score**
3747_AcaciaShrubland	3747	Disturbance footprint	0.19	43.4	77.8	22.6	42.4	0	0	0	0	-42.4
3747_Derived	3747	Disturbance footprint	3.29	74.8	54.3	15.9	40.1	0	0	0	0	-40.1

Vegetation zone	PCT ID	Management zone	Area (ha)	Before development				After development				Change
				Composition	Structure	Function	VI score	Composition	Structure	Function	VI score	Change in VI score
3747_Good	3747	Disturbance footprint	0.81	74	95.6	83.9	84.0	0	0	0	0	-84.0
3747_Moderate	3747	Disturbance footprint	0.36	85.3	46.4	58.1	58.1	0	0	0	0	-58.1
3747_Quarry	3747	Disturbance footprint	0.14	27.6	22.2	15	21.0	0	0	0	0	-21.0
3747_WetGrassland	3747	Disturbance footprint	0.15	50.9	36.2	0	12.3	0	0	0	0	-12.3

8.2 Indirect impacts

Table 22 documents residual indirect impacts (likely to occur on native vegetation, threatened entities and their habitat beyond the development footprint).

Table 22 Summary of residual indirect impacts

Indirect impact	Impacted entities	Extent (ha or zone reference)	Frequency	Duration (long-term/ short-term/ medium-term)	Project phase/ timing of impact (e.g. construction, operation, rehabilitation)	Likelihood and consequences
Transport of weeds/pathogens	PCT 3747 outside the direct impact footprint and any ecosystem credit species assumed present.	Uncertain.	Ongoing	Long-term	Construction and operation	Likely. Degradation of native vegetation outside the impact footprint.
Impacts to soil and/or hydrology	PCT 3747 outside the direct impact footprint and any ecosystem credit species assumed present.	Uncertain.	Ongoing	Long-term	Construction and operation	Likely. Degradation of water quality outside the impact footprint.

8.3 Prescribed impacts

8.3.1 Karst, caves, crevices, cliffs, rocks or other geological features of significance

8.3.1.1 Nature

The site does not contain karst landforms or well-formed caves but does contain minor crevices in the existing quarry wall, which may also be considered to constitute a cliff. Consideration was given, in the design phase, to retaining the extraction face of Pit 1 intact. However, it is a requirement of the previous Conditions of Consent that this area be levelled and rehabilitated, therefore the extraction face cannot be retained.

The project would impact outcropping and embedded rock as well as areas of loose surface rock within the disturbance footprint.

8.3.1.2 Extent

It is likely that the whole of the disturbance footprint (5.36 ha) would experience some loss or alteration of rocky habitat.

8.3.1.3 Duration

Long-term or permanent. Novel rocky habitat may be created by quarrying activity; however, the existing rocky habitat would be permanently altered.

8.3.1.4 Consequences

No threatened species are known to make use of this habitat within the site. Impacts to non-threatened reptile fauna (including displacement and mortality) are likely.

8.3.2 Non-native vegetation

8.3.2.1 Nature

Certain formerly cleared areas have been recolonised by non-native species, chiefly opportunistic members of the family Asteraceae such as Flaxleaf Fleabane (*Conyza bonariensis*) and flatweeds (*Hypochaeris* spp.). These areas are likely to be cleared by the project. These and other weeds also occur around the edges of the machinery shed.

8.3.2.2 Extent

Difficult to quantify as most areas of non-native vegetation occur diffusely as scattered plants over otherwise bare ground. Likely less than 0.10 ha in total.

8.3.2.3 Duration

Long-term or permanent. The existing weed invasions would likely be eradicated, though others would most likely follow.

8.3.2.4 Consequences

Minimal. These diffuse areas of non-native vegetation offer little or no habitat for any threatened species, particularly as these areas occur in proximity to ongoing human activity and disturbance.

8.3.3 Habitat connectivity

8.3.3.1 Nature

The site is positioned between a well-timbered ridge and a road with a partially timbered corridor. The landscape in the south is dominated by pastures, with trees sparse and frequently non-native. Vegetation on the subject land bridges the ridge and the road corridor and may therefore contribute to overall landscape continuity. However, as the vegetation along the road corridor is frequently interrupted by areas of derived grassland or non-native vegetation, this contribution is likely to be limited. Connectivity would remain outside the subject land.

8.3.3.2 Extent

As indicated above, the extent and severity of the disruption to connectivity caused by this project is likely to be limited, owing to the position of the subject land near the edge of remnant vegetation. Some impacts to connectivity are likely, though these are difficult to quantify.

8.3.3.3 Duration

Long-term or permanent. Removal of vegetation for quarrying would most likely result in impacts to connectivity for the life of the quarry.

8.3.3.4 Consequences

Reduced connectivity for less mobile threatened species, e.g. ground-dwelling species such as Rosenberg's Goanna (*Varanus rosenbergi*), and potentially to arboreal species such as the Squirrel Glider (*Petaurus norfolcensis*), which has a limited glide distance.

8.3.4 Waterbodies, water quality and hydrological processes

8.3.4.1 Nature

Impacts to a dam currently located close to the existing quarry wall would result from this project. Other dams and areas of impounded water would remain in the surrounding landscape and additional waterbodies are proposed as a component of the project.

8.3.4.2 Extent

One dam of approximately 0.06 ha in size would be impacted by the project.

8.3.4.3 Duration

Long-term or permanent. It is expected that one dam would be permanently removed by expansion of the quarry, however others would be retained and additional ones would be created.

8.3.4.4 Consequences

No threatened aquatic flora or fauna are expected to be impacted by the project; however, the loss of a water source may reduce the viability of local populations of any ecosystem credit species dependent on sources of water such as this. As additional dams will remain in the surrounding landscape, and additional dams will be created for this proposal, the consequences of this impact may be relatively minor.

8.3.4.5 Maximum predicted offset liability

This project does not entail longwall mining. Consequently, the *Addendum to the NSW Biodiversity Offsets Policy for Major Projects: upland swamps impacted by longwall mining subsidence* does not apply.

8.3.5 Vehicle strikes

Table 23 Residual prescribed impacts – vehicle strikes

Threatened fauna or protected fauna that are part of a TEC that are at risk of vehicle strike (identified in Section 6)	**SAII entity**	**Likelihood**	**Estimated vehicle strike rates**	**Consequences**
All ecosystem credit species and species credit species are susceptible to vehicle strike.	No	Ecosystem credit species are likely to be moderately susceptible to vehicle strike. The Squirrel Glider, one of two relevant species credit species, is nocturnal and arboreal and therefore the likelihood of it suffering vehicle strike on the subject land is low. The Pink-tailed Legless Lizard is likely to be largely confined to rocky habitat and less susceptible to vehicle strike; however, some minor risk remains.	Low	Potential for injury or death of threatened fauna.

8.4 Mitigating residual impacts – management measures and implementation

Table 24 summarises the proposed mitigation and management measures for residual impacts. Further details on implementation of the measures described in **Table 24** will be provided in the eventual Biodiversity Management Plan (BMP), which is to be developed in consultation with the Conservation Programs, Heritage and Regulation (CPHR) division of South East Planning.

Table 24 Summary of proposed mitigation and management measures for residual impacts (direct, indirect and prescribed)

Mitigation measure (specify if none proposed and ensure an adaptive management strategy is developed and addressed in Section 0)	**Method/technique**	**Timing**	**Frequency**	**Responsibility**	**Likely efficacy** (including risk of failure)	**MNES** (when relevant)
Preventing over-clearing	Any change in design outside the assessed impact footprint (subject land) will require further ecological survey and assessment.	Pre-disturbance	Continuous	Proponent	Moderate risk of failure Breaches may result where the below measures are not successfully implemented.	EPBC Act-listed entities assumed present: South-eastern Hooded Robin, Spotted-tailed Quoll, Southern Whiteface, Brown Treecreeper (eastern subspecies), White-throated Needletail, Superb Parrot, Diamond Firetail
	All personnel are to be inducted to be aware that disturbance of any stand of native vegetation outside the disturbance footprint, or otherwise unauthorised disturbance, could have legislative consequences. Evidence of all personnel receiving an induction would be	Pre-disturbance	Continuous	Proponent	Moderate risk of failure Breaches may result where induction materials are poorly designed or are disregarded, or where personnel are not inducted.	

Mitigation measure (specify if none proposed and ensure an adaptive management strategy is developed and addressed in Section 0)	**Method/technique**	**Timing**	**Frequency**	**Responsibility**	**Likely efficacy** (including risk of failure)	**MNES** (when relevant)
	kept on file (signed induction sheets).					
	Before start of work, clearly identify the extent of permitted vegetation clearing and areas to be retained as native vegetation. Fencing or bunting installed to demarcate 'no go zones' where vegetation is to be retained. This includes all hollow-bearing trees to be retained, which must be clearly demarcated.	Pre-disturbance	Continuous	Proponent / contractor	Low risk of failure If fencing or bunting is properly implemented, risk of breaches is low.	
	Vegetation will be removed in such a way to avoid unnecessary damage to surrounding vegetation.	During construction	Continuous	Proponent / contractor	Low risk of failure Impacts may result where vegetation removal is carried out without regard to surrounding vegetation.	

Mitigation measure (specify if none proposed and ensure an adaptive management strategy is developed and addressed in Section 0)	**Method/technique**	**Timing**	**Frequency**	**Responsibility**	**Likely efficacy** (including risk of failure)	**MNES** (when relevant)
	The Construction Environmental Management Plan (CEMP) must ensure that stockpiling of materials and equipment and parking of vehicles does not occur outside disturbance footprint, and that native vegetation outside the footprint is not otherwise disturbed.	Pre-disturbance / During construction	Development of plan: One-off, prior to disturbance. Implementation of plan: Continuous	Proponent / contractor	Moderate risk of failure Should the CEMP not satisfactorily account for the compound, stockpile, or light and heavy vehicle parking requirements of the proposal, adverse environmental impacts may result. Failure to induct workers in the requirement to confine all stockpiling of materials or parking of vehicles to designated sites, or to emphasise the importance of avoiding environmental impacts associated, may lead to breaches.	
Bushfire protection	If any “hot works” are to be undertaken, these activities will not take place on days of extreme fire danger (where possible).	During construction	Continuous	Contractor	Low risk of failure If bushfire management obligations are followed, there is little risk of adverse events.	N/A
Soil Management	An erosion and sediment control plan will be developed and	Pre-disturbance / During construction	Development of plan: Prior to disturbance for construction and for	Contractor	Moderate risk of failure	N/A

Mitigation measure (specify if none proposed and ensure an adaptive management strategy is developed and addressed in Section 0)	**Method/technique**	**Timing**	**Frequency**	**Responsibility**	**Likely efficacy** (including risk of failure)	**MNES** (when relevant)
	implemented within the CEMP		operational activities. Implementation of plan: Continuous.		Should the plan not satisfactorily address the risks of erosion and runoff, adverse environmental impacts may result. Failure to induct workers in the requirements of the plan, failure to emphasise the importance of avoiding environmental impacts associated with runoff, and poor maintenance of controls may lead to breaches.	
Preventing introduction and spread of significant weeds and pathogens	Construction machinery (bulldozers, excavators, trucks, loaders and graders) must be clean and free from soil or weeds before entry to the work site.	Pre-disturbance / During construction	Continuous	Contractor	Moderate risk of failure Inadequate cleaning of machinery may result from failure to provide appropriate facilities or failure to emphasise the requirement for proper biosecurity hygiene.	N/A
	Weed-free fill only to be used for on-site earthwork, if required.	During construction	Continuous	Contractor	Low risk of failure It is likely that displaced material will be available for use as fill. If this material proves inadequate, it is possible that alternative material may carry weed propagules.	
	Any significant weeds should be controlled. Any herbicide use is to be in accordance with the	During construction / During operation	Continuous	Contractor	Low risk of failure It is not anticipated that major herbicide application will be required; however, minor amounts will be required, and as such breaches may result where the importance	

Mitigation measure (specify if none proposed and ensure an adaptive management strategy is developed and addressed in Section 0)	**Method/technique**	**Timing**	**Frequency**	**Responsibility**	**Likely efficacy** (including risk of failure)	**MNES** (when relevant)
	requirements on the label. Any person carrying out herbicide application would be appropriately trained and competent in its use.				of adequate training is not properly emphasised.	
Minimising disturbance to fallen timber, dead wood, bush rock and anthropogenic habitat	Wherever possible, bush rock should be relocated to the edge of the disturbance area to enhance habitat. Where possible, dead wood and hollow logs should be retained and relocated to the edge of the disturbance area to enhance habitat.	During construction	Continuous	Contractor	Moderate risk of failure Large quantities of bush rock occur on site. Fallen timber is primarily confined to previously cleared areas.	EPBC Act-listed entities assumed present that rely on such features: South-eastern Hooded Robin, Spotted-tailed Quoll, Southern Whiteface, Brown Treecreeper (eastern subspecies), Superb Parrot

Mitigation measure (specify if none proposed and ensure an adaptive management strategy is developed and addressed in Section 0)	**Method/technique**	**Timing**	**Frequency**	**Responsibility**	**Likely efficacy** (including risk of failure)	**MNES** (when relevant)
Minimising impacts to hollow-bearing trees	Wherever possible, hollow-bearing trees (HBTs) should be retained. Retained trees should be clearly demarcated to prevent unintended impacts. For each hollow-bearing tree that must be removed, a replacement hollow must be created. Recommended measures include creation of novel hollows in retained large trees using a tool such as the Hollowhog or remounting of hollows from felled trees in retained trees. Should these options not be viable, a nest box should be installed to	Pre-construction	One-off, prior to removal of hollow-bearing trees	Proponent	Moderate risk of failure Failure to induct workers in the need to retain hollow-bearing trees and where not possible, install nest boxes, may lead to breaches.	EPBC Act-listed entities assumed present that rely on hollow-bearing trees:, Spotted-tailed Quoll, Brown Treecreeper (eastern subspecies), Superb Parrot

Mitigation measure (specify if none proposed and ensure an adaptive management strategy is developed and addressed in Section 0)	**Method/technique**	**Timing**	**Frequency**	**Responsibility**	**Likely efficacy** (including risk of failure)	**MNES** (when relevant)
	compensate for each lost HBT. Created or remounted hollows or nest boxes should be suitable for occupation by Squirrel Gliders and should be installed as high as possible (>4 m) in mature trees to be retained. Nest boxes should only be installed where other options cannot be implemented. Nest boxes must be monitored, maintained, and replaced for the life of the project.					
Protecting native fauna from harm	Any fauna found within the disturbance area should be allowed (or assisted) to relocate into adjoining habitat. Any vegetation	Pre-disturbance / During construction	Continuous	Proponent / contractor	Moderate risk of failure Failure to identify threatened species where present is likely where contractors lack relevant skills or information, or where the importance of avoiding impacts to threatened species is inadequately emphasised.	EPBC Act-listed entities assumed present: South-eastern Hooded

Mitigation measure (specify if none proposed and ensure an adaptive management strategy is developed and addressed in Section 0)	**Method/technique**	**Timing**	**Frequency**	**Responsibility**	**Likely efficacy** (including risk of failure)	**MNES** (when relevant)
	containing threatened fauna may not be removed until the fauna has dispersed.					Robin, Spotted-tailed Quoll, Southern Whiteface, Brown Treecreeper (eastern subspecies), White-throated Needletail, Superb Parrot, Diamond Firetail
	All personnel working on site will be made aware of the presence of threatened fauna on the site, this includes Squirrel Gliders that may be refuging in hollow-bearing trees during the day. If threatened fauna are detected, work must be stopped immediately and the area left undisturbed until the individuals have dispersed or suitably qualified personnel are engaged to	During construction	Continuous	Contractor	Moderate risk of failure Failure to identify threatened species where present is likely where contractors lack relevant skills or information, or where the importance of avoiding impacts to threatened species is inadequately emphasised.	

Mitigation measure (specify if none proposed and ensure an adaptive management strategy is developed and addressed in Section 0)	**Method/technique**	**Timing**	**Frequency**	**Responsibility**	**Likely efficacy** (including risk of failure)	**MNES** (when relevant)
	facilitate their removal.					
	Where hollow-bearing trees must be removed, the following procedure must be followed: 1. Engage an ecologist to conduct a pre-clearance survey to mark all habitat trees 2. Remove non-habitat trees at least 24 hours prior to removing habitat trees 3. An ecologist must be present for the removal of habitat trees 4. Under the supervision of an ecologist, knock habitat	During construction	One-off, during clearing activities	Contractor	Moderate risk of failure Risks to fauna may result where the process outlined is not followed correctly.	

Mitigation measure (specify if none proposed and ensure an adaptive management strategy is developed and addressed in Section 0)	**Method/technique**	**Timing**	**Frequency**	**Responsibility**	**Likely efficacy** (including risk of failure)	**MNES** (when relevant)
	trees prior to removal 5. Remove the habitat tree by gently lowering it to the ground 6. Ecologist to inspect the hollows for fauna (where possible, the contractor to provide a chainsaw to aid in opening hollow limbs for fauna extraction) 7. Allow the habitat tree to lay undisturbed on the ground overnight to permit fauna to vacate on their own accord					

Mitigation measure (specify if none proposed and ensure an adaptive management strategy is developed and addressed in Section 0)	**Method/technique**	**Timing**	**Frequency**	**Responsibility**	**Likely efficacy** (including risk of failure)	**MNES** (when relevant)
	Implementing an unexpected species finds procedure.					
Minimising the risk of chemical spill	Emergency spill procedures are to be developed in order to prevent environmental damage associated with chemicals, including fuel and herbicides.	Pre-disturbance / During construction	Development of procedures: One-off, prior to disturbance. Implementation of plan: Continuous	Contractor	Moderate risk of failure Uncontained chemical spills may occur where procedures are inadequate or poorly implemented	N/A

9. Serious and irreversible impacts

9.1 Assessment for serious and irreversible impacts on biodiversity values

Following targeted surveys, no entities considered to be at risk of SAII were retained in the assessment.

10. Impact summary

10.1 Determine an offset requirement for impacts

10.1.1 Impacts on native vegetation and TECs (ecosystem credits)

Impacts requiring offsetting via ecosystem credits are identified in **Table 25**.

Table 25 Impacts that require an offset – ecosystem credits

Vegetation zone	PCT name	TEC	Impact area (ha)	Current VI score	Future VI score	Change in VI score	Biodiversity risk weighting	Number of ecosystem credits required
Stage 1a								
3747_Good	Southern Tableland Western Hills Scribbly Gum Forest	Not a TEC	0.12	84.0	0	-84.0	1.75	4
3747_Quarry	Southern Tableland Western Hills Scribbly Gum Forest	Not a TEC	0.01	21.0	0	-21.0	1.75	1
							Stage 1a credits	5
Stage 1b								
3747_Good	Southern Tableland Western Hills Scribbly Gum Forest	Not a TEC	0.01	84.0	0	-84.0	1.75	1
3747_Derived	Southern Tableland Western Hills Scribbly Gum Forest	Not a TEC	0.2	40.1	0	-40.1	1.75	4
3747_Moderate	Southern Tableland Western Hills Scribbly Gum Forest	Not a TEC	0.01	58.1	0	-58.1	1.75	1
3747_Quarry	Southern Tableland Western Hills Scribbly Gum Forest	Not a TEC	0.13	21.0	0	-21.0	1.75	1
3747_WetGrassland	Southern Tableland Western Hills Scribbly Gum Forest	Not a TEC	0.15	12.3	0	-12.3	1.75	0
							Stage 1b credits	7

Vegetation zone	PCT name	TEC	Impact area (ha)	Current VI score	Future VI score	Change in VI score	Biodiversity risk weighting	Number of ecosystem credits required
Stage 2a								
3747_AcaciaShrubland	Southern Tableland Western Hills Scribbly Gum Forest	Not a TEC	0.02	42.4	0	-42.4	1.75	1
3747_Derived	Southern Tableland Western Hills Scribbly Gum Forest	Not a TEC	1.4	40.1	0	-40.1	1.75	25
3747_Moderate	Southern Tableland Western Hills Scribbly Gum Forest	Not a TEC	0.01	58.1	0	-58.1	1.75	1
							Stage 2a credits	27
Stage 2b								
3747_AcaciaShrubland	Southern Tableland Western Hills Scribbly Gum Forest	Not a TEC	0.17	42.4	0	-42.4	1.75	3
3747_Derived	Southern Tableland Western Hills Scribbly Gum Forest	Not a TEC	0.64	40.1	0	-40.1	1.75	11
3747_Moderate	Southern Tableland Western Hills Scribbly Gum Forest	Not a TEC	0.01	58.1	0	-58.1	1.75	1
							Stage 2b credits	15
Stage 2c								
3747_Derived	Southern Tableland Western Hills Scribbly Gum Forest	Not a TEC	0.65	40.1	0	-40.1	1.75	11
3747_Moderate	Southern Tableland Western Hills Scribbly Gum Forest	Not a TEC	0.04	58.1	0	-58.1	1.75	1
							Stage 2c credits	12
Stage 2d								
3747_Derived	Southern Tableland Western Hills Scribbly Gum Forest	Not a TEC	0.32	40.1	0	-40.1	1.75	6
3747_Moderate	Southern Tableland Western Hills Scribbly Gum Forest	Not a TEC	0.29	58.1	0	-58.1	1.75	7

Vegetation zone	PCT name	TEC	Impact area (ha)	Current VI score	Future VI score	Change in VI score	Biodiversity risk weighting	Number of ecosystem credits required
3747_Good	Southern Tableland Western Hills Scribbly Gum Forest	Not a TEC	0.13	84.0	0	-84.0	1.75	5
							Stage 2d credits	18
Stage 3a								
3747_Derived	Southern Tableland Western Hills Scribbly Gum Forest	Not a TEC	0.08	40.1	0	-40.1	1.75	1
3747_Good	Southern Tableland Western Hills Scribbly Gum Forest	Not a TEC	0.53	84.0	0	-84.0	1.75	19
							Stage 3a credits	20
Stage 3b								
3747_Good	Southern Tableland Western Hills Scribbly Gum Forest	Not a TEC	0.02	84.0	0	-84.0	1.75	1
							Stage 3b credits	1
							Total credits	**105**

10.1.2 Impacts on threatened species and their habitat (species credits)

Impacts requiring offsetting via species credits are identified in **Table 26**.

Table 26 Impacts that require an offset – species credits

Common name	Scientific name	BC Act status	EPBC Act status	Loss of habitat (ha) or individuals	Biodiversity risk weighting	Number of species credits required
Stage 1a						
Squirrel Glider	*Petaurus norfolcensis*	Vulnerable	Not listed	0.13 ha	2.0	6
Pink-tailed Legless Lizard	*Aprasia parapulchella*	Vulnerable	Vulnerable	0.03 ha	2.0	2
					Stage 1a credits	8
Stage 1b						
Squirrel Glider	*Petaurus norfolcensis*	Vulnerable	Not listed	0.32	2.0	8
Pink-tailed Legless Lizard	*Aprasia parapulchella*	Vulnerable	Vulnerable	0.01	2.0	1
					Stage 1b credits	9
Stage 2a						
Squirrel Glider	*Petaurus norfolcensis*	Vulnerable	Not listed	1.43	2.0	30
Pink-tailed Legless Lizard	*Aprasia parapulchella*	Vulnerable	Vulnerable	0.04	2.0	2
					Stage 2a credits	32
Stage 2b						
Squirrel Glider	*Petaurus norfolcensis*	Vulnerable	Not listed	0.82	2.0	18
Pink-tailed Legless Lizard	*Aprasia parapulchella*	Vulnerable	Vulnerable	0.01	2.0	1
					Stage 2b credits	19
Stage 2c						
Squirrel Glider	*Petaurus norfolcensis*	Vulnerable	Not listed	0.69	2.0	14
Pink-tailed Legless Lizard	*Aprasia parapulchella*	Vulnerable	Vulnerable	0.16	2.0	4

Common name	Scientific name	BC Act status	EPBC Act status	Loss of habitat (ha) or individuals	Biodiversity risk weighting	Number of species credits required
					Stage 2c credits	18
Stage 2d						
Squirrel Glider	*Petaurus norfolcensis*	Vulnerable	Not listed	0.74	2.0	19
Pink-tailed Legless Lizard	*Aprasia parapulchella*	Vulnerable	Vulnerable	0.49	2.0	14
					Stage 2d credits	33
Stage 3a						
Squirrel Glider	*Petaurus norfolcensis*	Vulnerable	Not listed	0.61	2.0	24
Pink-tailed Legless Lizard	*Aprasia parapulchella*	Vulnerable	Vulnerable	0.61	2.0	24
					Stage 3a credits	48
Stage 3b						
Squirrel Glider	*Petaurus norfolcensis*	Vulnerable	Not listed	0.02	2.0	1
					Stage 3b credits	1
					Total credits	**168**

10.2 Impacts that do not need further assessment

Areas of the site lacking native vegetation (i.e. tracks, cleared ground surrounding buildings, and dams lacking native vegetation) do not require additional assessment for ecosystem credits. These are described in **Table 27** and mapped in **Figure 18**.

Table 27 Impacts that do not need further assessment for ecosystem credits

Impact	Location within subject land	Justification why no further assessment is required
Existing access track (0.09 ha)	Stage 1a. Stage 3b.	An existing cleared trail lacking vegetation. Per BAM Section 9.3(1), areas not containing native vegetation do not need to be assessed for ecosystem credits. No habitat for threatened species is likely to occur here.
Clearing surrounding existing shed (0.29 ha)	Stage 1b.	Cleared area lacking native vegetation at the time of the initial survey. Per BAM Section 9.3(1), areas not containing native vegetation do not need to be assessed for ecosystem credits. No habitat for threatened species is likely to occur here.
Impounded water (0.05 ha)	Stage 2b.	Dam/impounded water lacking vegetation. Per BAM Section 9.3(1), areas not containing native vegetation do not need to be assessed for ecosystem credits. It is unlikely that this area would provide habitat for the Squirrel Glider, as this species does not generally obtain water from open water sources, instead acquiring water from plant exudates. No other species credit species are considered to be present.

11. Biodiversity credit report

Ecosystem credits, including the relevant offset trading group (OTG), are described in **Table 28**. Species credits are described in **Table 29**.

11.1 Ecosystem credits

Table 28 Ecosystem credit class and matching credit profile

Ecosystem credits	Attributes shared with matching credits						
	PCT name	**PCT vegetation class**	**PCT vegetation formation**	**Associated TEC or EC**	**Offset trading group** (BAM Section 10.2, Tables 4 & 5)	**Hollow bearing trees present?**	**IBRA subregion** (in which project is located)
Stage 1a: 5 Stage 1b: 7 Stage 2a: 27 Stage 2b: 15 Stage 2c: 12 Stage 2d: 18 Stage 3a: 20 Stage 3b: 1	3747-Southern Tableland Western Hills Scribbly Gum Forest	Southern Tableland Dry Sclerophyll Forests	Dry Sclerophyll Forests (Shrubby sub-formation)	Not a TEC	Southern Tableland Dry Sclerophyll Forests >=50% and <70%	Yes	**Monaro**, Bungonia, Crookwell, Kybeyan-Gourock, Monaro, Murrumbateman, Snowy Mountains, and South East Coastal Ranges.

11.2 Species credits

Table 29 Species credit class and matching credit profile

Species credits	Attributes shared with matching credits				
	Name of threatened species	**Kingdom**	**BC Act status**	**EPBC Act status**	**IBRA region**
Stage 1a: 6 Stage 1b: 8 Stage 2a: 30 Stage 2b: 18 Stage 2c: 14 Stage 2d: 19	*Petaurus norfolcensis* / Squirrel Glider	Animalia	Vulnerable	Not listed	Any in NSW

Species credits	Attributes shared with matching credits				
	Name of threatened species	Kingdom	BC Act status	EPBC Act status	IBRA region
Stage 3a: 24 Stage 3b: 1					
Stage 1a: 2 Stage 1b: 1 Stage 2a: 2 Stage 2b: 1 Stage 2c: 4 Stage 2d: 14 Stage 3a: 24 Stage 3b: 0	*Aprasia parapulchella* / Pink-tailed Legless Lizard	Animalia	Vulnerable	Vulnerable	Any in NSW

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13. Figures

Figure 1 Approved quarry layout.

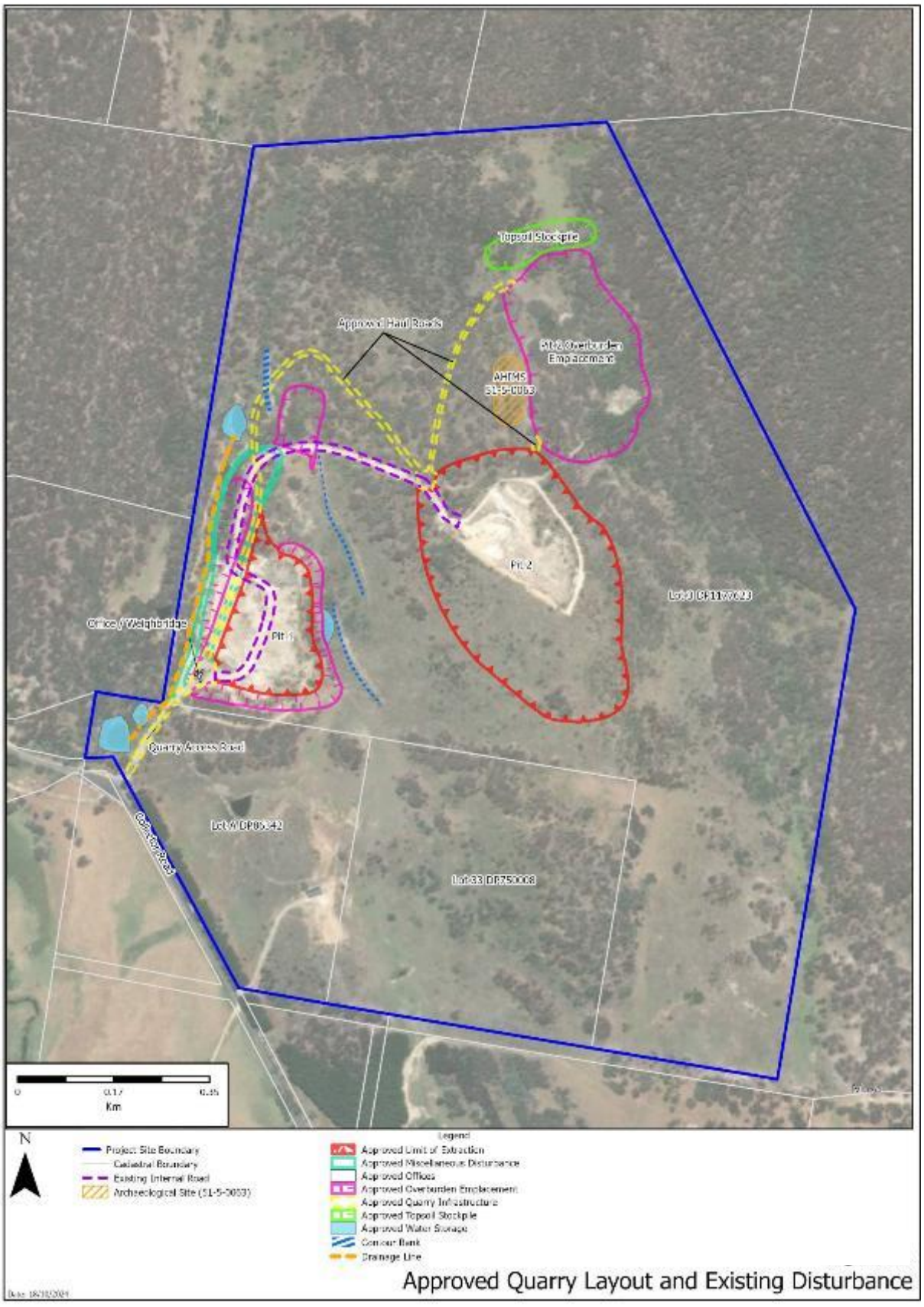


Figure 2 Proposed impact footprint

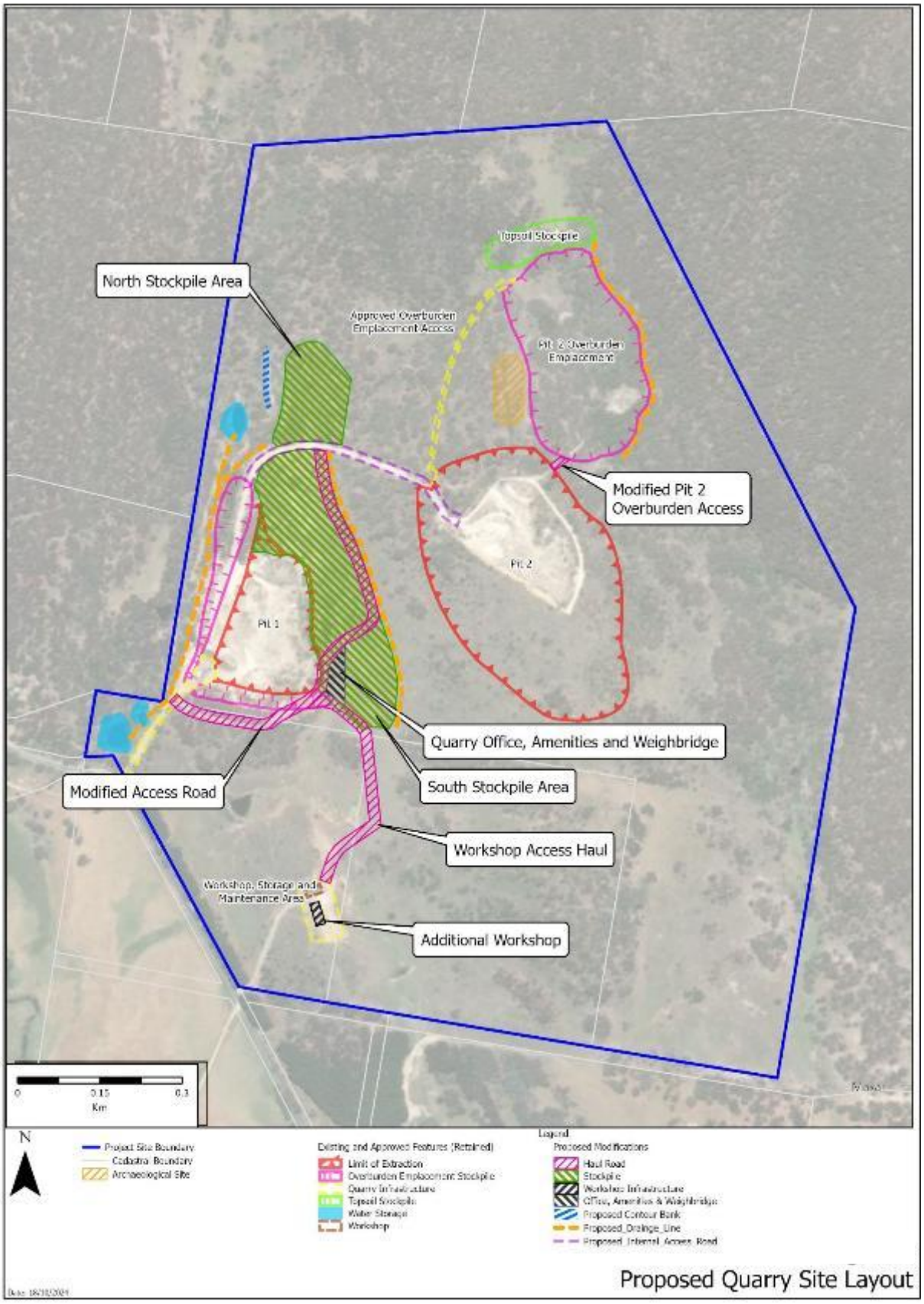


Figure 3 Site Map

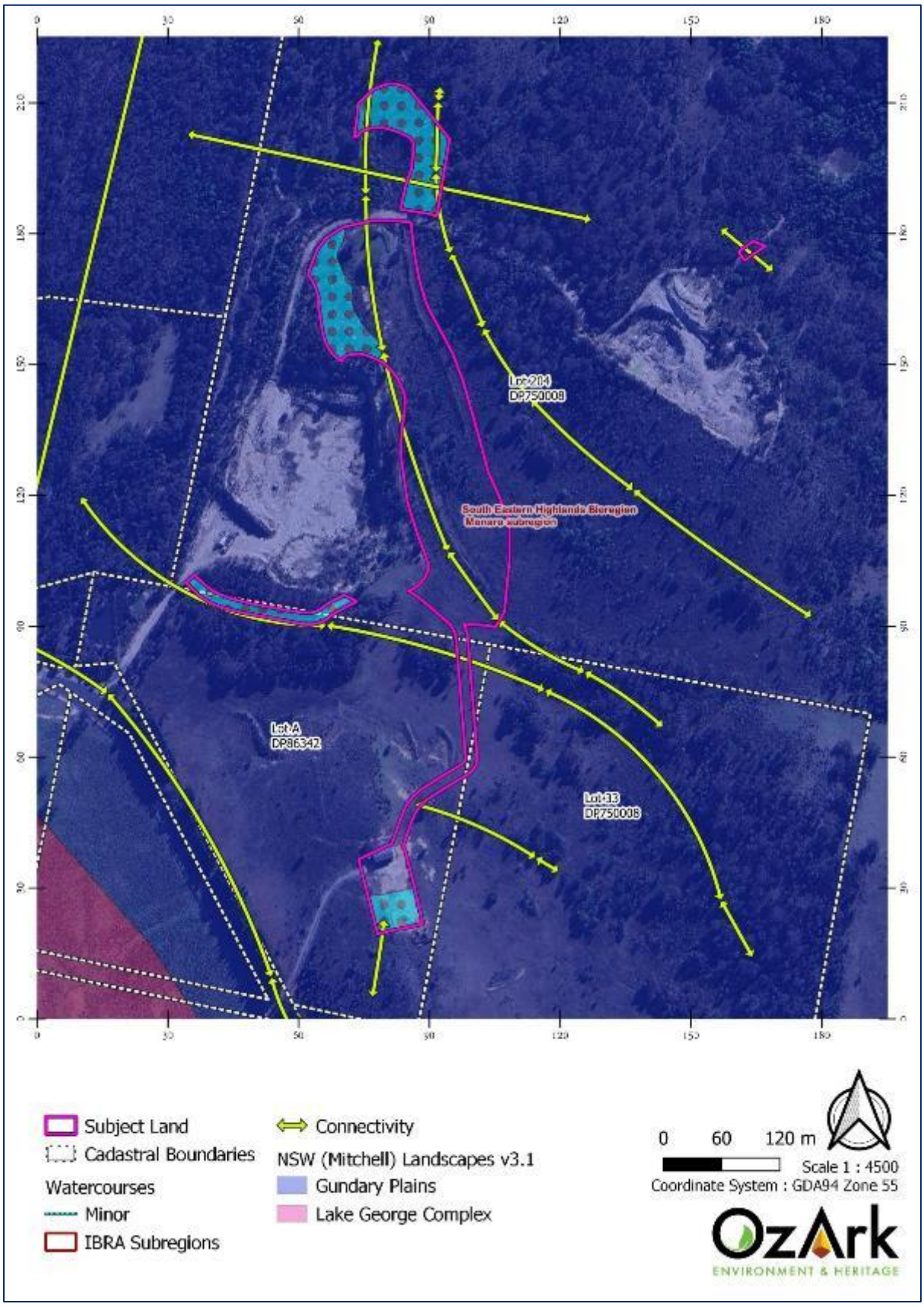


Figure 4 Location Map

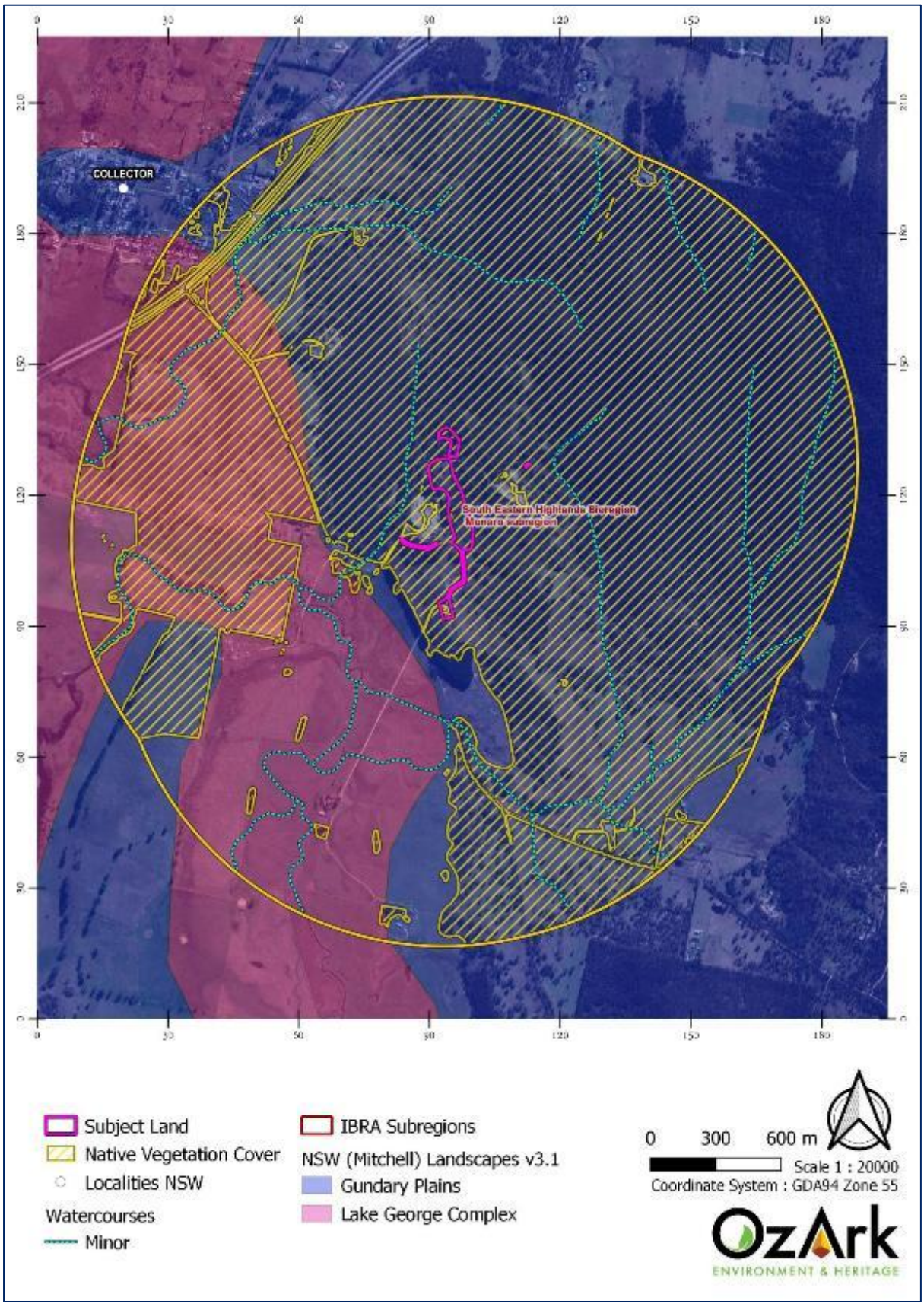


Figure 5 Development layout

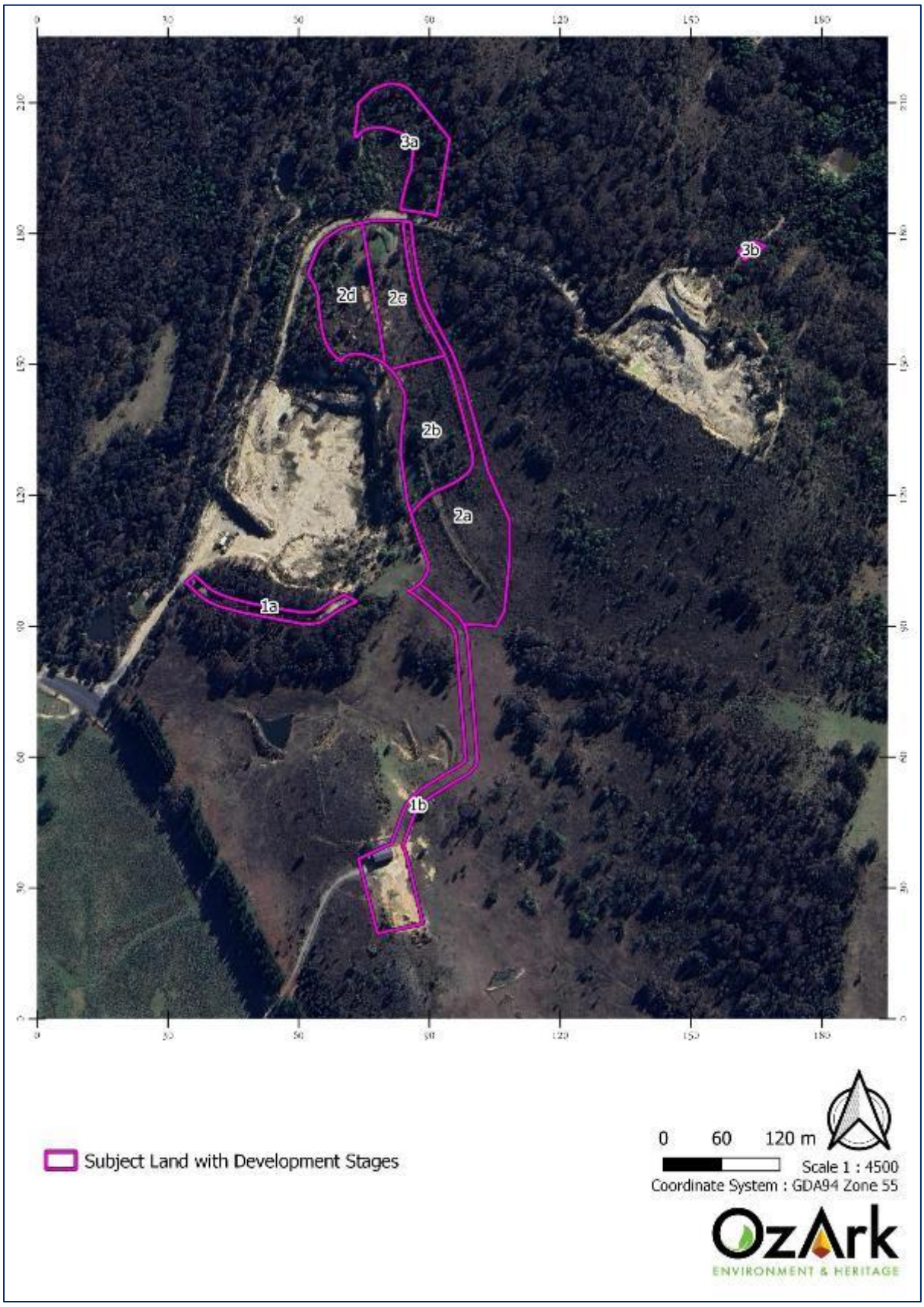


Figure 6 Biodiversity Values Map

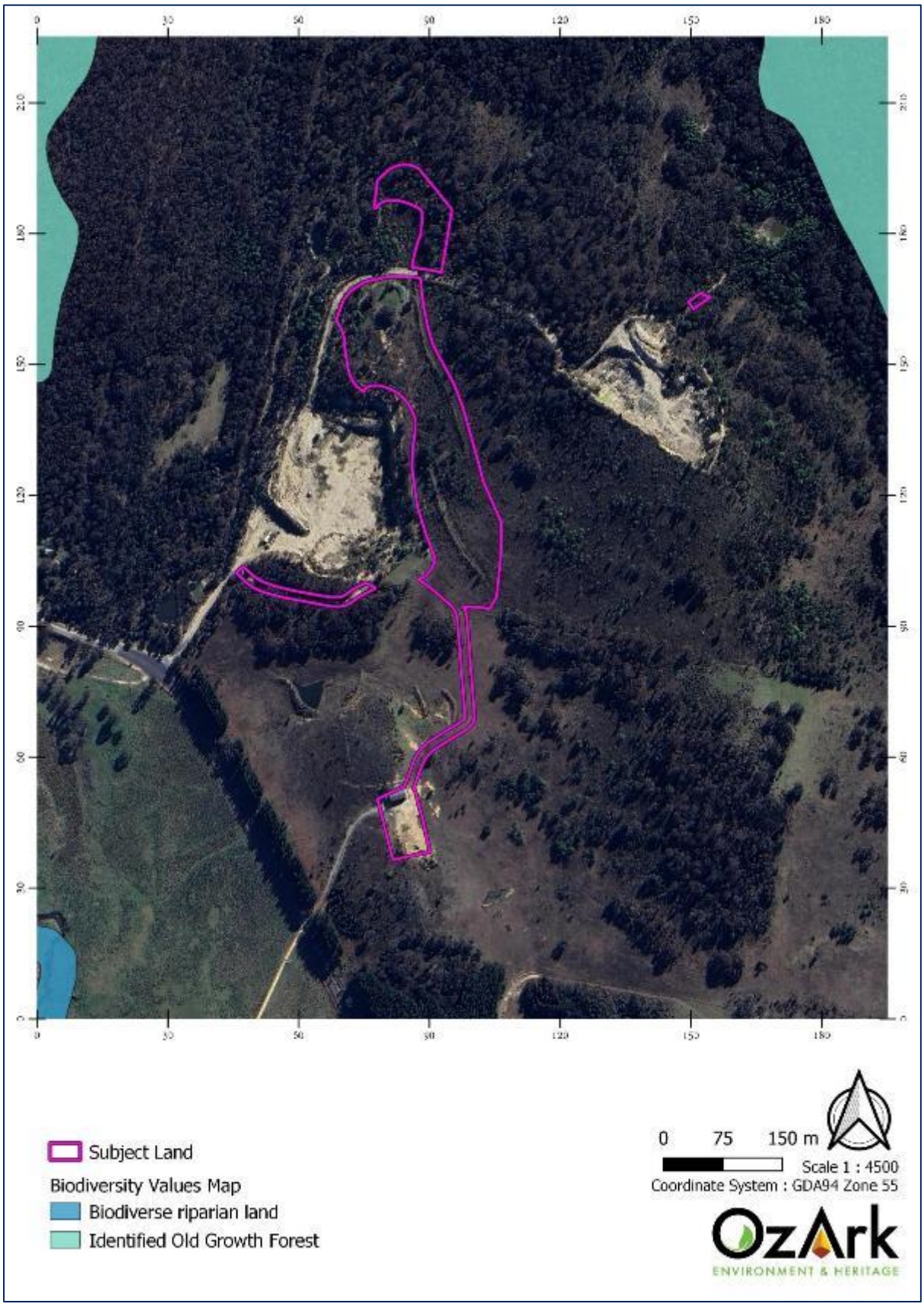
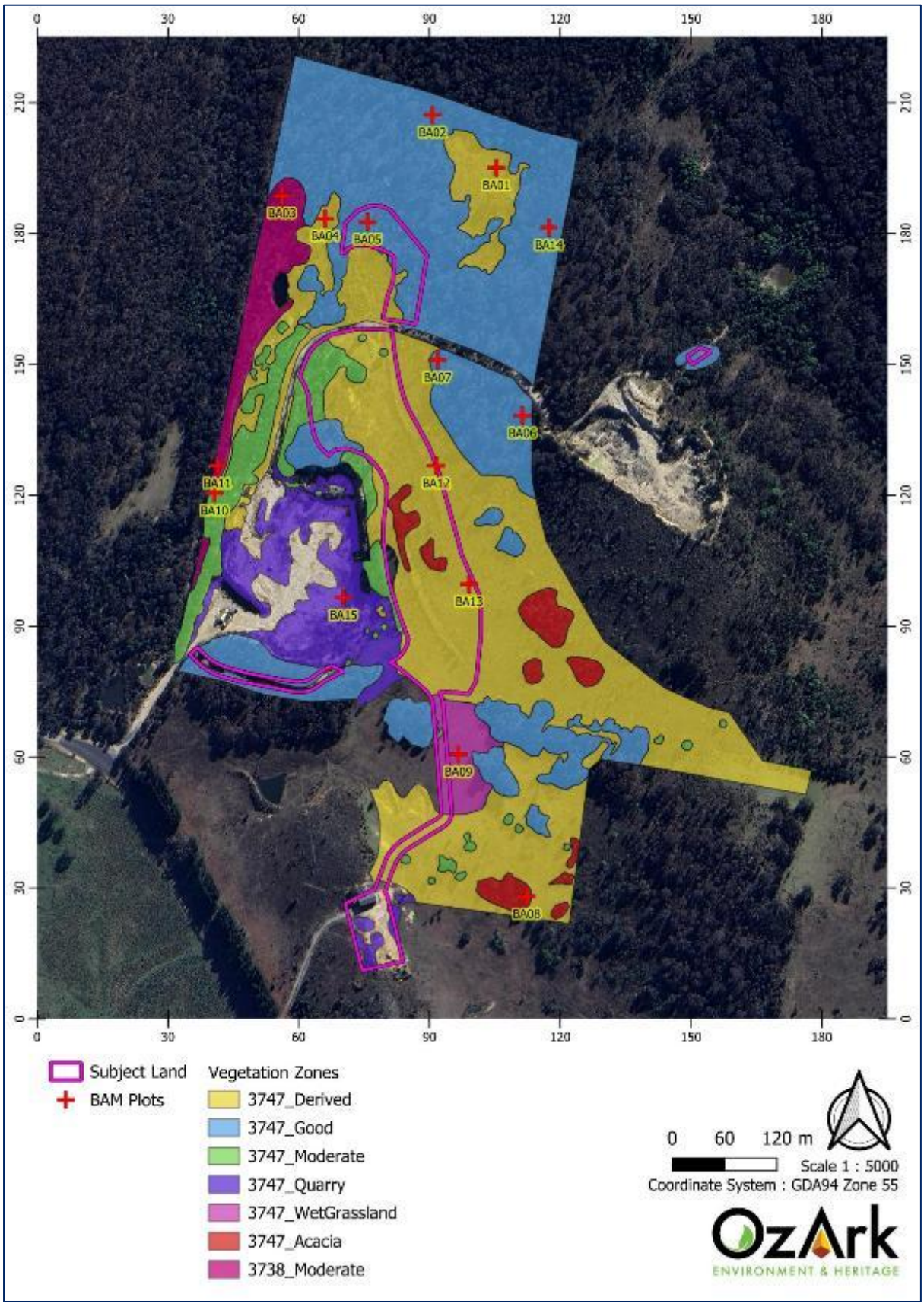
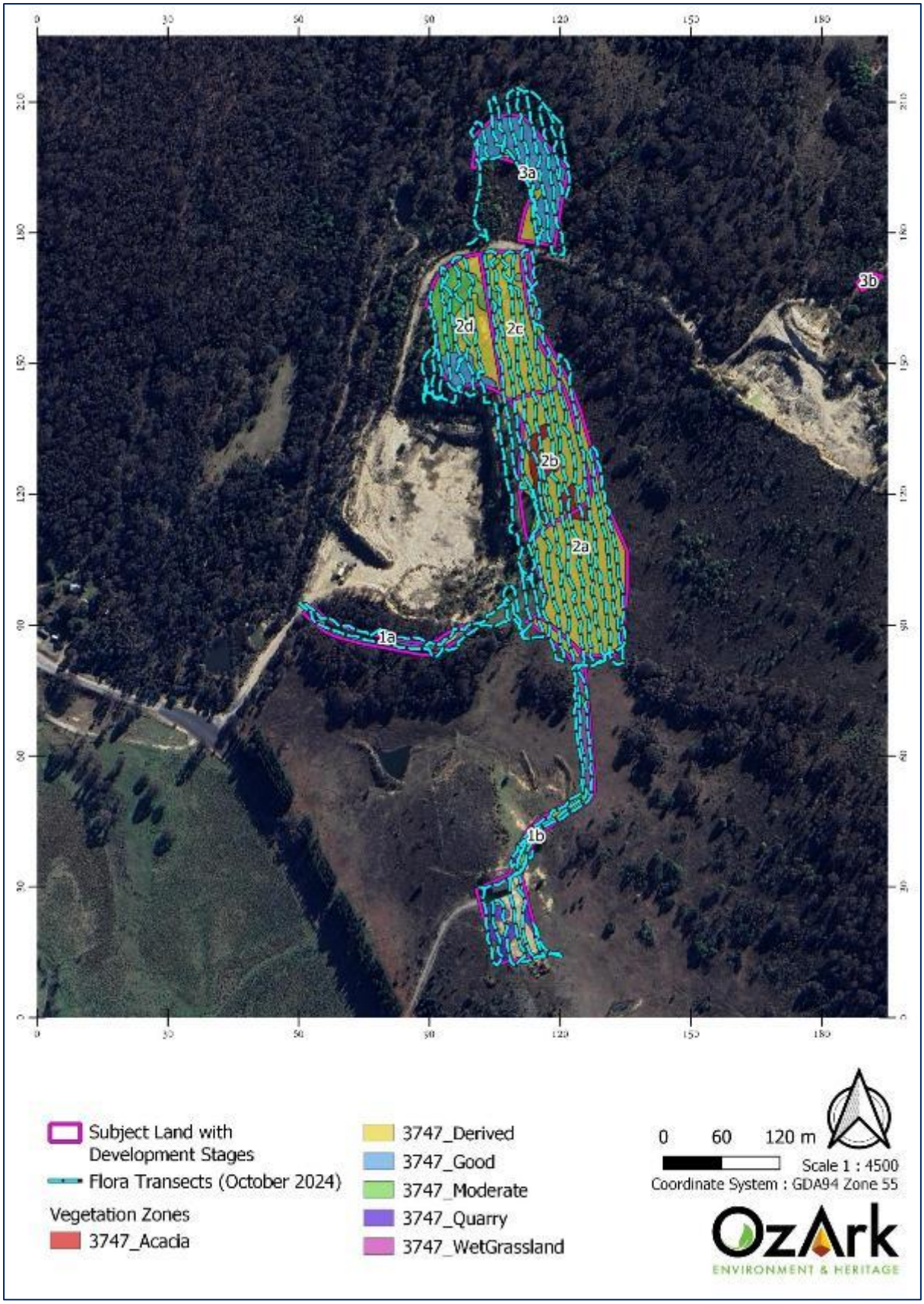


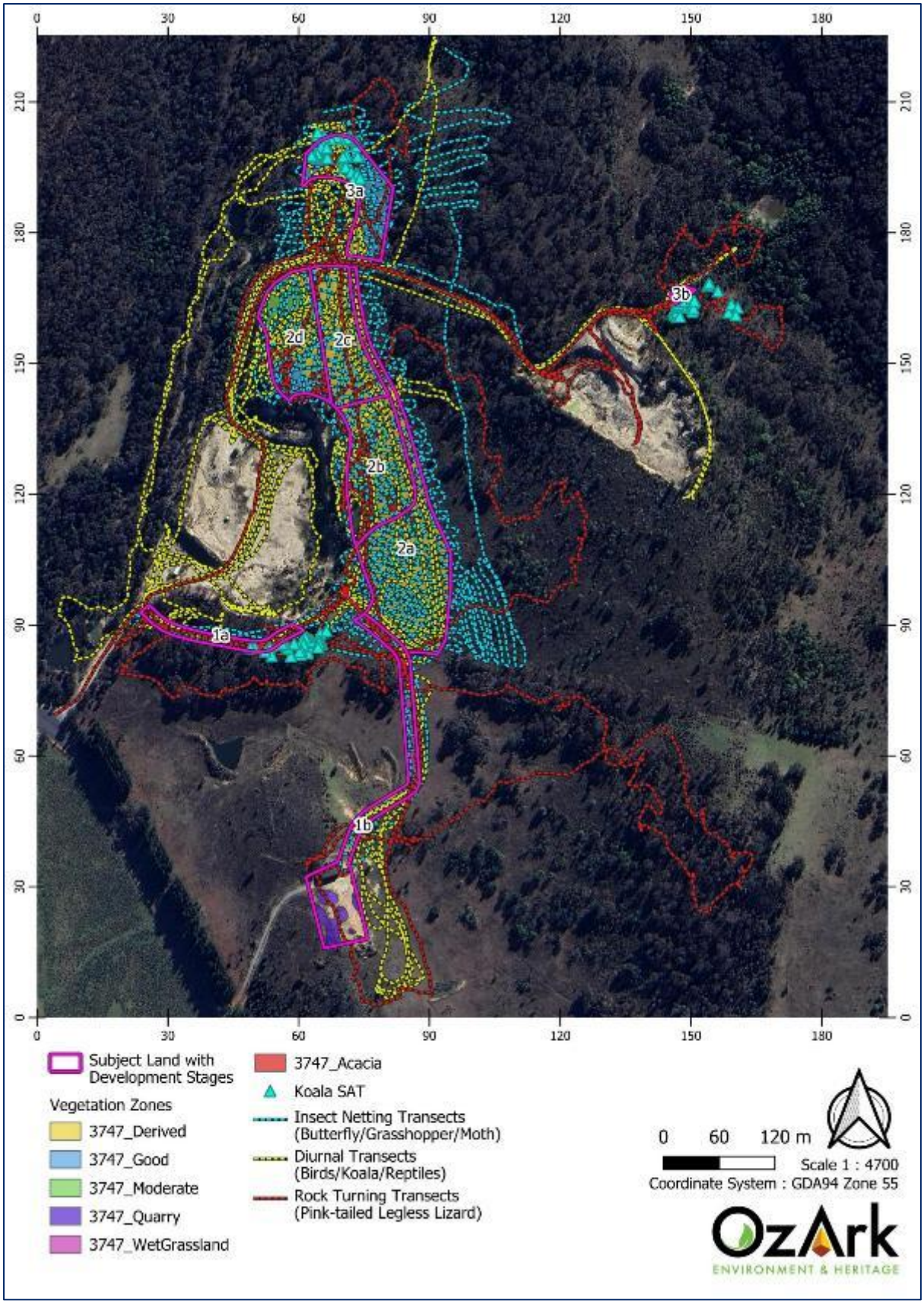
Figure 7 Excluded impacts

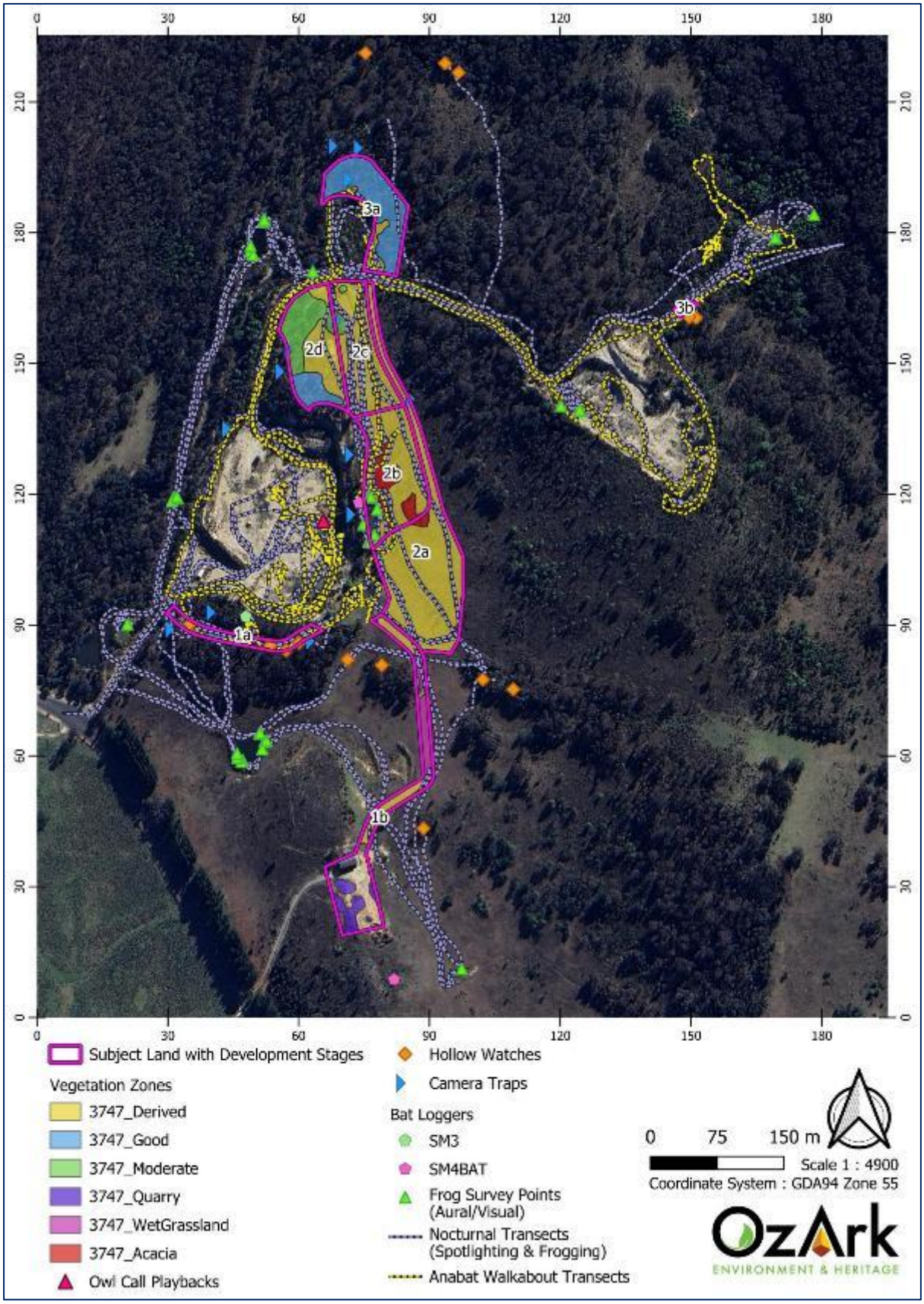
No impacts were excluded due to land categorisation or any other reason.

Figure 8 Field survey locations




3a
3b
2d
2c
2b
2a
1a
1b
Subject Land with Development Stages
Flora Transects (October 2024)
Vegetation Zones
3747_Acadia
3747_Derived
3747_Good
3747_Moderate
3747_Quarry
3747_WetGrassland
0 60 120 m
Scale 1 : 4500
Coordinate System : GDA94 Zone 55
OzArk
ENVIRONMENT & HERITAGE


0
30
60
90
120
150
180
210
3a
3b
2d
2c
2b
2a
1a
1b
Subject Land with Development Stages
Vegetation Zones
3747_Derived
3747_Good
3747_Moderate
3747_Quarry
3747_WetGrassland
3747_Acacia
Koala SAT
Insect Netting Transects (Butterfly/Grasshopper/Moth)
Diurnal Transects (Birds/Koala/Reptiles)
Rock Turning Transects (Pink-tailed Legless Lizard)
0 60 120 m
Scale 1 : 4700
Coordinate System : GDA94 Zone 55
OzArk
ENVIRONMENT & HERITAGE


0
30
60
90
120
150
180
210
3a
3b
2d
2c
2b
2a
1a
1b
Subject Land with Development Stages
Vegetation Zones
3747_Derived
3747_Good
3747_Moderate
3747_Quarry
3747_WetGrassland
3747_Acacia
Owl Call Playbacks
Hollow Watches
Camera Traps
Bat Loggers
SM3
SM4BAT
Frog Survey Points (Aural/Visual)
Nocturnal Transects (Spotlighting & Frogging)
Anabat Walkabout Transects
0 75 150 m
Scale 1 : 4900
Coordinate System : GDA94 Zone 55
OzArk
ENVIRONMENT & HERITAGE

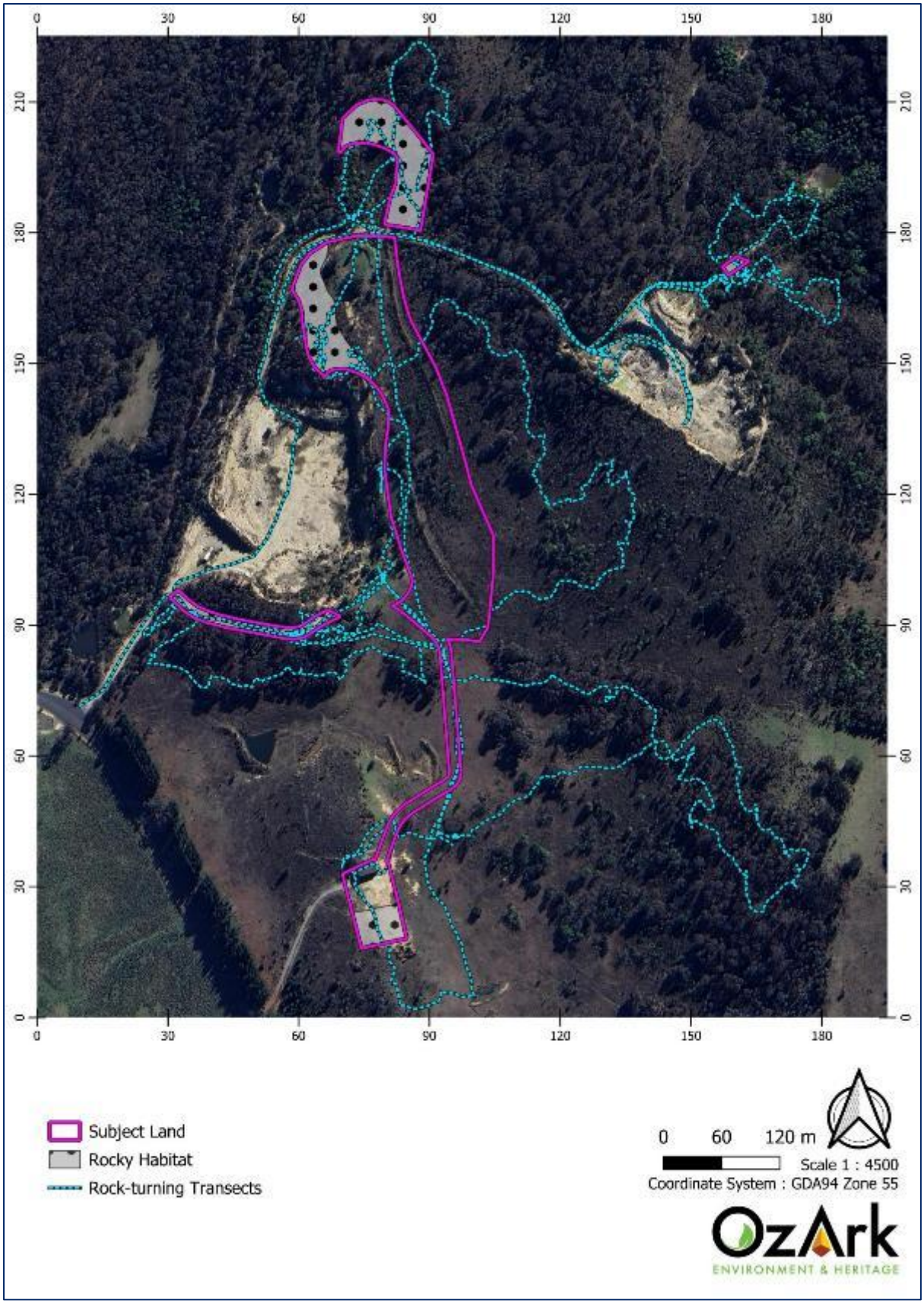

0
30
60
90
120
150
180
210
Subject Land
Rocky Habitat
Rock-turning Transects
0 60 120 m
Scale 1 : 4500
Coordinate System : GDA94 Zone 55
OzArk
ENVIRONMENT & HERITAGE

Figure 9 Native vegetation extent

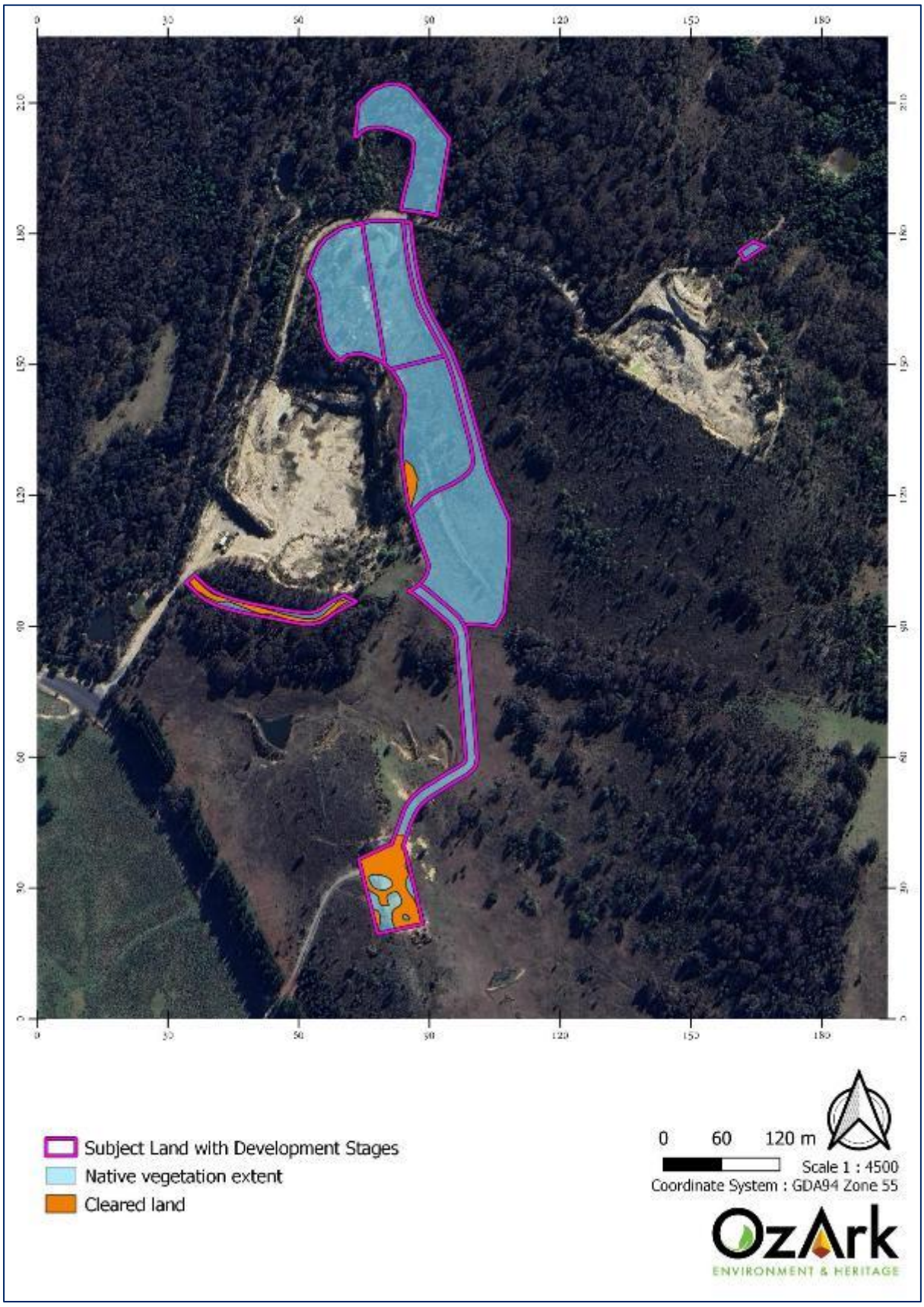


Figure 10 Plant community types

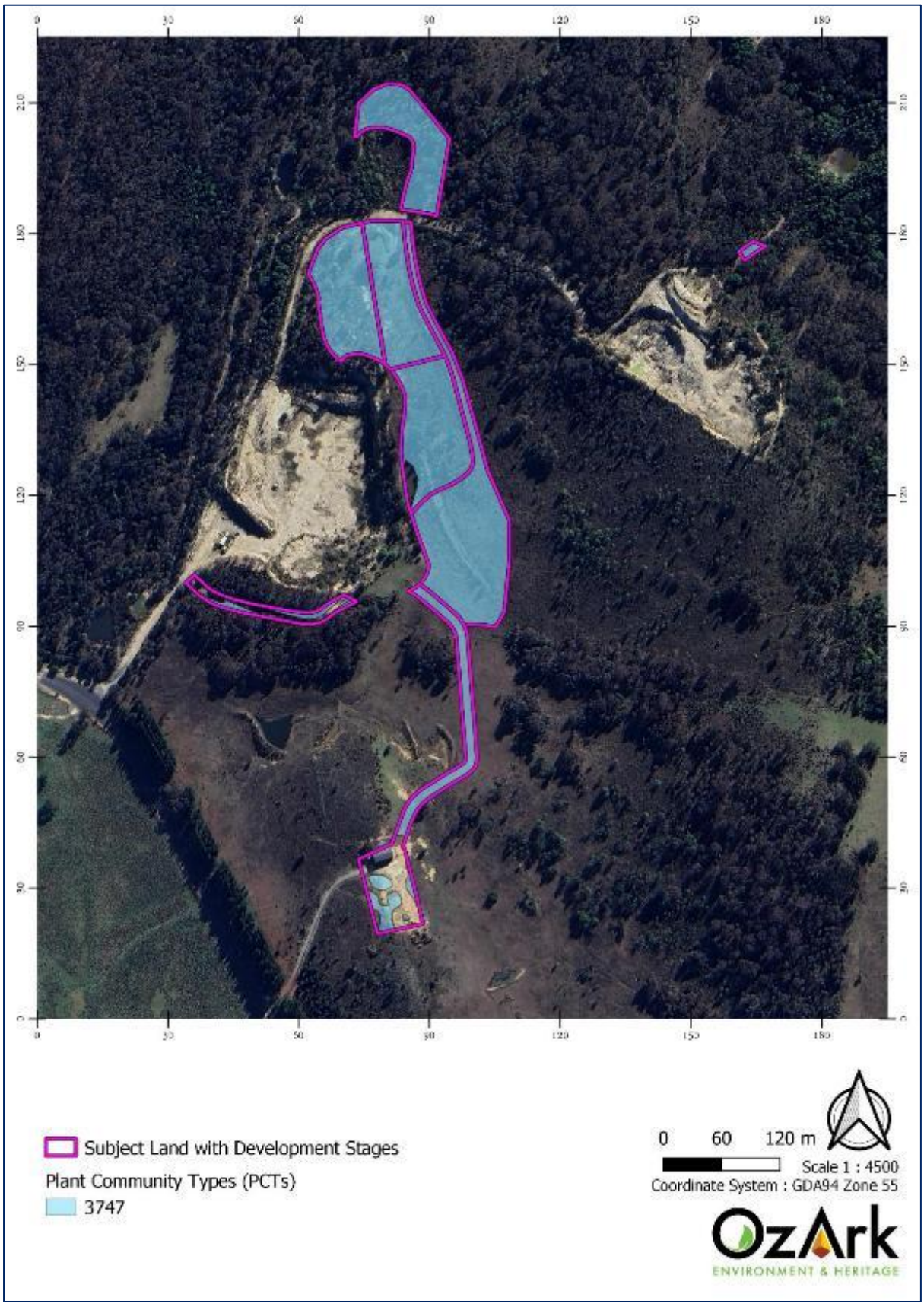


Figure 11 Threatened ecological communities and ecological communities

No TECs were identified on the subject land.

Figure 12 Vegetation zones

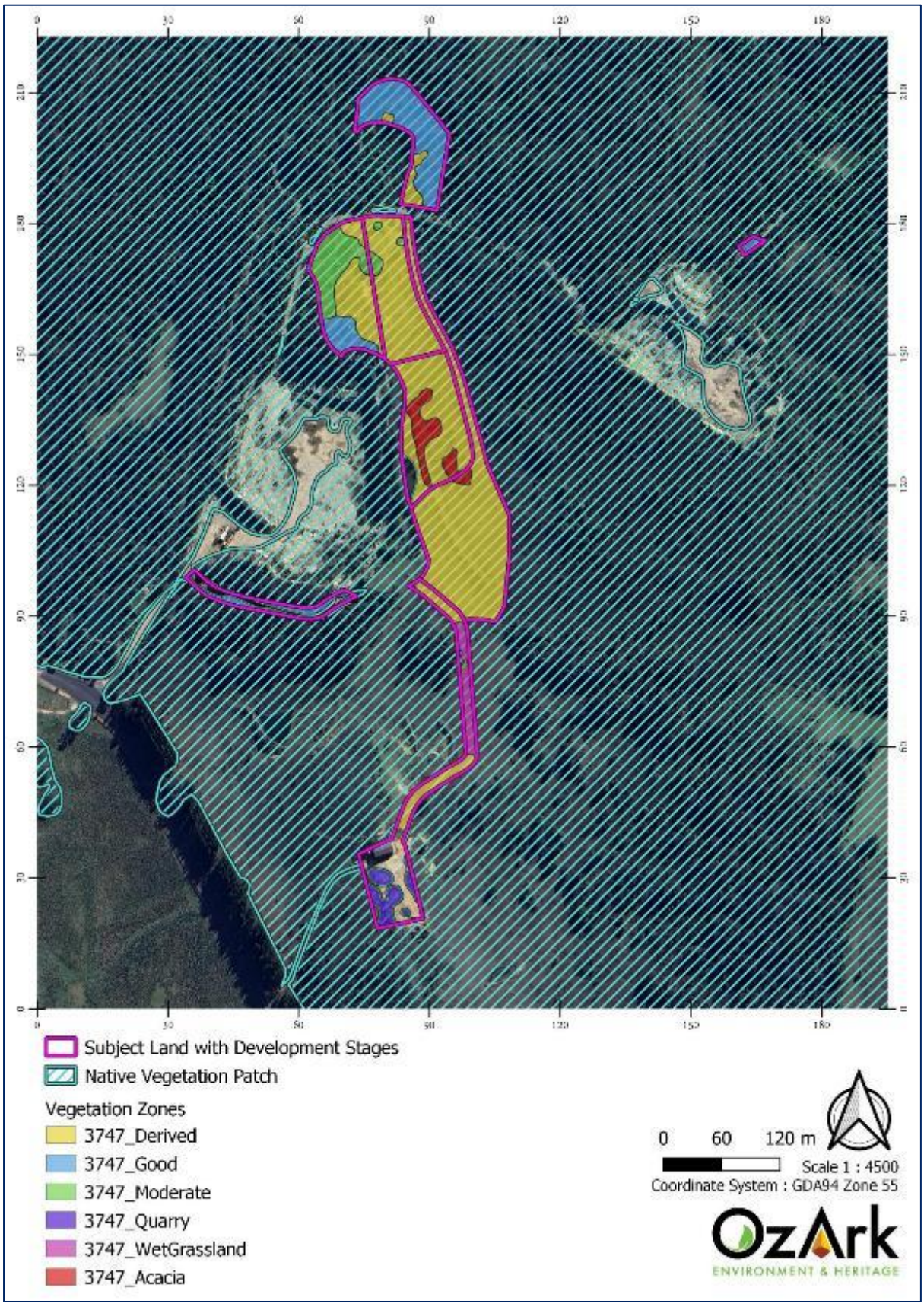
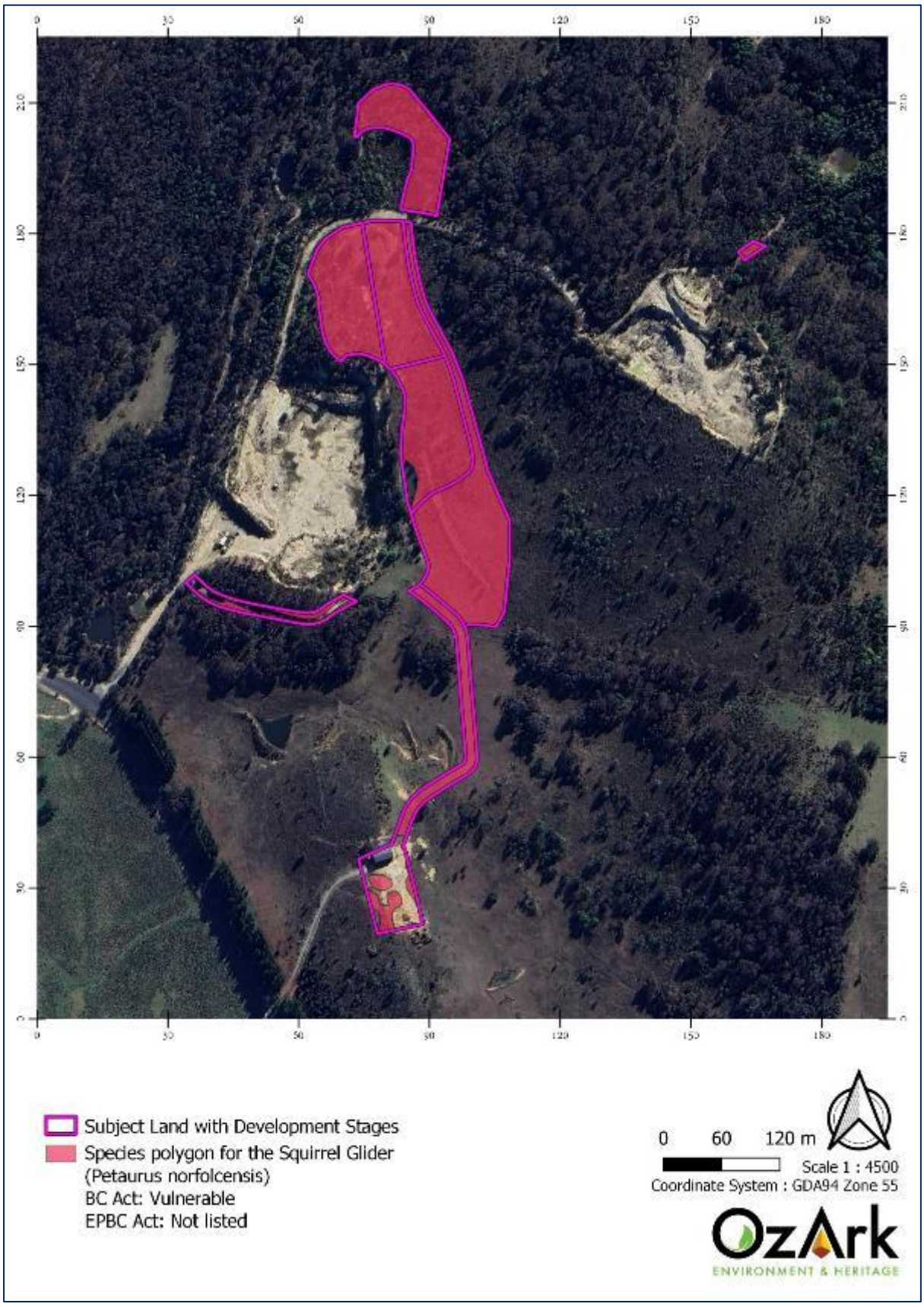


Figure 13 Candidate species credit species records and species polygons



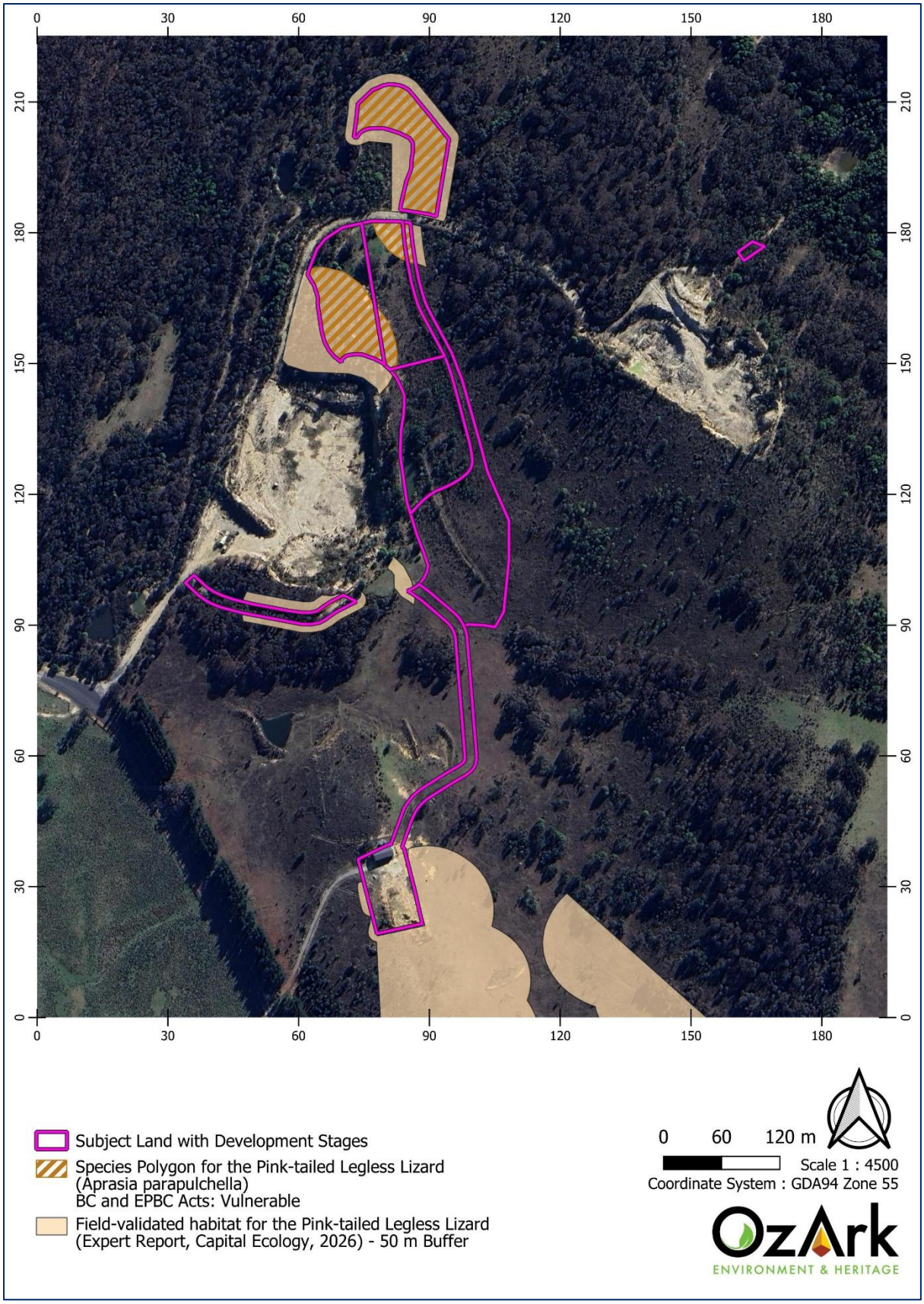

0
30
60
90
120
150
180
210
Subject Land with Development Stages
Species Polygon for the Pink-tailed Legless Lizard (Aprasia parapulchella) BC and EPBC Acts: Vulnerable
Field-validated habitat for the Pink-tailed Legless Lizard (Expert Report, Capital Ecology, 2026) - 50 m Buffer
0 60 120 m
Scale 1 : 4500
Coordinate System : GDA94 Zone 55
OzArk
ENVIRONMENT & HERITAGE

Figure 14 Impact avoidance measures employed (blue hashed area)

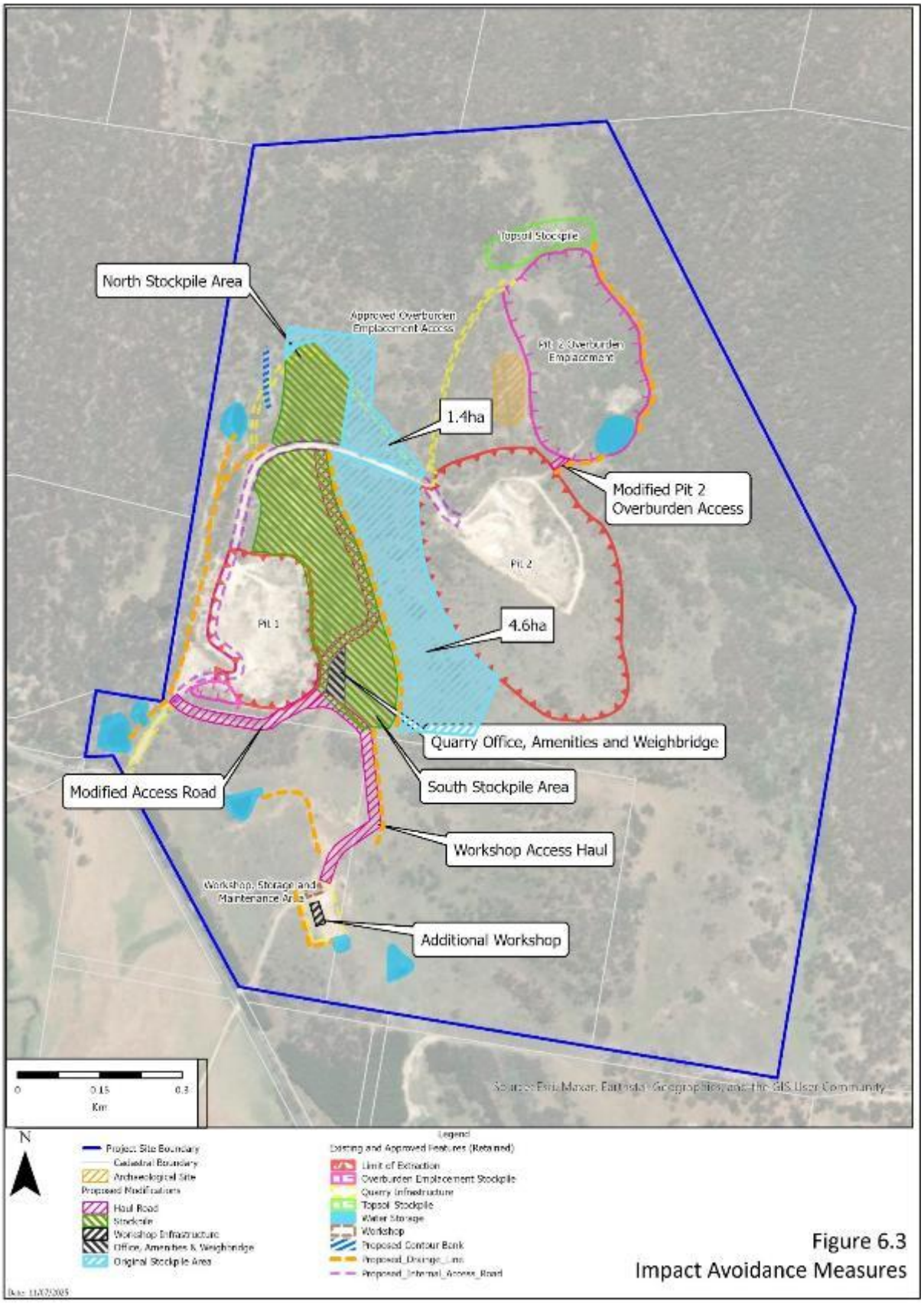


Figure 15 Final impacts likely to occur on the subject land

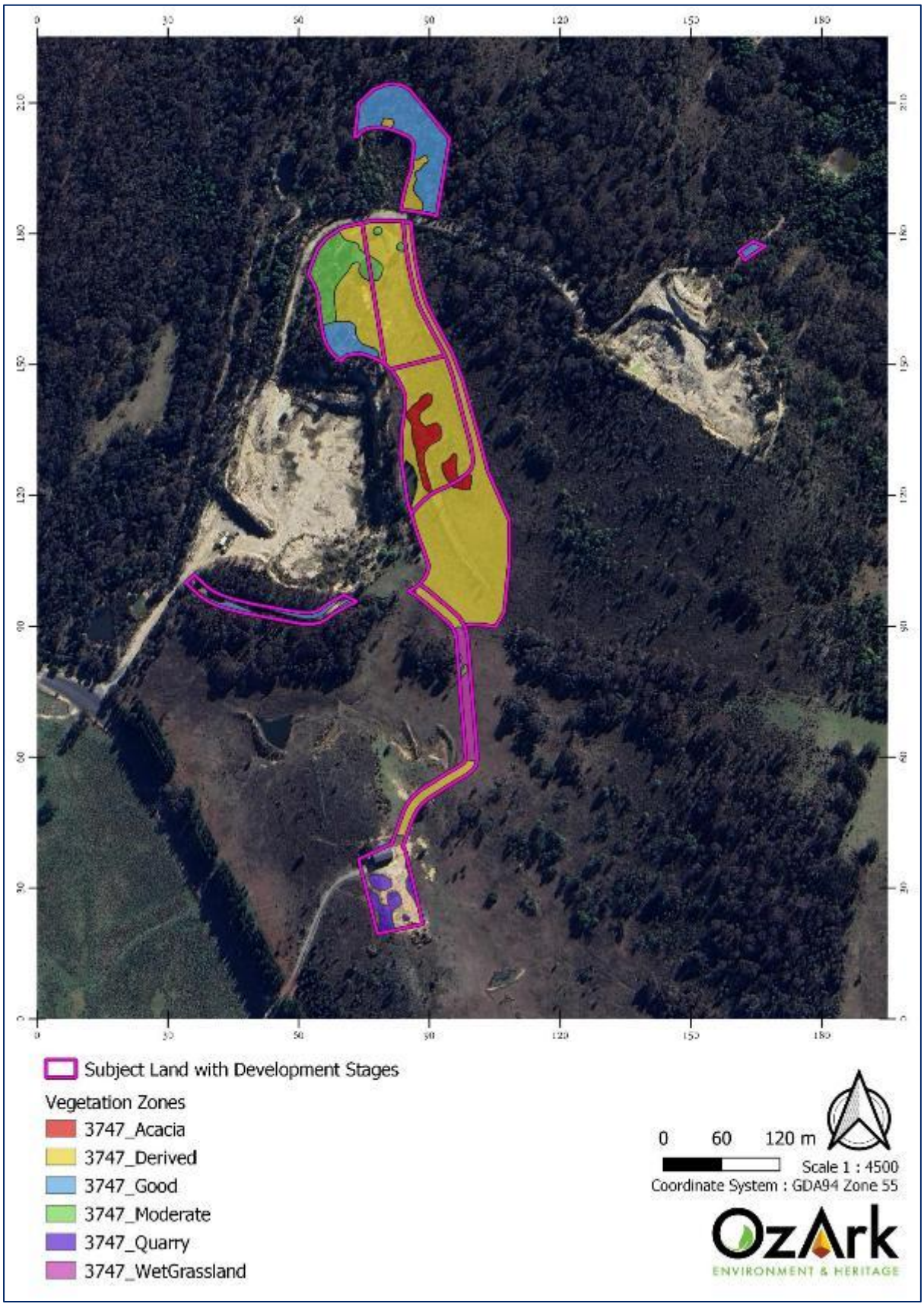


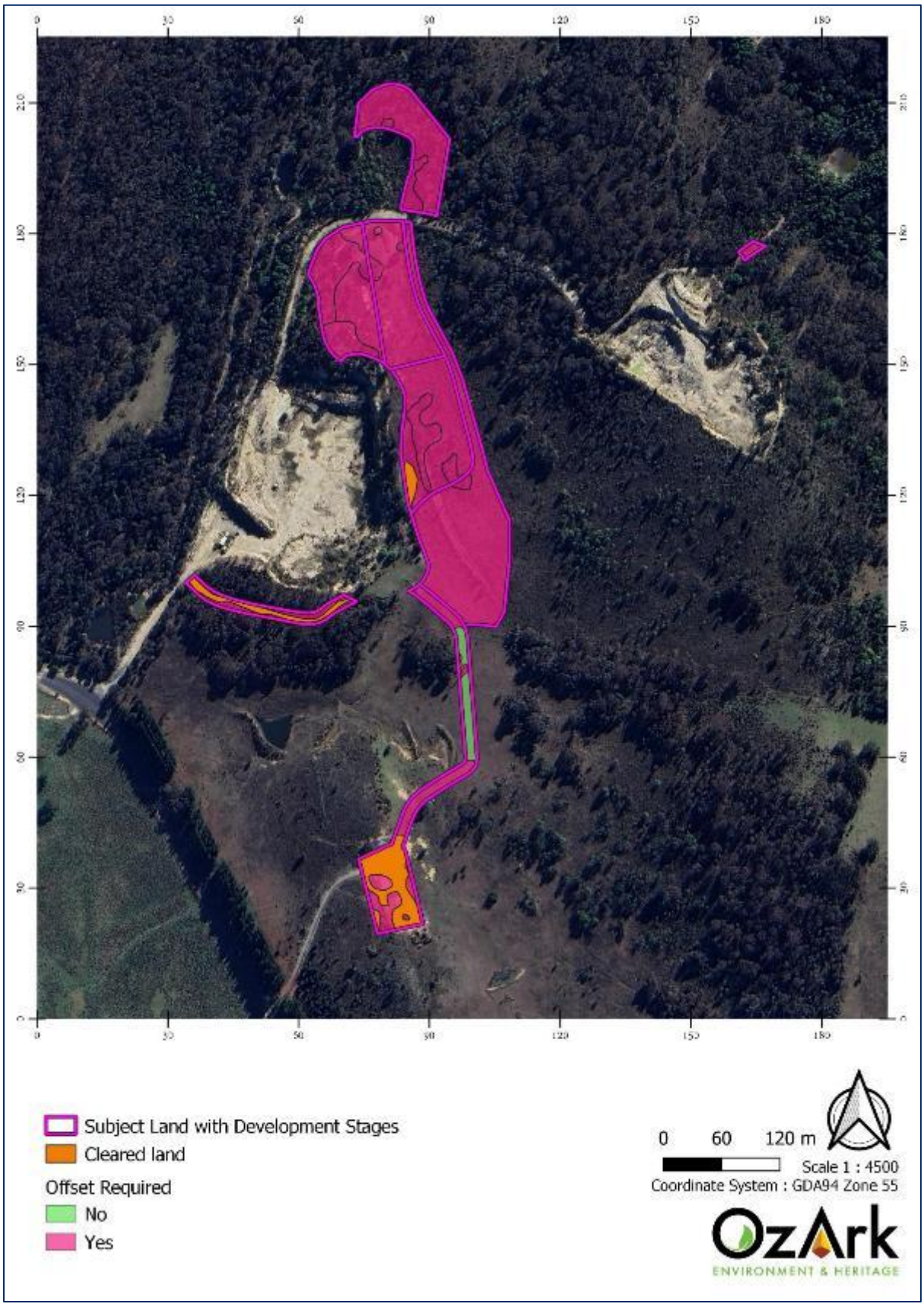
Figure 16 Wind turbine disturbance zone

Not relevant to this project.

Figure 17 Serious and irreversible impacts

No SAII entities were identified on the subject land.

Figure 18 Thresholds for assessing and offsetting impacts



Appendix A: Biodiversity Values Map and Threshold tool report

NSW GOVERNMENT Department of Planning and Environment

Biodiversity Values Map and Threshold Report

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

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

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

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

Biodiversity Values Map and Threshold Report

Date of Report Generation		20/05/2025 2:23 PM
1. Biodiversity Values (BV) Map - Results Summary (Biodiversity Conservation Regulation Section 7.3)		
1.1	**Does the development Footprint intersect with BV mapping?**	no
1.2	**Was ALL BV Mapping within the development footprinted added in the last 90 days?** (dark purple mapping only, no light purple mapping present)	no
1.3	**Date of expiry of dark purple 90 day mapping**	N/A
1.4	**Is the Biodiversity Values Map threshold exceeded?**	no
2. Area Clearing Threshold - Results Summary (Biodiversity Conservation Regulation Section 7.2)		
2.1	**Size of the development or clearing footprint**	61,908.1 sqm
2.2	**Native Vegetation Area Clearing Estimate (NVACE)** (within development/clearing footprint)	28,635.9 sqm
2.3	**Method for determining Minimum Lot Size**	LEP
2.4	**Minimum Lot Size** (10,000sqm = 1ha)	800,000 sqm
2.5	**Area Clearing Threshold** (10,000sqm = 1ha)	10,000 sqm
2.6	**Does the estimate exceed the Area Clearing Threshold?** (NVACE results are an estimate and can be reviewed using the Guidance)	yes
REPORT RESULT: Is the Biodiversity Offset Scheme (BOS) Threshold exceeded for the proposed development footprint area? (Your local council will determine if a BDAR is required)		**yes**

Page 1 of 4

NSW GOVERNMENT Department of Planning and Environment

What do I do with this report?

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

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

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

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

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

Review Options:

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

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

Acknowledgement

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

Signature: _____ Date: _____

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

20/05/2025 02:23 PM

NSW GOVERNMENT Department of Planning and Environment

Biodiversity Values Map and Threshold Tool

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

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

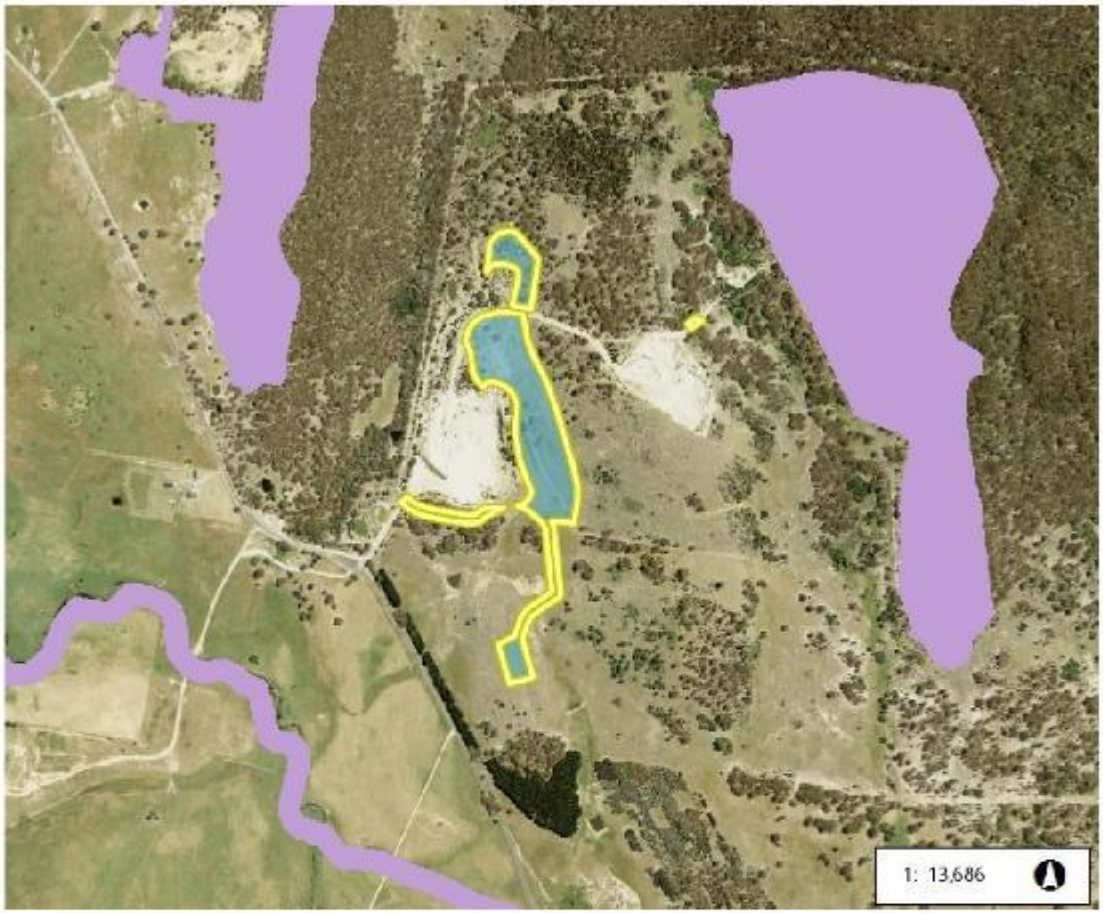
This report may be used as evidence for development applications submitted to councils. You may also use this report when considering native vegetation clearing under the State Environmental Planning Policy (Biodiversity and Conservation) 2021 - Chapter 2 vegetation in non-rural areas.

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

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

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

Biodiversity Values Map



695.2 0 347.62 695.2 Metres

WGS_1984_Web_Mercator_Auxiliary_Sphere

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

Legend

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

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Imagery © Airbus DS/Spot Image 2015

© NSW Department of Customer Service, Basemaps 2019

© NSW Department of Planning and Environment

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

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

Appendix B: Test of Significance

Not relevant to this project.

Appendix C: Determination of excluded impacts

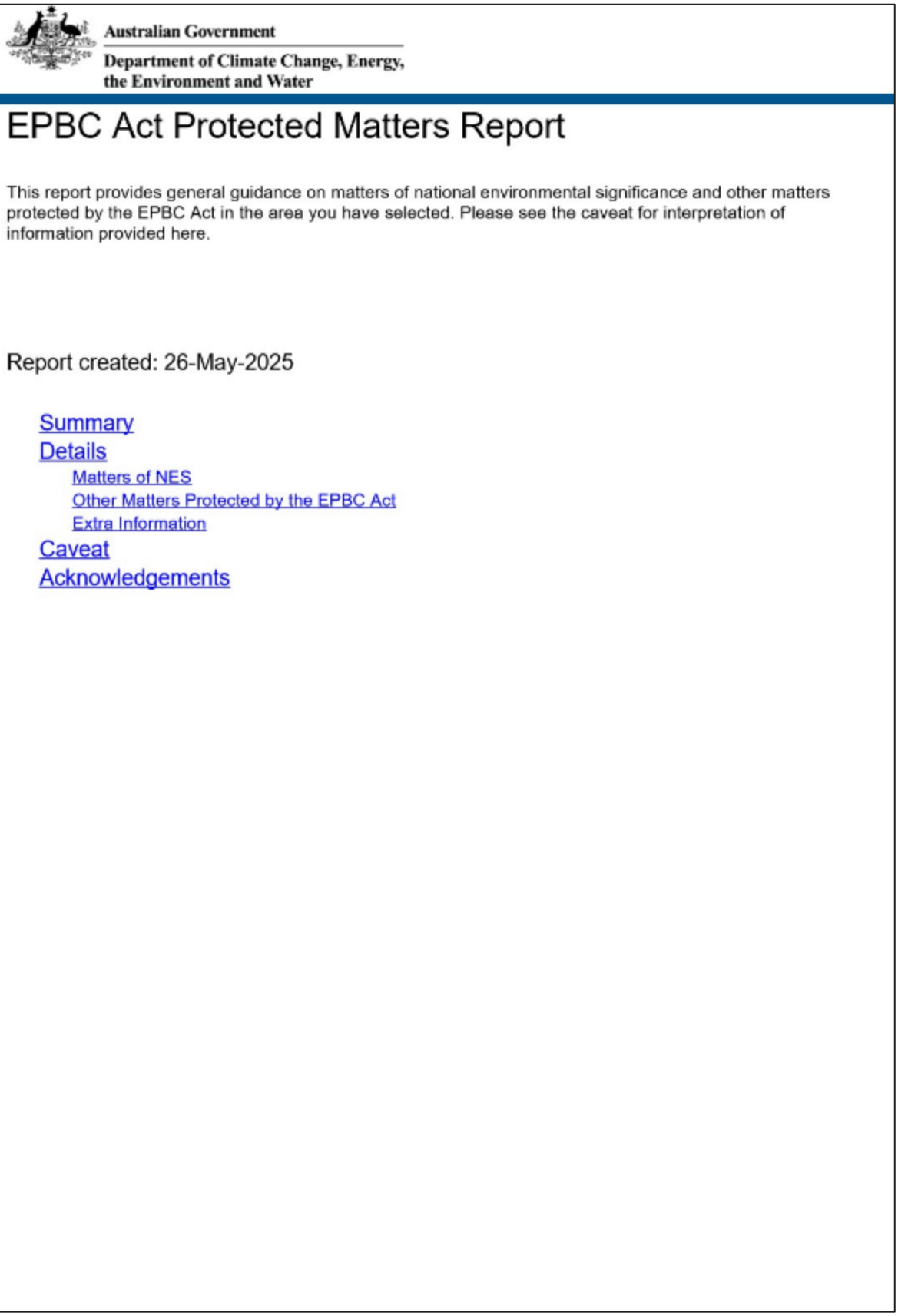
No excluded impacts have been identified for this project.

Appendix D: Matters of National Environmental Significance

The EPBC Act protected matters search has identified no world heritage property, no national heritage place, no wetlands of international importance, two TECs, 39 threatened species, eight migratory species and 18 marine species that could potentially occur in the 10 km search area.

No significant impact on any MNES entity is likely. The below assessment has not identified a need for referral of this development to the Commonwealth, and the project has not been identified as a controlled action.

EPBC Act Protected Matters Report



Australian Government
Department of Climate Change, Energy, the Environment and Water

EPBC Act Protected Matters Report

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

Report created: 26-May-2025

Summary
Details
- Matters of NES
- Other Matters Protected by the EPBC Act
- Extra Information

Caveat
Acknowledgements

Summary

Matters of National Environment Significance

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

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	2
Listed Threatened Species:	39
Listed Migratory Species:	8

Other Matters Protected by the EPBC Act

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

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

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

Commonwealth Lands:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	18
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

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

State and Territory Reserves:	None
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	4
Key Ecological Features (Marine):	None
Biologically Important Areas:	None
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Listed Threatened Ecological Communities [Resource Information]

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

Community Name	Threatened Category	Presence Text
Natural Temperate Grassland of the South Eastern Highlands	Critically Endangered	Community likely to occur within area
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	Community may occur within area

Listed Threatened Species [Resource Information]

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

Scientific Name	Threatened Category	Presence Text
BIRD		
Anthochaera phrygia Regent Honeyeater [82338]	Critically Endangered	Foraging, feeding or related behaviour may occur within area
Aphelocephala leucopsis Southern Whiteface [529]	Vulnerable	Species or species habitat likely to occur within area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Callocephalon fimbriatum Gang-gang Cockatoo [768]	Endangered	Species or species habitat likely to occur within area
Calyptorhynchus lathami lathami South-eastern Glossy Black-Cockatoo [67036]	Vulnerable	Species or species habitat may occur within area
Climacteris picumnus victoriae Brown Treecreeper (south-eastern) [67062]	Vulnerable	Species or species habitat likely to occur within area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	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 likely to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat may occur within area
Melanodryas cucullata cucullata South-eastern Hooded Robin, Hooded Robin (south-eastern) [67093]	Endangered	Species or species habitat likely to occur within area
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat may occur within area
Polytelis swainsonii Superb Parrot [738]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Rostratula australis		
Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area
Stagonopleura guttata		
Diamond Firetail [59398]	Vulnerable	Species or species habitat likely to occur within area
CRUSTACEAN		
Euastacus armatus		
Murray Crayfish [81537]	Vulnerable	Species or species habitat may occur within area
FISH		
Macquaria australasica		
Macquarie Perch [66632]	Endangered	Species or species habitat may occur within area
FROG		
Litoria castanea		
Yellow-spotted Tree Frog, Yellow-spotted Bell Frog [1848]	Critically Endangered	Species or species habitat likely to occur within area
INSECT		
Synemon plana		
Golden Sun Moth [25234]	Vulnerable	Species or species habitat likely to occur within area
MAMMAL		
Chalinolobus dwyeri		
Large-eared Pied Bat, Large Pied Bat [183]	Endangered	Species or species habitat may 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 may occur within area
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)		
Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Endangered	Species or species habitat likely to occur within area
Pteropus poliocephalus		
Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour may occur within area
PLANT		

Scientific Name	Threatened Category	Presence Text
Ammobium craspedioides Yass Daisy [20758]	Vulnerable	Species or species habitat likely to occur within area
Amphibromus fluitans River Swamp Wallaby-grass, Floating Swamp Wallaby-grass [19215]	Vulnerable	Species or species habitat may occur within area
Dodonaea procumbens Trailing Hop-bush [12149]	Vulnerable	Species or species habitat may occur within area
Lepidium aschersonii Spiny Peppercress [10976]	Vulnerable	Species or species habitat may 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 likely to occur within area
Prasophyllum petilum Tarengo Leek Orchid [55144]	Endangered	Species or species habitat may occur within area
Rutidosis leptorhynchoides Button Wrinklewort [67251]	Endangered	Species or species habitat may occur within area
Senecio macrocarpus Large-fruit Fireweed, Large-fruit Groundsel [16333]	Vulnerable	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 may occur within area
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat may occur within area
REPTILE		

Scientific Name	Threatened Category	Presence Text
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

Listed Migratory Species [Resource Information]

Scientific Name	Threatened Category	Presence Text
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 likely to occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may 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]	Vulnerable	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
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat likely to occur within area

Other Matters Protected by the EPBC Act

Listed Marine Species		[Resource Information]
Scientific Name	Threatened Category	Presence Text
Bird		
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 overfly marine area
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area overfly marine area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area
Chalcites osculans as Chrysococcyx osculans Black-eared Cuckoo [83425]		Species or species habitat likely to occur within area overfly marine area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat likely to occur within area overfly marine area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat likely to occur within area overfly marine area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat may occur within area overfly marine area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area overfly marine area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat likely to occur within area overfly marine area
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat may occur within area overfly marine area
Pterodroma cervicalis White-necked Petrel [59642]		Species or species habitat may occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area overfly marine area
Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area overfly marine area

Extra Information

EPBC Act Referrals			[Resource Information]
Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed
INDIGO Central Submarine Telecommunications Cable	2017/8127	Not Controlled Action	Completed
Not controlled action (particular manner)			
Aerial baiting for wild dog control	2006/2713	Not Controlled Action (Particular Manner)	Post-Approval
INDIGO Marine Cable Route Survey (INDIGO)	2017/7996	Not Controlled Action (Particular Manner)	Post-Approval

Caveat

1 PURPOSE

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

The report contains the mapped locations of:

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

2 DISCLAIMER

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

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

3 DATA SOURCES

Threatened ecological communities

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

Threatened, migratory and marine species

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

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

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

4 LIMITATIONS

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

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

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

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

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

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

Acknowledgements

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-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
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-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
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-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

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

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EPBC Act Habitat Assessment

The following tables give an overview of the assessments of these threatened entities and shows that the proposed activity:

1. Is not likely to have a significant impact on a matter of national environmental significance. The matters of national environmental significance are:
    i. World heritage properties.
    ii. National heritage places.
    iii. Wetlands of international importance.
    iv. Threatened species and ecological communities.
    v. Migratory species.
    vi. Commonwealth marine areas.
    vii. The Great Barrier Reef Marine Park. and;
    viii. Nuclear actions (including uranium mines).
    ix. A water resource, in relation to coal seam gas development and large coal mining development.

Is not likely to have a significant impact on the environment in general (for actions by Commonwealth agencies or actions on Commonwealth land) or the environment on Commonwealth land (for actions outside Commonwealth land).

Notes:

Important Population as determined by the *Environment Protection and Biodiversity Conservation Act 1999*, is one that for a vulnerable species:

a) is likely to be key source populations either for breeding or dispersal
b) is likely to be necessary for maintaining genetic diversity
c) is at or near the limit of the species range.

A ‘significant impact’ is an impact which is important, notable, or of consequence, having regard to its context or intensity (DoE, 2013).

Species life cycle information in Likelihood of Occurrence section below is sourced from https://www.environment.nsw.gov.au/threatenedSpeciesApp

EPBC Act-listed Threatened Ecological Communities

Name	Status	Assessment of significance required (Yes / No)
Natural Temperate Grassland of the South Eastern Highlands	Critically Endangered	No, this community does not occur within the subject land.
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	No, this community does not occur within the subject land.

EPBC Act-listed Threatened & Migratory Species

Scientific Name	Common Name	+Comm. Status	BioNet Records <10 km?	Likelihood of Occurrence	Test of significance required (Yes/No)
THREATENED FISH					
Macquaria australasica	Macquarie Perch	E	0	Macquarie Perch are found in the Murray-Darling Basin (particularly upstream reaches) of the Lachlan, Murrumbidgee and Murray rivers, and parts of south-eastern coastal NSW, including the Hawkesbury/Nepean and Shoalhaven catchments. The conservation status of the different populations is not well known, but there have been long-term declines in their abundance. Macquarie Perch numbers have declined in Victoria, and the species is now restricted to a small number of fragmented populations mostly in cool, rocky, fast flowing streams in relatively undisturbed upland catchments, such as King Parrot Creek in the in the Goulburn Broken Catchment in northern Victoria. A self-sustaining population also exists in the Yarra River from fish translocated in the 1920s. **Absent – No suitable aquatic habitat is present within the subject land.**	No
THREATENED CRUSTACEAN					
Euastacus armatus	Murray Crayfish	V	0	*Euastacus armatus* is endemic to lotic waters of the southern Murray-Darling Basin. The species has experienced declines in distribution and abundance. There are records from the upper sections of the Lachlan and Macquarie River basins. Given its widespread distribution in stream habitat occurring through pasturelands to sclerophyll forest, and its occurrence in waterways on a spectrum from large rivers to small creeks, and particularly its broad altitudinal range, it appears that the species is tolerant of a variety of in-stream habitat conditions. At a microhabitat scale, the species prefers cool, flowing-water habitats (lotic) proximal to clay banks for burrowing, and wood or rock cover is characteristic of occupied areas. **Absent – No suitable aquatic habitat is present within the subject land.**	No
THREATENED FROGS					
Heleioporus australiacus	Giant Burrowing Frog	V	0	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. Spends more than 95% of its time in non-breeding habitat in areas up to 300 m from breeding sites. Whilst in non-breeding habitat it burrows below the soil surface or in the leaf litter. Individual frogs occupy a series of	No

Scientific Name	Common Name	+Comm. Status	BioNet Records <10 km?	Likelihood of Occurrence	Test of significance required (Yes/No)
				burrow sites, some of which are used repeatedly. The home ranges of both sexes appear to be non-overlapping suggesting exclusivity of non-breeding habitat. Home ranges are approximately 0.04 ha in size. **Absent – Targeted surveys determined that this species does not occur within the subject land.**	
Litoria aurea	Green and Golden Bell Frog	V	2	Formerly distributed from the NSW north coast near Brunswick Heads, southwards along the NSW coast to Victoria where it extends into east Gippsland. Records from west to Bathurst, Tumut and the ACT region. Since 1990 there have been approximately 50 recorded locations in NSW, most of which are small, coastal, or near-coastal populations. These locations occur over the species' former range, however, they are widely separated and isolated. Large populations in NSW are located around the metropolitan areas of Sydney, Shoalhaven and mid north coast (one an island population). There is only one known population on the NSW Southern Tablelands. Inhabits marshes, dams and stream-sides, particularly those containing bullrushes (*Typha* spp.) or spikerushes (*Eleocharis* spp.). Optimum habitat includes water-bodies that are unshaded, free of predatory fish such as Plague Minnow (*Gambusia holbrooki*), have a grassy area nearby and diurnal sheltering sites available. **Absent – Targeted surveys determined that this species does not occur within the subject land.**	No
Litoria booroolongensis	Booroolong Frog	E	0	The Booroolong Frog is restricted to NSW and north-eastern Victoria, predominantly along the western-flowing streams of the Great Dividing Range. It has disappeared from much of the Northern Tablelands, however, several populations have recently been recorded in the Namoi catchment. The species is rare throughout most of the remainder of its range. Live along permanent streams with some fringing vegetation cover such as ferns, sedges or grasses. **Absent – Targeted surveys determined that this species does not occur within the subject land.**	No
Litoria castanea	Yellow-spotted Tree Frog	CE	0	Historically, this species occurred in two separate highland ranges: on the New England Tableland, and on the southern and central tablelands from Bathurst to Bombala. Following the chytrid virus pandemic in the 1970s, this species went unrecorded for 30 years and was believed to be extinct, until it was rediscovered in 2009 on the Southern Tablelands. This population - near Yass - remains the only known extant site of the	No

Scientific Name	Common Name	+Comm. Status	BioNet Records <10 km?	Likelihood of Occurrence	Test of significance required (Yes/No)
				species. Require large permanent ponds or slow flowing 'chain-of-ponds' streams with abundant emergent vegetation such as bulrushes and aquatic vegetation. **Absent – Targeted surveys determined that this species does not occur within the subject land.**	
Litoria raniformis	Southern Bell Frog	V	0	In NSW the species was once distributed along the Murray and Murrumbidgee Rivers and their tributaries, the southern slopes of the Monaro district and the central southern tablelands as far north as Tarana, near Bathurst. Currently, the species is known to exist only in isolated populations in the Coleambally Irrigation Area, the Lowbidgee floodplain and around Lake Victoria. A few yet unconfirmed records have also been made in the Murray Irrigation Area in recent years. The species is also found in Victoria, Tasmania and South Australia, where it has also become endangered. Usually found in or around permanent or ephemeral Black Box/Lignum/Nitre Goosefoot swamps, Lignum/Typha swamps and River Red Gum swamps or billabongs along floodplains and river valleys. They are also found in irrigated rice crops, particularly where there is no available natural habitat. **Absent – Targeted surveys determined that this species does not occur within the subject land.**	No
Litoria verreauxii alpina	Alpine Tree Frog	V	0	The Alpine Tree Frog occurs in the south-eastern NSW and Victorian high country (alpine and sub-alpine zones) generally above 1100 m asl. Most locations are within National Park and some are close to alpine resorts. Found in a wide variety of habitats including woodland, heath, grassland and herb fields. Breed in natural and artificial wetlands including ponds, bogs, fens, streamside pools, stock dams and drainage channels that are still or slow flowing. **Low – The subject land is within the known distribution of the species, but no associated vegetation communities are present, and there are no records within 10 km.**	No
Litoria watsoni	Watson's Tree Frog	E	0	Within NSW the distribution of *L. watsoni* is fragmented. There are few specimens recorded between Nadgee NP, in the far south-east of the state, and Monga NP and no specimens between Monga and the one population known from a fire dam in Yadboro State Forest. The Morton plateau population covers the largest area inhabited by the species but is separated from the Budderoo population to the north. These major disjunctions in populations are caused by the species being restricted to upland (above 100m ADH) sites, primarily in heath-woodland with sandy substrates.	No

Scientific Name	Common Name	+Comm. Status	BioNet Records <10 km?	Likelihood of Occurrence	Test of significance required (Yes/No)
				Low – The subject land is within the predicted distribution of the species, but no associated vegetation communities are present, and there are no records within 10 km.	
Pseudophryne corroboree	Southern Corroboree Frog	CE	0	The Southern Corroboree Frog is limited to sphagnum bogs of the northern Snowy Mountains, in a strip from the Maragle Range in the north-west, through Mt Jagungal to Smiggin Holes in the south. Its range is entirely within Kosciuszko National Park. Summer breeding habitat is pools and seepages in sphagnum bogs, wet tussock grasslands and wet heath. Feed primarily on small black ants and other invertebrates. Males move into the breeding sites in summer and call during January and February from covered depressions or mossy chambers at the edges of pools. **Low – The subject land is within the known distribution of the species, but no associated vegetation communities are present, and there are no records within 10 km.**	No
THREATENED BIRDS					
Anthochaera phrygia	Regent Honeyeater	CE	0	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. Once recorded between Adelaide and the central coast of Queensland, its range has contracted dramatically in the last 30 years to 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 NSW the distribution is very patchy and mainly confined to the two main breeding areas and surrounding fragmented woodlands. In some years flocks converge on flowering coastal woodlands and forests. The Regent Honeyeater is a flagship threatened woodland bird whose conservation will benefit a large suite of other threatened and declining woodland fauna. The species inhabits dry open forest and woodland, particularly Box-Ironbark woodland, and riparian forests of River Sheoak. Regent Honeyeaters inhabit woodlands that support a significantly high abundance and species richness of bird species. These woodlands have significantly large numbers of mature trees, high canopy cover and abundance of mistletoes. **Low – The subject land is within the predicted distribution of the species, but no associated vegetation communities are present, and there are no records within 10 km.**	No

Scientific Name	Common Name	+Comm. Status	BioNet Records <10 km?	Likelihood of Occurrence	Test of significance required (Yes/No)
Aphelocephala leucopsis	Southern Whiteface	V	4	Prefers the drier habitats of southern Australia. Commonly found in dry open forests and woodland, mallee, mulga and saltbush. Prefers sites with fallen timber or dead trees and stumps. **High – The subject land is within the known distribution of the species, an associated vegetation community (PCT 3747) is present, and there are records within 10 km.**	Yes
Botaurus poiciloptilus	Australasian Bittern	E	9	Australasian Bitterns are widespread but uncommon over south-eastern Australia. In NSW they may be found over most of the state except for the far north-west. Favours permanent freshwater wetlands with tall, dense vegetation, particularly bullrushes (*Typha* spp.) and spikerushes (*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 – The subject land is within the predicted distribution of the species, no associated vegetation communities are present, but there are records within 10 km. However, no suitable march habitat is present within the subject land.**	No
Calidris acuminata	Sharp-tailed Sandpiper	V,C,J,K	1	The Sharp-tailed Sandpiper spends the non-breeding season in Australia with small numbers occurring regularly in New Zealand. Most of the population migrates to Australia, mostly to the south-east and are widespread in both inland and coastal locations and in both freshwater and saline habitats. Many inland records are of birds on passage. In Australasia, the Sharp-tailed Sandpiper prefers muddy edges of shallow fresh or brackish wetlands, with inundated or emergent sedges, grass, saltmarsh or other low vegetation. This includes lagoons, swamps, lakes and pools near the coast, and dams, waterholes, soaks, bore drains and bore swamps, saltpans and hypersaline saltlakes inland. They also occur in saltworks and sewage farms. They use flooded paddocks, sedgelands and other ephemeral wetlands, but leave when they dry. They use intertidal mudflats in sheltered bays, inlets, estuaries or seashores, and swamps and creeks lined with mangroves. They tend to occupy coastal mudflats mainly after ephemeral terrestrial wetlands have dried out, moving back during the wet season. They may be attracted to mats of algae and water weed either floating or washed up around terrestrial wetlands.	No

Scientific Name	Common Name	+Comm. Status	BioNet Records <10 km?	Likelihood of Occurrence	Test of significance required (Yes/No)
				Low – The subject land is within the predicted distribution of the species, no associated vegetation communities are present, but there is a record within 10 km. However, no suitable wetland habitat is present within the subject land.	
Calidris ferruginea	Curlew Sandpiper	CE,C,J,K	0	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. In NSW, they are widespread east of the Great Divide, especially in coastal regions. They are occasionally recorded in the Tablelands and are widespread in the Riverina and south-west NSW, with scattered records elsewhere. 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 – The subject land is within the predicted distribution of the species, no associated vegetation communities are present, and there are no records within 10 km.**	No
Callocephalon fimbriatum	Gang-gang Cockatoo	E	4	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. **Absent – Targeted surveys determined that this species does not occur within the subject land.**	No
Calyptorhynchus lathami lathami	South-eastern Glossy Black-Cockatoo	V	10	The species 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	No

Scientific Name	Common Name	+Comm. Status	BioNet Records <10 km?	Likelihood of Occurrence	Test of significance required (Yes/No)
				open forest and woodlands of the coast and the Great Dividing Range where stands of sheoak occur. Black Sheoak (*Allocasuarina littoralis*) and Forest Sheoak (*A. torulosa*) are important foods. **Absent – Targeted surveys determined that this species does not occur within the subject land.**	
Climacteris picumnus victoriae	Brown Treecreeper (eastern subspecies)	V	3	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 *Climacteris picumnus* victoriae runs approximately through Corowa, Wagga Wagga, Temora, Forbes, Dubbo and Inverell and along this line the subspecies intergrades with the arid zone subspecies of Brown Treecreeper *Climacteris picumnus picumnus* which then occupies the remaining parts of the state. The eastern subspecies lives in eastern NSW in eucalypt woodlands through central NSW and in coastal areas with drier open woodlands such as the Snowy River Valley, Cumberland Plains, Hunter Valley and parts of the Richmond and Clarence Valleys. The population density of this subspecies has been greatly reduced over much of its range, with major declines recorded in central NSW and the northern and southern tablelands. Declines have occurred in remnant vegetation fragments smaller than 300 hectares, that have been isolated or fragmented for more than 50 years. **High – The subject land is within the known distribution of the species, an associated vegetation community (PCT 3747) is present, and there are records within 10 km.**	Yes
Falco hypoleucos	Grey Falcon	V	0	The Grey Falcon is sparsely distributed in NSW, chiefly throughout the Murray-Darling Basin, with the occasional vagrant east of the Great Dividing Range. The breeding range has contracted since the 1950s with most breeding now confined to arid parts of the range. There are possibly less than 5000 individuals left. Population trends are unclear, though it is believed to be extinct in areas with more than 500mm rainfall in NSW. Usually restricted to shrubland, grassland and wooded watercourses of arid and semi-arid regions, although it is occasionally found in open woodlands near the coast. Also occurs near wetlands where surface water attracts prey. Preys primarily on birds, especially parrots and pigeons, using high-speed chases and stoops; reptiles and mammals are also taken. Like other falcons it utilises old nests of other birds of prey and	No

Scientific Name	Common Name	+Comm. Status	BioNet Records <10 km?	Likelihood of Occurrence	Test of significance required (Yes/No)
				ravens, usually high in a living eucalypt near water or a watercourse; peak laying season is in late winter and early spring; two or three eggs are laid. **Low – The subject land is not within the distribution of this species, no associated vegetation communities are present, and there are no records within 10 km.**	
Gallinago hardwickii	Latham's Snipe	V,J,K	0	Latham's Snipe is a non-breeding visitor to south-eastern Australia and is a passage migrant through northern Australia (i.e. it travels through northern Australia to reach non-breeding areas located further south). The species has been recorded along the east coast of Australia from Cape York Peninsula through to south-eastern South Australia (including the Adelaide plains and Mount Lofty Ranges, and the Eyre Peninsula). The range extends inland over the eastern tablelands in south-eastern Queensland (and occasionally from Rockhampton in the north), and to west of the Great Dividing Range in New South. The species is widespread in Tasmania and is found in all regions of Victoria except for the north-west. Most birds spend the non-breeding period at sites located south of the Richmond River in New South Wales. In Australia, Latham's Snipe occurs in permanent and ephemeral wetlands up to 2000 m above sea-level. They usually inhabit open, freshwater wetlands with low, dense vegetation (e.g. swamps, flooded grasslands or heathlands, around bogs and other water bodies. However, they can also occur in habitats with saline or brackish water, in modified or artificial habitats, and in habitats located close to humans or human activity. **Low – The subject land is within the predicted distribution of the species, no associated vegetation communities are present, and there are no records within 10 km.**	No
Grantiella picta	Painted Honeyeater	V	0	The Painted Honeyeater is nomadic and occurs at low densities throughout its range. 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/ Weeping Myall (*Acacia pendula*), Brigalow (*A. harpophylla*) and Box-Gum Woodlands and Box-Ironbark Forests. **Low – The subject land is not within the distribution of the species, but an associated vegetation community (PCT 3747) is present. However, there are no records within 10 km.**	No
Hirundapus caudacutus	White-throated Needletail	V,C,J,K, M	2	The White-throated Needletail is widespread in eastern and south-eastern. In eastern Australia, it is recorded in all coastal regions of Queensland and NSW, extending inland	Yes

Scientific Name	Common Name	+Comm. Status	BioNet Records <10 km?	Likelihood of Occurrence	Test of significance required (Yes/No)
				to the western slopes of the Great Divide and occasionally onto the adjacent inland plains. 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 aerial, it has been stated that conventional habitat descriptions are inapplicable, but there are, nevertheless, certain preferences exhibited by the species. Although they occur over most types of habitat, 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. **High – The subject land is within the known distribution of the species, an associated vegetation community (PCT 3747) is present, there are records within 10 km.**	
Lathamus discolor	Swift Parrot	CE	0	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. 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*, Forest Red Gum *E. tereticornis*, Mugga Ironbark *E. sideroxylon*, and White Box *E. albens*. **Absent – The subject land is within the known distribution of the species, and an associated vegetation community (PCT 3747) is present. However, there are no records within 10 km, no suitable foraging habitat is present within the subject land, and the species does not breed locally.**	No
Melanodryas cucullata cucullata	South-eastern Hooded Robin	E	0	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. It is considered a sedentary species, but local seasonal movements are possible. The south-eastern form (subspecies cucullata) is found from Brisbane to Adelaide and throughout much of inland NSW, with the exception of the extreme north-west, where it is replaced by subspecies *picata*. Two other subspecies occur outside NSW. Prefers lightly wooded country, usually open eucalypt woodland, acacia scrub and mallee, often in or near clearings or open	Yes

Scientific Name	Common Name	+Comm. Status	BioNet Records <10 km?	Likelihood of Occurrence	Test of significance required (Yes/No)
				areas. Requires structurally diverse habitats featuring mature eucalypts, saplings, some small shrubs and a ground layer of moderately tall native grasses. **Moderate – The subject land is within the known distribution of the species, and associated vegetation communities (PCT 3747) are present. However, there are no records within 10 km.**	
Neophema chrysostoma	Blue-winged Parrot	V,M	0	Blue-winged Parrots occur in range of habitats from coastal to semi-arid and favour grasslands and grassy woodlands. Mainly found in Tasmania and Victoria but some populations can be found in Western NSW and Eastern SA. **Low – The subject land is within the known distribution of this species, but no associated vegetation communities are present, and there are no records within 10 km.**	No
Polytelis swainsonii	Superb Parrot	V	2	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. This species inhabits 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 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. May forage up to 10 km from nesting sites, and feed in trees and understorey shrubs and on the ground and their diet consists mainly of grass seeds and herbaceous plants. **Moderate – The subject land is within the predicted distribution of the species, and no associated vegetation communities are present. However, there are records within 10 km.**	Yes
Pycnoptilus floccosus	Pilotbird	V	0	Pilotbirds are endemic to south-east Australia, can occur above 600 m in the Brindabella Ranges in the Australian Capital Territory, and in the Snowy Mountains throughout New South Wales and north-east Victoria. Also occur in forests in the Blue Mountains and around the wetter forests of eastern Australia, to Dandenong near Melbourne.	No

Scientific Name	Common Name	+Comm. Status	BioNet Records <10 km?	Likelihood of Occurrence	Test of significance required (Yes/No)
				Low – The subject land is within the known distribution of this species, but no associated vegetation communities are present, and there are no records within 10 km.	
Rostratula australis	Australian Painted Snipe	E,M	0	The Australian Painted Snipe is restricted to Australia. Most records 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. Forages nocturnally on mud-flats and in shallow water. Feeds on worms, molluscs, insects and some plant-matter. **Low – The subject land is within the known distribution of this species, but no associated vegetation communities are present, and there are no records within 10 km.**	No
Stagonopleura guttata	Diamond Firetail	V	3	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, Central and South Western Slopes and the North West Plains and Riverina. Not commonly found in coastal districts, though there are 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. **High – The subject land is within the known distribution of the species, an associated vegetation community (PCT 3747) is present, there are records within 10 km.**	Yes
Tringa nebularia	Common Greenshank	E,C,J,K	0	The Common Greenshank does not breed in Australia, however, the species occurs in all types of wetlands and has the widest distribution of any shorebird in Australia. The Common Greenshank is found in a wide variety of inland wetlands and sheltered coastal	No

Scientific Name	Common Name	+Comm. Status	BioNet Records <10 km?	Likelihood of Occurrence	Test of significance required (Yes/No)
				habitats of varying salinity. It occurs in sheltered coastal habitats, typically with large mudflats and saltmarsh, mangroves or seagrass. Habitats include embayments, harbours, river estuaries, deltas and lagoons and are recorded less often in round tidal pools, rock-flats and rock platforms. The species uses both permanent and ephemeral terrestrial wetlands, including swamps, lakes, dams, rivers, creeks, billabongs, waterholes and inundated floodplains, claypans and saltflats. It will also use artificial wetlands, including sewage farms and saltworks dams, inundated rice crops and bores. The edges of the wetlands used are generally of mud or clay, occasionally of sand, and may be bare or with emergent or fringing vegetation, including short sedges and saltmarsh, mangroves, thickets of rushes, and dead or live trees. It was once recorded with Black-winged Stilts (*Himantopus himantopus*) in pasture, but are generally not found in dry grassland. **Low – The subject land is within the known distribution of this species, but no associated vegetation communities are present, and there are no records within 10 km.**	
THREATENED INSECTS					
Keyacris scurra	Key's Matchstick Grasshopper	E	5	Key's Matchstick grasshopper was originally distributed from Victoria to Orange (NSW) across the wheat/sheep belt, typically recorded in native grasslands and grassy woodland. Typically found in native grasslands and grassy woodlands but it has also been recorded in other vegetation associations usually containing a native grass understory (especially kangaroo grass *Themeda triandra*) and known food plants (particularly Asteraceae). **Absent – Targeted surveys determined that this species does not occur within the subject land.**	No
Paralucia spinifera	Purple Copper Butterfly, Bathurst Copper Butterfly	V	0	Until very recently purple copper butterfly was only known to occur on the Central Tablelands of NSW; however, in August 2021 the species was discovered flying within Namadgi National Park, ACT. This species has highly specific habitat requirements and only occurs where *Bursaria spinosa subsp. lasiophylla* and an attendant is present. It is highly possible where potential habitat occurs that additional locations will be identified and these again may lie outside the currently known distribution of the species. Occurs above 850 m elevation.	No

Scientific Name	Common Name	+Comm. Status	BioNet Records <10 km?	Likelihood of Occurrence	Test of significance required (Yes/No)
				Low – The subject land is not within the distribution of the species, but an associated vegetation community (PCT 3747) is present. However, there are no records within 10 km.	
Synemon plana	Golden Sun Moth	V	0	The Golden Sun Moth's NSW populations are found in the area between Queanbeyan, Gunning, Young and Tumut. The species' historical distribution extended from Bathurst (central NSW) through the NSW Southern Tablelands, through to central and western Victoria, to Bordertown in eastern South Australia. Occurs in Natural Temperate Grasslands and grassy Box-Gum Woodlands in which ground layer is dominated by wallaby grasses *Austrodanthonia* spp. **Absent – Targeted surveys determined that this species does not occur within the subject land.**	No
THREATENED MAMMALS					
Chalinolobus dwyeri	Large Pied Bat	E	0	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 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. Females have been recorded raising young in maternity roosts (c. 20-40 females) from November through to January in roof domes in sandstone caves and overhangs. They remain loyal to the same cave over many years. Found in well-timbered areas containing gullies. **Low – The subject land is within the known distribution of this species, but no associated vegetation communities are present, and there are no records within 10 km.**	No
Dasyurus maculatus	Spotted-tailed Quoll	E	0	The range of the Spotted-tailed Quoll has contracted considerably since European settlement. It is now found in eastern NSW, eastern Victoria, south-east and north-eastern Queensland, and Tasmania. Only in Tasmania is it still considered relatively common. 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.	Yes

Scientific Name	Common Name	+Comm. Status	BioNet Records <10 km?	Likelihood of Occurrence	Test of significance required (Yes/No)
				Moderate – The subject land is within the known distribution of the species, and an associated vegetation community (PCT 3747) is present. However, there are no records within 10 km.	
Mastacomys fuscus mordicus	Broad-toothed Rat	E	0	In NSW the Broad-toothed Rat occurs in two widely separated areas: the wet alpine and subalpine heaths and woodlands in Kosciuszko National Park, adjacent Nature Reserves (Bimberi and Scabby NR) and State Forest (Buccleuch SF) in the south of the State, and on the Barrington Tops, north-west of Newcastle. In Victoria - South Gippsland and the Otways - and western Tasmania, it can be found in wet sedge and grasslands at lower elevations. The Broad-toothed Rat lives in a complex of runways through the dense vegetation of its wet grass, sedge or heath environment, and under the snow in winter. This relatively warm under-snow space enables it to be active throughout winter. Sheltering nests of grass are built in the understorey or under logs, where two or three young are born in summer. In winter the rats huddle together in nests, for warmth. **Low – The subject land is within the known distribution of this species, but no associated vegetation communities are present, and there are no records within 10 km.**	No
Petauroides volans	Southern Greater Glider	E	0	The Southern Greater Glider occurs in eastern Australia, in eucalypt forests and woodlands, where it has a broad distribution from around Proserpine in Queensland, south through NSW and the Australian Capital Territory into Victoria. **Absent – Targeted surveys determined that this species does not occur within the subject land.**	No
Petaurus australis	Yellow-bellied Glider	V	0	The Yellow-bellied Glider is found along the eastern coast to the western slopes of the Great Dividing Range, from southern Queensland to Victoria. Occur in tall mature eucalypt forest generally in areas with high rainfall and nutrient rich soils. **Low – The subject land is within the known distribution of this species, but no associated vegetation communities are present, and there are no records within 10 km.**	No
Petrogale penicillata	Brush-tailed Rock-wallaby	V	0	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	No

Scientific Name	Common Name	+Comm. Status	BioNet Records <10 km?	Likelihood of Occurrence	Test of significance required (Yes/No)
				population in the Warrumbungle Ranges being the western limit. Occupy rocky escarpments, outcrops and cliffs with a preference for complex structures with fissures, caves and ledges, often facing north. Shelter or bask during the day in rock crevices, caves and overhangs and are most active at night when foraging. Browse on vegetation in and adjacent to rocky areas eating grasses and forbs as well as the foliage and fruits of shrubs and trees. Highly territorial and have strong site fidelity with an average home range size of about 15 ha. Males tend to have larger home ranges than females. The home range consists of a refuge area and a foraging range linked by habitually used commuting routes. Females settle in or near their mother's range, while males mainly disperse between female groups within colonies, and less commonly between colonies. **Absent – Targeted surveys determined that this species does not occur within the subject land.**	
Phascolarctos cinereus	Koala	E	1	The Koala has a fragmented distribution throughout eastern Australia from north-east Queensland to the Eyre Peninsula in South Australia. In New South Wales, koala populations are found on the central and north coasts, southern highlands, southern and northern tablelands, Blue Mountains, southern coastal forests, with some smaller populations on the plains west of the Great Dividing Range. Inhabit eucalypt woodlands and forests. **Absent – Targeted surveys determined that this species does not occur within the subject land.**	No
Potorous tridactylus trisulcatus	Southern long-nosed potoroo	V	0	The southern long-nosed potoroo has a broad and fragmented distribution. It occurs between the Great Dividing Range, generally up to 800 m above sea level, and the coastal plains. The species is restricted to habitats receiving an annual rainfall greater than 760 mm. The most northern records of occurrence are at Barren Grounds Nature Reserve and Budderoo National Park in New South Wales. The subspecies occurs in isolated habitat patches along the coastal plains of southern New South Wales and Victoria and inland to the slopes and foothills of the Great Dividing Range. One island population exists at French Island in Western Port Bay, Victoria. **Absent – The subject land is not within the distribution of this species, no associated vegetation communities are present, and there are no records within 10 km.**	No
Pseudomys fumeus	Smoky Mouse	E	0	The Smoky Mouse is currently limited to a small number of sites in western, southern and eastern Victoria, south-east NSW and the ACT. In NSW there are 3 records from	No

Scientific Name	Common Name	+Comm. Status	BioNet Records <10 km?	Likelihood of Occurrence	Test of significance required (Yes/No)
				Kosciuszko National Park and 2 records adjacent to the park in Bondo and Ingbyra State Forests; the remainder are centred around Mt Poole, Nullica State Forest and the adjoining South East Forests National Park. The Smoky Mouse appears to prefer heath habitat on ridge tops and slopes in sclerophyll forest, heathland and open-forest from the coast (in Victoria) to sub-alpine regions of up to 1800 metres, but sometimes occurs in ferny gullies. Nesting burrows have been found in rocky localities among tree roots and under the skirts of Grass Trees *Xanthorrhoea* spp. **Low – The subject land is within the predicted distribution of this species, but no associated vegetation communities are present, and there are no records within 10 km.**	
Pteropus poliocephalus	Grey-headed Flying-fox	V	0	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. Individual camps may have tens of thousands of animals and are used for mating, and for giving birth and rearing young. Annual mating commences in January and conception occurs in April or May; a single young is born in October or November. Site fidelity to camps is high; some camps have been used for over a century. Can travel up to 50 km from the camp to forage; commuting distances are more often <20 km. Feed on the nectar and pollen of native trees, in particular *Eucalyptus*, *Melaleuca* and *Banksia*, and fruits of rainforest trees and vines. Also forage in cultivated gardens and fruit crops. **Absent – The subject land is within the known distribution of the species, and an associated vegetation community (PCT 3747) is present. However, there are no records within 10 km, and no suitable habitat is present within the subject land.**	No
THREATENED REPTILES					
Aprasia parapulchella	Pink-tailed Legless Lizard	V	0	The Pink-tailed Legless Lizard is only known from the Central and Southern Tablelands, and the South Western Slopes. 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	No

Scientific Name	Common Name	+Comm. Status	BioNet Records <10 km?	Likelihood of Occurrence	Test of significance required (Yes/No)
				grassy groundlayers, particularly those dominated by Kangaroo Grass (*Themeda australis*). **Absent – Targeted surveys determined that this species does not occur within the subject land.**	
Delma impar	Striped Legless Lizard	V	0	The Striped Legless Lizard occurs in the Southern Tablelands, the South West Slopes, the Upper Hunter and possibly on the Riverina. Populations are known in the Goulburn, Yass, Queanbeyan, Cooma, Muswellbrook and Tumut areas. Also occurs in the ACT, Victoria and south-eastern South Australia. Found mainly in Natural Temperate Grassland but has also been captured in grasslands that have a high exotic component. Also found in secondary grassland near Natural Temperate Grassland and occasionally in open Box-Gum Woodland. **Low – The subject land is within the known distribution of this species, but no associated vegetation communities are present, and there are no records within 10 km.**	No
Eulamprus kosciuskoi	Alpine Water Skink	V	0	The alpine water skink has been observed at high elevations (above 1000 m asl and up to 2000 m asl), basking on granite boulders, tussocks, and sphagnum moss along small alpine streams, bogs, and wet heath. It has also been observed along drainage lines, in tussock grasses, and up to hundreds of metres upslope, or otherwise away from typical wetter habitats. In the Snowy Mountains and Brindabella Range, the species exhibits a high degree of habitat specialisation, being confined to sphagnum bog, fen, wet heath, and, less frequently, wet sod-tussock grassland. **Low – The subject land is within the distribution of this species, but no associated vegetation communities are present, and there are no records within 10 km.**	No
Tympanocryptis lineata	Canberra Grassland Earless Dragon	CE	0	Historically, the Grassland Earless Dragon ranged from Bathurst to Cooma, including the ACT region. The only populations now known are in the ACT and adjacent NSW at Queanbeyan, and on the Monaro Basalt Plains between Cooma and south-west of Nimmitabel. Formerly known from Victoria, though no recent records. Restricted to a small number of Natural Temperate Grassland sites dominated by wallaby grasses (*Nothodanthonia* spp.), spear grasses (*Austrostipa* spp.), Poa Tussock (*Poa sieberiana*), Red Grass (*Bothriochloa macra*), and occasionally Kangaroo Grass (*Themeda australis*). Introduced pasture grasses occur at many of the sites supporting this species, which has also been captured in secondary grassland. Within its habitat, apparently	No

Scientific Name	Common Name	+Comm. Status	BioNet Records <10 km?	Likelihood of Occurrence	Test of significance required (Yes/No)
				prefers areas with a more open structure, characterised by small patches of bare ground between the grasses and herbs. **Absent – The subject land is not within the distribution of this species, no associated vegetation communities are present, and there are no records within 10 km.**	
Tympanocryptis osbornei	Monaro Grassland Earless Dragon	E	0	Restricted to a small number of Natural Temperate Grassland sites dominated by wallaby grasses (*Nothodanthonia* spp.), spear grasses (*Austrostipa* spp.), Poa Tussock (*Poa sieberiana*), Red Grass (*Bothriochloa macra*), and occasionally Kangaroo Grass (*Themeda australis*). Introduced pasture grasses occur at many of the sites supporting this species, which has also been captured in secondary grassland. Within its habitat, it apparently prefers areas with a more open structure, characterised by small patches of bare ground between the grasses and herbs. However, it is possible that this is related to lower detectability in denser grassland rather than absence from it. In addition to tussocks, partially embedded surface rocks, and spider and insect holes are used for shelter. These are important micro-habitat elements within the grassland habitat. Rocks and arthropod holes provide important thermal refuges during temperature extremes. **Low – The subject land is within the distribution of this species, but no associated vegetation communities are present, and there are no records within 10 km.**	No
THREATENED PLANTS					
Acacia bynoeana	Bynoe's Wattle	V	0	Bynoe's wattle is found in central eastern NSW, from the Hunter District (Morisset) south to the Southern Highlands and west to the Blue Mountains. The species is currently known from about 30 locations, with the size of the populations at most locations being very small (1-5 plants). It has recently been found in the Colymea and Parma Creek areas west of Nowra. Occurs in heath or dry sclerophyll forest on sandy soils. **Low – The subject land is not within the distribution of this species, but an associated vegetation community (PCT 3747) is present. However, there are no records within 10 km.**	No
Ammobium craspedioides	Yass Daisy	V	0	Found from near Crookwell on the Southern Tablelands to near Wagga Wagga on the South Western Slopes. Most populations are in the Yass region. Found in moist or dry forest communities, Box-Gum Woodland and secondary grassland derived from clearing of these communities. Grows in association with a large range of eucalypts (*Eucalyptus blakelyi, E. bridgesiana, E. dives, E. goniocalyx, E. macrorhyncha, E. mannifera, E. melliodora, E. polyanthemos, E. rubida*).	No

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				Low – The subject land is not within the distribution of this species, but an associated vegetation community (PCT 3747) is present. However, there are no records within 10 km.	
Amphibromus fluitans	Floating Swamp Wallaby-grass	V	0	There are many historic collections in the City of Greater Albury. It has been recorded recently in lagoons beside the Murray River near Cooks Lagoon (Shire of Greater Hume), Mungabarina Reserve, East Albury, at Ettamogah, Thurgoona (Charles Sturt University Campus), near Narranderra, and also further west along the Murray River (near Mathoura) and in Victoria. There is a recent record of this species near Laggan in Upper Lachlan Shire. It is also found in Victoria and in Tasmania. *Amphibromus fluitans* grows mostly in permanent swamps. The species needs wetlands which are at least moderately fertile and which have some bare ground, conditions which are produced by seasonally-fluctuating water levels. Habitats in south-western NSW include swamp margins in mud, dam and tank beds in hard clay and in semi-dry mud of lagoons with Potamogeton and Chamaeraphis species. **Absent – The subject land is not within the distribution of this species, no associated vegetation communities are present, and there are no records within 10 km.**	No
Bossiaea fragrans		CE	0	Currently only known from the Abercrombie Karst Conservation Reserve, south of Bathurst on the NSW central tablelands. It is highly restricted, with only a small number of known populations. Occurs on spilite, rhyolite or slate and volcanic substrates and is often associated with Red Stringybark (*Eucalyptus macrorhyncha*) - Red Box (*Eucalyptus polyanthemos*) woodland +/- White Box (*Eucalyptus albens*). **Low – The subject land is not within the distribution of this species, but an associated vegetation community (PCT 3747) is present. However, there are no records within 10 km.**	No
Bossiaea oligosperma	Few-seeded Bossiaea	V	0	The Few-seeded Bossiaea is known from two disjunct areas - the lower Blue Mountains in the Warragamba area (Wollondilly, Allum, Tonalli River catchments) and the Windellama area in Goulburn Mulwaree Shire, where it is locally abundant. A 1960s record for the Araluen valley south of Braidwood is credible but has not been relocated. Occurs on stony slopes or ridges on sandstone in the Yerranderie area. Occurs in low woodland on loamy soil in the Windellama area. Nothing is known about its ecology, but it probably has hard-coated seeds that respond well to fire and soil disturbance.	No

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				Absent – The subject land is not within the distribution of this species, no associated vegetation communities are present, and there are no records within 10 km.	
Caladenia concolor	Crimson Spider Orchid	V	0	The current NSW Scientific Committee listing incorporates two populations which have each been described as separate species by D.L. Jones. One of these populations comprises a few hundred plants on private property near Bethungra and the other of about 100 plants occurs in Burrinjuck Nature reserve. The other occurrences of the Crimson Spider Orchid in NSW are from the Nail Can Hill Crown Reserve near Albury. The species also occurs at two localities in Victoria near Beechworth and Chiltern. Habitat is regrowth woodland on granite ridge country that has retained a high diversity of plant species, including other orchids. **Absent – The subject land is not within the distribution of this species, no associated vegetation communities are present, and there are no records within 10 km.**	No
Caladenia tessellata	Thick Lip Spider Orchid	V	0	The Thick Lip Spider Orchid is known from the Sydney area (old records), Wyong, Ulladulla and Braidwood in NSW. Populations in Kiama and Queanbeyan are presumed extinct. It was also recorded in the Huskisson area in the 1930s. The species occurs on the coast in Victoria from east of Melbourne to almost the NSW border. Generally found in grassy sclerophyll woodland on clay loam or sandy soils, though the population near Braidwood is in low woodland with stony soil. **Low – The subject land is within the predicted distribution of this species, but no associated vegetation communities are present, and there are no records within 10 km.**	No
Calotis glandulosa	Mauve Burr-daisy	V	0	The distribution of the Mauve Burr-daisy is centred on the Monaro and Kosciuszko regions. There are three known sites in the upper Shoalhaven catchment. There are old and possibly dubious records from near Oberon, the Dubbo area and Mt Imlay. Found in montane and subalpine grasslands in the Australian Alps. Found in subalpine grassland (dominated by *Poa* spp.), and montane or natural temperate grassland dominated by Kangaroo Grass (*Themeda australis*) and Snow Gum (*Eucalyptus pauciflora*) Woodlands on the Monaro and Shoalhaven area. **Low – The subject land is within the known distribution of this species, but no associated vegetation communities are present, and there are no records within 10 km.**	No

Scientific Name	Common Name	+Comm. Status	BioNet Records <10 km?	Likelihood of Occurrence	Test of significance required (Yes/No)
Commersonia prostrata	Dwarf Kerrawang	E	6	Dwarf Kerrawang occurs on the Southern Highlands and Southern Tablelands (one plant at Penrose State Forest, one plant at Tallong, a small population near the Corang and about 2000 plants at Rowes Lagoon), a larger population in the Thirlmere Lakes area (particularly among the dying reeds at the edge of the water), and on the North Coast (less than 100 plants at the Tomago sandbeds north of Newcastle). It is also found in Victoria. Occurs on sandy, sometimes peaty soils in a wide variety of habitats: Snow Gum (*Eucalyptus pauciflora*) Woodland and Ephemeral Wetland floor at Rowes Lagoon; Blue leaved Stringybark (*E. agglomerata*) Open Forest at Tallong; and in Brittle Gum (*E. mannifera*) Low Open Woodland at Penrose; Scribbly Gum (*E. haemostoma*)/ Swamp Mahogany (*E. robusta*) Ecotonal Forest at Tomago. The population at the Thirlmere lakes is most abundant in the areas of prior lake bed exposed by the dropping water levels. It is uncertain how long this may remain the case, as many of the individuals are very large, growing among the decomposing bases of bulrushes. It is also found among wattle thickets in the drainage line between the lakes. **Low – The subject land is within the known distribution of this species, but no associated vegetation communities are present, and there are no records within 10 km.**	No
Diuris aequalis	Buttercup Doubletail	E	5	The buttercup doubletail has been recorded in Kanangra-Boyd National Park, Gurnang State Forest, towards Wombeyan Caves, the Taralga - Goulburn area, and the ranges between Braidwood, Tarago and Bungendore. The type location (from the 19th Century) is Liverpool, west of Sydney. However, this and other questionable records from the Sydney metropolitan area are unlikely based on current knowledge of the species. Recorded in forest, low open woodland with grassy understorey and secondary grassland on the higher parts of the Southern and Central Tablelands (especially on the Great Dividing Range). Leaves die back each year and resprout just before flowering. Populations tend to contain few, scattered individuals; despite extensive surveys, only about 200 plants in total, from 20 populations, are known. **Low – The subject land is within the known distribution of this species, but no associated vegetation communities are present, and there are no records within 10 km.**	No
Dodonaea procumbens	Creeping Hop-bush	V	0	Creeping Hop-bush is found in the dry areas of the Monaro, between Michelago and Dalgety. Here it occurs mostly in Natural Temperate Grassland or Snow Gum Eucalyptus pauciflora Woodland. There is one population at Lake Bathurst (the northern-most	No

Scientific Name	Common Name	+Comm. Status	BioNet Records <10 km?	Likelihood of Occurrence	Test of significance required (Yes/No)
				occurrence of the species). Here it occurs in adjacent to the lake bed in grassland dominated by Corkscrew Grass *Austrostipa scabra* and Curly Sedge *Carex bichenoviana*. Creeping Hop-bush also occurs in South Australia and Victoria. Grows in Natural Temperate Grassland or fringing eucalypt woodland of Snow Gum (*Eucalyptus pauciflora*). Grows in open bare patches where there is little competition from other species. Does not persist in heavily grazed pastures of the Monaro. **Low – The subject land is within the known distribution of this species, but no associated vegetation communities are present, and there are no records within 10 km.**	
Eucalyptus aggregata	Black Gum	V	0	Black Gum is found in the NSW Central and Southern Tablelands, with small isolated populations in Victoria and the ACT. In NSW it 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 on alluvial soils, on cold, poorly-drained flats and hollows adjacent to creeks and small rivers. Often grows with other cold-adapted eucalypts, such as Snow Gum or White Sallee (*Eucalyptus pauciflora*), Manna or Ribbon Gum (*E. viminalis*), Candlebark (*E. rubida*), Black Sallee (*E. stellulata*) and Swamp Gum (*E. ovata*). Black Gum usually occurs in an open woodland formation with a grassy ground layer dominated either by River Tussock (*Poa labillardierei*) or Kangaroo Grass (*Themeda triandra*), but with few shrubs. **Low – The subject land is within the known distribution of this species, but no associated vegetation communities are present, and there are no records within 10 km.**	No
Eucalyptus kartzoffiana	Araluen Gum	V	0	Araluen Gum is found in the Araluen, Bendethera and Majors Creek area, south of Braidwood. Grows near rivers, in grassy or shrubby woodland or in wet sclerophyll forest on moderately fertile sandy soil on granite. **Low – The subject land is within the predicted distribution of this species, but no associated vegetation communities are present, and there are no records within 10 km.**	No
Eucalyptus macarthurii	Paddys River Box, Camden Woollybutt	E	0	Paddy's River Box has a moderately restricted distribution. It is currently recorded from the Moss Vale District to Kanangra-Boyd National Park. In the Southern Highlands it occurs mainly on private land, often as isolated individuals in, or on the edges of roads	No

Scientific Name	Common Name	+Comm. Status	BioNet Records <10 km?	Likelihood of Occurrence	Test of significance required (Yes/No)
				and paddocks. It is not well reserved but does occur within Cecil Hoskins Nature Reserve in the Southern Highlands. In Kanangra-Boyd National Park, isolated stands occur in the north-west part of the range on the Boyd Plateau. **Low – The subject land is within the known distribution of this species, but no associated vegetation communities are present, and there are no records within 10 km.**	
Eucalyptus nicholii	Narrow-leaved Black Peppermint	V	0	This species is sparsely distributed but widespread on the New England Tablelands from Nundle to north of Tenterfield, being most common in central portions of its range. Found largely on private property and roadsides, and occasionally in conservation reserves. Planted as urban trees, windbreaks and corridors. Typically grows in dry grassy woodland, on shallow soils of slopes and ridges. Found primarily on infertile soils derived from granite or metasedimentary rock. **Absent – The subject land is not within the distribution of this species, no associated vegetation communities are present, and there are no records within 10 km.**	No
Eucalyptus parvula	Small-leaved Gum	V	0	This species has a very small distribution in the eastern edge of the Monaro, in a narrow 100km strip from Big Badja Mountain (north-east of Cooma) to Nunnock Swamp in South-East Forests National Park, north-east of Bombala. Grows at and above an elevation of 1100 m in acidic soil on cold wet grassy flats. **Low – The subject land is within the known distribution of this species, but no associated vegetation communities are present, and there are no records within 10 km.**	No
Eucalyptus pulverulenta	Silver-leafed Gum	V	0	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. macrorhyncha*), Broad-leafed Peppermint (*E. dives*), Silvertop Ash (*E. sieberi*) and Apple Box (*E. bridgesiana*). **Low – The subject land is within the known distribution of this species, but no associated vegetation communities are present, and there are no records within 10 km.**	No
Eucalyptus robertsonii subsp. hemisphaerica	Robertson's Peppermint	V	0	Known only from the central tablelands of NSW, at small disjunct localities from north of Orange to Burraga. Locally frequent in grassy or dry sclerophyll woodland or forest, on lighter soils and often on granite. Usually found in closed grassy woodlands in locally	No

Scientific Name	Common Name	+Comm. Status	BioNet Records <10 km?	Likelihood of Occurrence	Test of significance required (Yes/No)
				sheltered sites. Habitats include quartzite ridges, upper slopes and a slight rise of shallow clay over volcanics. **Low – The subject land is not within the distribution of this species, but an associated vegetation community (PCT 3747) is present. However, and there are no records within 10 km.**	
Eucalyptus scoparia	Wallangarra White Gum	V	0	In NSW it is known from only three locations near Tenterfield, including Bald Rock National Park. In Queensland it is equally rare, occurring at three sites on the Stanthorp Plateau including one population in Girrawween National Park. Only one Queensland population has more than a dozen trees. **Absent – The subject land is not within the distribution of this species, no associated vegetation communities are present, and there are no records within 10 km.**	No
Gentiana baeuerlenii	Baeuerlen's Gentian	E	0	The original collection was made in the 1890s from 'Quidong', west of Bombala, however the species has not been recorded again in NSW. In the late 1980s a small population of less than 20 plants was discovered in Namadgi National Park in the ACT. This population has not been observed since the early 1990s and the last time it was found the population had declined to only four plants. In Namadgi National Park the species grows as an inter-tussock herb of grassland and sedgeland (*Poa labillardieri* and *Carex gaudichaudii*) in a moist area on the lower slope of a broad valley. It is an annual herb. **Low – The subject land is within the predicted distribution of this species, but no associated vegetation communities are present, and there are no records within 10 km.**	No
Grevillea iaspicula	Wee Jasper Grevillea	E	0	The Wee Jasper Grevillea is found only in the Wee Jasper area and on the shores of Lake Burrinjuck near Burrinjuck village on the border of the Southern Tablelands and South Western Slopes. Although there is no evidence that the Grevillea was widespread in the recent past, it is possible that some of its original population was submerged following the damming of Lake Burrinjuck. **Absent – The subject land is not within the distribution of this species, no associated vegetation communities are present, and there are no records within 10 km.**	No
Lepidium aschersonii	Spiny Peppercress	V	0	Not widespread, occurring in the marginal central-western slopes and north-western plains regions of NSW (and potentially the south western plains). In the north of the	No

Scientific Name	Common Name	+Comm. Status	BioNet Records <10 km?	Likelihood of Occurrence	Test of significance required (Yes/No)
				State recent surveys have recorded a number of new sites including Brigalow Nature Reserve, Brigalow State Conservation Area, Leard State Conservation Area and Bobbiwaa State Conservation Area. Also known from the West Wyalong in the south of the State. The Spiny Peppercress occurs in periodically wet sites such as gilgai depressions and the margins of freshwater and saline marshes and shallow lakes, usually on heavy clay soil. **Absent – The subject land is not within the distribution of this species, no associated vegetation communities are present, and there are no records within 10 km.**	
Lepidium hyssopifolium	Aromatic Peppercress	E	0	In NSW, there is a small population near Bathurst, one populations at Bungendore, and one near Crookwell. The species was also recorded near Armidale in 1945 and 1958; however it is not known whether it remains in this area. A specimen collected in the Cooma area about 100 years ago may also be Aromatic Peppercress. In NSW the species was known to have occurred in both woodland with a grassy understorey and in grassland. The species may be a disturbance opportunist, as it was discovered at the most recently discovered site (near Bungendore) following soil disturbance. **Absent – The subject land is not within the distribution of this species, no associated vegetation communities are present, and there are no records within 10 km.**	No
Leucochrysum albicans subsp. tricolor	Hoary Sunray	E	1	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. **c**	No
Monotoca rotundifolia	Trailing Monotoca	E	0	In NSW Trailing Monotoca is known only from Big Badja Hill and Wadbilliga Trig. There is an unconfirmed record from west of Kybean State Conservation Area. In Victoria it is only known from Brumby Point on the Nunniong Plateau. The New South Wales populations of Trailing Monotoca occur in shrubland or Snow Gum woodland from 1250 to 1360 m asl.	No

Scientific Name	Common Name	+Comm. Status	BioNet Records <10 km?	Likelihood of Occurrence	Test of significance required (Yes/No)
				Low – The subject land is within the known distribution of this species, but no associated vegetation communities are present, and there are no records within 10 km.	
Pelargonium sp. Striatellum	Omeo Storksbill	E	0	Known from only 4 locations in NSW, with three on lake-beds on the basalt plains of the Monaro and one at Lake Bathurst. A population at a fifth known site on the Monaro has not been seen in recent years. The only other known population is at Lake Omeo, Victoria. It occurs at altitudes between 680 to 1030 m. It is known to occur in the local government areas of Goulburn-Mulwaree, Cooma-Monaro and Snowy River, but may occur in other areas with suitable habitat; these may include Bombala, Eurobodalla, Palerang, Tumbarumba, Tumut, Upper Lachlan and Yass local government areas. It has a narrow habitat that is usually just above the high-water level of irregularly inundated or ephemeral lakes, in the transition zone between surrounding grasslands or pasture and the wetland or aquatic communities. It sometimes colonises exposed lake beds during dry periods. This species is likely to occur at other sites, especially on other Monaro basalt lakes; much potential habitat may occur on private land and has not been extensively surveyed. **Low – The subject land is within the known distribution of this species, but no associated vegetation communities are present, and there are no records within 10 km.**	No
Persoonia oxycoccoides		E	0	Persoonia oxycoccoides is endemic to New South Wales where it is currently known from the Wingecarribee Shire in the south-eastern portion of the Central Tablelands, with the easternmost records in the municipality of Kiama, and a south-western outlier at Tallong in Goulburn-Mulwaree Shire in the Southern Tablelands. The historical northern limit of distribution is Colo Vale; the eastern limit is Budderoo National Park and environs (between Jamberoo and Robertson); and the southern and western limits are Tallong. It is known from Budderoo and Morton National Parks, Upper Nepean State Conservation Area and Stingray Swamp Flora Reserve. **Absent – The subject land is not within the distribution of this species, no associated vegetation communities are present, and there are no records within 10 km.**	No
Pimelea bracteata		CE	0	*Pimelea bracteata* is endemic to New South Wales where it is currently known from the Southern Tablelands. The main areas of occurrence of *P. bracteata* are in the northern area of Kosciuszko National Park, Scabby Range Nature Reserve, neighbouring State	No

Scientific Name	Common Name	+Comm. Status	BioNet Records <10 km?	Likelihood of Occurrence	Test of significance required (Yes/No)
				Forests and freehold land. *Pimelea bracteata* occurs in wetlands and along waterways and stream edges in high altitude treeless subalpine valleys. It can also occur in wet heathland and closed heath. **Low – The subject land is within the known distribution of this species, but no associated vegetation communities are present, and there are no records within 10 km.**	
Pomaderris delicata	Delicate Pomaderris	CE	0	Delicate Pomaderris is known from only two sites; between Goulburn and Bungonia and south of Windellama (Cullula). At both known sites the Delicate Pomaderris grows in dry open forest dominated by Eucalyptus sieberi with a dense she-oak understorey. Soils are shallow and derived from sandstone and siltstone. Nothing is known about the response of the species to fire and other disturbance. **Absent – The subject land is not within the distribution of this species, no associated vegetation communities are present, and there are no records within 10 km.**	No
Pomaderris pallida	Pale Pomaderris	V	0	Pale Pomaderris has been recorded from near Kydra Trig (north-west of Nimmitabel), Tinderry Nature Reserve, the Queanbeyan River (near Queanbeyan), the Shoalhaven River (between Bungonia and Warri), the Murrumbidgee River west of the ACT and the Byadbo area in Kosciuszko National Park. It is also found along the Murrumbidgee River in the ACT and has been recently recorded in eastern Victoria. This species usually grows in shrub communities surrounded by Brittle Gum (*Eucalyptus mannifera*) and Red Stringybark (*E. macrorhyncha*) or Callitris spp. woodland. **Absent – Targeted surveys determined that this species does not occur within the subject land.**	No
Prasophyllum petilum	Tarengo Leek Orchid	E	0	Natural populations are known from a total of five sites in NSW. These are near Boorowa, Queanbeyan area, Ilford, Delegate and a newly recognised population c.10 km west 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 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. near Queanbeyan and within the grassy groundlayer dominated by Kanagroo Grass under Box-Gum Woodland at Ilford (and Hall, ACT).	No

Scientific Name	Common Name	+Comm. Status	BioNet Records <10 km?	Likelihood of Occurrence	Test of significance required (Yes/No)
				Low – The subject land is within the known distribution of this species, but no associated vegetation communities are present, and there are no records within 10 km.	
Pterostylis oreophila	Blue-tongued Greenhood	CE	0	In New South Wales, the Blue-tongued Greenhood is known from a few small populations within Kosciuszko National Park and a population of about 40 plants (possibly now extinct) in Bago State Forest and adjoining Crown Leases south of Tumut. The known distribution includes parts of the Snowy River, Tumbarumba and possibly Tumut Local Government Areas. The Blue-tongued Greenhood is also known from the Australian Capital Territory (Brindabella Range) and in montane areas of far north-eastern Victoria. **Low – The subject land is within the known distribution of this species, but no associated vegetation communities are present, and there are no records within 10 km.**	No
Rutidosis leiolepis	Monaro Golden Daisy	V	0	The Monaro Golden Daisy is found in scattered populations on the Monaro, and in low subalpine plains of Kosciuszko National Park (eg. Long Plain and Happy Jacks Plain). Found in Natural Temperate Grassland on the Monaro. Occurs in sub-alpine grasslands in Kosciuszko National Park. Grows on basalt, granite and sedimentary substrates. Apparently highly susceptible to grazing, being retained in only a small number of populations on roadsides, ungrazed reserves and very lightly grazed pastures on private lands. **Low – The subject land is within the known distribution of this species, but no associated vegetation communities are present, and there are no records within 10 km.**	No
Rutidosis leptorrhynchoides	Button Wrinklewort	E	0	The Button Wrinklewort is a perennial, multi-stemmed herb, sometimes with narrow basal leaves and with leafy flower stems to 35 cm tall. Local populations at Goulburn, the Canberra - Queanbeyan area, Bredbo, north of Captains Flat and Michelago. Other populations occur in Victoria. Occurs in Box-Gum Woodland, secondary grassland derived from Box-Gum Woodland or in Natural Temperate Grassland; and often in the ecotone between the two communities. Grows on soils that are usually shallow, stony red-brown clay loams; tends to occupy areas where there is relatively less competition from herbaceous species (either due to the shallow nature of the soils, or at some sites due to the competitive effect of woodland trees). Exhibits an ability to colonise disturbed	No

Scientific Name	Common Name	+Comm. Status	BioNet Records <10 km?	Likelihood of Occurrence	Test of significance required (Yes/No)
				areas (eg. vehicle tracks, bulldozer scrapings and areas of soil erosion). Normally flowers between December to March; plants do not usually flower until their second year. **Low – The subject land is within the known distribution of this species, but no associated vegetation communities are present, and there are no records within 10 km.**	
Senecio macrocarpus	Large-fruit Fireweed	V	0	Woodland, grassland, and sedgeland. Tablelands east and north of the ACT. Shrub or herb to about 0.7 m high or sprawling, arising from a perennial rootstock, sparsely to moderately greyish-cobwebbed hairy below, becoming hairless above. Leaves alternating up the stems, 4–15 cm long, 2–10 mm wide, entire to distantly and minutely toothed, rarely prominently toothed or shallowly and distantly lobed. Flower heads 7–18 mm long, plumply cylindrical, with 50–150 florets, 0 petals, surrounded by 13–33 appressed bracts. Flower heads usually in clusters of about 2–10. Flowers mostly winter–spring. **Low – The subject land is within the known distribution of this species, but no associated vegetation communities are present, and there are no records within 10 km.**	No
Swainsona recta	Small Purple-pea	E	0	Small Purple-pea was recorded historically from places such as Carcoar, Culcairn and Wagga Wagga where it is probably now extinct. Populations still exist in the Queanbeyan and Wellington-Mudgee areas. Over 80% of the southern population grows on a railway easement. It is also known from the ACT and a single population of four plants near Chiltern in Victoria. Grows in association with understorey dominants that include Kangaroo Grass *Themeda australis*, poa tussocks *Poa* spp. and spear-grasses *Austrostipa* spp. **Low – The subject land is within the known distribution of this species, but no associated vegetation communities are present, and there are no records within 10 km.**	No
Thesium australe	Austral Toadflax	V	0	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 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.	No

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				Low – The subject land is within the known distribution of this species, but no associated vegetation communities are present, and there are no records within 10 km.	
Westringia kydrensis	Kydra Westringia	E	0	The species occurs in heath on rocky areas at Kydra Reefs, south-east of Cooma. Occurs in heathland with larger shrubs of *Allocasuarina nana* and *Banksia canei*. Grows on shallow rocky granite or quartzite soils. **Low – The subject land is within the known distribution of this species, but no associated vegetation communities are present, and there are no records within 10 km.**	No
Xerochrysum palustre	Swamp Everlasting	V	0	The Swamp Everlasting *Xerochrysum palustre* is a relatively large, yellow-flowered native daisy growing in seasonal or permanent wetland habitats. The species is endemic to south-eastern Australia, where it occurs in Victoria, Tasmania, and New South Wales. There are about 35 wild populations containing in excess of 10,000 plants. Major threats to populations include wetland drainage and modification, weed invasion, grazing and climate change. The Swamp Everlasting is listed as Vulnerable under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (listed as *Bracteantha palustris*). *Xerochrysum palustre* is listed as threatened under the Victorian Flora and Fauna Guarantee Act 1988.This national Recovery Plan for the Swamp Everlasting details the species' distribution and biology, conservation status, threats, and recovery objectives and actions necessary to ensure its long-term survival. **Low – The subject land is within the known distribution of this species, but no associated vegetation communities are present, and there are no records within 10 km.**	No
Zieria adenophora	Araluen Zieria	CE	0	The species is currently known only from a single population of only 18 mature plants in 2020 near Araluen, south of Braidwood. There are two other historic records of the species, one from ‘near the Clyde’ in 1889 and the other from ‘Some of the remotest sources of Murrumbidgee at Maneroo’ in 1888. Searches in the Clyde River catchment have failed to re-locate the species there. Araluen Zieria occurs in shrubland amongst large granite boulders and granite tors on a steep west facing hillside. Plants generally flower profusely in the wild and produce plentiful quantities of seed. Major recruitment events appear rare. There was a significant seedling germination event around 2000 and the next major germination event was not until autumn 2020.	No

Scientific Name	Common Name	+Comm. Status	BioNet Records <10 km?	Likelihood of Occurrence	Test of significance required (Yes/No)
				Low – The subject land is within the predicted distribution of this species, but no associated vegetation communities are present, and there are no records within 10 km.	
Zieria citriodora	Lemon Zieria	V	0	The species is known from two sites in NSW - Numerella and Kybean Trig - east of Cooma. The species is also very rare in Victoria. Lemon Zieria grows in low woodland of *Eucalyptus mannifera - E. macrorhyncha - E. dives* with a shrub understorey . Flowering occurs from late winter to summer. **Absent – Targeted surveys determined that this species does not occur within the subject land.**	No
MIGRATORY MARINE BIRDS					
Apus pacificus	Fork-tailed Swift	C,J,K,M	0	In NSW, the Fork-tailed Swift is recorded in all regions. Many records occur east of the Great Divide; however, a few populations have been found west of the Great Divide. These are widespread but scattered further west of the line joining Bourke and Dareton. Sightings have been recorded at Milparinka, the Bulloo River and Thurloo Downs (Higgins 1999). The Fork-tailed Swift is almost exclusively aerial, flying from less than 1 m to at least 300 m above ground and probably much higher. **Low – The subject land is within the predicted distribution of this species, but no associated vegetation communities are present, and there are no records within 10 km.**	No
MIGRATORY TERRESTRIAL BIRDS					
Hirundapus caudacutus	White-throated Needletail	V,C,J,K, M	2	The White-throated Needletail is widespread in eastern and south-eastern. In eastern Australia, it is recorded in all coastal regions of Queensland and NSW, extending inland to the western slopes of the Great Divide and occasionally onto the adjacent inland plains. 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 aerial, it has been stated that conventional habitat descriptions are inapplicable, but there are, nevertheless, certain preferences exhibited by the species. Although they occur over most types of habitat, 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.	Yes

Scientific Name	Common Name	+Comm. Status	BioNet Records <10 km?	Likelihood of Occurrence	Test of significance required (Yes/No)
				High – The subject land is within the known distribution of the species, an associated vegetation community (PCT 3747) is present, there are records within 10 km.	
Motacilla flava	Yellow Wagtail	C,J,K,M	0	Widespread wagtail, favouring wet meadows, marshland, grassy and muddy lakeshores. Occurs in fields and often near livestock during migration. Like other wagtails, walks on ground and pumps its long, white-sided tail up and down. Plumage highly variable, but breeding male wholly bright yellow below, with greenish back. Male head pattern varies regionally: in U.K. has greenish head with yellow eyebrow; in northern Europe head slaty gray overall; in central and southwest Europe head blue-gray with white eyebrow. Individuals of several subspecies may winter together. Female and nonbreeding plumages drabber and paler, with ghosting of male patterns. Uncertainty exists regarding this species presence outside of northern Europe. **Low – This species is only infrequently recorded in Australia and has not been seen within 10 km of the subject land. No 'core range' for the species has been identified, but habitat includes wet grasslands and wetlands, with roosting observed chiefly within mangroves and similarly dense vegetation. Given the lack of local records and the broadly unsuitable habitat, it is unlikely that the species would make significant use of the subject land.**	No
MIGRATORY WETLANDS BIRD SPECIES					
Actitis hypoleucos	Common Sandpiper	C,J,K,M	0	Found along all coastlines of Australia and in many areas inland, the Common Sandpiper is widespread in small numbers. The population when in Australia is concentrated in northern and western Australia. The species utilises a wide range of coastal wetlands and some inland wetlands, with varying levels of salinity, and is mostly found around muddy margins or rocky shores and rarely on mudflats. The Common Sandpiper has been recorded in estuaries and deltas of streams, as well as on banks farther upstream; around lakes, pools, billabongs, reservoirs, dams and claypans, and occasionally piers and jetties. The muddy margins utilised by the species are often narrow and may be steep. The species is often associated with mangroves, and sometimes found in areas of mud littered with rocks or snags. **Low – The subject land is within the known distribution of this species, but no associated vegetation communities are present, and there are no records within 10 km. However, no suitable wetland habitat is present within the subject land.**	No

Scientific Name	Common Name	+Comm. Status	BioNet Records <10 km?	Likelihood of Occurrence	Test of significance required (Yes/No)
Calidris acuminata	Sharp-tailed Sandpiper	V,C,J,K,M	1	The Sharp-tailed Sandpiper spends the non-breeding season in Australia with small numbers occurring regularly in New Zealand. Most of the population migrates to Australia, mostly to the south-east and are widespread in both inland and coastal locations and in both freshwater and saline habitats. Many inland records are of birds on passage. In Australasia, the Sharp-tailed Sandpiper prefers muddy edges of shallow fresh or brackish wetlands, with inundated or emergent sedges, grass, saltmarsh or other low vegetation. This includes lagoons, swamps, lakes and pools near the coast, and dams, waterholes, soaks, bore drains and bore swamps, saltpans and hypersaline saltlakes inland. They also occur in saltworks and sewage farms. They use flooded paddocks, sedgelands and other ephemeral wetlands, but leave when they dry. They use intertidal mudflats in sheltered bays, inlets, estuaries or seashores, and swamps and creeks lined with mangroves. They tend to occupy coastal mudflats mainly after ephemeral terrestrial wetlands have dried out, moving back during the wet season. They may be attracted to mats of algae and water weed either floating or washed up around terrestrial wetlands. **Low – The subject land is within the predicted distribution of the species, no associated vegetation communities are present, but there is a record within 10 km. However, no suitable wetland habitat is present within the subject land.**	No
Calidris ferruginea	Curlew Sandpiper	CE,C,J,K,M	0	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. In NSW, they are widespread east of the Great Divide, especially in coastal regions. They are occasionally recorded in the Tablelands and are widespread in the Riverina and south-west NSW, with scattered records elsewhere. 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 – The subject land is within the predicted distribution of the species, no associated vegetation communities are present, and there are no records within 10 km.**	No

Scientific Name	Common Name	+Comm. Status	BioNet Records <10 km?	Likelihood of Occurrence	Test of significance required (Yes/No)
Calidris melanotos	Pectoral Sandpiper	J,K,M	0	The Pectoral Sandpiper breeds in northern Russia and North America. Within Australasia, the Pectoral Sandpiper prefers shallow fresh to saline wetlands. In New South Wales (NSW), the Pectoral Sandpiper is widespread, but scattered. Records exist east of the Great Divide, from Casino and Ballina, south to Ulladulla. West of the Great Divide, the species is widespread in the Riverina and Lower Western regions. The species is usually found in coastal or near coastal habitat but occasionally found further inland. It prefers wetlands that have open fringing mudflats and low, emergent or fringing vegetation, such as grass or samphire. The species has also been recorded in swamp overgrown with lignum. They forage in shallow water or soft mud at the edge of wetlands. **Low – The subject land is within the known distribution of this species, but no associated vegetation communities are present, and there are no records within 10 km. However, no suitable wetland habitat is present within the subject land.**	No
Calidris ruficollis	Red-necked Stint	C,J,K	1	In Australasia, the Red-necked Stint is mostly found in coastal areas, including in sheltered inlets, bays, lagoons and estuaries with intertidal mudflats, often near spits, islets and banks and, sometimes, on protected sandy or coralline shores. They also occur in saltworks and sewage farms; saltmarsh; ephemeral or permanent shallow wetlands near the coast or inland, including lagoons, lakes, swamps, riverbanks, waterholes, bore drains, dams, soaks and pools in salt flats. They sometimes use flooded paddocks or damp grasslands. They have occasionally been recorded on dry gibber plains, with little or no perennial vegetation. **Low – The subject land is within the known distribution of this species, no associated vegetation communities are present, but there is a single record within 10 km, located outside the assessment area. However, no suitable wetland habitat is present within the subject land.**	No
Gallinago hardwickii	Latham's Snipe	V,J,K,M	0	Latham's Snipe is a non-breeding visitor to south-eastern Australia and is a passage migrant through northern Australia (i.e. it travels through northern Australia to reach non-breeding areas located further south). The species has been recorded along the east coast of Australia from Cape York Peninsula through to south-eastern South Australia (including the Adelaide plains and Mount Lofty Ranges, and the Eyre Peninsula). The range extends inland over the eastern tablelands in south-eastern Queensland (and occasionally from Rockhampton in the north), and to west of the Great Dividing Range in New South. The species is widespread in Tasmania and is found in all regions of Victoria	No

Scientific Name	Common Name	+Comm. Status	BioNet Records <10 km?	Likelihood of Occurrence	Test of significance required (Yes/No)
				except for the north-west. Most birds spend the non-breeding period at sites located south of the Richmond River in New South Wales. In Australia, Latham's Snipe occurs in permanent and ephemeral wetlands up to 2000 m above sea-level. They usually inhabit open, freshwater wetlands with low, dense vegetation (e.g. swamps, flooded grasslands or heathlands, around bogs and other water bodies. However, they can also occur in habitats with saline or brackish water, in modified or artificial habitats, and in habitats located close to humans or human activity. **Low – The subject land is within the predicted distribution of the species, no associated vegetation communities are present, and there are no records within 10 km.**	
OTHER MATTERS PROTECTED BY THE EPBC Act					
MARINE BIRDS					
Actitis hypoleucos	Common Sandpiper	C,J,K,M	0	Found along all coastlines of Australia and in many areas inland, the Common Sandpiper is widespread in small numbers. The population when in Australia is concentrated in northern and western Australia. The species utilises a wide range of coastal wetlands and some inland wetlands, with varying levels of salinity, and is mostly found around muddy margins or rocky shores and rarely on mudflats. The Common Sandpiper has been recorded in estuaries and deltas of streams, as well as on banks farther upstream; around lakes, pools, billabongs, reservoirs, dams and claypans, and occasionally piers and jetties. The muddy margins utilised by the species are often narrow and may be steep. The species is often associated with mangroves, and sometimes found in areas of mud littered with rocks or snags. **Low – The subject land is within the known distribution of this species, but no associated vegetation communities are present, and there are no records within 10 km.**	No test of significance required for marine species. No impact anticipated.
Apus pacificus	Fork-tailed Swift	C,J,K,M	0	In NSW, the Fork-tailed Swift is recorded in all regions. Many records occur east of the Great Divide; however, a few populations have been found west of the Great Divide. These are widespread but scattered further west of the line joining Bourke and Dareton. Sightings have been recorded at Milparinka, the Bulloo River and Thurloo Downs (Higgins 1999). The Fork-tailed Swift is almost exclusively aerial, flying from less than 1 m to at least 300 m above ground and probably much higher.	No test of significance required for marine species. No impact anticipated.

Scientific Name	Common Name	+Comm. Status	BioNet Records <10 km?	Likelihood of Occurrence	Test of significance required (Yes/No)
				Low – The subject land is within the predicted distribution of this species, but no associated vegetation communities are present, and there are no records within 10 km.	
Bubulcus ibis as Ardea ibis	Cattle Egret	M	0	In Australia it is most widespread and common in north-eastern Western Australia across the Top End, Northern Territory, and in south-eastern Australia from Bundaberg, Queensland to Port Augusta, South Australia, including Tasmania. The Cattle Egret is found in grasslands, woodlands and wetlands, and is not common in arid areas. It also uses pastures and croplands, especially where drainage is poor. Will also forage at garbage dumps and is often seen with cattle and other stock. **Low – The subject land is within the predicted distribution of this species, but no associated vegetation communities are present, and there are no records within 10 km.**	No test of significance required for marine species. No impact anticipated.
Calidris acuminata	Sharp-tailed Sandpiper	V,C,J,K, M	1	The Sharp-tailed Sandpiper spends the non-breeding season in Australia with small numbers occurring regularly in New Zealand. Most of the population migrates to Australia, mostly to the south-east and are widespread in both inland and coastal locations and in both freshwater and saline habitats. Many inland records are of birds on passage. In Australasia, the Sharp-tailed Sandpiper prefers muddy edges of shallow fresh or brackish wetlands, with inundated or emergent sedges, grass, saltmarsh or other low vegetation. This includes lagoons, swamps, lakes and pools near the coast, and dams, waterholes, soaks, bore drains and bore swamps, saltpans and hypersaline saltlakes inland. They also occur in saltworks and sewage farms. They use flooded paddocks, sedgelands and other ephemeral wetlands, but leave when they dry. They use intertidal mudflats in sheltered bays, inlets, estuaries or seashores, and swamps and creeks lined with mangroves. They tend to occupy coastal mudflats mainly after ephemeral terrestrial wetlands have dried out, moving back during the wet season. They may be attracted to mats of algae and water weed either floating or washed up around terrestrial wetlands. **Low – The subject land is within the predicted distribution of the species, no associated vegetation communities are present, but there is a record within 10 km.**	No test of significance required for marine species. No impact anticipated.
Calidris ferruginea	Curlew Sandpiper	CE,C,J,K ,M	0	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 during the breeding season when many non-breeding one-year old birds	No test of significance required for marine species.

Scientific Name	Common Name	+Comm. Status	BioNet Records <10 km?	Likelihood of Occurrence	Test of significance required (Yes/No)
				remain in Australia rather than migrating north. In NSW, they are widespread east of the Great Divide, especially in coastal regions. They are occasionally recorded in the Tablelands and are widespread in the Riverina and south-west NSW, with scattered records elsewhere. Curlew Sandpipers mainly occur on intertidal mudflats in sheltered coastal areas, such as estuaries, bays, inlets and lagoons, and 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 – The subject land is within the predicted distribution of the species, no associated vegetation communities are present, and there are no records within 10 km.**	No impact anticipated.
Calidris melanotos	Pectoral Sandpiper	J,K,M	0	The Pectoral Sandpiper breeds in northern Russia and North America. Within Australasia, the Pectoral Sandpiper prefers shallow fresh to saline wetlands. In New South Wales (NSW), the Pectoral Sandpiper is widespread but scattered. Records exist east of the Great Divide, from Casino and Ballina, south to Ulladulla. West of the Great Divide, the species is widespread in the Riverina and Lower Western regions. The species is usually found in coastal or near coastal habitat but occasionally found further inland. It prefers wetlands that have open fringing mudflats and low, emergent or fringing vegetation, such as grass or samphire. The species has also been recorded in swamp overgrown with lignum. They forage in shallow water or soft mud at the edge of wetlands. **Low – The subject land is within the known distribution of this species, but no associated vegetation communities are present, and there are no records within 10 km.**	No test of significance required for marine species. No impact anticipated.
Chalcities osculans as Chrysococcyx osculans	Black-eared Cuckoo	M	0	The Black-eared Cuckoo is widespread on mainland Australia, but avoids the wet, heavily forested areas on the east coast and the south-west corner of Western Australia. The species is found in drier country where species such as mulga and mallee form open woodlands and shrublands. It is often found in vegetation along creek beds. **Low – While the subject land is within the known distribution of this species, it is mostly associated with inland Australia and with dryland ecosystems, including**	No test of significance required for marine species. No impact anticipated.

Scientific Name	Common Name	+Comm. Status	BioNet Records <10 km?	Likelihood of Occurrence	Test of significance required (Yes/No)
				mulga and mallee. These habitat types do not occur within the subject land, and this species has not been recorded within 10 km of the subject land.	
Gallinago hardwickii	Latham's Snipe	V,J,K,M	0	Latham's Snipe is a non-breeding visitor to south-eastern Australia and is a passage migrant through northern Australia (i.e. it travels through northern Australia to reach non-breeding areas located further south). The species has been recorded along the east coast of Australia from Cape York Peninsula through to south-eastern South Australia (including the Adelaide plains and Mount Lofty Ranges, and the Eyre Peninsula). The range extends inland over the eastern tablelands in south-eastern Queensland (and occasionally from Rockhampton in the north), and to west of the Great Dividing Range in New South. The species is widespread in Tasmania and is found in all regions of Victoria except for the north-west. Most birds spend the non-breeding period at sites located south of the Richmond River in New South Wales. In Australia, Latham's Snipe occurs in permanent and ephemeral wetlands up to 2000 m above sea-level. They usually inhabit open, freshwater wetlands with low, dense vegetation (e.g. swamps, flooded grasslands or heathlands, around bogs and other water bodies. However, they can also occur in habitats with saline or brackish water, in modified or artificial habitats, and in habitats located close to humans or human activity. **Low – The subject land is within the predicted distribution of the species, no associated vegetation communities are present, and there are no records within 10 km.**	No test of significance required for marine species. No impact anticipated.
Haliaeetus leucogaster	White-bellied Sea-Eagle	M	0	The White-bellied Sea-eagle is distributed around the Australian coastline, including Tasmania, and well inland along rivers and wetlands of the Murray Darling Basin. In New South Wales it is widespread along the east coast, and along all major inland rivers and waterways. Habitats are characterised by the presence of large areas of open water including larger rivers, swamps, lakes, and the sea. Occurs at sites near the sea or sea-shore, such as around bays and inlets, beaches, reefs, lagoons, estuaries and mangroves; and at, or in the vicinity of freshwater swamps, lakes, reservoirs, billabongs and saltmarsh. Terrestrial habitats include coastal dunes, tidal flats, grassland, heathland, woodland, and forest (including rainforest). Breeding habitat consists of mature tall open forest, open forest, tall woodland, and swamp sclerophyll forest close to foraging habitat. Nest trees are typically large emergent eucalypts and often have emergent dead branches or large dead trees nearby which are used as ‘guard roosts’. Nests are large structures built from sticks and lined with leaves or grass. Feed mainly	No test of significance required for marine species. No impact anticipated.

Scientific Name	Common Name	+Comm. Status	BioNet Records <10 km?	Likelihood of Occurrence	Test of significance required (Yes/No)
				on fish and freshwater turtles, but also waterbirds, reptiles, mammals and carrion. Hunts its prey from a perch or whilst in flight (by circling slowly, or by sailing along 10–20 m above the shore). Prey is usually carried to a feeding platform or (if small) consumed in flight, but some items are eaten on the ground. May be solitary or live in pairs or small family groups consisting of a pair of adults and dependent young. Typically lays two eggs between June and September with young birds remaining in the nest for 65-70 days. **Absent – The subject land is within the known distribution of the species, and an associated vegetation community (PCT 3747) is present. However, there are no records within 10 km, and no suitable habitat is present within the subject land.**	
Hirundapus caudacutus	White-throated Needletail	V,C,J,K, M	2	The White-throated Needletail is widespread in eastern and south-eastern. In eastern Australia, it is recorded in all coastal regions of Queensland and NSW, extending inland to the western slopes of the Great Divide and occasionally onto the adjacent inland plains. 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 aerial, it has been stated that conventional habitat descriptions are inapplicable, but there are, nevertheless, certain preferences exhibited by the species. Although they occur over most types of habitat, 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. **High – The subject land is within the known distribution of the species, an associated vegetation community (PCT 3747) is present, there are records within 10 km.**	No test of significance for marine species. Impacts of project likely to be minimal. Separately assessed as a vulnerable and migratory species.
Lathamus discolor	Swift Parrot	CE,M	0	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. 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*, Forest Red Gum *E. tereticornis*, Mugga Ironbark *E. sideroxylon*, and White Box *E. albens*.	No test of significance required for marine species. No impact anticipated.

Scientific Name	Common Name	+Comm. Status	BioNet Records <10 km?	Likelihood of Occurrence	Test of significance required (Yes/No)
				Absent – The subject land is within the known distribution of the species, and an associated vegetation community (PCT 3747) is present. However, there are no records within 10 km, no suitable foraging habitat is present within the subject land, and the species does not breed locally.	
Merops ornatus	Rainbow Bee-eater	M	0	The Rainbow Bee-eater is distributed across much of mainland Australia, and occurs on several near-shore islands. It is not found in Tasmania, and is thinly distributed in the most arid regions of central and Western Australia (Barrett et al. 2003; Blakers et al. 1984; Higgins 1999). The Rainbow Bee-eater occurs mainly in open forests and woodlands, shrublands, and in various cleared or semi-cleared habitats, including farmland and areas of human habitation (Higgins 1999). It usually occurs in open, cleared or lightly-timbered areas that are often, but not always, located in close proximity to permanent water. The Rainbow Bee-eater occurs in open woodlands and shrublands, including mallee, and in open forests that are usually dominated by eucalypts. It also occurs in grasslands (Gibson 1986; Jones 1986; Leach 1988; Longmore 1978; McEvey & Middleton 1968; Saunders & Ingram 1995; Woinarski et al. 1988, 1989) and, especially in arid or semi-arid areas, in riparian, floodplain or wetland vegetation assemblages. **Low – Although the subject land is located within the known distribution of this species, and it is known to utilise a wide range of habitat types, this species has not been recorded within 10 km of the subject land.**	No test of significance required for marine species. No impact anticipated.
Motacilla flava	Yellow Wagtail	C,J,K,M	0	Widespread wagtail, favouring wet meadows, marshland, grassy and muddy lakeshores. Occurs in fields and often near livestock during migration. Like other wagtails, walks on ground and pumps its long, white-sided tail up and down. Plumage highly variable, but breeding male wholly bright yellow below, with greenish back. Male head pattern varies regionally: in U.K. has greenish head with yellow eyebrow; in northern Europe head slaty gray overall; in central and southwest Europe head blue-gray with white eyebrow. Individuals of several subspecies may winter together. Female and nonbreeding plumages drabber and paler, with ghosting of male patterns. Uncertainty exists regarding this species presence outside of northern Europe. **Low – This species is only infrequently recorded in Australia and has not been seen within 10 km of the subject land. No 'core range' for the species has been identified, but habitat includes wet grasslands and wetlands, with roosting observed chiefly within mangroves and similarly dense vegetation. Given the lack**	No test of significance required for marine species. No impact anticipated.

Scientific Name	Common Name	+Comm. Status	BioNet Records <10 km?	Likelihood of Occurrence	Test of significance required (Yes/No)
				of local records and the broadly unsuitable habitat, it is unlikely that the species would make significant use of the subject land.	
Myiagra cyanoleuca	Satin Flycatcher	M	0	The Satin Flycatcher is found along the east coast of Australia from far northern Queensland to Tasmania, including south-eastern South Australia. It is also found in New Guinea. The Satin Flycatcher is not a commonly seen species, especially in the far south of its range, where it is a summer breeding migrant. The Satin Flycatcher is found in tall forests, preferring wetter habitats such as heavily forested gullies, but not rainforests. The Satin Flycatcher takes insects on the wing, foraging actively from perches in the mid to upper canopy. After the breeding season, it may forage in loose groups, usually of adults and their newly-fledged young, in drier, more open forests. The Satin Flycatcher nests in loose colonies of two to five pairs nesting at intervals of about 20 m - 50 m apart. It builds a broad-based, cup-shaped nest of shredded bark and grass, coated with spider webs and decorated with lichen. The nest is placed on a bare, horizontal branch, with overhanging foliage, about 3 m - 25 m above the ground. Both sexes build the nest, incubate the eggs and feed the young. Nests may be parasitised by the Brush Cuckoo and, sometimes, the Pallid Cuckoo, Horsfield's Bronze-Cuckoo or the Golden Bronze-Cuckoo. **Low – Although the subject land is located within the known distribution of this species, and it is known to utilise a wide range of habitat types (with preference to heavily vegetated gullies in eucalypt-dominated forests and taller woodlands), this species has not been recorded within 10 km of the subject land.**	No test of significance required for marine species. No impact anticipated.
Neophema chrysostoma	Blue-winged Parrot	V,M	0	Blue-winged Parrots occur in range of habitats from coastal to semi-arid and favour grasslands and grassy woodlands. Mainly found in Tasmania and Victoria but some populations can be found in Western NSW and Eastern SA. **Low – The subject land is within the known distribution of this species, but no associated vegetation communities are present, and there are no records within 10 km.**	No test of significance required for marine species. No impact anticipated.
Pterodroma cervicalis	White-necked Petrel	M	0	In Australia, the White-necked Petrel is found on Phillip Island and Norfolk Island. The species breeds exclusively on Macauley Island in the Kermadec Islands (New Zealand) and has a smaller breeding colony on Phillip Island, off Norfolk Island. It used to breed on Raoul Island in the Kermadec Islands but was extirpated due to predation by introduced species like rats and cats. During the non-breeding season, it migrates	No test of significance required for marine species. No impact anticipated.

Scientific Name	Common Name	+Comm. Status	BioNet Records <10 km?	Likelihood of Occurrence	Test of significance required (Yes/No)
				throughout a large portion of the Pacific Ocean, including the tropical and sub-tropical North Pacific. **Low – The species is highly unlikely to make use of inland sites. However, there are no records within 10 km.**	
Rhipidura rufifrons	Rufous Fantail	M	0	The Rufous Fantail is found in northern and eastern coastal Australia, being more common in the north. It is also found in New Guinea, the Solomon Islands, Sulawesi and Guam. The Rufous Fantail is found in rainforest, dense wet forests, swamp woodlands and mangroves, preferring deep shade, and is often seen close to the ground. During migration, it may be found in more open habitats or urban areas. The Rufous Fantail feeds on insects, which it gleans from the middle and lower levels of the canopy. It is a very active feeder and constantly fans tail and flicks wings and body while foraging. The Rufous Fantail builds a small compact cup nest, of fine grasses bound with spider webs, that is suspended from a tree fork about 5 m from the ground. The bottom of the nest is drawn out into a long stem. Both sexes share nest-building, incubation and feeding of the young. One or two broods may be raised in a season. **Low – Although the subject land is located within the known distribution of this species, and it is known to utilise a wide range of habitat types, this species has not been recorded within 10 km of the subject land.**	No test of significance required for marine species. No impact anticipated.
Rostratula australis as Rostratula benghalensis (sensu lato)	Australian Painted Snipe	E,M	0	The Australian Painted Snipe is restricted to Australia. Most records 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. Forages nocturnally on mud-flats and in shallow water. Feeds on worms, molluscs, insects and some plant-matter. **Low – The subject land is within the known distribution of this species, but no associated vegetation communities are present, and there are no records within 10 km.**	No test of significance required for marine species. No impact anticipated.

+ Comm. Status: V=Vulnerable, E=Endangered, CE=Critically Endangered, C=CAMBA, J=JAMBA, K=ROKAMBA, M=Marine species.

EPBC Act-listed Critically Endangered and Endangered Species

***Melanodryas cucullata cucullata* – South-eastern Hooded Robin**	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of a population	The project will impact up to 4.94 ha of potential habitat for this species. The subject land is not within a priority management area for the species. This species prefers lightly wooded country, typically open eucalypt woodlands and acacia scrub, often in or near open areas and clearings. It is considered sedentary with local seasonal movements. The habitat within the subject land is partially suitable for this species. However, the species was not detected during the field surveys, and there are no records within 10 km of the subject land. It is, therefore, unlikely that a population exists onsite. Considering the above, this project is unlikely to lead to the long-term decrease of any population of this species.
Reduce the area of occupancy of the species	As indicated above, it is unlikely that an established population exists at the site. As such, the current area of occupancy will not likely be significantly reduced.
Fragment an existing population into two or more populations	As indicated above, it is unlikely that an established population exists at the site. This project is not expected to widen the existing fragmentation or split any population into two or more.
Adversely affect habitat critical to the survival of a species	Habitat critical to the survival of this species includes remnants of structurally diverse habitats are essential, typically featuring mature eucalypts, saplings, small shrubs, and a ground layer of moderately tall native grasses. Standing dead or live trees and tree stumps are important for nesting, roosting, and foraging. The habitat within the subject land is partially suitable for this species. Considering the inability to detect the species during field surveys and the absence of records within 10 km of the subject land, the habitat within the subject land is unlikely to be critical habitat for the species.
Disrupt the breeding cycle of a population	As indicated above, it is unlikely that an established population exists at the site. Therefore, this project would not disrupt the breeding cycle of a population.
Modify, destroy, remove, isolate, or decrease the availability or quality of habitat to the extent that the species is likely to decline	The project will remove/modify up to 4.94 ha of associated PCT for the species. This project will not isolate any habitat for this species. This removal/modification of available habitat is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat	There is the potential for works to introduce invasive species to the project site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	Clearing of woodlands, modification/destruction of ground habitat through grazing, removal of litter and fallen timber, and habitat loss and degradation are the main threats to this species. Although this project will exacerbate the impacts of habitat loss due to the clearing/modifying of up to 4.94 ha of associated PCT, this should not significantly interfere with the recovery of the species within the region.
Conclusion	**No significant impact**

***Dasyurus maculatus* – Spotted-tailed Quoll**	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of a population	The project will impact up to 4.94 ha of potential habitat for this species. The subject land is not within a priority management area for the species. The species uses communal 'latrine sites', often on flat rocks among boulder fields, rocky cliff faces or along rocky stream beds or banks. The subject land is partially suitable but lacks key habitat features for this species. Furthermore, this species was not detected during field surveys, and there are no records within 10 km of the subject land. It is, therefore, unlikely that a population exists onsite. Considering the above, this project is unlikely to lead to the long-term decrease of any population of this species.
Reduce the area of occupancy of the species	As indicated above, it is unlikely that an established population exists at the site. As such, the current area of occupancy will not likely be significantly reduced.
Fragment an existing population into two or more populations	As indicated above, it is unlikely that an established population exists at the site. This project is not expected to widen the existing fragmentation or split any population into two or more.
Adversely affect habitat critical to the survival of a species	Habitats critical to the survival of the Spotted-tailed Quoll include rainforest, open forest, woodland, coastal heath and inland riparian forest, from the sub-alpine zone to the coastline. They use communal 'latrine sites', often on flat rocks among boulder fields, rocky cliff faces or along rocky stream beds or banks. The subject land lacks key habitat features for this species, and there are no records within the search area. As such, the subject land is unlikely to constitute a habitat critical to the survival of the species.
Disrupt the breeding cycle of a population	As indicated above, it is unlikely that an established population exists at the site. Therefore, this project would not disrupt the breeding cycle of a population.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The project will remove/modify up to 4.94 ha of associated PCT for the species. This project will not isolate any habitat for this species. This removal/modification of available habitat is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species habitat	There is the potential for works to introduce invasive species to the project site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	Loss, modification and fragmentation of habitat, competition with introduced predators such as cats and foxes, deliberate poisoning, shooting and trapping, primarily in response to chicken predation, vehicle strikes and poisoning from eating cane toads are the key threats to this species. Although this project will exacerbate the loss of habitat, due to the clearing/modifying of up to 4.94 ha of associated PCT, which is not ideal habitat, and this should not significantly interfere with the recovery of the species within the region.
Conclusion	**No significant impact**

EPBC Act-listed Vulnerable Species

***Aphelocephala leucopsis* – Southern Whiteface**	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of an important population of a species	The project will impact up to 4.94 ha of associated PCT for this species. The subject land is not within a priority management area for the species, nor is it at the edge of the species distribution. This species was not detected during field surveys, and of the four records within 10 km of the subject land, none are located within the assessment area. Given that the subject land is not within a priority management area for the species, and it is not at the edge of the species distribution, even if a population occurred within the subject land, it would not fit the definition of an important population under the EPBC Act. Considering the above, it is unlikely that the project will lead to a long-term decrease in the size of an important population of this species.
Reduce the area of occupancy of an important population	As indicated above, if a population were to occur within the subject land, it would not fit the definition of an important population under the EPBC Act.
Fragment an existing important population into two or more populations	As indicated above, if a population were to occur within the subject land, it would not fit the definition of an important population under the EPBC Act.
Adversely affect habitat critical to the survival of a species	Habitat critical to the survival of the Southern Whiteface includes areas of relatively undisturbed open woodlands and shrublands with an understorey of grasses or shrubs, or both; habitat with low tree densities and herbaceous understory litter cover which provides essential foraging habitat; and living and dead trees with hollows and crevices for roosting and nesting. The subject land contains several hollow-bearing trees. However, the vegetation within the footprint has been substantially disturbed. It, therefore, does not constitute relatively undisturbed open woodlands. Considering the above and that, of the four records within 10 km of the subject land, none are located within the assessment area, the subject land is unlikely to contain habitat critical to the survival of the species.
Disrupt the breeding cycle of an important population	As indicated above, if a population were to occur within the subject land, it would not fit the definition of an important population under the EPBC Act.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The project will remove/modify up to 4.94 ha of associated PCT for the species. The project will not isolate any habitat for this species. The removal/modification of vegetation at the project site is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species habitat	There is the potential for works to introduce invasive species to the project site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	Habitat disturbance and destruction, Climate change, and predation are the possible threats to this species. Although this project will exacerbate disturbance and destruction of habitats, due to the clearing/modifying of up to 4.94 ha of associated PCT, this loss/modification is unlikely to significantly interfere with the recovery of the species within the region.

Aphelocephala leucopsis – Southern Whiteface	
Conclusion	**No significant impact**

***Climacteris picumnus victoriae* – Brown Treecreeper (eastern subspecies)**	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of an important population of a species	The project will impact up to 4.94 ha of associated PCT for this species. The subject land is not within a priority management area for the species, nor is it at the edge of the species distribution. This species was not detected during field surveys, and of the three records within 10 km of the subject land, none are located within the assessment area. Given that the subject land is not within a priority management area for the species, and it is not at the edge of the species distribution, even if a population occurred within the subject land, it would not fit the definition of an important population under the EPBC Act. Considering the above, it is unlikely that the project will lead to a long-term decrease in the size of an important population of this species.
Reduce the area of occupancy of an important population	As indicated above, if a population were to occur within the subject land, it would not fit the definition of an important population under the EPBC Act.
Fragment an existing important population into two or more populations	As indicated above, if a population were to occur within the subject land, it would not fit the definition of an important population under the EPBC Act.
Adversely affect habitat critical to the survival of a species	The habitat critical to the survival of the Brown Treecreeper (eastern subspecies) typically includes relatively undisturbed grassy woodlands with a native understorey. Vegetation within the footprint has been substantially disturbed. It therefore does not constitute relatively undisturbed grassy woodlands with a native understorey. Considering the above and that, of the three records within 10 km of the subject land, none are located within the assessment area, the subject land is unlikely to contain habitat critical to the survival of the species.
Disrupt the breeding cycle of an important population	As indicated above, if a population were to occur within the subject land, it would not fit the definition of an important population under the EPBC Act.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The project will remove/modify up to 4.94 ha of associated PCT for the species. The project will not isolate any habitat for this species. The removal/modification of vegetation at the project site is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species habitat	There is the potential for works to introduce invasive species to the project site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	The major threats to this species include historical and ongoing loss of woodland, forest, and mallee habitats due to agriculture, forestry, mining, and residential development; fragmentation of remaining woodland and forest, which isolates populations and leads to local extinctions; habitat degradation, particularly the loss of hollow-bearing trees and fallen timber from firewood collection and overgrazing; and insufficient eucalypt regeneration due to overgrazing and frequent fires. While this project may contribute to the clearing/modifying of up to 4.94 ha of associated PCT and the loss of some hollow-bearing trees, this should not significantly interfere with the recovery of the species within the region.
Conclusion	**No significant impact**

***Hirundapus caudacutus* – White-throated Needletail**	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of an important population of a species	The project will impact up to 4.94 ha of potential habitat for this species. The White-throated Needletail is migratory and usually visits eastern Australia from October to April, commonly in coastal areas and less often inland. It does not breed in Australia. This species was not detected during field surveys, and of the two records within 10 km of the subject land, none are located within the assessment area. The subject land is not within a priority management area for the species or at the edge of the species distribution. As such, if a population occurred within the subject land, it would not fit the definition of an important population under the EPBC Act. Considering the above, it is unlikely that the project will lead to a long-term decrease in the size of an important population of this species.
Reduce the area of occupancy of an important population	As indicated above, if a population were to occur within the subject land, it would not fit the definition of an important population under the EPBC Act.
Fragment an existing important population into two or more populations	As indicated above, if a population were to occur within the subject land, it would not fit the definition of an important population under the EPBC Act.
Adversely affect habitat critical to the survival of a species	Critical habitat for this species has not been formally identified. This species was not detected during field surveys, and of the two records within 10 km of the subject land, none are located within the assessment area. Considering the locations of the minimal records within 10 km, the subject land is unlikely to contain habitat critical to the survival of the species.
Disrupt the breeding cycle of an important population	No. This species does not breed in Australia.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The project will remove/modify up to 4.94 ha of potential habitat for the species. This removal/modification of available habitat is unlikely to isolate or decrease the availability or quality of habitat to the extent that the species declines at a regional scale.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species habitat	There is the potential for works to introduce invasive species to the project site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	Aerial collision with wires, windows, and lighthouses are biggest threats to this species while it resides in Australia. Though the reduction in invertebrate prey due to the loss of woodland habitat is also a threat. It is unlikely that the project will interfere with the recovery of this species.
Conclusion	**No significant impact**

***Polytelis swainsonii* – Superb Parrot**	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of an important population of a species	This species is not associated with any PCT within the site. Consequently, the project will not impact any potential habitat for this species. This species was not detected during field surveys, and of the two records within 10 km of the subject land, none are located within the assessment area. The subject land is not within a priority management area for the species or at the edge of the species distribution. As such, if a population occurred within the subject land, it would not fit the definition of an important population under the EPBC Act. Considering the above, it is unlikely that the project will lead to a long-term decrease in the size of an important population of this species.
Reduce the area of occupancy of an important population	As indicated above, if a population were to occur within the subject land, it would not fit the definition of an important population under the EPBC Act.
Fragment an existing important population into two or more populations	As indicated above, if a population were to occur within the subject land, it would not fit the definition of an important population under the EPBC Act.
Adversely affect habitat critical to the survival of a species	Habitat critical to the survival of the Superb Parrot includes any habitat that supports foraging, breeding, roosting, or dispersal, commonly in Box-Gum, Box-Cypress-pine, and River Red Gum forests. These habitats typically include abundant hollow-bearing trees, essential for the species nesting in colonies. Although the subject land may provide potential breeding habitat for this species, the locations of existing Superb Parrot records within 10 km of the subject land, all outside the assessment area, suggest that the subject land is unlikely to contain habitat critical to the survival of the species.
Disrupt the breeding cycle of an important population	As indicated above, if a population were to occur within the subject land, it would not fit the definition of an important population under the EPBC Act.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The project will not remove/modify any associated PCT for the species. The project will not isolate any habitat for this species. As such, the project is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species habitat	There is the potential for works to introduce invasive species to the project site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	Loss of living, foraging and breeding habitat and poor regeneration of nesting trees and food resources. are the main threats to this species. While this project may contribute to the clearing/modifying of up to 4.94 ha of native vegetation and the loss of some hollow-bearing trees, this should not significantly interfere with the recovery of the species within the region.
Conclusion	**No significant impact**

***Stagonopleura guttata* – Diamond Firetail**	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of an important population of a species	The project will impact up to 4.94 ha associated PCT for this species. The subject land is not within a priority management area for the species, nor is it at the edge of the species distribution. This species was not detected during field surveys, and of the three records within 10 km of the subject land, none are located within the assessment area. Given that the subject land is not within a priority management area for the species, and it is not at the edge of the species distribution, even if a population occurred within the subject land, it would not fit the definition of an important population under the EPBC Act. Considering the above, it is unlikely that the project will lead to a long-term decrease in the size of an important population of this species.
Reduce the area of occupancy of an important population	As indicated above, if a population were to occur within the subject land, it would not fit the definition of an important population under the EPBC Act.
Fragment an existing important population into two or more populations	As indicated above, if a population were to occur within the subject land, it would not fit the definition of an important population under the EPBC Act.
Adversely affect habitat critical to the survival of a species	The Diamond Firetail relies on eucalypt, acacia, or casuarina woodlands and open forests with a low tree density, limited large logs, sparse litter cover, and high grass cover. While the 4.94 ha of native vegetation within the subject land may partially align with these habitat preferences, the Diamond Firetail was not observed during the field survey. Furthermore, there are only three records of this species within 10 km of the subject land, all located outside the assessment area. As such, it is unlikely that the subject land is a critical habitat for this species. Consequently, the project is unlikely to adversely affect habitat critical to the survival of this species.
Disrupt the breeding cycle of an important population	As indicated above, if a population were to occur within the subject land, it would not fit the definition of an important population under the EPBC Act.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The project will remove/modify up to 4.94 ha of associated PCT for the species. This removal/modification of available habitat is unlikely to isolate or decrease the availability or quality of habitat to the extent that the species declines at a regional scale.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species habitat	There is the potential for works to introduce invasive species to the project site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	Modification and destruction of ground- and shrub layers within habitat, invasion of weeds, clearing and fragmentation of a variety of habitats and poor regeneration of open forest and woodland habitats are the key threats to the species. Although this project will exacerbate the loss of habitat, due to the clearing/modifying of up to 4.94 ha of associated PCT, this should not significantly interfere with the recovery of the species within the region.
Conclusion	**No significant impact**

EPBC Act-listed Migratory Species

Hirundapus caudacutus – White-throated Needletail	
Significant Impact Guideline	**Assessment**
Substantially modify (including by fragmenting, altering fire regimes, altering nutrient cycles or altering hydrological cycles), destroy or isolate an area of important habitat for a migratory species	The subject land occurs within the core non-breeding range of the White-throated Needletail (see figure below). The species was not observed during field surveys, and there are only two records from within 10 km of the subject land, located outside the assessment area. As the species is very widely distributed, and as the subject land contains only a small area of potential foraging habitat, it is unlikely to constitute an important habitat for this species.
Result in an invasive species that is harmful to the migratory species becoming established in an area of important habitat for the migratory species	It is highly unlikely that the subject land constitutes an important habitat for this species. While there is potential for works to introduce invasive species to the project site or exacerbate existing infestations of significant invasive species, environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Seriously disrupt the lifecycle (breeding, feeding, migration or resting behaviour) of an ecologically significant proportion of the population of a migratory species.	It is highly unlikely that an ecologically significant proportion of the population occurs within or is dependent on the project site. Furthermore, this species breeds in forests in south-eastern Siberia, Mongolia, the Korean Peninsula and northern Japan from June to August. As such, the project is unlikely to seriously disrupt the lifecycle of this species.
Conclusion	**No significant impact**

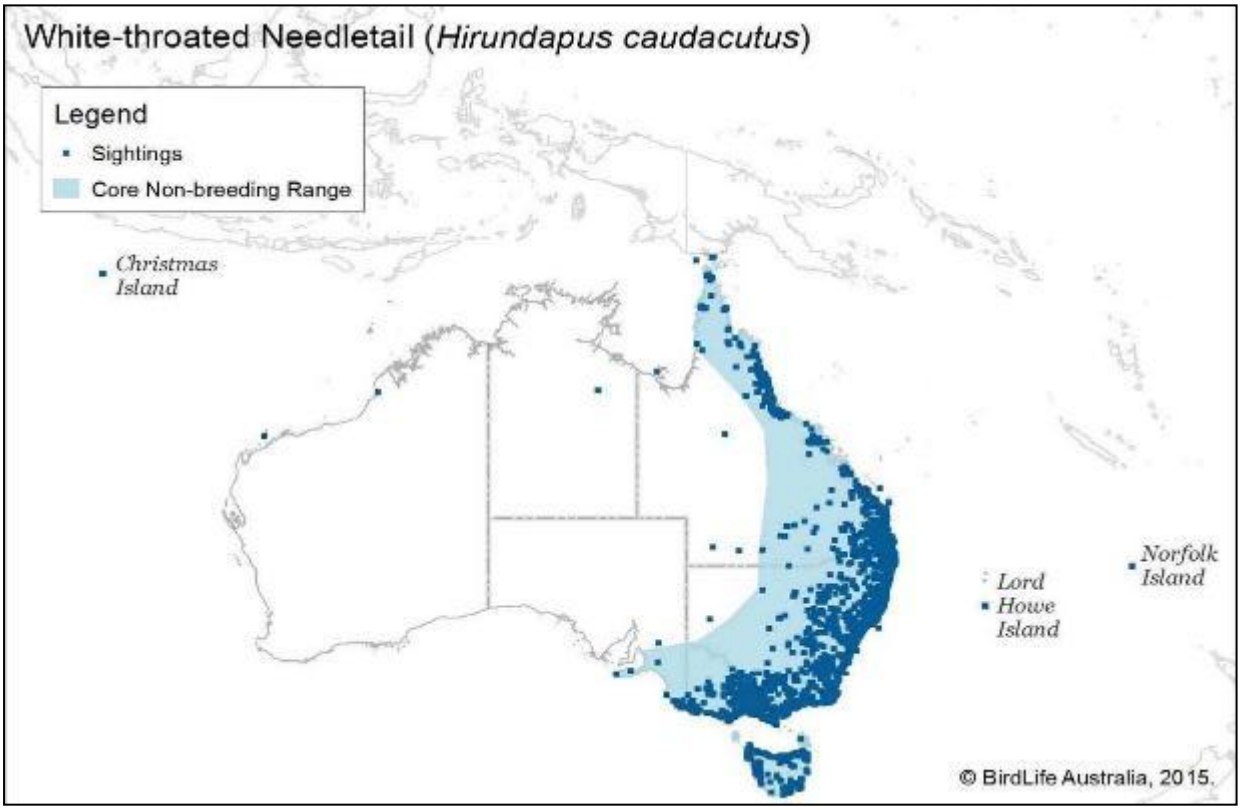

Figure 19 **White-throated Needletail Core Non-breeding Range (BirdLife Australia, 2015)**

Appendix E: Field survey data

Vegetation integrity plot data is given in **Table 30**. Field datasheets and recorded flora and fauna species are provided below.

Table 30 Vegetation survey data and locations

plot	pct	area[1]	patchsize	condition class	zone	easting	northing	bearing	compTree	compShrub	compGrass	compForbs	compFerns	compOther	strucTree	strucShrub	strucGrass	strucForbs	strucFerns	strucOther	funLargeTrees	funHollowtrees	funLitterCover	funLenFallenLogs	funTreeStem5to9	funTreeStem10to19	funTreeStem20to29	funTreeStem30to49	funTreeStem50to79	funTreeRegen	funHighThreatExotic	Plot-based vegetation survey?	Vegetation integrity survey?
BA01	3747	N/A	800	Derived	55	723954	6132784	233	1	6	6	11	1	0	1	30.7	21.4	27.1	0.1	0	0	0	5.6	23.8	Y	N	N	N	N	N	0	☒ Yes ☐ No	☒ Yes ☐ No
BA02	3747	N/A	800	Good	55	723881	6132844	226	2	16	7	8	0	0	25	27.2	3.4	35.7	0	0	2	0	90	39.5	Y	Y	Y	Y	Y	Y	0	☒ Yes ☐ No	☒ Yes ☐ No
BA04	3747	N/A	800	Derived	55	723758	6132725	285	3	8	6	8	0	0	1.2	60.7	3.3	5.7	0	0	0	0	3.8	0	Y	Y	N	N	N	Y	0	☒ Yes ☐ No	☒ Yes ☐ No
BA05	3747	N/A	800	Good	55	723807	6132722	11	1	10	7	6	0	0	35	22.7	4.4	20.5	0	0	3	1	92	20.6	Y	Y	Y	N	Y	Y	0	☒ Yes ☐ No	☒ Yes ☐ No
BA06	3747	N/A	800	Good	55	723984	6132500	319	2	13	6	7	0	1	50	9.9	0.7	21.5	0	0.1	1	0	78	25.4	Y	Y	Y	Y	N	Y	0	☒ Yes ☐ No	☒ Yes ☐ No
BA07	3747	N/A	800	Good	55	723887	6132563	124	2	7	6	8	0	1	37	2.6	67.3	5.7	0	0.2	3	0	97	49.1	Y	Y	Y	Y	Y	Y	0	☒ Yes ☐ No	☒ Yes ☐ No
BA08	3747	N/A	800	Acacia Shrubland	55	723989	6131948	285	1	4	5	5	1	0	20	20.5	37.4	5.4	2	0	0	0	42	39.2	N	N	N	Y	N	N	0	☒ Yes ☐ No	☒ Yes ☐ No
BA09	3747	N/A	800	Wet Grassland	55	723911	6132111	355	0	2	8	10	0	0	0	0.2	96.1	6.9	0	0	0	0	0.2	0	N	N	N	N	N	N	0	☒ Yes ☐ No	☒ Yes ☐ No

plot	pct	area[1]	patchsize	condition class	zone	easting	northing	bearing	compTree	compShrub	compGrass	compForbs	compFerns	compOther	strucTree	strucShrub	strucGrass	strucForbs	strucFerns	strucOther	funLargeTrees	funHollowtrees	funLitterCover	funLenFallenLogs	funTreeStem5to9	funTreeStem10to19	funTreeStem20to29	funTreeStem30to49	funTreeStem50to79	funTreeRegen	funHighThreatExotic	Plot-based vegetation survey?	Vegetation integrity survey?
BA10	3747	N/A	800	Moderate	55	723631	6132411	8	3	9	6	8	0	1	25.2	10.6	2.5	1.7	0	0.1	0	0	60	19.9	Y	Y	Y	Y	N	Y	0	☒ Yes ☐ No	☒ Yes ☐ No
BA12	3747	N/A	800	Derived	55	723885	6132442	159	0	9	8	8	1	0	0	25.6	47.4	2.7	0.1	0	0	0	3	9.2	N	N	N	N	N	Y	0	☒ Yes ☐ No	☒ Yes ☐ No
BA13	3747	N/A	800	Derived	55	723923	6132306	149	1	5	5	9	1	0	0.1	6.4	80.3	2.8	0.1	0	0	0	3.8	20.8	N	N	N	N	N	Y	0	☒ Yes ☐ No	☒ Yes ☐ No
BA14	3747	N/A	800	Good	55	724015	6132715	33	2	9	6	5	0	0	16	22.3	38.3	25.4	0	0	2	1	89	30.9	Y	Y	Y	Y	Y	Y	0	☒ Yes ☐ No	☒ Yes ☐ No
BA15	3747	N/A	800	Quarry	55	723779	6132291	206	2	1	3	5	0	0	1.1	15	2.1	3.1	0	0	0	0	1.8	0.1	N	N	N	N	N	Y	0	☒ Yes ☐ No	☒ Yes ☐ No

[1]As the project is staged, up to eight area values may apply to a single zone.

VI Plot Datasheets

BAM Plot - Field Survey Sheet Page 1 of (2)

Date	23/11/2022	**Survey Name**	Barina Quarry				
Recorders	David Orchard			**Plot ID #**	BA01	**Zone ID**	3747_Der.
Photo #				**Plot dimensions**			20 x 50
Datum	GDA2020	**Zone**	55	**Plot bearing along midline**			233
Easting	723954	**Northing**	6132784	Record magnetic bearing along midline from 0 m point			

Record easting, northing at plot marker (0 m point), Photos taken vertically and horizontally at 0 m point and 50 m point, looking into plot

IBRA region	South Eastern Highlands
Subregion	Monaro
Likely Vegetation Class	Southern Tableland Dry Sclerophyll Forests
Plant Community Type	3747 **Condition state** Derived

For sites plot is centred on the midline, at 0 m point, 10 m either side

BAM Composition / Structure plot (400m²)		
Dimensions (circle applicable size)		
20 x 20 m	~~10 x 40 m~~	**Sum values***
Native Richness (count of native species)	**Trees**	1
	Shrubs	6
	Grasses etc	6
	Forbs	11
	Ferns	1
	Other	0
Cover (sum of cover of natives species)	**Trees**	1
	Shrubs	30.7
	Grasses etc	21.4
	Forbs	27.1
	Ferns	0.1
	Other	0
High threat weed cover		0

*These values summarise the floristic data for input into BAM calculator

Function plot is an extension of floristics plot out to 50 m along midline (or equiv. area)

BAM Function plot (1000m²)		
Dimensions (circle applicable size)		
20 x 50 m	~~10 x 100 m~~	
Tree stem DBH (cm)		Notes on function attributes:
>80	0	Stem size class records #large trees (cf. benchmark)
50 - 79	0	Record stems for living trees only, and for all species
30 - 49	-	For multistemmed trees, record only the largest stem
20 - 29	-	Presence of <5cm stems records regeneration
10 - 19	-	Record # trees with hollows, not number of hollows
5 - 9	+	Count as one stem where tree is multistemmed
< 5	-	Hollow bearing stem may be a dead stem (inc. stag)

# Trees with hollows	<20cm	Total #
	>20cm**	0
Length of logs		Total (m) 0

Measure length of logs >10cm, fully or partly in contact with the ground, and within the plot.

**Hollows of >20cm are recorded for habitat for some threatened species

BAM Litter/ Groundcover (1 x 1 m plots)		Litter cover is used for BAM, other attributes are useful for recordings to condition in general					
		1	2	3	4	5	**Average**
Sub-plot score (% cover)	**Litter**	1	5	5	15	2	5.6
	Bare ground						
	Cryptogam						
	Rock						

Litter / groundcover plots are located at 5, 15, 25, 35, 45 m (alternating sides) along the midline of function plot

Other plot information (not essential for BAM)

Disturbance	Severity	Timing	Landform
Clearing (incl. logging)			Microrelief
Cultivation			Slope
Grazing (native / stock)			Aspect
Soil erosion			Soil surface texture
Firewood removal			Soil colour
Fire (ground mosaic, mid, canopy burnt)			Site drainage
Storm damage			Distance to nearest water
Weediness			Distance to nearest rock outcrop /cave

Severity code: 0=no evidence, 1=slight, 2=moderate, 3=severe

Timing code: R = recent (<3yr), NR = not recent, O = old/historic

Notes

BAM Plot - Field Survey Sheet

Date	23/11/2022	**Survey Name**	Barina Quarry				
Recorders	David Orchard		**Plot ID #**	BA01	**Zone ID**	3747_Der.	
GF code	***Genus species*** (tick if photographed or sample taken)		**Cover %**	**Abund** (count)	**N, E, HTE**	Stratum	
TG	*Acacia decurrens*		1	1	N		
SG	*Cassinia sifton*		30		N		
SG	*Brachyloma daphnoides*		0.2	20	N		
SG	*Melichrus urceolatus*		0.1	1	N		
FG	*Gonocarpus tetragynus*		25		N		
EG	*Cheilanthes sieberi*		0.1	30	N		
FG	*Drosera hookeri*		0.2	300	N		
GG	*Rytidosperma carphoides*		20		N		
GG	*Echinopogon caespitosus*		0.1	10	N		
FG	*Diuris sulphurea*		0.1	1	N		
FG	*Triptilodiscus pygmaeus*		1		N		
FG	*Centaurium erythraea*		0.1	30	E		
FG	*Hypochaeris radicata*		0.1	10	E		
GG	*Aira elegantissima*		5		E		
FG	*Hydrocotyle laxiflora*		0.1	20	N		
FG	*Goodenia hederacea*		0.1	4	N		
FG	*Euchiton sphaericus*		0.2	100	N		
FG	*Vittadinia muelleri*		0.1	6	N		
GG	*Microlaena stipoides*		1		N		
SG	*Hibbertia obtusifolia*		0.1	4	N		
GG	*Aristida ramosa*		0.1	2	N		
GG	*Schoenus apogon*		0.1	40	N		
FG	*Microtis unifolia*		0.1	80	N		
GG	*Lomandra filiformis*		0.1	20	N		
SG	*Leucopogon virgatus*		0.1	4	N		
FG	*Cicendia quadrangularis*		0.1	20	E		
FG	*Hypoxis hygrometrica*		0.1	1	N		
SG	*Persoonia linearis*		0.2	2	N		
FG	*Wahlenbergia gracilenta*		0.1	20	N		
FG	*Cerastium glomeratum*		0.1	10	E		

Growth Form (see BAM Appendix 4) - Tree (TG), Shrub (SG), Grass & grasslike (GG), Forb (FG), Fern (EG), Other (OG)
Cover: 0.1, 0.2, 0.3, ... 1, 2, 3, ...10, 15, 20, 25, ...100% (incl. leaf, branch, stem cover per species).
Abundance for each species with ≤5% cover: 1, 2, 3, 4, ... 10, 20, 30, ... 100, 500, 1000, 1500, 2000 stems
N=native, E=exotic, HTE=high threat exotic
All species in a plot must be recorded. If you can only ID to genus, separate different species by unique identifiyer e.g. *Genus* sp1, *Genus* sp2 etc
Identify top 3 dominants in each stratum (use own stratum definitions) Cover area examples: 0.1% = 63x63cm, 0.5% = 1.4x1.4m, 1% =2x2 m, 5%=4x5m, 25%=10x10m

BAM Plot - Field Survey Sheet

Date	23/11/2022	**Survey Name**	Barina Quarry				
Recorders	David Orchard			**Plot ID #**	BA02	**Zone ID**	3747_Good
Photo #				**Plot dimensions**			20 x 50
Datum	GDA2020	**Zone**	55	**Plot bearing along midline**			226
Easting	723881	**Northing**	6132844	Record magnetic bearing along midline from 0 m point			

Record easting, northing at plot marker (0 m point). Photos taken vertically and horizontally at 0 m point and 50 m point, looking into plot

IBRA region	South Eastern Highlands
Subregion	Monaro
Likely Vegetation Class	Southern Tableland Dry Sclerophyll Forests
Plant Community Type	3747 — **Condition state** Good

For stics plot is centred on the midline, at 0 m point, 10 m either side

BAM Composition / Structure plot (400m²)

Dimensions (circle applicable size)

20 x 20 m ~~10 x 40 m~~

		Sum values*
Native Richness (count of native species)	**Trees**	2
	Shrubs	13
	Grasses etc	7
	Forbs	8
	Ferns	0
	Other	0
Cover (sum of cover of natives species)	**Trees**	25
	Shrubs	27.2
	Grasses etc	3.4
	Forbs	35.7
	Ferns	0
	Other	0
High threat weed cover		0

*These values summarise the floristic data for input into BAM calculator

Function plot is an extension of floristics plot out to 50 m along midline (or equiv. area)

BAM Function plot (1000m²)

Dimensions (circle applicable size)

20 x 50 m ~~10 x 100 m~~

Tree stem DBH (cm)		Notes on function attributes:
>80	0	Stem size class records # large trees (cf. benchmark)
50 - 79	2	Record stems for living trees only, and for all species
30 - 49	+	For multistemmed trees, record only the largest stem
20 - 29	+	Presence of <5cm stems records regeneration
10 - 19	+	Record # trees with hollows, not number of hollows
5 - 9	+	Count as one stem where tree is multistemmed
< 5	+	Hollow bearing stem may be a dead stem (i.e. stag)

# Trees with hollows	<20cm	Total #
	>20cm**	0
Length of logs		Total (m) 39.5

Measure length of logs >10cm, fully or partly in contact with the ground, and within the plot.

**Hollows of >20cm are recorded for habitat for some threatened species

BAM Litter/ Groundcover (1 x 1 m plots) Litter cover is used for BAM, other attributes are useful for recording to condition in general

		1	2	3	4	5	Average
Sub-plot score (% cover)	**Litter**	80	80	100	90	100	90
	Bare ground						
	Cryptogam						
	Rock						

Litter / groundcover plots are located at 5, 15, 25, 35, 45 m (alternating sides) along the midline of function plot

Other plot information (not essential for BAM)

Disturbance	Severity	Timing	Landform
Clearing (incl. logging)			Microrelief
Cultivation			Slope
Grazing (native / stock)			Aspect
Soil erosion			Soil surface texture
Firewood removal			Soil colour
Fire (ground, understorey, mid, canopy burnt)			Site drainage
Storm damage			Distance to nearest water
Weediness			Distance to nearest rock outcrop / cave

Severity code: 0 = no evidence, 1 = slight, 2 = moderate, 3 = severe

Timing code: R = recent (<3yr), NR = not recent, O = old/historic

Notes

BAM Plot - Field Survey Sheet

Date	23/11/2022	**Survey Name**	Barina Quarry			
Recorders	David Orchard		**Plot ID #**	BA02	**Zone ID**	3747_Good
GF code	***Genus species*** (tick if photographed or sample taken)		**Cover %**	**Abund** (count)	**N, E, HTE**	**Stratum**
TG	*Eucalyptus rossii*		20		N	
TG	*Allocasuarina littoralis*		5		N	
SG	*Brachyloma daphnoides*		12		N	
FG	*Gonocarpus tetragynus*		35		N	
SG	*Hibbertia obtusifolia*		1		N	
GG	*Themeda triandra*		0.1	3	N	
SG	*Acacia terminalis*		1		N	
SG	*Leptospermum multicaule*		12		N	
SG	*Rhytidosporum procumbens*		0.1	40	N	
SG	*Leucopogon virgatus*		0.1	10	N	
FG	*Goodenia hederacea*		0.1	20	N	
SG	*Dillwynia sericea*		0.2	40	N	
SG	*Melichrus urceolatus*		0.1	3	N	
GG	*Rytidosperma carphoides*		1		N	
GG	*Austrostipa densiflora*		1		N	
FG	*Drosera hookeri*		0.1	40	N	
FG	*Diuris sulphurea*		0.1	1	N	
GG	*Lepidosperma laterale*		0.1	2	N	
SG	*Pultenaea subspicata*		0.1	1	N	
GG	*Rytidosperma pallidum*		0.1	10	N	
GG	*Echinopogon caespitosus*		0.1	1	N	
FG	*Patersonia sericea*		0.1	1	N	
SG	*Gompholobium huegelii*		0.1	1	N	
SG	*Cassinia longifolia*		0.3	5	N	
GG	*Aristida ramosa*		1		N	
FG	*Thelymitra sp.*		0.1	1	N	
FG	*Poranthera microphylla*		0.1	3	N	
SG	*Cassinia aculeata*		0.1	2	N	
FG	*Stylidium graminifolium*		0.1	1	N	
SG	*Persoonia linearis*		0.1	1	N	

Growth Form (see BAM Appendix 4) - Tree (TG), Shrub (SG), Grass & grasslike (GG), Forb (FG), Fern (EG), Other (OG)
Cover: 0.1, 0.2, 0.3, ... 1, 2, 3, ...10, 15, 20, 25, ...100% (incl. leaf, branch, stem cover per species).
Abundance for each species with ≤5% cover: 1, 2, 3, 4, ... 10, 20, 30, ... 100, 500, 1000, 1500, 2000 stems
N=native, E=exotic, HTE=high threat exotic
All species in a plot must be recorded. If you can only ID to genus, separate different species by unique identifiyer e.g. *Genus* sp1, *Genus* sp2 etc
Identify top 3 dominants in each stratum (use own stratum definitions) Cover area examples: 0.1% = 63x63cm, 0.5% = 1.4x1.4m, 1% =2x2 m, 5%=4x5m, 25%=10x10m

BAM Plot - Field Survey Sheet

Page 1 of [2]

Date	23/11/2022	**Survey Name**	Barina Quarry				
Recorders	David Orchard			**Plot ID #**	BA04	**Zone ID**	3747_Der.
Photo #				**Plot dimensions**			20 x 50
Datum	GDA2020	**Zone**	55	**Plot bearing along midline**			285
Easting	723758	**Northing**	6132725	Record magnetic bearing along midline from 0 m point			

Record easting, northing at plot marker (0 m point). Photos taken vertically and horizontally at 0 m point and 50 m point, looking into plot

IBRA region	South Eastern Highlands
Subregion	Monaro
Likely Vegetation Class	Southern Tableland Dry Sclerophyll Forests
Plant Community Type	3747 — **Condition state** Derived

For stics plot is centred on the midline, at 0m point, 10m either side

BAM Composition / Structure plot (400m²)

Dimensions (circle applicable size)		
20 x 20 m	~~10 x 40 m~~	**Sum values***
Native Richness (count of native species)	**Trees**	3
	Shrubs	8
	Grasses etc	6
	Forbs	8
	Ferns	0
	Other	0
Cover (sum of cover of natives species)	**Trees**	1.2
	Shrubs	60.7
	Grasses etc	3.3
	Forbs	5.7
	Ferns	0
	Other	0
High threat weed cover		0

*These values summarise the floristic data for input into BAM calculator

Function plot is an extension of floristics plot out to 50 m along midline (or equiv. area)

BAM Function plot (1000m²)

Dimensions (circle applicable size)	
20 x 50 m	~~10 x 100 m~~

Tree stem DBH (cm)		Notes on function attributes:
>80	0	Stem size class records # large trees (cf. benchmark)
50 - 79	0	Record stems for living trees only, and for all species
30 - 49	-	For multistemmed trees, record only the largest stem
20 - 29	-	Presence of <5cm stems records regeneration
10 - 19	+	Record # trees with hollows, not number of hollows
5 - 9	+	Count as one stem where tree is multistemmed
< 5	+	Hollow bearing stem may be a dead stem (i.e. stag)

# Trees with hollows	<20cm	Total #
	>20cm**	0

Length of logs	Total (m)
	0

Measure length of logs >10cm, fully or partly in contact with the ground, and within the plot.

**Hollows of >20cm are recorded for habitat for some threatened species

BAM Litter/ Groundcover (1 x 1 m plots) Litter cover is used for BAM, other attributes are useful for recordings to condition in general

		1	2	3	4	5	Average
Sub-plot score (% cover)	**Litter**	3	1	5	5	5	3.8
	Bare ground						
	Cryptogam						
	Rock						

Litter / groundcover plots are located at 5, 15, 25, 35, 45 m (alternating sides) along the midline of function plot

Other plot information (not essential for BAM)

Disturbance	Severity	Timing	Landform
Clearing (incl. logging)			Microrelief
Cultivation			Slope
Grazing (native / stock)			Aspect
Soil erosion			Soil surface texture
Firewood removal			Soil colour
Fire (ground, understorey, mid, canopy burnt)			Site drainage
Storm damage			Distance to nearest water
Weediness			Distance to nearest rock outcrop / cave

Severity code: 0=no evidence, 1=slight, 2=moderate, 3=severe

Timing code: R = recent (<3yr), NR = not recent, O = old/historic

Notes

BAM Plot - Field Survey Sheet

Date	23/11/2022	Survey Name	Barina Quarry			
Recorders	David Orchard		Plot ID #	BA04	Zone ID	3747_Der.
GF code	Genus species (tick if photographed or sample taken)		Cover %	Abund (cover)	N, E, HTE	Stratum
SG	*Leptospermum multicaule*		1		N	
SG	*Cassinia sifton*		20		N	
GG	*Schoenus apogon*		40		N	
SG	*Dillwynia sericea*		1		N	
SG	*Pultenaea subspicata*		0.1	20	N	
FG	*Drosera hookeri*		0.1	20	N	
FG	*Stylidium graminifolium*		0.1	20	N	
FG	*Calochilus robertsonii*		0.1	10	N	
SG	*Rhytidosporum procumbens*		0.1	2	N	
SG	*Brachyloma daphnoides*		0.1	20	N	
FG	*Hypochaeris* sp.		0.1	7	N	
TG	*Allocasuarina littoralis*		0.1	20	E	
FG	*Plantago lanceolata*		0.1	1	N	
GG	*Rytidosperma carphoides*		0.1	2	E	
SG	*Leucopogon virgatus*		1		N	
FG	*Microtis unifolia*		0.1	3	N	
TG	*Eucalyptus macrorhyncha*		0.1	9	N	
FG	*Wahlenbergia gracilenta*		0.1	2	N	
GG	*Rytidosperma pallidum*		0.1	1	N	
GG	*Centrolepis strigosa* subsp. *strigosa*		0.1	2	N	
FG	*Gonocarpus tetragynus*		0.1	2	N	
GG	*Microlaena stipoides*		5		N	
FG	*Goodenia hederacea*		0.1	10	N	
GG	*Aristida jerichoensis* var. *jerichoensis*		0.1	20	N	
SG	*Persoonia linearis*		1		N	
FG	*Diuris sulphurea*		0.2	1	N	
GG	*Briza minor*		0.1	1	N	
			0.1	1	E	

Growth Form (see BAM Appendix 4) - Tree (TG), Shrub (SG), Grass & grasslike (GG), Forb (FG), Fern (FG), Other (OG)

Cover: 0.1, 0.2, 0.3, ...1, 2, 3, ...10, 15, 20, 25, ...100% (incl. leaf, branch, stem cover per species).

Abundance for each species with ≤5% cover: 1, 2, 3, 4, .. 10, 20, 30, .. 100, 500, 1000, 1500, 2000 stems

N=native, E=exotic, HTE=high threat exotic

All species in a plot must be recorded. If you can only ID to genus, separate different species by unique identifier e.g. Genus sp1, Genus sp2 etc

Identify top 3 common species in each stratum (use own stratum definitions) Cover area examples: 0.1% = 63x63cm, 0.5% = 1.4x1.4m, 1% =2x2 m, 5%=4x5m, 25%=10x10 m

BAM Plot - Field Survey Sheet

Date	23/11/2022	**Survey Name**	Barina Quarry				
Recorders	David Orchard			**Plot ID #**	BA05	**Zone ID**	3747_Good
Photo #				**Plot dimensions**			20 x 50
Datum	GDA2020	**Zone**	55	**Plot bearing along midline**			11
Easting	723807	**Northing**	6132722	Record magnetic bearing along midline from 0 m point			

Record easting, northing at plot marker (0 m point). Photos taken vertically and horizontally at 0 m point and 50 m point, looking into plot

IBRA region	South Eastern Highlands
Subregion	Monaro
Likely Vegetation Class	Southern Tableland Dry Sclerophyll Forests
Plant Community Type	3747 — **Condition state** Good

For stics plot is centred on the midline, at 0 m point, 10 m either side

BAM Composition / Structure plot (400m²)

Dimensions (circle applicable size)

20 x 20 m ~~10 x 40 m~~

		Sum values*
Native Richness (count of native species)	**Trees**	2
	Shrubs	13
	Grasses etc	7
	Forbs	8
	Ferns	0
	Other	0
Cover (sum of cover of natives species)	**Trees**	25
	Shrubs	27.2
	Grasses etc	3.4
	Forbs	35.7
	Ferns	0
	Other	0
High threat weed cover		0

*These values summarise the floristic data for input into BAM calculator

Function plot is an extension of floristics plot out to 50 m along midline (or equiv. area)

BAM Function plot (1000m²)

Dimensions (circle applicable size)

20 x 50 m ~~10 x 100 m~~

Tree stem DBH (cm)		Notes on function attributes:
>80	0	Stem size class records # large trees (cf. benchmark)
50 - 79	2	Record stems for living trees only, and for all species
30 - 49	+	For multistemmed trees, record only the largest stem
20 - 29	+	Presence of <5cm stems records regeneration
10 - 19	+	Record # trees with hollows, not number of hollows
5 - 9	+	Count as one stem where tree is multistemmed
< 5	+	Hollow bearing stem may be a dead stem (i.e. stag)

# Trees with hollows	<20cm	Total #
	>20cm**	0
Length of logs		Total (m) 39.5

Measure length of logs >10cm, fully or partly in contact with the ground, and within the plot.

**Hollows of >20cm are recorded for habitat for some threatened species

BAM Litter/ Groundcover (1 x 1 m plots) Litter cover is used for BAM, other attributes are useful for recording to condition in general

		1	2	3	4	5	Average
Sub-plot score (% cover)	**Litter**	80	80	100	90	100	90
	Bare ground						
	Cryptogam						
	Rock						

Litter / groundcover plots are located at 5, 15, 25, 35, 45 m (alternating sides) along the midline of function plot

Other plot information (not essential for BAM)

Disturbance	Severity	Timing	Landform
Clearing (incl. logging)			Microrelief
Cultivation			Slope
Grazing (native / stock)			Aspect
Soil erosion			Soil surface texture
Firewood removal			Soil colour
Fire (ground, understorey, mid, canopy burnt)			Site drainage
Storm damage			Distance to nearest water
Weediness			Distance to nearest rock outcrop / cave

Severity code: 0 = no evidence, 1 = slight, 2 = moderate, 3 = severe

Timing code: R = recent (<3yr), NR = not recent, O = old/historic

Notes

BAM Plot - Field Survey Sheet

Date	23/11/2022	**Survey Name**	Barina Quarry				
Recorders	David Orchard			**Plot ID #**	BA05	**Zone ID**	3747_Good
GF code	***Genus species*** (tick if photographed or sample taken)			**Cover %**	**Abund** (count)	**N, E, HTE**	**Stratum**
TG	*Eucalyptus rossii*			35		N	
SG	*Persoonia linearis*			1	1	N	
GG	*Rytidosperma pallidum*			2		N	
SG	*Cassinia sifton*			15		N	
SG	*Cassinia aculeata*			5		N	
SG	*Brachyloma daphnoides*			0.1	4	N	
SG	*Hibbertia obtusifolia*			0.2	30	N	
SG	*Leucopogon virgatus*			0.1	10	N	
FG	*Gonocarpus tetragynus*			20		N	
FG	*Goodenia hederacea*			0.1	30	N	
SG	*Pultenaea subspicata*			0.1	20	N	
FG	*Boronia nana*			0.1	10	N	
FG	*Stylidium graminifolium*			0.1	7	N	
SG	*Dillwynia sericea*			0.1	10	N	
GG	*Poa sieberiana*			1		N	
GG	*Aristida ramosa*			1		N	
GG	*Lomandra multiflora*			0.1	20	N	
GG	*Schoenus apogon*			0.1	50	N	
FG	*Poranthera microphylla*			0.1	2	N	
GG	*Lomandra filiformis*			0.1	20	N	
SG	*Leptospermum multicaule*			1		N	
GG	*Austrostipa densiflora*			0.1	8	N	
FG	*Drosera hookeri*			0.1	30	N	
SG	*Acacia gunnii*			0.1	1	N	

Growth Form (see BAM Appendix 4) - Tree (TG), Shrub (SG), Grass & grasslike (GG), Forb (FG), Fern (EG), Other (OG)
Cover: 0.1, 0.2, 0.3, ... 1, 2, 3, ...10, 15, 20, 25, ...100% (incl. leaf, branch, stem cover per species).
Abundance for each species with ≤5% cover: 1, 2, 3, 4, ... 10, 20, 30, ... 100, 500, 1000, 1500, 2000 stems
N=native, E=exotic, HTE=high threat exotic
All species in a plot must be recorded. If you can only ID to genus, separate different species by unique identifiyer e.g. *Genus* sp1, *Genus* sp2 etc
Identify top 3 dominants in each stratum (use own stratum definitions) Cover area examples: 0.1% = 63x63cm, 0.5% = 1.4x1.4m, 1% =2x2 m, 5%=4x5m, 25%=10x10m

BAM Plot - Field Survey Sheet

Date	23/11/2022	**Survey Name**	Barina Quarry				
Recorders	David Orchard			**Plot ID #**	BA06	**Zone ID**	3747_Good
Photo #				**Plot dimensions**			20 x 50
Datum	GDA2020	**Zone**	55	**Plot bearing along midline**			319
Easting	723984	**Northing**	6132500	Record magnetic bearing along midline from 0 m point			

Record easting, northing at plot marker (0 m point). Photos taken vertically and horizontally at 0 m point and 50 m point, looking into plot

IBRA region	South Eastern Highlands
Subregion	Monaro
Likely Vegetation Class	Southern Tableland Dry Sclerophyll Forests
Plant Community Type	3747 — **Condition state**: Good

For stics plot is centred on the midline, at 0 m point, 10 m either side

BAM Composition / Structure plot (400m²)

Dimensions (circle applicable size): 20 x 20 m ~~10 x 40 m~~

		Sum values*
Native Richness (count of native species)	**Trees**	2
	Shrubs	13
	Grasses etc	7
	Forbs	8
	Ferns	0
	Other	0
Cover (sum of cover of natives species)	**Trees**	25
	Shrubs	27.2
	Grasses etc	3.4
	Forbs	35.7
	Ferns	0
	Other	0
High threat weed cover		0

*These values summarise the floristic data for input into BAM calculator

Function plot is an extension of floristics plot out to 50 m along midline (or equiv. area)

BAM Function plot (1000m²)

Dimensions (circle applicable size): 20 x 50 m ~~10 x 100 m~~

Tree stem DBH (cm)		Notes on function attributes:
>80	1	Stem size class records # large trees (cf. benchmark)
50 - 79	0	Record stems for living trees only, and for all species
30 - 49	+	For multistemmed trees, record only the largest stem
20 - 29	+	Presence of <5cm stems records regeneration
10 - 19	+	Record # trees with hollows, not number of hollows
5 - 9	+	Count as one stem where tree is multistemmed
< 5	+	Hollow bearing stem may be a dead stem (i.e. stag)

# Trees with hollows	<20cm	Total #
	>20cm**	0
Length of logs		Total (m) 25.4

Measure length of logs >10cm, fully or partly in contact with the ground, and within the plot.

**Hollows of >20cm are recorded for habitat for some threatened species

BAM Litter/ Groundcover (1 x 1 m plots) Litter cover is used for BAM, other attributes are useful for recording to condition in general

		1	2	3	4	5	Average
Sub-plot score (% cover)	**Litter**	70	80	95	50	95	78
	Bare ground						
	Cryptogam						
	Rock						

Litter / groundcover plots are located at 5, 15, 25, 35, 45 m (alternating sides) along the midline of function plot

Other plot information (not essential for BAM)

Disturbance	Severity	Timing	Landform
Clearing (incl. logging)			Microrelief
Cultivation			Slope
Grazing (native / stock)			Aspect
Soil erosion			Soil surface texture
Firewood removal			Soil colour
Fire (ground, understorey, mid, canopy burnt)			Site drainage
Storm damage			Distance to nearest water
Weediness			Distance to nearest rock outcrop / cave

Severity code: 0 = no evidence, 1 = slight, 2 = moderate, 3 = severe

Timing code: R = recent (<3yr), NR = not recent, O = old/historic

Notes

BAM Plot - Field Survey Sheet

Date	23/11/2022	**Survey Name**	Barina Quarry				
Recorders	David Orchard			**Plot ID #**	BA06	**Zone ID**	3747_Good
GF code	***Genus species*** (tick if photographed or sample taken)			**Cover %**	**Abund** (count)	**N, E, HTE**	**Stratum**
TG	*Eucalyptus rossii*			35		N	
FG	*Thysanotus tuberosus*			1	1	N	
SG	*Persoonia linearis*			2		N	
TG	*Allocasuarina littoralis*			15		N	
SG	*Brachyloma daphnoides*			5		N	
SG	*Pultenaea subspicata*			0.1	4	N	
GG	*Rytidosperma pallidum*			0.2	30	N	
SG	*Rhytidosporum procumbens*			0.1	10	N	
FG	*Poranthera microphylla*			20		N	
FG	*Patersonia sericea*			0.1	30	N	
GG	*Schoenus apogon*			0.1	20	N	
OG	*Cassytha pubescens*			0.1	10	N	
FG	*Gonocarpus tetragynus*			0.1	7	N	
SG	*Hibbertia obtusifolia*			0.1	10	N	
SG	*Dillwynia sericea*			1		N	
FG	*Hypochaeris radicata*			0.1	20	E	
GG	*Aristida ramosa*			0.1	50	N	
FG	*Stylidium graminifolium*			0.1	2	N	
SG	*Cassinia sifton*			0.1	20	N	
SG	*Acacia gunnii*			1		N	
SG	*Leucopogon virgatus*			0.1	8	N	
GG	*Lomandra multiflora*			0.1	30	N	
SG	*Acacia terminalis*			0.1	1	N	
SG	*Tetratheca bauerifolia*			0.1	1	N	
SG	*Cassinia aculeata*			0.1	1	N	
GG	*Echinopogon caespitosus*			0.1	1	N	
FG	*Thelymitra* sp.			0.1	1	N	
SG	*Hibbertia ?calycina*			0.1	1	N	
GG	*Austrostipa densiflora*			0.1	1	N	
FG	*Microtis unifolia*			0.1	1	N	

Growth Form (see BAM Appendix 4) - Tree (TG), Shrub (SG), Grass & grasslike (GG), Forb (FG), Fern (EG), Other (OG)
Cover: 0.1, 0.2, 0.3, ... 1, 2, 3, ...10, 15, 20, 25, ...100% (incl. leaf, branch, stem cover per species).
Abundance for each species with ≤5% cover: 1, 2, 3, 4, ... 10, 20, 30, ... 100, 500, 1000, 1500, 2000 stems
N=native, E=exotic, HTE=high threat exotic
All species in a plot must be recorded. If you can only ID to genus, separate different species by unique identifiyer e.g. *Genus* sp1, *Genus* sp2 etc
Identify top 3 dominants in each stratum (use own stratum definitions) Cover area examples: 0.1% = 63x63cm, 0.5% = 1.4x1.4m, 1% =2x2 m, 5%=4x5m, 25%=10x10m

BAM Plot - Field Survey Sheet

Date	23/11/2022	**Survey Name**	Barina Quarry				
Recorders	David Orchard			**Plot ID #**	BA07	**Zone ID**	3747_Good
Photo #				**Plot dimensions**			20 x 50
Datum	GDA2020	**Zone**	55	**Plot bearing along midline**			124
Easting	723887	**Northing**	6132563	Record magnetic bearing along midline from 0 m point			

Record easting, northing at plot marker (0 m point). Photos taken vertically and horizontally at 0 m point and 50 m point, looking into plot

IBRA region	South Eastern Highlands
Subregion	Monaro
Likely Vegetation Class	Southern Tableland Dry Sclerophyll Forests
Plant Community Type	3747 — **Condition state** Good

For stics plot is centred on the midline, at 0m point, 10m either side

BAM Composition / Structure plot (400m²)

Dimensions (circle applicable size)		
20 x 20 m	~~10 x 40 m~~	**Sum values***
Native Richness (count of native species)	**Trees**	2
	Shrubs	7
	Grasses etc	6
	Forbs	8
	Ferns	0
	Other	1
Cover (sum of cover of natives species)	**Trees**	37
	Shrubs	2.6
	Grasses etc	67.3
	Forbs	5.7
	Ferns	0
	Other	0.2
High threat weed cover		0

*These values summarise the floristic data for input into BAM calculator

Function plot is an extension of floristics plot out to 50 m along midline (or equiv. area)

BAM Function plot (1000m²)

Dimensions (circle applicable size)	
20 x 50 m	~~10 x 100 m~~

Tree stem DBH (cm)		Notes on function attributes:
>80	1	Stem size class records # large trees (cf. benchmark)
50 - 79	2	Record stems for living trees only, and for all species
30 - 49	+	For multistemmed trees, record only the largest stem
20 - 29	+	Presence of <5cm stems records regeneration
10 - 19	+	Record # trees with hollows, not number of hollows
5 - 9	+	Count as one stem where tree is multistemmed
< 5	+	Hollow bearing stem may be a dead stem (i.e. stag)

# Trees with hollows	<20cm	Total #
	>20cm**	0
Length of logs		Total (m) 49.1

Measure length of logs >10cm, fully or partly in contact with the ground, and within the plot.

**Hollows of >20cm are recorded for habitat for some threatened species

BAM Litter/ Groundcover (1 x 1 m plots) Litter cover is used for BAM, other attributes are useful for recording to condition in general

		1	2	3	4	5	Average
Sub-plot score (% cover)	**Litter**	90	100	100	100	95	97
	Bare ground						
	Cryptogam						
	Rock						

Litter / groundcover plots are located at 5, 15, 25, 35, 45 m (alternating sides) along the midline of function plot

Other plot information (not essential for BAM)

Disturbance	Severity	Timing	Landform
Clearing (incl. logging)			Microrelief
Cultivation			Slope
Grazing (native / stock)			Aspect
Soil erosion			Soil surface texture
Firewood removal			Soil colour
Fire (ground, understorey, mid, canopy burnt)			Site drainage
Storm damage			Distance to nearest water
Weediness			Distance to nearest rock outcrop / cave

Severity code: 0=no evidence, 1=slight, 2=moderate, 3=severe

Timing code: R = recent (<3yr), NR = not recent, D = undetermined

Notes

BAM Plot - Field Survey Sheet

Date	23/11/2022	Survey Name	Barina Quarry			
Recorders	David Orchard		Plot ID #	BA07	Zone ID	3747_Good
GF code	*Genus species* (tick if photographed or sample taken)		Cover %	Abund (cover)	N, E, HTE	Stratum
TG	*Eucalyptus macrorhyncha*		35		N	
OG	*Amyema miquelii*		0.2	10	N	
SG	*Cassinia arcuata*		1		N	
GG	*Rytidosperma pallidum*		65		N	
FG	*Gonocarpus tetragynus*		5		N	
FG	*Diuris sulphurea*		0.1	7	N	
SG	*Brachyloma daphnoides*		1		N	
FG	*Wahlenbergia gracilenta*		0.1	2	N	
NN	*Hypochaeris radicata*		0.1	6	E	
GG	*Echinopogon caespitosus*		0.1	10	N	
GG	*Schoenus apogon*		0.1	30	N	
SG	*Rhytidosporum procumbens*		0.1	10	N	
FG	*Hydrocotyle laxiflora*		0.1	20	N	
SG	*Persoonia linearis*		0.2	10	N	
FG	*Stylidium graminifolium*		0.1	10	N	
SG	*Hibbertia obtusifolia*		0.1	10	N	
GG	*Lomandra multiflora*		0.1	10	N	
GG	*Rytidosperma carphoides*		1		N	
GG	*Lomandra filiformis*		1		N	
TG	*Acacia decurrens*		2		N	
FG	*Goodenia hederacea*		0.1	10	N	
SG	*Dillwynia sericea*		0.1	8	N	
FG	*Oxalis perennans*		0.1	1	N	
FG	*Poranthera microphylla*		0.1	2	N	
SG	*Solanum linearifolium*		0.1	1	N	

Growth Form (see BAM Appendix 4) - Tree (TG), Shrub (SG), Grass & grasslike (GG), Forb (FG), Fern (FG), Other (OG)

Cover: 0.1, 0.2, 0.3, ...1, 2, 3, ...10, 15, 20, 25, ...100% (incl. leaf, branch, stem cover per species).

Abundance for each species with ≤5% cover: 1, 2, 3, 4, .. 10, 20, 30, .. 100, 500, 1000, 1500, 2000 stems

N=native, E=exotic, HTE=high threat exotic

All species in a plot must be recorded. If you can only ID to genus, separate different species by unique identifier e.g. Genus sp1, Genus sp2 etc

Identify top 3 common species in each stratum (use own stratum definitions) Cover area examples: 0.1% = 63x63cm, 0.5% = 1.4x1.4m, 1% =2x2 m, 5%=4x5m, 25%=10x10 m

BAM Plot - Field Survey Sheet

Date	23/11/2022	**Survey Name**	Barina Quarry				
Recorders	David Orchard			**Plot ID #**	BA08	**Zone ID**	3747_Acac.
Photo #				**Plot dimensions**			20 x 50
Datum	GDA2020	**Zone**	55	**Plot bearing along midline**			285
Easting	723989	**Northing**	6131948	Record magnetic bearing along midline from 0 m point			

Record easting, northing at plot marker (0 m point). Photos taken vertically and horizontally at 0 m point and 50 m point, looking into plot

IBRA region	South Eastern Highlands
Subregion	Monaro
Likely Vegetation Class	Southern Tableland Dry Sclerophyll Forests
Plant Community Type	3747 — **Condition state** Acacia

For stics plot is centred on the midline, at 0 m point, 10 m either side

BAM Composition / Structure plot (400m²)

Dimensions (circle applicable size)

20 x 20 m ~~10 x 40 m~~

		Sum values*
Native Richness (count of native species)	**Trees**	1
	Shrubs	4
	Grasses etc	5
	Forbs	5
	Ferns	1
	Other	0
Cover (sum of cover of natives species)	**Trees**	20
	Shrubs	20.5
	Grasses etc	42.3
	Forbs	5.4
	Ferns	2
	Other	0
High threat weed cover		0

*These values summarise the floristic data for input into BAM calculator

Function plot is an extension of floristics plot out to 50 m along midline (or equiv. area)

BAM Function plot (1000m²)

Dimensions (circle applicable size)

20 x 50 m ~~10 x 100 m~~

Tree stem DBH (cm)		Notes on function attributes:
>80	0	Stem size class records # large trees (cf. benchmark)
50 - 79	0	Record stems for living trees only, and for all species
30 - 49	+	For multistemmed trees, record only the largest stem
20 - 29	-	Presence of <5cm stems records regeneration
10 - 19	+	Record # trees with hollows, not number of hollows
5 - 9	+	Count as one stem where tree is multistemmed
< 5	+	Hollow bearing stem may be a dead stem (i.e. stag)

# Trees with hollows	<20cm	Total #
	>20cm**	0
Length of logs		Total (m) 39.2

Measure length of logs >10cm, fully or partly in contact with the ground, and within the plot.

**Hollows of >20cm are recorded for habitat for some threatened species

BAM Litter/ Groundcover (1 x 1 m plots) Litter cover is used for BAM, other attributes are useful for recordings to condition in general

		1	2	3	4	5	Average
Sub-plot score (% cover)	**Litter**	5	30	15	80	80	42
	Bare ground						
	Cryptogam						
	Rock						

Litter / groundcover plots are located at 5, 15, 25, 35, 45 m (alternating sides) along the midline of function plot

Other plot information (not essential for BAM)

Disturbance	Severity	Timing	Landform
Clearing (incl. logging)			Microrelief
Cultivation			Slope
Grazing (native / stock)			Aspect
Soil erosion			Soil surface texture
Firewood removal			Soil colour
Fire (ground, understorey, mid, canopy burnt)			Site drainage
Storm damage			Distance to nearest water
Weediness			Distance to nearest rock outcrop / cave

Severity code: 0 = no evidence, 1 = slight, 2 = moderate, 3 = severe

Timing code: R = recent (<3yr), NR = not recent, O = old/historic

Notes

BAM Plot - Field Survey Sheet

Date	23/11/2022	Survey Name	Barina Quarry			
Recorders	David Orchard		Plot ID #	BA08	Zone ID	3747_Acac.
GF code	Genus species (tick if photographed or sample taken)		Cover %	Abund (cover)	N, E, HTE	Stratum
TG	*Acacia decurrens*		20		N	
EG	*Pteridium esculentum*		2		N	
FG	*Gonocarpus tetragynus*		5		N	
SG	*Cassinia sifton*		20		N	
GG	*Schoenus apogon*		2		N	
FG	*Hypochaeris radicata*		2		E	
GG	*Microlaena stipoides*		35		N	
SG	*Cassinia arcuata*		0.3	10	N	
FG	*Veronica plebeia*		0.1	1	N	
GG	*Rytidosperma sp.*		5		N	
FG	*Euchiton sphaericus*		0.1	30	N	
FG	*Centaurium erythraea*		0.1	10	E	
FG	*Briza minor*		0.1	8	E	
FG	*Cirsium vulgare*		0.1	1	E	
SG	*Persoonia linearis*		0.1	1	N	
GG	*Luzula meridionalis*		0.1	5	N	
FG	*Poranthera microphylla*		0.1	3	N	
SG	*Melichrus urceolatus*		0.1	2	N	
FG	*Hydrocotyle laxiflora*		0.1	6	N	
GG	*Aira elegantissima*		0.1	5	E	
GG	*Briza maxima*		0.1	10	E	
GG	*Isolepis cernua*		0.2	200	N	
GG	*Holcus lanatus*		0.1	5	E	
GG	*Lachnagrostis filiformis*		0.1	2	N	

Growth Form (see BAM Appendix 4) - Tree (TG), Shrub (SG), Grass & grasslike (GG), Forb (FG), Fern (FG), Other (OG)
Cover: 0.1, 0.2, 0.3, ...1, 2, 3, ...10, 15, 20, 25, ...100% (incl. leaf, branch, stem cover per species).
Abundance for each species with ≤5% cover: 1, 2, 3, 4, .. 10, 20, 30, .. 100, 500, 1000, 1500, 2000 stems
N=native, E=exotic, HTE=high threat exotic
All species in a plot must be recorded. If you can only ID to genus, separate different species by unique identifier e.g. Genus sp1, Genus sp2 etc
Identify top 3 common species in each stratum (use own stratum definitions) Cover area examples: 0.1% = 63x63cm, 0.5% = 1.4x1.4m, 1% =2x2 m, 5%=4x5m, 25%=10x10 m

BAM Plot - Field Survey Sheet

Date	23/11/2022	**Survey Name**	Barina Quarry				
Recorders	David Orchard			**Plot ID #**	BA09	**Zone ID**	3747_WetG
Photo #				**Plot dimensions**			20 x 50
Datum	GDA2020	**Zone**	55	**Plot bearing along midline**			355
Easting	723911	**Northing**	6132111	Record magnetic bearing along midline from 0 m point			

Record easting, northing at plot marker (0 m point). Photos taken vertically and horizontally at 0 m point and 50 m point, looking into plot

IBRA region	South Eastern Highlands
Subregion	Monaro
Likely Vegetation Class	Southern Tableland Dry Sclerophyll Forests
Plant Community Type	3747 — **Condition state** Wet Grassl

For stics plot is centred on the midline, at 0m point, 10m either side

BAM Composition / Structure plot (400m²)

Dimensions (circle applicable size)		
20 x 20 m	~~10 x 40 m~~	**Sum values***
Native Richness (count of native species)	**Trees**	0
	Shrubs	2
	Grasses etc	8
	Forbs	10
	Ferns	0
	Other	0
Cover (sum of cover of natives species)	**Trees**	0
	Shrubs	0.2
	Grasses etc	86.1
	Forbs	6.9
	Ferns	0
	Other	0
High threat weed cover		0

*These values summarise the floristic data for input into BAM calculator

Function plot is an extension of floristics plot out to 50 m along midline (or equiv. area)

BAM Function plot (1000m²)

Dimensions (circle applicable size)	
20 x 50 m	~~10 x 100 m~~

Tree stem DBH (cm)		Notes on function attributes:
>80	0	Stem size class records #large trees (cf. benchmark)
50 - 79	0	Record stems for living trees only, and for all species
30 - 49	-	For multistemmed trees, record only the largest stem
20 - 29	-	Presence of <5cm stems records regeneration
10 - 19	-	Record # trees with hollows, not number of hollows
5 - 9	-	Count as one stem where tree is multistemmed
< 5	-	Hollow bearing stem may be a dead stem (i.e. stag)

# Trees with hollows	<20cm	Total #
	>20cm**	0
Length of logs		Total (m) 0

Measure length of logs >10cm, fully or partly in contact with the ground, and within the plot.

**Hollows of >20cm are recorded for habitat for some threatened species

BAM Litter/ Groundcover (1 x 1 m plots) Litter cover is used for BAM, other attributes are useful for recordings to condition in general

		1	2	3	4	5	Average
Sub-plot score (% cover)	**Litter**	0	1	0	0	0	0.2
	Bare ground						
	Cryptogam						
	Rock						

Litter / groundcover plots are located at 5, 15, 25, 35, 45 m (alternating sides) along the midline of function plot

Other plot information (not essential for BAM)

Disturbance	Severity	Timing	Landform
Clearing (incl. logging)			Microrelief
Cultivation			Slope
Grazing (native / stock)			Aspect
Soil erosion			Soil surface texture
Firewood removal			Soil colour
Fire (ground, understorey, mid, canopy burnt)			Site drainage
Storm damage			Distance to nearest water
Weediness			Distance to nearest rock outcrop / cave

Severity code: 0=no evidence, 1=slight, 2=moderate, 3=severe

Timing code: R = recent (<3yr), NR = not recent, D = undetermined

Notes

BAM Plot - Field Survey Sheet

Date	23/11/2022	**Survey Name**	Barina Quarry			
Recorders	David Orchard		**Plot ID #**	BA09	**Zone ID**	3747_WetG
GF code	***Genus species*** (tick if photographed or sample taken)		**Cover %**	**Abund** (count)	**N, E, HTE**	Stratum
NN	*Holcus lanatus*		0.1	20	E	
SG	*Melichrus urceolatus*		0.1	1	N	
SG	*Cassinia sifton*		0.1	20	N	
GG	*Microlaena stipoides*		20		N	
FG	*Euchiton sphaericus*		5		N	
NN	*Hypochaeris radicata*		0.1	20	E	
FG	*Hypoxis hygrometrica*		0.1	10	N	
FG	*Drosera hookeri*		0.2	200	N	
FG	*Microtis unifolia*		0.1	80	N	
GG	*Schoenus apogon*		50		N	
GG	*Isolepis cernua*		2		N	
FG	*Isotoma fluviatilis*		0.1	30	N	
NN	*Centaurium erythraea*		2		E	
FG	*Schenkia australis*		1		N	
GG	*Isolepis inundata*		1		N	
FG	*Thelymitra sp.*		0.1	20	N	
GG	*Luzula meridionalis*		10		N	
GG	*Juncus subsecundus*		0.1	30	N	
FG	*Haloragis heterophylla*		0.1	10	N	
GG	*Aristida ramosa*		2		N	
FG	*Wahlenbergia gracilenta*		0.1	1	N	
FG	*Hydrocotyle laxiflora*		0.1	3	N	
GG	*Rytidosperma pilosum*		1		N	
NN	*Anthoxanthum odoratum*		0.1	8	N	

Growth Form (see BAM Appendix 4) - Tree (TG), Shrub (SG), Grass & grasslike (GG), Forb (FG), Fern (EG), Other (OG)
Cover: 0.1, 0.2, 0.3, ... 1, 2, 3, ...10, 15, 20, 25, ...100% (incl. leaf, branch, stem cover per species).
Abundance for each species with ≤5% cover: 1, 2, 3, 4, ... 10, 20, 30, ... 100, 500, 1000, 1500, 2000 stems
N=native, E=exotic, HTE=high threat exotic
All species in a plot must be recorded. If you can only ID to genus, separate different species by unique identifiyer e.g. *Genus* sp1, *Genus* sp2 etc
Identify top 3 dominants in each stratum (use own stratum definitions) Cover area examples: 0.1% = 63x63cm, 0.5% = 1.4x1.4m, 1% =2x2 m, 5%=4x5m, 25%=10x10m

BAM Plot - Field Survey Sheet

Date	24/11/2022	**Survey Name**	Barina Quarry				
Recorders	David Orchard			**Plot ID #**	BA10	**Zone ID**	3747_Mod.
Photo #				**Plot dimensions**			20 x 50
Datum	GDA2020	**Zone**	55	**Plot bearing along midline**			8
Easting	723631	**Northing**	6132411	Record magnetic bearing along midline from 0 m point			

Record easting, northing at plot marker (0 m point). Photos taken vertically and horizontally at 0 m point and 50 m point, looking into plot

IBRA region	South Eastern Highlands
Subregion	Monaro
Likely Vegetation Class	Southern Tableland Dry Sclerophyll Forests
Plant Community Type	3747 — **Condition state**: Moderate

For stics plot is centred on the midline, at 0m point, 10m either side

BAM Composition / Structure plot (400m²)

Dimensions (circle applicable size): 20 x 20 m ~~10 x 40 m~~

		Sum values*
Native Richness (count of native species)	**Trees**	3
	Shrubs	9
	Grasses etc	6
	Forbs	8
	Ferns	0
	Other	1
Cover (sum of cover of natives species)	**Trees**	25.2
	Shrubs	10.6
	Grasses etc	2.5
	Forbs	1.7
	Ferns	0
	Other	0.1
High threat weed cover		0

*These values summarise the floristic data for input into BAM calculator

Function plot is an extension of floristics plot out to 50 m along midline (or equiv. area)

BAM Function plot (1000m²)

Dimensions (circle applicable size): 20 x 50 m ~~10 x 100 m~~

Tree stem DBH (cm)		Notes on function attributes:
>80	0	Stem size class records # large trees (cf. benchmark)
50 - 79	0	Record stems for living trees only, and for all species
30 - 49	+	For multistemmed trees, record only the largest stem
20 - 29	+	Presence of <5cm stems records regeneration
10 - 19	+	Record # trees with hollows, not number of hollows
5 - 9	+	Count as one stem where tree is multistemmed
< 5	+	Hollow bearing stem may be a dead stem (i.e. stag)

# Trees with hollows	<20cm	Total #
	>20cm**	0
Length of logs		Total (m) 19.9

Measure length of logs >10cm, fully or partly in contact with the ground, and within the plot.

**Hollows of >20cm are recorded for habitat for some threatened species

BAM Litter/ Groundcover (1 x 1 m plots) Litter cover is used for BAM, other attributes are useful for recording to condition in general

		1	2	3	4	5	Average
Sub-plot score (% cover)	**Litter**	95	30	5	90	80	60
	Bare ground						
	Cryptogam						
	Rock						

Litter / groundcover plots are located at 5, 15, 25, 35, 45 m (alternating sides) along the midline of function plot

Other plot information (not essential for BAM)

Disturbance	Severity	Timing	Landform
Clearing (incl. logging)			Microrelief
Cultivation			Slope
Grazing (native / stock)			Aspect
Soil erosion			Soil surface texture
Firewood removal			Soil colour
Fire (ground, understorey, mid, canopy burnt)			Site drainage
Storm damage			Distance to nearest water
Weediness			Distance to nearest rock outcrop / cave

Severity code: 0=no evidence, 1=slight, 2=moderate, 3=severe

Timing code: R = recent (<3yr), NR = not recent, O = old/historic

Notes

BAM Plot - Field Survey Sheet

Date	24/11/2022	Survey Name	Barina Quarry			
Recorders	David Orchard		Plot ID #	BA10	Zone ID	3747_Mod
GF code	Genus species (tick if photographed or sample taken)		Cover %	Abund (cover)	N, E, HTE	Stratum
TG	*Eucalyptus rossii*		25		N	
SG	*Persoonia linearis*		1		N	
SG	*Cassinia sifton*		5		N	
GG	*Rytidosperma carphoides*		1		N	
TG	*Eucalyptus dives*		0.1	1	N	
SG	*Acacia terminalis*		0.2	8	N	
FG	*Goodenia hederacea*		0.1	20	N	
SG	*Dillwynia sericea*		0.1	9	N	
SG	*Pultenaea subspicata*		2		N	
SG	*Rhytidosporum procumbens*		0.1	10	N	
FG	*Gonocarpus tetragynus*		1		N	
GG	*Austrostipa densiflora*		0.1	10	N	
SG	*Brachyloma daphnoides*		2		N	
TG	*Acacia decurrens*		0.1	1	N	
GG	*Lomandra multiflora*		0.1	8	N	
FG	*Stylidium graminifolium*		0.1	10	N	
FG	*Hovea heterophylla*		0.1	1	N	
FG	*Stypandra glauca*		0.1	1	N	
FG	*Dianella revoluta*		0.1	3	N	
GG	*Rytidosperma pallidum*		0.2	5	N	
FG	*Diuris sulphurea*		0.1	1	N	
GG	*Lomandra filiformis*		0.1	10	N	
OG	*Hardenbergia violacea*		0.1	1	N	
FG	*Poranthera microphylla*		0.1	1	N	
SG	*Gompholobium huegelii*		0.1	1	N	
SG	*Melichrus urceolatus*		0.1	1	N	
GG	*Poa sieberiana*		1		N	

Growth Form (see BAM Appendix 4) - Tree (TG), Shrub (SG), Grass & grasslike (GG), Forb (FG), Fern (FG), Other (OG)
Cover: 0.1, 0.2, 0.3, ...1, 2, 3, ...10, 15, 20, 25, ...100% (incl. leaf, branch, stem cover per species).
Abundance for each species with ≤5% cover: 1, 2, 3, 4, .. 10, 20, 30, .. 100, 500, 1000, 1500, 2000 stems
N=native, E=exotic, HTE=high threat exotic
All species in a plot must be recorded. If you can only ID to genus, separate different species by unique identifier e.g. Genus sp1, Genus sp2 etc
Identify top 3 dominants in each stratum (use own stratum definitions) Cover area examples: 0.1% = 63x63cm, 0.5% = 1.4x1.4m, 1% =2x2 m, 5%=4x5m, 25%=10x10 m

BAM Plot - Field Survey Sheet

Date	24/11/2022	**Survey Name**	Barina Quarry				
Recorders	David Orchard			**Plot ID #**	BA12	**Zone ID**	3747_Der.
Photo #				**Plot dimensions**			20 x 50
Datum	GDA2020	**Zone**	55	**Plot bearing along midline**			159
Easting	723885	**Northing**	6132442	Record magnetic bearing along midline from 0 m point			

Record easting, northing at plot marker (0 m point). Photos taken vertically and horizontally at 0 m point and 50 m point, looking into plot

IBRA region	South Eastern Highlands
Subregion	Monaro
Likely Vegetation Class	Southern Tableland Dry Sclerophyll Forests
Plant Community Type	3747 — **Condition state** Derived

For stics plot is centred on the midline, at 0m point, 10m either side

BAM Composition / Structure plot (400m²)

Dimensions (circle applicable size)

20 x 20 m ~~10 x 40 m~~

		Sum values*
Native Richness (count of native species)	**Trees**	0
	Shrubs	9
	Grasses etc	8
	Forbs	8
	Ferns	1
	Other	0
Cover (sum of cover of natives species)	**Trees**	0
	Shrubs	25.6
	Grasses etc	47.4
	Forbs	2.7
	Ferns	0.1
	Other	0
High threat weed cover		0

*These values summarise the floristic data for input into BAM calculator

Function plot is an extension of floristics plot out to 50 m along midline (or equiv. area)

BAM Function plot (1000m²)

Dimensions (circle applicable size)

20 x 50 m ~~10 x 100 m~~

Tree stem DBH (cm)		Notes on function attributes:
>80	0	Stem size class records # large trees (cf. benchmark)
50 - 79	0	Record stems for living trees only, and for all species
30 - 49	-	For multistemmed trees, record only the largest stem
20 - 29	-	Presence of <5cm stems records regeneration
10 - 19	-	Record # trees with hollows, not number of hollows
5 - 9	-	Count as one stem where tree is multistemmed
< 5	+	Hollow bearing stem may be a dead stem (i.e. stag)

# Trees with hollows	<20cm	Total #
	>20cm**	0
Length of logs		Total (m) 9.2

Measure length of logs >10cm, fully or partly in contact with the ground, and within the plot.

**Hollows of >20cm are recorded for habitat for some threatened species

BAM Litter/ Groundcover (1 x 1 m plots) Litter cover is used for BAM, other attributes are useful for recordings to condition in general

		1	2	3	4	5	Average
Sub-plot score (% cover)	**Litter**	3	1	3	3	5	3
	Bare ground						
	Cryptogam						
	Rock						

Litter / groundcover plots are located at 5, 15, 25, 35, 45 m (alternating sides) along the midline of function plot

Other plot information (not essential for BAM)

Disturbance	Severity	Timing	Landform
Clearing (incl. logging)			Microrelief
Cultivation			Slope
Grazing (native / stock)			Aspect
Soil erosion			Soil surface texture
Firewood removal			Soil colour
Fire (ground, understorey, mid, canopy burnt)			Site drainage
Storm damage			Distance to nearest water
Weediness			Distance to nearest rock outcrop / cave

Severity code: 0=no evidence, 1=slight, 2=moderate, 3=severe

Timing code: R = recent (<3yr), NR = not recent, D = undetermined

Notes

BAM Plot - Field Survey Sheet

Date	24/11/2022	**Survey Name**	Barina Quarry				
Recorders	David Orchard			**Plot ID #**	BA12	**Zone ID**	3747_Der.
GF code	***Genus species*** (tick if photographed or sample taken)			**Cover %**	**Abund** (count)	**N, E, HTE**	**Stratum**
SG	*Cassinia sifton*			2		N	
SG	*Brachyloma daphnoides*			20		N	
EG	*Pteridium esculentum*			0.1	20	N	
SG	*Hibbertia obtusifolia*			1		N	
SG	*Leptospermum multicaule*			2		N	
GG	*Rytidosperma pallidum*			20		N	
FG	*Stylidium graminifolium*			0.1	20	N	
GG	*Dichelachne crinita*			1		N	
GG	*Austrostipa densiflora*			0.1	20	N	
GG	*Aristida ramosa*			25		N	
SG	*Melichrus urceolatus*			0.1	10	N	
GG	*Rytidosperma carphoides*			1		N	
SG	*Dillwynia sericea*			0.1	10	N	
GG	*Lomandra filiformis*			0.1	20	N	
FG	*Gonocarpus tetragynus*			2		N	
FG	*Microtis unifolia*			0.1	30	N	
SG	*Rhytidosporum procumbens*			0.1	20	N	
GG	*Austrostipa bigeniculata*			0.1	2	N	
SG	*Persoonia linearis*			0.1	1	N	
SG	*Cassinia arcuata*			0.2	5	N	
FG	*Hydrocotyle laxiflora*			0.1	10	N	
FG	*Wahlenbergia gracilenta*			0.1	1	N	
FG	*Hypochaeris radicata*			0.1	8	E	
FG	*Centaurium erythraea*			0.1	10	E	
FG	*Solenogyne dominii*			0.1	10	N	
GG	*Aira elegantissima*			0.1	50	E	
FG	*Thelymitra* sp.			0.1	2	N	
GG	*Schoenus apogon*			0.1	10	N	
FG	*Hovea heterophylla*			0.1	3	N	

Growth Form (see BAM Appendix 4) - Tree (TG), Shrub (SG), Grass & grasslike (GG), Forb (FG), Fern (EG), Other (OG)
Cover: 0.1, 0.2, 0.3, ... 1, 2, 3, ...10, 15, 20, 25, ...100% (incl. leaf, branch, stem cover per species).
Abundance for each species with ≤5% cover: 1, 2, 3, 4, ... 10, 20, 30, ... 100, 500, 1000, 1500, 2000 stems
N=native, E=exotic, HTE=high threat exotic
All species in a plot must be recorded. If you can only ID to genus, separate different species by unique identifiyer e.g. *Genus* sp1, *Genus* sp2 etc
Identify top 3 dominants in each stratum (use own stratum definitions) Cover area examples: 0.1% = 63x63cm, 0.5% = 1.4x1.4m, 1% =2x2 m, 5%=4x5m, 25%=10x10m

BAM Plot - Field Survey Sheet

Date	24/11/2022	**Survey Name**	Barina Quarry				
Recorders	David Orchard			**Plot ID #**	BA13	**Zone ID**	3747_Der.
Photo #				**Plot dimensions**			20 x 50
Datum	GDA2020	**Zone**	55	**Plot bearing along midline**			149
Easting	723923	**Northing**	6132306	Record magnetic bearing along midline from 0 m point			

Record easting, northing at plot marker (0 m point). Photos taken vertically and horizontally at 0 m point and 50 m point, looking into plot

IBRA region	South Eastern Highlands
Subregion	Monaro
Likely Vegetation Class	Southern Tableland Dry Sclerophyll Forests
Plant Community Type	3747 — **Condition state** Derived

For stics plot is centred on the midline, at 0 m point, 10 m either side

BAM Composition / Structure plot (400m²)

Dimensions (circle applicable size)

20 x 20 m ~~10 x 40 m~~

		Sum values*
Native Richness (count of native species)	**Trees**	1
	Shrubs	5
	Grasses etc	5
	Forbs	9
	Ferns	1
	Other	0
Cover (sum of cover of natives species)	**Trees**	0.1
	Shrubs	6.4
	Grasses etc	80.3
	Forbs	2.8
	Ferns	0.1
	Other	0
High threat weed cover		0

*These values summarise the floristic data for input into BAM calculator

Function plot is an extension of floristics plot out to 50 m along midline (or equiv. area)

BAM Function plot (1000m²)

Dimensions (circle applicable size)

20 x 50 m ~~10 x 100 m~~

Tree stem DBH (cm)		Notes on function attributes:
>80	0	Stem size class records # large trees (cf. benchmark)
50 - 79	0	Record stems for living trees only, and for all species
30 - 49	-	For multistemmed trees, record only the largest stem
20 - 29	-	Presence of <5cm stems records regeneration
10 - 19	-	Record # trees with hollows, not number of hollows
5 - 9	-	Count as one stem where tree is multistemmed
< 5	+	Hollow bearing stem may be a dead stem (i.e. stag)

# Trees with hollows	<20cm	Total #
	>20cm**	0
Length of logs		Total (m) 20.8

Measure length of logs >10cm, fully or partly in contact with the ground, and within the plot.

**Hollows of >20cm are recorded for habitat for some threatened species

BAM Litter/ Groundcover (1 x 1 m plots) Litter cover is used for BAM, other attributes are useful for recordings to condition in general

		1	2	3	4	5	Average
Sub-plot score (% cover)	**Litter**	1	7	5	1	5	3.8
	Bare ground						
	Cryptogam						
	Rock						

Litter / groundcover plots are located at 5, 15, 25, 35, 45 m (alternating sides) along the midline of function plot

Other plot information (not essential for BAM)

Disturbance	Severity	Timing	Landform
Clearing (incl. logging)			Microrelief
Cultivation			Slope
Grazing (native / stock)			Aspect
Soil erosion			Soil surface texture
Firewood removal			Soil colour
Fire (ground, understorey, mid, canopy burnt)			Site drainage
Storm damage			Distance to nearest water
Weediness			Distance to nearest rock outcrop / cave

Severity code: 0 = no evidence, 1 = slight, 2 = moderate, 3 = severe

Timing code: R = recent (<3yr), NR = not recent, O = old/historic

Notes

BAM Plot - Field Survey Sheet

Date	24/11/2022	Survey Name	Barina Quarry			
Recorders	David Orchard		Plot ID #	BA13	Zone ID	3747_Der.
GF code	Genus species (tick if photographed or sample taken)		Cover %	Abund (cover)	N, E, HTE	Stratum
TG	*Acacia decurrens*		0.1	2	N	
SG	*Cassinia sifton*		5		N	
FG	*Dluris sulphurea*		0.1	1	N	
GG	*Austrostipa bigeniculata*		60		N	
SG	*Hibbertia obtusifolia*		1		N	
FG	*Drosera hookeri*		0.1	20	N	
FG	*Centaurium erythraea*		0.1	30	E	
FG	*Gonocarpus tetragynus*		2		N	
SG	*Melichrus urceolatus*		0.1	8	N	
FG	*Hypochaeris radicata*		0.1	50	E	
GG	*Rytidosperma carphoides*		10		N	
GG	*Briza maxima*		1		E	
FG	*Solenogyne dominii*		0.1	20	N	
GG	*Rytidosperma pallidum*		0.1	1	N	
GG	*Schoenus apogon*		10		N	
GG	*Aira elegantissima*		0.1	50	E	
SG	*Leptospermum multicaule*		0.2	1	N	
EG	*Pteridium esculentum*		0.1	6	N	
FG	*Thelymitra sp.*		0.1	1	N	
GG	*Austrostipa densiflora*		0.2	30	N	
FG	*Wahlenbergia gracilenta*		0.1	1	N	
GG	*Briza minor*		0.1	20	E	
SG	*Brachyloma daphnoides*		0.1	6	N	
FG	*Microtis unifolia*		0.1	1	N	
FG	*Wahlenbergia stricta*		0.1	3	N	
FG	*Oxalis perennans*		0.1	1	N	

Growth Form (see BAM Appendix 4) - Tree (TG), Shrub (SG), Grass & grasslike (GG), Forb (FG), Fern (FG), Other (OG)

Cover: 0.1, 0.2, 0.3, ...1, 2, 3, ...10, 15, 20, 25, ...100% (incl. leaf, branch, stem cover per species).

Abundance for each species with ≤5% cover: 1, 2, 3, 4, .. 10, 20, 30, .. 100, 500, 1000, 1500, 2000 stems

N=native, E=exotic, HTE=high threat exotic

All species in a plot must be recorded. If you can only ID to genus, separate different species by unique identifier e.g. Genus sp1, Genus sp2 etc

Identify top 3 dominants in each stratum (use own stratum definitions) Cover area examples: 0.1% = 63x63cm, 0.5% = 1.4x1.4m, 1% =2x2 m, 5%=4x5m, 25%=10x10 m

BAM Plot - Field Survey Sheet

Date	24/11/2022	**Survey Name**	Barina Quarry				
Recorders	David Orchard			**Plot ID #**	BA14	**Zone ID**	3747_Good
Photo #				**Plot dimensions**			20 x 50
Datum	GDA2020	**Zone**	55	**Plot bearing along midline**			33
Easting	724015	**Northing**	6132715	Record magnetic bearing along midline from 0 m point			

Record easting, northing at plot marker (0 m point). Photos taken vertically and horizontally at 0 m point and 50 m point, looking into plot

IBRA region	South Eastern Highlands
Subregion	Monaro
Likely Vegetation Class	Southern Tableland Dry Sclerophyll Forests
Plant Community Type	3747 — **Condition state**: Good

For stics plot is centred on the midline, at 0m point, 10m either side

BAM Composition / Structure plot (400m²)

Dimensions (circle applicable size)		
20 x 20 m	~~10 x 40 m~~	**Sum values***
Native Richness (count of native species)	**Trees**	2
	Shrubs	9
	Grasses etc	6
	Forbs	5
	Ferns	0
	Other	0
Cover (sum of cover of natives species)	**Trees**	16
	Shrubs	22.3
	Grasses etc	38.3
	Forbs	25.4
	Ferns	0
	Other	0
High threat weed cover		0

*These values summarise the floristic data for input into BAM calculator

Function plot is an extension of floristics plot out to 50 m along midline (or equiv. area)

BAM Function plot (1000m²)

Dimensions (circle applicable size)	
20 x 50 m	~~30 x 100 m~~

Tree stem DBH (cm)		Notes on function attributes:
>80	1	Stem size class records #large trees (cf. benchmark)
50 - 79	1	Record stems for living trees only, and for all species
30 - 49	+	For multistemmed trees, record only the largest stem
20 - 29	+	Presence of <5cm stems records regeneration
10 - 19	+	Record # trees with hollows, not number of hollows
5 - 9	+	Count as one stem where tree is multistemmed
< 5	+	Hollow bearing stem may be a dead stem (i.e. stag)

# Trees with hollows	<20cm	Total #
	>20cm**	1
Length of logs		Total (m) 30.9

Measure length of logs >10cm, fully or partly in contact with the ground, and within the plot.

**Hollows of >20cm are recorded for habitat for some threatened species

BAM Litter/ Groundcover (1 x 1 m plots) Litter cover is used for BAM, other attributes are useful for recordings to condition in general

		1	2	3	4	5	Average
Sub-plot score (% cover)	Litter	60	95	100	95	95	89
	Bare ground						
	Cryptogam						
	Rock						

Litter / groundcover plots are located at 5, 15, 25, 35, 45 m (alternating sides) along the midline of function plot

Other plot information (not essential for BAM)

Disturbance	Severity	Timing	Landform
Clearing (incl. logging)			Microrelief
Cultivation			Slope
Grazing (native / stock)			Aspect
Soil erosion			Soil surface texture
Firewood removal			Soil colour
Fire (ground, understorey, mid, canopy burnt)			Site drainage
Storm damage			Distance to nearest water
Weediness			Distance to nearest rock outcrop / cave

Severity code: 0=no evidence, 1=slight, 2=moderate, 3=severe

Timing code: R = recent (<3yr), NR = not recent, D = undetermined

Notes

BAM Plot - Field Survey Sheet

Date	24/11/2022	Survey Name	Barina Quarry			
Recorders	David Orchard		Plot ID #	BA14	Zone ID	3747_Good
GF code	*Genus species* (tick if photographed or sample taken)		Cover %	Abund (cover)	N, E, HTE	Stratum
TG	*Eucalyptus macrorhyncha*		15		N	
TG	*Eucalyptus rossii*		1		N	
SG	*Cassinia arcuata*		20		N	
FG	*Gonocarpus tetragynus*		25		N	
SG	*Persoonia linearis*		0.5	20	N	
SG	*Hibbertia obtusifolia*		0.1	10	N	
SG	*Cassinia sifton*		0.1	20	N	
SG	*Brachyloma daphnoides*		1		N	
FG	*Diuris sulphurea*		0.1	1	N	
SG	*Acacia falciformis*		0.2	30	N	
GG	*Lomandra filiformis*		0.1	20	N	
GG	*Rytidosperma pallidum*		30		N	
GG	*Rytidosperma carphoides*		5		N	
FG	*Stylidium graminifolium*		0.1	3	N	
SG	*Acacia terminalis*		0.2	2	N	
GG	*Austrostipa densiflora*		0.2	10	N	
GG	*Microlaena stipoides*		2		N	
GG	*Poa sieberiana*		1		N	
NN	*Hypochaeris radicata*		0.1	20	E	
FG	*Goodenia hederacea*		0.1	10	N	
SG	*Rhytidosporum procumbens*		0.1	8	N	
FG	*Hydrocotyle laxiflora*		0.1	7	N	
SG	*Dillwynia sericea*		0.1	1	N	

Growth Form (see BAM Appendix 4) - Tree (TG), Shrub (SG), Grass & grasslike (GG), Forb (FG), Fern (FG), Other (OG)
Cover: 0.1, 0.2, 0.3, ...1, 2, 3, ...10, 15, 20, 25, ...100% (incl. leaf, branch, stem cover per species).
Abundance for each species with ≤5% cover: 1, 2, 3, 4, .. 10, 20, 30, .. 100, 500, 1000, 1500, 2000 stems
N=native, E=exotic, HTE=high threat exotic
All species in a plot must be recorded. If you can only ID to genus, separate different species by unique identifier e.g. Genus sp1, Genus sp2 etc
Identify top 3 common species in each stratum (use own stratum definitions) Cover area examples: 0.1% = 63x63cm, 0.5% = 1.4x1.4m, 1% =2x2 m, 5%=4x5m, 25%=10x10 m

BAM Plot - Field Survey Sheet

Date	24/11/2022	**Survey Name**	Barina Quarry				
Recorders	David Orchard			**Plot ID #**	BA15	**Zone ID**	3747_Qua.
Photo #				**Plot dimensions**			20 x 50
Datum	GDA2020	**Zone**	55	**Plot bearing along midline**			206
Easting	723779	**Northing**	6132291	Record magnetic bearing along midline from 0 m point			

Record easting, northing at plot marker (0 m point). Photos taken vertically and horizontally at 0 m point and 50 m point, looking into plot

IBRA region	South Eastern Highlands
Subregion	Monaro
Likely Vegetation Class	Southern Tableland Dry Sclerophyll Forests
Plant Community Type	3747 — **Condition state** Quarry

For stics plot is centred on the midline, at 0 m point, 10 m either side

BAM Composition / Structure plot (400m²)

Dimensions (circle applicable size)		
20 x 20 m	~~10 x 40 m~~	**Sum values***
Native Richness (count of native species)	**Trees**	2
	Shrubs	1
	Grasses etc	3
	Forbs	5
	Ferns	0
	Other	0
Cover (sum of cover of natives species)	**Trees**	1.1
	Shrubs	15
	Grasses etc	2.1
	Forbs	3.4
	Ferns	0.1
	Other	0
High threat weed cover		0

*These values summarise the floristic data for input into BAM calculator

Function plot is an extension of floristics plot out to 50 m along midline (or equiv. area)

BAM Function plot (1000m²)

Dimensions (circle applicable size)	
20 x 50 m	~~10 x 100 m~~

Tree stem DBH (cm)		Notes on function attributes:
>80	0	Stem size class records # large trees (cf. benchmark)
50 - 79	0	Record stems for living trees only, and for all species
30 - 49	-	For multistemmed trees, record only the largest stem
20 - 29	-	Presence of <5cm stems records regeneration
10 - 19	-	Record # trees with hollows, not number of hollows
5 - 9	-	Count as one stem where tree is multistemmed
< 5	+	Hollow bearing stem may be a dead stem (i.e. stag)

# Trees with hollows	<20cm	Total #
	>20cm**	0
Length of logs		Total (m) 0.1

Measure length of logs >10cm, fully or partly in contact with the ground, and within the plot.

**Hollows of >20cm are recorded for habitat for some threatened species

BAM Litter/ Groundcover (1 x 1 m plots) Litter cover is used for BAM, other attributes are useful for recordings to condition in general

		1	2	3	4	5	Average
Sub-plot score (% cover)	**Litter**	0	1	3	0	5	1.8
	Bare ground						
	Cryptogam						
	Rock						

Litter / groundcover plots are located at 5, 15, 25, 35, 45 m (alternating sides) along the midline of function plot

Other plot information (not essential for BAM)

Disturbance	Severity	Timing	Landform
Clearing (incl. logging)			Microrelief
Cultivation			Slope
Grazing (native / stock)			Aspect
Soil erosion			Soil surface texture
Firewood removal			Soil colour
Fire (ground, understorey, mid, canopy burnt)			Site drainage
Storm damage			Distance to nearest water
Weediness			Distance to nearest rock outcrop / cave

Severity code: 0 = no evidence, 1 = slight, 2 = moderate, 3 = severe

Timing code: R = recent (<3yr), NR = not recent, O = old/historic

Notes

BAM Plot - Field Survey Sheet

Date	24/11/2022	Survey Name	Barina Quarry			
Recorders	David Orchard		Plot ID #	BA15	Zone ID	3747_Qua.
GF code	Genus species (tick if photographed or sample taken)		Cover %	Abund (covers)	N, E, HTE	Stratum
TG	*Acacia dealbata*		1		N	
TG	*Acacia decurrens*		0.1	1	N	
SG	*Cassinia sifton*		15		N	
FG	*Gonocarpus tetragynus*		3		N	
GG	*Schoenus apogon*		1		N	
FG	*Triptilodiscus pygmaeus*		0.1	20	N	
GG	*Rytidosperma carphoides*		1		N	
FG	*Wahlenbergia stricta*		0.1	1	N	
NN	*Hypochaeris glabra*		0.1	10	E	
NN	*Aira elegantissima*		0.1	20	E	
NN	*Gamochaeta purpurea*		0.1	10	E	
FG	*Drosera hookeri*		0.1	1	N	
NN	*Holcus lanatus*		0.1	3	E	
NN	*Leontodon saxatilis*		0.1	1	E	
GG	*Juncus bufonius*		0.1	1	N	
NN	*Centaurium erythraea*		0.1	1	E	
FG	*Isotoma fluviatilis*		0.1	2	N	

Growth Form (see BAM Appendix 4) - Tree (TG), Shrub (SG), Grass & grasslike (GG), Forb (FG), Fern (FG), Other (OG)
Cover: 0.1, 0.2, 0.3, ...1, 2, 3, ...10, 15, 20, 25, ...100% (incl. leaf, branch, stem cover per species).
Abundance for each species with ≤5% cover: 1, 2, 3, 4, .. 10, 20, 30, .. 100, 500, 1000, 1500, 2000 stems
N=native, E=exotic, HTE=high threat exotic
All species in a plot must be recorded. If you can only ID to genus, separate different species by unique identifier e.g. Genus sp1, Genus sp2 etc
Identify top 3 dominants in each stratum (use own stratum definitions) Cover area examples: 0.1% = 63x63cm, 0.5% = 1.4x1.4m, 1% =2x2 m, 5%=4x5m, 25%=10x10 m

FLORA SPECIES LIST

In total, 101 plant species were detected during the initial field survey (**Table 31**). This list includes species within and adjacent to the subject land. Of these, 85 were native (84.16%) and 16 introduced (15.84%). No species listed as High-threat Exotics (HTE) under the Biodiversity Assessment Method (2020), Weeds of National Significance (WoNS), or Priority Weeds (PW) for the South East LLS region were recorded during the survey. Note that these species were recorded during the initial survey, which covered a wider area than the final impact footprint.

Table 31 Flora species detected during the field survey

[1]Growth Form	Scientific Name	Common Name	[2]Status	[3]HTE	[4]WoNS	[5]PW
TG	*Acacia dealbata*	Silver Wattle	N	No	No	No
TG	*Acacia decurrens*	Black Wattle	N	No	No	No
TG	*Allocasuarina littoralis*	Black She-Oak	N	No	No	No
TG	*Eucalyptus cinerea*	Argyle Apple	N	No	No	No
TG	*Eucalyptus dives*	Broad-Leaved Peppermint	N	No	No	No
TG	*Eucalyptus macrorhyncha*	Red Stringybark	N	No	No	No
TG	*Eucalyptus rossii*	Inland Scribbly Gum	N	No	No	No
SG	*Acacia falciformis*	Broad-Leaved Hickory	N	No	No	No
SG	*Acacia gunnii*	Ploughshare Wattle	N	No	No	No
SG	*Acacia terminalis*	Sunshine Wattle	N	No	No	No
SG	*Brachyloma daphnoides*	Daphne Heath	N	No	No	No
SG	*Cassinia aculeata*	Dolly Bush	N	No	No	No
SG	*Cassinia longifolia*	Shiny Cassinia	N	No	No	No
SG	*Cassinia sifton*	Sifton Bush	N	No	No	No
SG	*Dillwynia sericea*	Showy Parrot-Pea	N	No	No	No
SG	*Gompholobium huegelii*	Pale Wedge Pea	N	No	No	No
SG	*Hibbertia calycina*	Lesser Guinea Flower	N	No	No	No
SG	*Hibbertia obtusifolia*	Hoary Guinea Flower	N	No	No	No
SG	*Gaudium multicaule*	Silver Tea-Tree	N	No	No	No
SG	*Leucopogon virgatus*	Common Beard-heath	N	No	No	No
SG	*Melichrus urceolatus*	Urn-Heath	N	No	No	No
SG	*Persoonia linearis*	Narrow-Leaved Geebung	N	No	No	No
SG	*Pultenaea subspicata*	Low Bush-Pea	N	No	No	No
SG	*Rhytidosporum procumbens*	White Marianth	N	No	No	No
SG	*Solanum linearifolium*	Mountain Kangaroo Apple	N	No	No	No
SG	*Tetratheca bauerifolia*	Heath Pink-Bells	N	No	No	No

[1]Growth Form	Scientific Name	Common Name	[2]Status	[3]HTE	[4]WoNS	[5]PW
GG	*Aristida jerichoensis*	Jericho Wiregrass	N	No	No	No
GG	*Aristida ramosa*	Purple Wiregrass	N	No	No	No
GG	*Austrostipa bigeniculata*	Kneed Speargrass	N	No	No	No
GG	*Austrostipa densiflora*	Foxtail Speargrass	N	No	No	No
GG	*Centrolepis strigosa* subsp. *strigosa*	Bristlewort	N	No	No	No
GG	*Dichelachne crinita*	Longhair Plumegrass	N	No	No	No
GG	*Echinopogon caespitosus*	Bushy Hedgehog-Grass	N	No	No	No
GG	*Isolepis cernua*	Nodding Club-Rush	N	No	No	No
GG	*Isolepis inundata*	Club-Rush	N	No	No	No
GG	*Juncus bufonius*	Toad Rush	N	No	No	No
GG	*Juncus subsecundus*	Rush	N	No	No	No
GG	*Lachnagrostis filiformis*	Common Blown-grass	N	No	No	No
GG	*Lepidosperma laterale*	Variable Sword-sedge	N	No	No	No
GG	*Lomandra filiformis*	Wattle Mat-Rush	N	No	No	No
GG	*Lomandra multiflora*	Many-Flowered Mat-Rush	N	No	No	No
GG	*Luzula meridionalis*	Woodrush	N	No	No	No
GG	*Microlaena stipoides*	Weeping Grass	N	No	No	No
GG	*Poa sieberiana*	Snowgrass	N	No	No	No
GG	*Rytidosperma carphoides*	Short Wallaby Grass	N	No	No	No
GG	*Rytidosperma erianthum*	Wallaby Grass	N	No	No	No
GG	*Rytidosperma pallidum*	Redanther Wallaby Grass	N	No	No	No
GG	*Rytidosperma pilosum*	Smooth-Flower Wallaby Grass	N	No	No	No
GG	*Schoenus apogon*	Common Bog-Rush	N	No	No	No
GG	*Themeda triandra*	Kangaroo Grass	N	No	No	No
FG	*Boronia nana*	Dwarf Boronia	N	No	No	No
FG	*Caladenia gracilis*	Musky Caladenia	N	No	No	No
FG	*Calochilus robertsonii*	Purplish Beard Orchid	N	No	No	No
FG	*Dianella revoluta*	Black-anther Flax-lily	N	No	No	No
FG	*Diuris sulphurea*	Tiger Orchid	N	No	No	No
FG	*Drosera hookeri*	Sundew	N	No	No	No
FG	*Euchiton sphaericus*	Star Cudweed	N	No	No	No
FG	*Gonocarpus tetragynus*	Common Raspwort	N	No	No	No
FG	*Goodenia hederacea*	Ivy Goodenia	N	No	No	No
FG	*Haloragis heterophylla*	Rough Raspwort	N	No	No	No

[1]Growth Form	Scientific Name	Common Name	[2]Status	[3]HTE	[4]WoNS	[5]PW
FG	*Hovea heterophylla*	Hovea	N	No	No	No
FG	*Hydrocotyle laxiflora*	Stinking Pennywort	N	No	No	No
FG	*Hypoxis hygrometrica*	Golden Weather-Grass	N	No	No	No
FG	*Isotoma fluviatilis*	Swamp Isotome	N	No	No	No
FG	*Microtis unifolia*	Common Onion Orchid	N	No	No	No
FG	*Oxalis perennans*	Grassland Wood-sorrel	N	No	No	No
FG	*Patersonia sericea*	Silky Purple-Flag	N	No	No	No
FG	*Poranthera microphylla*	Small Poranthera	N	No	No	No
FG	*Schenkia australis*	Spike Centaury	N	No	No	No
FG	*Solenogyne dominii*	Smooth Solenogyne	N	No	No	No
FG	*Stylidium graminifolium*	Grass Trigger-Plant	N	No	No	No
FG	*Stypandra glauca*	Nodding Blue Lily	N	No	No	No
FG	*Thelymitra pauciflora*	Slender Sun Orchid	N	No	No	No
FG	*Thysanotus tuberosus*	Common Fringe Lily	N	No	No	No
FG	*Triptilodiscus pygmaeus*	Common Sunray	N	No	No	No
FG	*Veronica plebeia*	Creeping Speedwell	N	No	No	No
FG	*Vittadinia muelleri*	Narrow-leaf New Holland Daisy	N	No	No	No
FG	*Wahlenbergia gracilenta*	Annual Bluebell	N	No	No	No
FG	*Wahlenbergia stricta*	Tall Bluebell	N	No	No	No
EG	*Cheilanthes sieberi*	Poison Rock Fern	N	No	No	No
EG	*Pteridium esculentum*	Common Bracken	N	No	No	No
OG	*Amyema miquelii*	Box Mistletoe	N	No	No	No
OG	*Amyema pendula*	Mistletoe	N	No	No	No
OG	*Cassytha pubescens*	Devil's Twine	N	No	No	No
OG	*Hardenbergia violacea*	Purple Coral Pea	N	No	No	No
GG	*Aira elegantissima*	Delicate Hairgrass	E	No	No	No
GG	*Anthoxanthum odoratum*	Sweet Vernal Grass	E	No	No	No
GG	*Briza maxima*	Quaking Grass	E	No	No	No
GG	*Briza minor*	Shivery Grass	E	No	No	No
GG	*Bromus hordeaceus*	Soft Brome	E	No	No	No
GG	*Cynosurus echinatus*	Rough Dog's Tail	E	No	No	No
GG	*Holcus lanatus*	Yorkshire Fog	E	No	No	No
FG	*Centaurium erythraea*	Common Centaury	E	No	No	No
FG	*Cerastium glomeratum*	Mouse-Ear Chickweed	E	No	No	No
FG	*Cicendia quadrangularis*	Oregon Timwort	E	No	No	No

[1]Growth Form	Scientific Name	Common Name	[2]Status	[3]HTE	[4]WoNS	[5]PW
FG	*Cirsium vulgare*	Spear Thistle	E	No	No	No
FG	*Gamochaeta purpurea*	Purple Cudweed	E	No	No	No
FG	*Hypochaeris glabra*	Smooth Catsear	E	No	No	No
FG	*Hypochaeris radicata*	Flatweed	E	No	No	No
FG	*Leontodon saxatilis*	Lesser Hawkbit	E	No	No	No
FG	*Plantago lanceolata*	Lamb's Tongues	E	No	No	No

FAUNA SPECIES LIST

In total, 74 fauna species (70 native and 4 introduced), were detected during the surveys. Seven frogs, 32 birds, two insects, 27 mammals (including fourteen bats), and six reptiles were detected. One threatened bird species (Scarlet Robin) and one threatened mammal species (Squirrel Glider) was detected during the field survey.

Due to similarities in the calls of some bat species, conclusive identification of some species was not possible. These species, including four threatened species, have been marked as probable in **Table 32**.

Table 32 Fauna species detected during the field survey.

Class	Scientific name	Common name	Status[1]	BC Act Status[2]	EPBC Act Status	Seen	Heard	SM4 Bat[3]	Camera Trap
Amphibia	*Crinia parinsignifera*	Eastern sign-bearing Froglet	N	-	-	x	x	-	-
Amphibia	*Crinia signifera*	Common Eastern Froglet	N	-	-	x	x	-	-
Amphibia	*Limnodynastes dumerilii*	Eastern Banjo Frog	N	-	-	x	x	-	-
Amphibia	*Limnodynastes tasmaniensis*	Spotted Marsh Frog	N	-	-	x	x	-	-
Amphibia	*Litoria peronii*	Peron's tree frog	N	-	-	x	x	-	-
Amphibia	*Litoria verreauxii*	Whistling tree frog	N	-	-	x	x	-	-
Amphibia	*Uperoleia laevigata*	Smooth Toadlet	N	-	-	x	x	-	-
Aves	*Acanthiza chrysorrhoa*	Yellow-rumped Thornbill	N	-	-	x	-	-	-
Aves	*Acanthiza pusilla*	Brown Thornbill	N	-	-	x	-	-	-
Aves	*Alisterus scapularis*	Australian King Parrot	N	-	-	x	-	-	-
Aves	*Anthochaera carunculata*	Red Wattlebird	N	-	-	x	-	-	-
Aves	*Cacatua galerita*	Sulphur-crested Cockatoo	N	-	-	x	-	-	-
Aves	*Chenonetta jubata*	Australian Wood Duck	N	-	-	x	-	-	-
Aves	*Colluricincla harmonica*	Grey Shrike-thrush	N	-	-	x	-	-	-

Class	Scientific name	Common name	Status[1]	BC Act Status[2]	EPBC Act Status	Seen	Heard	SM4 Bat[3]	Camera Trap
Aves	*Corcorax melanorhamphos*	White Winged Chough	N	-	-	x	-	-	-
Aves	*Cormobates leucophaea*	White-throated Treecreeper	N	-	-	x	x	-	-
Aves	*Corvus coronoides*	Australian Raven	N	-	-	x	x	-	-
Aves	*Cracticus nigrogularis*	Pied Butcherbird	N	-	-	x	-	-	-
Aves	*Dacelo novaeguineae*	Laughing Kookaburra	N	-	-	x	x	-	-
Aves	*Egretta novaehollandiae*	White-faced Heron	N	-	-	x	-	-	-
Aves	*Eolophus roseicapilla*	Galah	N	-	-	x	-	-	-
Aves	*Eopsaltria australis*	Eastern Yellow Robin	N	-	-	x	x	-	-
Aves	*Falco cenchroides*	Nankeen Kestrel	N	-	-	x	-	-	-
Aves	*Falco longipennis*	Australian Hobby	N	-	-	x	-	-	-
Aves	*Grallina cyanoleuca*	Magpie-lark	N	-	-	x	-	-	-
Aves	*Gymnorhina tibicen*	Australian Magpie	N	-	-	x	-	-	-
Aves	*Heteroscenes pallidus*	Pallid Cuckoo	N	-	-	x	-	-	-
Aves	*Malurus cyaneus*	Superb Fairywren	N	-	-	x	-	-	-
Aves	*Pachycephala rufiventris*	Rufous Whistler	N	-	-	x	x	-	-
Aves	*Petroica boodang*	Scarlet Robin	N	V	-	x	-	-	-
Aves	*Phaps chalcoptera*	Common Bronzewing	N	-	-	x	-	-	-
Aves	*Philemon corniculatus*	Noisy Friarbird	N	-	-	x	x	-	-
Aves	*Platycercus elegans*	Crimson Rosella	N	-	-	x	-	-	-
Aves	*Platycercus eximius*	Eastern Rosella	N	-	-	x	-	-	-
Aves	*Rhipidura albiscapa*	Grey Fantail	N	-	-	x	-	-	-

Class	Scientific name	Common name	Status[1]	BC Act Status[2]	EPBC Act Status	Seen	Heard	SM4 Bat[3]	Camera Trap
Aves	*Rhipidura leucophrys*	Willie Wagtail	N	-	-	x	-	-	-
Aves	*Strepera graculina*	Pied Currawong	N	-	-	x	-	-	-
Aves	*Vanellus miles*	Masked Lapwing	N	-	-	x	-	-	-
Aves	*Zanda funerea*	Yellow-tailed Black-Cockatoo	N	-	-	x	-	-	-
Insecta	*Helicoverpa armigera*	Cotton bollworm	N	-	-	x	-	-	-
Insecta	*Pollanisus viridipulverulenta*	Satin-green Forester	N	-	-	x	-	-	-
Mammalia	*Antechinus agilis*	Agile Antechinus	N	-	-	-	-	-	x
Mammalia	*Austronomus australis*	White-striped Free-tailed Bat	N	-	-	-	-	C	-
Mammalia	*Chalinolobus gouldii*	Gould's Wattled Bat	N	-	-	-	-	C	-
Mammalia	*Chalinolobus morio*	Chocolate Wattled Bat	N	-	-	-	-	C	-
Mammalia	*Falsistrellus tasmaniensis*	Eastern False Pipistrelle	N	V	-	-	-	Pr	-
Mammalia	*Lepus europaeus*	European hare	I	-	-	x	-	-	-
Mammalia	*Macropus giganteus*	Eastern grey kangaroo	N	-	-	x	-	-	-
Mammalia	*Macropus rufogriseus*	Red-necked wallaby	N	-	-	x	-	-	-
Mammalia	*Miniopterus orianae oceanensis*	Large Bent-winged Bat	N	V	-	-	-	Pr	-
Mammalia	*Ncytophilus sp.*	Long-eared Bat sp.	N	-	-	-	-	Pr	-
Mammalia	*Oryctolagus cuniculus*	European Rabbit	I	-	-	x	-	-	-
Mammalia	*Osphranter robustus*	Common Wallaroo	N	-	-	x	-	-	-
Mammalia	*Ozimops ridei*	Eastern Free-tailed Bat	N	-	-	-	-	C	-
Mammalia	*Petaurus notatus*	Krefft’s Glider	N	-	-	-	-	-	x

Class	Scientific name	Common name	Status[1]	BC Act Status[2]	EPBC Act Status	Seen	Heard	SM4 Bat[3]	Camera Trap
Mammalia	*Petaurus norfolcensis*	Squirrel Glider	N	V	-	-	-	-	x
Mammalia	*Rhinolophus megaphyllus*	Eastern Horseshoe Bat	N	-	-	-	-	C	-
Mammalia	*Saccolaimus flaviventris*	Yellow-bellied Sheathtail-bat	N	V	-	-	-	Pr	-
Mammalia	*Scoteanax rueppellii*	Greater Broad-nosed Bat	N	V	-	-	-	Pr	-
Mammalia	*Scotorepens orion*	Eastern Broad-nosed Bat	N	-	-	-	-	Pr	-
Mammalia	*Sus scrofa*	Feral Pig	I	-	-	x	-	-	-
Mammalia	*Trichosurus vulpecula*	Common Brushtail Possum	N	-	-	-	-	-	x
Mammalia	*Vespadelus darlintoni*	Large Forest Bat	N	-	-	-	-	Pr	-
Mammalia	*Vespadelus regulus*	Southern Forest Bat	N	-	-	-	-	Pr	-
Mammalia	*Vespadelus vulturnus*	Little Forest Bat	N	-	-	-	-	Pr	-
Mammalia	*Vombatus ursinus*	Bare-nosed Wombat	N	-	-	x	-	-	-
Mammalia	*Vulpes vulpes*	European Red Fox	I	-	-	x	-	-	-
Mammalia	*Wallabia bicolor*	Swamp Wallaby	N	-	-	x	-	-	-
Reptilia	*Amphibolurus muricatus*	Jacky Dragon	N	-	-	x	-	-	-
Reptilia	*Chelodina longicollis*	Eastern Snake-necked Turtle	N	-	-	x	-	-	-
Reptilia	*Diplodactylus vittatus*	Eastern Stone Gecko	N	-	-	x	-	-	-
Reptilia	*Notechis scutatus*	Tiger snake	N	-	-	x	-	-	-
Reptilia	*Tiliqua nigrolutea*	Blotched Blue-tongue Lizard	N	-	-	x	-	-	-
Reptilia	*Tiliqua rugosa*	Shingleback Lizard	N	-	-	x	-	-	-

[1]N=Native, I=Introduced [2]V=Vulnerable [3]C=Confident, Pr=Probable

CAMERA TRAP DATA

Of the 14 arboreal baited camera traps deployed, 11 cameras captured images of native fauna. Three cameras captured images of Agile Antechinus (top images below), nine cameras captured images of gliders in the genus *Petaurus*. Krefft's gliders (middle images below) were identified based on the presence of a white tail tip (which is absent in Squirrel Gliders) and/or tail length and thickness at the base, along with the appearance of the face (Squirrel Gliders have a longer more pointed face).

Expert advice was sought from Angus Houston of WSP and Dr Rodney Van der Ree of WSP, the latter of whom is an approved expert for Squirrel Gliders. The received advice confirmed that at least one of the *Petaurus* images captured showed a Squirrel Glider (*Petaurus norfolcensis*; bottom left). In addition, the image on the bottom right was considered very likely to be a Squirrel Glider.

BAT LOGGER DATA

1-4 SM4 Bats (Song meter ultrasonic bat detectors) were left on site for 1-28 nights (February – March 2025) to record data. Bat logger data were analysed by Kristy Peters from Wingbeat Ecology.

Kristy Peters
Principal Ecologist
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ABN: 12 118 428 909

31 March 2025

Attn: Lauriane Citerne
Ecologist
OzArk Environment & Heritage
PO Box 2069
Dubbo NSW 2830

RE: Analysis of threatened microbat echolocation call data from Barina Quarry BDAR site, Collector NSW

Consultant Experience / Project Scope

Kristy Peters (Principal Ecologist) at Wingbeat Ecology has been analysing microbat calls from across NSW and Queensland for 18 years and has continually undertaken relevant training relating to bat call analysis using both Anabat Insight™ and Wildlife Acoustics Kaleidoscope™ software. Wingbeat Ecology was engaged to analyse Songmeter™ data collected by OzArk Environment and Heritage at the Barina Quarry project site during February and March 2025. The scope of the call analysis was to focus on finding threatened microbat species calls, however common species identified are also provided in the results.

Methods and Results

Data from three Songmeter™ units placed at three locations within the project study area (**Table 1**) was analysed using Anabat Insight™, with calls compared to descriptions and examples from Pennay *et al*. 2004 and Churchill (2022). Over 20,000 call files were filtered to search for target threatened species within the data set with a total of 20 person hours spent undertaking the analysis. All threatened and common species encountered during the search process were compiled into a species inventory for the site. A total of 14 microbat species (of which four are listed as threatened species under the NSW *Biodiversity Conservation Act 2016*) were recorded across the project site (**Table 2**).

Table 1 – Locations of three Songmeter units placed within the project study area

Logger Name	Latitude	Longitude	Logger ID	Dates of data provided for analysis
SM3	-34.9278468	149.4489623	SM300285	8/3/2025
SM4BAT Alfred	-34.926668	149.4503213	S4U11692	3 - 14 February 2025
SM4BAT Bram	-34.931486	149.4508946	S4U08933	4 February – 4 March 2025

Several species could be assigned a 'Confident' identification due to the distinctiveness of their call shape and the characteristic frequency they call at. Most species were given a 'Probable' identification based on their call shape and metrics as these species are known to overlap with other species with similar call shapes in the Sydney Basin and Southern NSW regions.

In these instances, it was considered that there was enough evidence within the data sets to suggest that both a threatened species such as Large Bent-winged Bat (*Miniopterus orianae oceanensis*) and overlapping species such as Southern Forest Bat (*Vespadelus regulus*) occur on site. Site habitat attributes and proximity of records from the NSW Bionet database and the Atlas of Living Australia were also considered.

Table 2 – Microbat species detected at the Barina Quarry BDAR site from echolocation call analysis

Scientific Name	Common Name	Status	Confidence	No. of 'passes'
Austronomus australis	White-striped Free-tailed Bat		C	
Chalinolobus gouldii	Gould's Wattled Bat		C	
Chalinolobus morio	Chocolate Wattled Bat		C	
Falsistrellus tasmaniensis	Eastern False Pipistrelle	V	Pr	1
Miniopterus orianae oceanensis	Large Bent-winged Bat	V	Pr	22
Ncytophilus sp.	Long-eared Bat sp.		Pr	
Ozimops ridei	Eastern Free-tailed Bat		C	
Rhinolophus megaphyllus	Eastern Horseshoe Bat		C	
Saccolaimus flaviventris	Yellow-bellied Sheathtail-bat	V	Pr	5
Scoteanax rueppellii	Greater Broad-nosed Bat	V	Pr	6
Scotorepens orion	Eastern Broad-nosed Bat		Pr	
Vespadelus darlingtoni	Large Forest Bat		Pr	
Vespadelus regulus	Southern Forest Bat		Pr	
Vespadelus vulturnus	Little Forest Bat		Pr	

V = Vulnerable, NSW Biodiversity Conservation Act 2016; C = Confident; Pr = Probable

Most calls observed during the filtering process were from common species (particularly Gould's Wattled Bat, Eastern Free-tailed Bat, Eastern Broad-nosed Bat, and the three *Vespadelus* species) with low numbers of 'passes' of the threatened species detected. Please feel free to contact me if you have any questions about the results provided.

Kind regards,

Kristy Peters
Principal Ecologist
Wingbeat Ecology

References

Atlas of Living Australia – Open access to Australia's biodiversity data (ala.org.au), database accessed 30/03/2025.

Churchill, S. (2008). *Australian Bats: Second Edition*. Allen & Unwin publishers, 2008.

Churchill, S. (2022). Australian Bats Field Guide app, released 2024.

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Pennay, M., Law, B., and Reinhold, L. (2004). 'Bat Calls of NSW: Region Based Guide to the Echolocation Calls of Microchiropteran Bats.' (NSW Dept. Environment and Conservation: Hurstville, NSW.)

Appendix F: Decision-maker authorisation to use more appropriate local data

Not relevant to this project

Appendix G: Staging of impacts – indicative timing

Year		Stage							
		1a	1b	2a	2b	2c	2d	3a	3b
1	2026	x	x						x
2	2027								
3	2028			x					
4	2029								
5	2030						x		
6	2031					x			
7	2032								
8	2033				x				
9	2034								
10	2035							x	

Appendix H: Expert report on the presence of Pink-tailed Legless Lizard *Aprasia parapulchella* habitat (Capital Ecology, 2026)

28 January 2026

Chris Eveston
Collector Resources Pty Ltd
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Expert report on the presence of Pink-tailed Legless Lizard *Aprasia parapulchella* habitat in the subject land for the Barina Quarry modification project, Collector, NSW

Capital Ecology project no. 3487

Dear Chris Eveston,

Prepared in accordance with section 5.3 of the NSW Biodiversity Assessment Method 2020 (BAM), Attachment 1 to this letter provides my expert report on the presence of the Pink-tailed Legless Lizard *Aprasia parapulchella* habitat in the subject land for the Barina Quarry modification project located at Collector, NSW.

The conclusion of my assessment is that *A. parapulchella* is likely to be present on or use habitat in the subject land. As outlined in my report, the subject land supports 7.56 ha of likely habitat for *A. parapulchella*.

I trust that this report provides the advice and assessment required. If, however, you should have any questions, please do not hesitate to contact me.

Yours sincerely,

Robert Speirs
Director / Principal Ecologist
BAppSc (Ecology), DipPM, MEIANZ, CEnvP-E, BAM Assessor (No: BAAS17089)
Approved BAM Expert – Striped Legless Lizard, Pink-tailed Legless Lizard, and Golden Sun Moth

Attachments:

Attachment 1. Expert report on the presence of Pink-tailed Legless Lizard *Aprasia parapulchella* habitat in the subject land for the Barina Quarry modification project, Collector, NSW.

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We acknowledge the Traditional Custodians of the land on which we work. We pay our respects to Elders past and present.

Attachment 1. Expert report on the presence of Pink-tailed Legless Lizard *Aprasia parapulchella* habitat in the subject land for the Barina Quarry modification project, Collector, NSW

Citation: Capital Ecology (2026). *Expert report on the presence of Pink-tailed Legless Lizard Aprasia parapulchella habitat in the subject land for the Barina Quarry modification project, Collector, NSW*. Final 01 – 28 January 2026. Prepared for Collector Resources Pty Ltd. Authors: R. Speirs and J. Thornberry. Project no. 3487.

1. Overview of the project and relevance of the Pink-tailed Legless Lizard

The Barina Quarry modification project (the 'proposed development') is a hard rock quarry project located in Collector, New South Wales (NSW). All components of the proposed development, being the extraction area, stockpile area, overburden emplacement area, site office/workshop, and private access roads, are located to the north of Collector Road, approximately 1.4 km south-east of the township of Collector, NSW. The proposed development is wholly located within the Queanbeyan-Palerang Regional Council Local Government Area (LGA). The 'development footprint' (area = 4.94 ha, Figure 1 and Figure 2) for the proposed development includes portions of Lot A DP86342, Lot 33 DP750008, and Lot 3 DP1177623. Due to the linear and fragmented nature of the development footprint, the field inspection component of this assessment was undertaken within a broader area, the 'subject land' (area = 15.04 ha, Figure 1 and Figure 2).

Irwin Environmental Management Pty Ltd (Irwin Environmental Management) is currently completing the required environmental investigations for the Barina Quarry modification project on behalf of Collector Resources Pty Ltd in accordance with the requirements of the NSW Government as a State Significant Development (SSD). OzArk Environment and Heritage (OzArk) is currently undertaking ecological investigations of the subject land on behalf of Irwin Environmental Management to inform a Biodiversity Development Assessment Report (BDAR) for the proposed development. Detailed specifications for the proposed development are provided in the BDAR prepared by OzArk (in preparation[1]).

The Pink-tailed Legless Lizard *Aprasia parapulchella* (Kluge, 1974) (Pygopodidae) is listed as 'vulnerable' pursuant to both the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and the NSW BC Act. As shown in Figure 3, the subject land is located within the indicative species distribution model developed by the NSW Department of Climate Change, Energy, the Environment, and Water (DCCEEW) for *A. parapulchella* (NSW Government, 2025). Additionally, as shown in Figure 4, the subject land is located within the area identified as 'Species or species habitat likely to occur' on the layers sourced from the Distribution Map provided on the EPBC Act SPRAT Profile for *A. parapulchella* (Commonwealth of Australia, 2025[2]).

The nearest records of *A. parapulchella* to the subject land (i.e. within 100 km of the subject land) are summarised in Table 3 and shown in Figure 5.

Aprasia parapulchella is identified as a 'candidate species' under the BAM for the single NSW Plant Community Type (PCT) identified and mapped by OzArk (2025) as occurring in the subject land, PCT3747 – Southern Tableland Western Hills Scribbly Gum Forest (Figure 6).

[1] OzArk Environment and Heritage (in preparation). *Biodiversity Development Assessment Report: Barina Quarry, Collector*. Prepared for Irwin Environmental Management.
[2] Commonwealth of Australia (2025). *Species Profile and Threats Database. Aprasia parapulchella – Pink-tailed Worm-lizard* https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=1665.

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Personal communications with OzArk indicate that a number of areas within the subject land supporting surface rock were previously identified as potential habitat for *A. parapulchella*. Although four days of rock-turning surveys were undertaken by OzArk in November 2024 targeting *A. parapulchella* within the subject land, this method is no longer supported by the NSW Department of Climate Change, Energy, the Environment and Water (NSW DCCEEW) for assessing presence/absence for *A. parapulchella*, as per the BioNet Threatened Biodiversity Data Collection (TBDC) (NSW Government 2025).

2. Requirement for expert report

In accordance with section 5.2.5 of the BAM, the BAM Assessor must establish and document in the BDAR whether each candidate 'species credit species'[3] is present on the subject land (or specific vegetation zone). A 'species polygon' must be prepared for each species credit species determined as occurring in the subject land, and this is used to calculate the quantum of offsets required for impacts on the species.

In accordance with section 5.2.4 of the BAM, to determine presence for a development proposal (such as the Modification), the BAM Assessor must apply one of the following options.

a. *assume the species is present, or*
b. *conduct a threatened species survey, as per Section 5.3, or*
c. *obtain an expert report, as per Box 3, or*
d. *for candidate species including dual credit species, where the TBDC indicates that an important habitat map identifies the species credit component, the assessor must confirm whether the subject land is within an area identified on the important habitat map*[4].

Notwithstanding the above, as noted in Section 1, following an October 2024 update to the *BioNet Threatened Biodiversity Data Collection* (TBDC) (NSW Government, 2025), the NSW DCCEEW now *"recommends that this species is assessed by expert report due to difficulty in detecting with confidence via survey"*.

In light of the above, Collector Resources Pty Ltd (Collector Resources) has determined that obtaining an expert report prepared in accordance with Box 3 under section 5.3 of the BAM is required for the purpose of developing a species polygon to be used to calculate the quantum of offset credits for *A. parapulchella* under the BAM. I have prepared this report to address this requirement.

As outlined in Box 3 –

An expert report must set out whether:

a. *the species is unlikely to be present on or use habitat on the subject land, in which case, no further assessment of the species is required, or*
b. *the species is likely to be present on or use habitat on the subject land.*

If the species is likely to be present on or use the subject land, the expert report must:

a. *identify the species or population*
b. *justify the use of an expert report*

[3] Species credit species are threatened species for which vegetation surrogates and/or landscape features cannot reliably predict the likelihood of their occurrence or components of their suitable habitat.
[4] The TBDC does not indicate that an important habitat map identifies the species credit component for *A. parapulchella*.

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c. *justify the likelihood of occurrence of the species or population and prepare a species polygon as per Subsection 5.2.5*

d. *estimate the area of habitat (if the species is assessed by area) or the maximum number of individuals (if the species is assessed by count of individuals) on the subject land. Evidence such as a population estimate from a reference site could be used to justify this estimation*

e. *include the information considered in making this determination*

f. *state the expert's credentials.*

3. Outline of experience in the ecological research, habitat assessment, and survey methods for *A. Parapulchella* (the expert's credentials)

I have worked as a full-time ecological consultant since January 2008. Since July 2010, I have been based in Canberra and specialised on the temperate woodlands and grasslands of the South-eastern Highlands bioregion (NSW and Australian Capital Territory [ACT]). *Aprasia parapulchella* has been a key focus species for my work and research each season since spring 2010, and I have completed more than 100 projects across this region involving *A. parapulchella* habitat assessment, targeted surveys, and/or species/habitat conservation plans. I have undertaken many of the large-scale *A. parapulchella* surveys, habitat mapping, and monitoring projects commissioned by the ACT Government since spring 2010. I have also completed targeted surveys and/or habitat assessments at many sites in the Queanbeyan-Palerang, Yass Valley, Goulburn Mulwaree, and Snowy Monaro LGAs.

I have been an active member of numerous working groups and advisory panels convened by the Commonwealth Government and the ACT Government regarding threatened grassland and woodland fauna, notably including for threatened grassland reptiles. I am currently a member of the ACT Government's Expert Working Group established to explore the functional connectivity requirements for grassland reptiles in the ACT.

I have been engaged by the Commonwealth Department of Climate Change, Energy, the Environment, and Water (Commonwealth DCCEEW) to run field classes for the department's EPBC Act assessment officers on the recognition and assessment of EPBC Act listed species and communities, including for *A. parapulchella*. I have also presented on *A. parapulchella* at professional forums and am regularly sought by many of the prominent government and private development projects in the region to provide survey and assessment services, peer review, and/or an advisory role relating to *A. parapulchella* and other threatened species. As part of my studies at Googong Township since 2010, I have led several springtime community engagement walks in the 54 ha Googong Township Pink-tailed Worm-lizard Conservation Area.

In recognition of the above, I was approved on 3 September 2024 by the NSW DCCEEW as a species expert for *A. parapulchella* in accordance with section 5.3 of the BAM.

4. Pink-tailed Legless Lizard – species overview

The Pink-tailed Legless Lizard *Aprasia parapulchella* (Kluge, 1974) is listed as 'vulnerable' pursuant to both the Commonwealth EPBC Act and the NSW BC Act. *Aprasia parapulchella* is a member of the family Pygopodidae, a group of lizards that lack forelimbs and have hind limbs reduced to small vestigial flaps (Cogger, 2014[5]). *Aprasia parapulchella* is a small, fossorial (living primarily, but not exclusively,

[5] Cogger H.G. (2014). *Reptiles and amphibians of Australia, 7th Edition*. CSIRO Publishing.

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underground) reptile, characterised by its grey-brown to pale grey body coloration and pink to reddish-brown tail (Wong *et al.*, 2011[6]).

4.1 Distribution

Aprasia parapulchella occurs over a broad but fragmented distribution west of the great dividing range throughout NSW, Victoria, and the ACT. In NSW, the species' distribution is particularly patchy with apparently isolated populations occurring in the Central Tablelands, Southern Tablelands, Northern Tablelands, and South-western Slopes (Commonwealth of Australia, 2015[7]) (refer to Figure 3 and Figure 4). *Aprasia parapulchella* occurs within a broad elevation range, with populations recorded from 180 m above sea level (ASL) near Bendigo, Victoria to 815 m ASL in South Canberra, ACT (Wong *et al.*, 2011).

In the ACT and the Southern Tablelands of NSW, the distribution of *A. parapulchella* appears to be restricted to areas of suitable lithology and rock cover, where substantial vegetation disturbance (e.g. pasture improvement, urban development etc.) has not occurred, likely owing somewhat to the presence of these protective landscape features. Due to a substantially lower degree of survey effort and research undertaken into the distribution of *A. parapulchella* in the Central Tablelands of NSW, there is less known about the factors influencing the distribution of the species in this region (Wong *et al.*, 2011). However, given the broad climatic, geologic, and vegetation similarities between eastern portions of the Central Tablelands of NSW and the ACT, it is likely that the habitat requirements influencing the distribution of the species in these areas are relatively similar.

The habitat requirements influencing the presence of *A. parapulchella* at a given location are not necessarily consistent across its known range. Populations of *A. parapulchella* are known to occur on the Hay Plain in south-west NSW where there is little to no surface rock (Michael and Herring, 2013[8]) and populations of the species occur near West Wyalong in western NSW within mallee shrubland vegetation communities supporting a relatively high overstorey and midstorey vegetation cover (Jones, 1999[9]).

4.2 Habitat

As above, the habitat requirements of *A. parapulchella* are highly variable across its range. In the ACT and NSW Southern Tablelands, the primary habitat of the species is broadly described as treeless or sparsely treed vegetation communities associated with well-drained mid-slopes or hilltops characterised by a high cover of scattered (e.g. lightly or non-embedded) rocks, usually of volcanic origin (Commonwealth of Australia, 2015). Sites within which *A. parapulchella* is most abundant are usually dominated by native, disturbance-sensitive grass species such as Kangaroo Grass *Themeda triandra*, and to a lesser extent Purple Wiregrass *Aristida ramosa* and Barbed-wire Grass *Cymbopogon refractus* (Wong et al. 2011, Jones 1999), likely owing to dominance of this species assemblage indicating a low degree of past vegetation disturbance within the given site. The species is unlikely to be found in areas in which a high degree of past vegetation/soil disturbance is evident, such as pasture improved areas or stock camps (Osborne 1993, Wong *et al.*, 2011). As a specialist predator of ant brood, *A. parapulchella* is

[6] Wong, D., Jones, S., Osborne, W., Brown, G., Robertson, P., Michael, D., & Kay, G. (2011). *The life history and ecology of the Pink-tailed Worm-lizard Aprasia parapulchella Kluge–a review*. Australian Zoologist, *35*(4), 927-940.
[7] Commonwealth of Australia (2015). *Conservation Advice – Aprasia parapulchella – Pink-tailed Worm-lizard*. Department of Climate Change, Energy, the Environment, and Water.
[8] Michael, D. and Herring, M. (2013). *Unexpected records of the pink-tailed worm lizard Aprasia parapulchella (Pygopodidae) in chenopod shrubland, Hay region, NSW*. Herpetofauna 43(1):14-17.
[9] Jones, S. R. (1999). *Conservation biology of the Pink-tailed Legless Lizard Aprasia parapulchella*. PhD Thesis. (Doctoral dissertation, University of Canberra).

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strongly associated with a number of ant species, often being detected under rocks also occupied by ants or in close proximity to active ant burrows (Wong *et al.*, 2011).

As noted in Section 4.1, although there is substantially less available information regarding the specific habitat requirements of *A. parapulchella* in the NSW Central Tablelands than in the ACT and Southern Tablelands of NSW, given the broad climatic, geologic, and vegetation similarities between eastern portions of the Central Tablelands of NSW and the ACT, it is likely that the habitat requirements of the species in these areas are relatively similar.

5. Methods

With regard to the *A. parapulchella* distribution and habitat characteristics, the 'key elements' that define the likelihood that potential habitat for *A. parapulchella* occurs in a given site (i.e. the subject land) as established in Armstrong et al. (in preparation[10]) are as follows.

1. Element 1 – Is the subject land located within the known geographical distribution of *A. parapulchella* (i.e. does it occur in an Interim Biogeographic Regionalisation for Australia [IBRA] subregion that the species is known to occur in)?

   If yes, proceed to Element 2.

2. Element 2 – Does the subject land support one or more of the PCTs within which *A. parapulchella* is known/predicted to occur in (i.e. a PCT for which the species is listed as a 'candidate species' under the BAM)?

   If yes, proceed to Element 3.

3. Element 3 – Does the subject land support appropriate lithology? That is, rock type/s consistent with those known or predicted to support *A. parapulchella* in the subject region.

   If the answer to Element 3 is in the affirmative, then the key elements that define the likelihood that *A. parapulchella* occurs in a given area (polygon) of the subject land are as follows.

4. Element 4 – Does the area have ≥ 1% cover of suitable habitat rocks[11] of appropriate lithology?

   If yes, proceed to Element 5.

5. Element 5 – Does the area currently[12] have ≤ 50% opaque crown cover (roughly equal to 25% projected foliage cover [PFC])?

   If yes, proceed to Element 6.

[10] Armstrong, R., O'Rourke, N., Speirs, R., Terry, W., Simpson, S., Michael, D. (in preparation). *Developing habitat descriptors for a threatened cryptic pygopod to determine potential habitat under the NSW Biodiversity Offset Scheme in Australia*.

[11] Suitable habitat rocks are generally between 10 centimetres (cm) and 30 cm in width and 5 cm to 15 cm thick. There is often a preference for flat, plate-like rocks, rather than spherical boulder-like rocks. The strong preference for rocks of volcanic origin is well documented in some areas of the distribution of *A. parapulchella*; however it is not known whether this is so across the species' entire distribution.

[12] Assessed based on the current crown cover rather than the likely crown cover of the relevant PCT in an intact, remnant form. This is necessary to capture areas of 'derived' forms of the PCT which have a crown cover less than typical of the PCT and which are thereby characteristically suitable as *A. parapulchella* habitat (e.g. derived native grassland resulting from past clearance of the remnant canopy of woodland or forest).

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6. Element 6 – Does the area have a ≥ 1% cover of a low/moderate disturbance-sensitive C4 grass species in the understorey? (e.g. *Themeda triandra*, *Bothriochloa macra*, *Cymbopogon refractus*, *Sorghum leiocladum*)

   If yes, proceed to Element 7.

7. Element 7 – Does the area have a composition score (determined via the BAM Calculator) ≥ the nominal threshold[13] for the Vegetation Class.

In accordance with the above, this assessment has followed the below two-step process. Note, it is only necessary to proceed to Step 2 if the answer to Step 1 is in the affirmative.

5.1 Step 1 – Determine whether the subject land supports the key geographic elements necessary for *A. parapulchella* to occur (Elements 1 to 3).

5.1.1 Desktop assessment

Step 1 involved compiling and reviewing the technical documents and other resources relevant to the potential for *A. parapulchella* to occur in the subject land. This involved my review of project-specific information and other relevant literature resources, together with the development of a Geographic Information System (GIS) platform to collate, analyse, assess, and display each of the key geographic elements relevant to the potential for *A. parapulchella* occurrence, including the:

- available current aerial imagery;
- PCT and vegetation zone mapping prepared by OzArk (2025);
- geology mapping layers from the NSW Seamless Geology Project (NSW Department of Primary Industries and Regional Development [DPIRD], 2024[14]);
- geological mapping from the Gunning 1:100,000 Geological Sheet 8728 (Thomas, O.D. et al., 2013[15]);
- *Aprasia parapulchella* (and all other Pygopodid species) point data from NSW BioNet (NSW Government, 2025); and
- *Aprasia parapulchella* Distribution Map provided on the EPBC Act SPRAT Profile (Commonwealth, 2025).

5.1.2 Site inspection

With consideration of the above, on 25 November 2025, Jarmin Thornberry (Consultant Ecologist, Capital Ecology) and I undertook a site inspection of the subject land. During our inspection we assessed the habitat characteristics relevant to *A. parapulchella* within the subject land. Where potential habitat was identified within the subject land, an estimated habitat polygon was recorded via markup of an orthorectified aerial image, and where relevant a short description of the following landscape and vegetation attributes relevant to *A. parapulchella* was taken:

[13] Nominal thresholds relate to the composition score generated by the BAM-C for a particular mapped vegetation zone. Specific thresholds for vegetation classes are not provided in this instance as the source literature (Armstrong *et al.* [*in preparation*]) is currently in preparation and is therefore subject to change.
[14] NSW Government (2024) *NSW Seamless Geology Project (version 2.4).* May 2024. NSW Department of Primary Industries and Regional Development
[15] Thomas O.D., Johnston A.J., Scott M.M., Warren, A.Y.E, Sherwin L., Pogson D.J., and Vassallo, J.J. (2013) *Gunning 1:100 000 Geological Sheet 8728, 1st edition*. Geological Survey of New South Wales, Maitland.

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- observed, or apparent, lithology;
- landscape position;
- vegetation condition, including potential historic land use (where relevant);
- dominant native flora species in each vegetation stratum; and
- vegetation structure.

The overall habitat quality for *A. parapulchella* was estimated for each mapped habitat polygon based on the above attributes.

5.2 Step 2 – Assess the subject land to determine and map the portions of the subject land that are likely *A. parapulchella* habitat (Elements 4 to 7).

As described above, on 25 November 2025, we undertook a site inspection of the subject land. During this inspection we assessed the habitat characteristics relevant to *A. parapulchella* within each inspected area and the broader subject land.

6. Results

6.1 Literature review

As outlined in Section 5.1, I undertook a review of a selection of relevant literature regarding the known habitat requirements of *A. parapulchella* prior to attending the subject land. A brief summary of the resources reviewed is included below as Table 1.

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Table 1. Literature review summary

Author(s) (year)	Study title	Key findings of relevance to habitat requirements of *A. parapulchella*
Osborne, W.S. *et al.* (1991)	*Distribution and conservation status of the endangered Pink-tailed Legless Lizard Aprasia parapulchella (Kluge) – Research report 5*	- *Aprasia parapulchella* is fossorial species and there is a strong correlation between the habitation of a number of ant species and *A. parapulchella* within microhabitat features. - Within the ACT, the species typically inhabits moderate to steep slopes ranging from 3° to 15° and is apparently less abundant on slopes with a southern aspect. - The species is usually found underneath small rocks (<500 cm^2 basal area), and occasionally beneath logs. - The species appears to be strongly associated with sites supporting a high cover of Kangaroo Grass, and to a lesser extent, other native tussock-forming grasses. However, exotic tussock-forming grasses were found to dominate the groundstorey at some sites at which the species persists. - The species appears to be absent from sites subject to intensive stock grazing and soil nutrification (e.g. stock camps).
Jones, S.R. (1999)	*Conservation biology of the Pink-tailed Legless Lizard Aprasia parapulchella* (Doctoral dissertation)	- Vegetation associations differ substantially across the range of the species. However, *A. parapulchella* is a specialist of grassy areas supporting scattered rock. - The species usually does not occur in areas supporting a cover of trees and/or tall shrubs. - Rocks utilised by the species are generally between 100 millimetres (mm) – 150 mm wide, 120 mm – 220 mm long, and 50 mm to 150 mm thick.
Wong, D. *et al.* (2011)	*The life history and ecology of the Pink-tailed Worm-lizard Aprasia parapulchella Kluge–a review*	- The species is strongly associated with landscapes supporting numerous lightly embedded surface rocks and open native vegetation dominated by grasses and shrubs, with some regional variation. - The species is unlikely to occur in areas that have undergone substantial historical groundstorey disturbance, such as pasture improved sites and stock camp areas. - Geological and soil type associations vary across the species' range, and includes volcanics, quartz sandstone, and metasediments.
Osborne, W.S. and Wong, D. (2013)	*The Extent and Habitat of the Vulnerable Pink-tailed Worm Lizard (Aprasia Parapulchella) in the West Belconnen-Ginninderra Creek Investigation Area: Confirmatory Distribution Surveys and Mapping*	- Potential habitat is defined as those areas supporting a cover of partially embedded rocks of appropriate size and volcanic origin, sparse tree cover, and native groundstorey supporting predominately native graminoids, particularly Kangaroo Grass, Red-leg Grass *Bothriochloa macra*, Mat-rush *Lomandra filiformis*, Purple Wire Grass, and Barbed-wire Grass. Areas supporting appropriate rock cover over a groundstorey dominated by more disturbance tolerant native grass species such as Speargrasses *Austrostipa spp*. and/or Wallaby Grasses *Rytidosperma spp*. may also constitute potential habitat. - Low quality potential habitat is defined as those areas supporting a cover of partially embedded rocks of appropriate size and volcanic origin that have undergone substantial disturbance such as intensive stock grazing, soil erosion, soil nitrification etc. This includes areas identified as former sheep camps etc.

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6.2 Desktop assessment of the subject land

As described in Section 5.1, a detailed desktop assessment of the subject land was undertaken to inform my assessment.

As outlined above, and described in Section 5.1.1, I undertook a detailed desktop assessment of a number of resources relevant to the subject land prior to completing the site visit. The results of this desktop assessment are detailed below.

Analysis of recent aerial imagery

As described in Section 1, and illustrated in Figure 1 and Figure 2, the subject land encompasses 4.94 ha and is located approximately 1.4 km south-east of Collector, NSW.

It is evident through analysis of recent aerial imagery that the majority of the subject land has been substantially modified through its past land use, which has primarily occurred through the removal of woody vegetation and in some cases, the underlying topsoil, to facilitate quarrying activities. Those areas of the subject land still supporting an intact canopy are in a comparatively higher condition across all strata than those areas within which the canopy has been completely removed. It is also evident that the predominant vegetation formation across much of the subject land is dry sclerophyll forest, with potential occurrences of a grassy woodland vegetation formation to the south-west, before grading further into a primary grassland vegetation formation beyond the extent of the subject land to the south and west.

Analysis of PCT and vegetation zone mapping

As illustrated in Figure 6, OzArk (2025) has previously undertaken detailed PCT and vegetation zone mapping consistent with the requirements of the BAM throughout the subject land. In the context of an expert report prepared under the BAM, the PCT and vegetation zone mapping is primarily used to refine the area of potential habitat for *A. parapulchella* within the subject land by identifying those PCTs within which the species is identified as a candidate species as per the BAM-C and the NSW TBDC[16]. This step of the desktop assessment aligns with Element 1 and Element 2 of the assessment process described in Section 4. The results of this analysis are displayed in Table 2.

Table 2. Plant community type association with *A. parapulchella* (NSW TBDC)

PCT ID	PCT Name	*A. parapulchella* identified as a candidate species
		IBRA Subregion = Monaro
3747	Southern Tableland Western Hills Scribbly Gum Forest	Yes

[16] NSW Government (2025). *Threatened Biodiversity Data Collection – Aprasia parapulchella – Ecological Data*.

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Analysis of geological mapping relevant to the subject land

As illustrated in Figure 7, a polygon depicting the subject land was overlaid on the NSW Seamless Geology Map (NSW Government, 2024) to determine the dominant geological formations represented within the subject land. This exercise, although not directly used to refine the area of potential habitat for *A. parapulchella* within the subject land, provides a broad insight into the potential habitat value of the subject land and wider locality by identifying those lithologies known to be compatible with the lifecycle of the species in the relevant IBRA region/subregion. The results of this analysis were largely as expected, with the site being mapped within a single rock units characterised by sedimentary rock types (e.g. sandstone and siltstone) and metamorphic rock types (e.g. quartzite).

Analysis of NSW BioNet point data for *A. parapulchella*

The nearest records of *A. parapulchella* to the subject land (within 100 km) are summarised below in Table 3 and illustrated in Figure 5. These records are discussed further in Section 6.3.

Table 3. Summary of nearby records of *A. parapulchella*

Year	Location description	Easting	Northing	Accuracy	Distance from Subject Land
2018 - 2025	Lake George, NSW	Various		10 m - 50 m	21 km
2021 - 2023	Bango, NSW	Various		10 m - 20 m	45 km
2009 - 2020	West Belconnen, ACT/Wallaroo, NSW	Various		3 m - 1000 m	54 km
2014 - 2025	Molonglo, ACT	Various		2 m - 10 m	55 km
1995 - 2023	Jerrabomberra, NSW	Various		1 m - 5000 m	59 km
2023	Woolgarlo, NSW	661819	6143242	20 m	63 km
2009 - 2024	Tuggeranong, ACT	Various		2 m - 40 m	63 km
2010 - 2012	Wee Jasper, NSW	Various		100 m - 200 m	65 km
2017 - 2017	Taralga, NSW	Various		10 m	65 km
2003 - 2024	Williamsdale, NSW	Various		1 m - 200 m	80 km

Analysis of the NSW distribution map for *A. parapulchella*

As illustrated in Figure 3, a polygon depicting the subject land was overlaid on the *A. parapulchella* distribution map published by the NSW Government via the NSW Government Sharing and Enabling Environmental Data portal (NSW SEED)[17] to determine whether the subject land is located within the most recent modelled distribution area for the species. As shown in Figure 3, parts of the subject land are located within the modelled distribution area for *A. parapulchella*.

[17] NSW Government (2025). *Aprasia parapulchella distribution for Biodiversity Assessment Method* assessments. NSW SEED Portal.

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Analysis of the EPBC Act distribution map for *A. parapulchella*

As illustrated in Figure 4, a polygon depicting the subject land was overlaid on the *A. parapulchella* distribution map provided within the EPBC Act SPRAT Profile[18] to determine whether the subject land is located within the known distribution area of the species. As shown in Figure 4, the subject land is located within the 'likely' distribution area for *A. parapulchella*.

6.3 Classification of potential *A. parapulchella* habitat within the subject land

As described in Section 5.1, we undertook a site inspection of those areas of the subject land identified through the desktop assessment as having the potential to support habitat for *A. parapulchella*. With reference to the habitat requirements of *A. parapulchella* identified and discussed in Section 6.1 and Section 6.2, per the standard habitat classification methodology employed by Capital Ecology for the species, I classified potential habitat as being of low, low – moderate, moderate, or high quality.

The factors considered in assessing the quality of potential habitat for *A. parapulchella* within the subject land included:

- mapped PCTs and vegetation zones;
- presence of loose surface rock;
- type, predominate size, and estimated cover of surface rock;
- vegetation structure (including climax [pre-1788] structure of derived grasslands and shrublands) and landscape connectivity of relevance to *A. parapulchella*; and
- vegetation condition, including evidence of substantial recent understorey disturbance incompatible with the life cycle of *A. parapulchella* (e.g. removal of topsoil for quarrying activities, nutrification from stock camps, heavily grazed areas, soil erosion, and recent/historic pasture improvement).

The results of the habitat assessment are illustrated in Figure 8 and summarised below in Table 4.

[18] Commonwealth of Australia (2025). *Species Profile and Threats Database. Aprasia parapulchella – Pink-tailed Worm-lizard.* Department of Climate Change, Energy, the Environment, and Water.

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Table 4. Classification of potential *A. parapulchella* habitat within the subject land

Habitat class	Habitat description	Example photograph
High	Areas identified as 'High' quality potential habitat are characterised by extensive scattered surface rock of sedimentary origin (e.g. sandstone) and volcanic origin (e.g. quartzite) over a predominately native groundstorey dominated by disturbance sensitive native grass species such as Red-leg Grass *Bothriochloa macra* and Purple Wiregrass *Aristida ramosa* with a moderate to high diversity of native non-grass understorey species including Common Everlasting *Chrysocephalum apiculatum*, Sheep's Burr *Acaena ovina*, and Common Sunray *Triptilodiscus pygmaeus*. Canopy and midstorey cover is sparse (e.g. <25% projected foliage cover [PFC]) to absent.	
Moderate	Areas identified as 'Moderate' quality potential habitat are characterised by a moderate cover of scattered surface rock of sedimentary origin (e.g. sandstone) and volcanic origin (e.g. quartzite) over a predominately native groundstorey dominated by native perennial grass species including Red-anther Wallaby Grass *Rytidosperma pallidum* and occasionally Purple Wiregrass, with a moderate diversity of native non-grass understorey species including Poverty Raspwort *Gonocarpus tetragynus* and Grass Triggerplant *Stylidium graminifolium*. Canopy and midstorey cover is sparse (e.g. <25% projected foliage cover [PFC]) to absent). Areas identified as 'Moderate' quality potential habitat typically occur on the margins of intact dry sclerophyll forest.	
Low - Moderate	N/A – Not identified in subject land	N/A – Not identified in subject land
Low	N/A – Not identified in subject land	N/A – Not identified in subject land

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6.4 Step 1 – Determine whether the subject land supports the key geographic elements necessary for *A. parapulchella* to occur (Elements 1 to 3).

Table 5. Assessment of whether the subject land supports the key geographic elements necessary for *A. parapulchella* to occur (Elements 1 to 3)

Subject Land	
Element 1 – Is the subject land located within the known geographical distribution of *A. parapulchella* (i.e. does it occur in an IBRA subregion that the species is known to occur in)?	**Yes**, the subject land is located: 1. in the area mapped as 'Species or species habitat likely to occur' on the EPBC Act Protected Matter Search Tool (PMST) (Commonwealth of Australia, 2025) Distribution map for *A. parapulchella*; 2. within the Indicative BAM Species Distribution (NSW Government, 2025) for *A. parapulchella;* 3. in the Monaro IBRA subregion, a subregion within which *A. parapulchella* is known to occur; and 4. approximately 21 km north-east of the next nearest known record of *A. parapulchella*.
If yes, proceed to Element 2.	
Element 2 – Does the subject land support one or more of the PCTs within which *A. parapulchella* is known/predicted to occur in (i.e. a PCT for which the species is listed as a 'candidate species' under the BAM)?	**Yes**, *A. parapulchella* is identified as a 'candidate species' under the BAM for the single NSW PCT identified and mapped by OzArk (2025) as occurring in the subject land, PCT3747 – Southern Tableland Western Hills Scribbly Gum Forest (area = approx. 4.93 ha).
If yes, proceed to Element 3.	
Element 3 – Does the subject land support appropriate lithology? (i.e. rock type/s consistent with those known or predicted to support *A. parapulchella* in the subject region).	**Yes**. During my site inspection, I found the subject land to primarily support sedimentary rock types (e.g. sandstone) and volcanic rock types (e.g. quartzite). As illustrated in Figure 7, these observed lithologies are broadly consistent with the single rock unit mapped within the subject land by the NSW Seamless Geology Map (NSW Government, 2024). • *Covan Creek Formation*. Described as medium-grained, thick-bedded quartz-lithic arenite and greywacke, graded or laminated in places. Quartzite, cross-bedded to laminated siltstone, and shale. The observed lithologies, and the rock unit mapped by the NSW Seamless Geology Map within the subject land, are broadly consistent with those known or predicted to support *A. parapulchella* in the South Eastern Highlands IBRA bioregion.
If yes, proceed to Element 4. Otherwise, no further assessment required.	

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6.5 Step 2 – Assess the subject land to determine and map the portions of the subject land that are likely *A. parapulchella* habitat (Elements 4 to 7).

Table 6. Assess the subject land to determine and map the portions of the subject land that are likely *A. parapulchella* habitat (Elements 4 to 7).

Subject Land	
Element 4 – Does the area have ≥ 1% cover of suitable habitat rocks of appropriate lithology?	**Yes** – areas identified as likely habitat have ≥ 1% cover of suitable habitat rocks of lithology identified as being suitable for *A. parapulchella* within the South Eastern Highlands IBRA bioregion (sandstone, quartzite).
If yes, proceed to Element 5.	
Element 5 – Does the area currently have ≤ 50% opaque crown cover (roughly equal to 25% projected foliage cover)?	**Yes** – areas identified as likely habitat have ≤ 50% opaque crown cover.
If yes, proceed to Element 6.	
Element 6 – Does the area have a ≥ 1% cover of a low/moderate disturbance-sensitive C4 grass species in the understorey? (e.g. *Themeda*, *Bothriochloa*, *Cymbopogon*, *Sorghum*).	**Yes** – areas identified as likely habitat have ≥ 1% cover of a low/moderate disturbance-sensitive C4 grass species in the understorey.
If yes, proceed to Element 7.	
Element 7 – Does the area have a composition score (determined via the BAM Calculator) ≥ the nominal threshold for the Vegetation Class (Armstrong, [*in preparation*])?	**Yes** – the following vegetation zones mapped within the subject land that were identified as supporting suitable rocky habitat for *A. parapulchella* have a composition score ≥ the nominal threshold[13] for the respective vegetation formation: • PCT 3747 – Good • PCT 3747 – Moderate • PCT3747 – Derived • PCT 3747 – Wet Grassland • PCT 3747 – Acacia Shrubland
If the answer to Element 7 is in the affirmative, draw a polygon based on this area, apply a 50 m buffer (constricted to the mapped extent of candidate PCTs), and allocate this combined area as the species polygon for *A. parapulchella* in the subject land as per Subsection 5.2.5 of the BAM (note that there may be one or numerous species polygons mapped within a given subject land).	

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7. Conclusion

Following the seven element assessment process detailed in Section 6.4 and Section 6.5, I have determined that *A. parapulchella* is likely to be present on or use habitat in the subject land. The subject land supports a total area of 7.56 ha of likely habitat for *A. parapulchella*, as illustrated in Figure 8 and as provided as a GIS shapefile to Collector Resources Pty Ltd.

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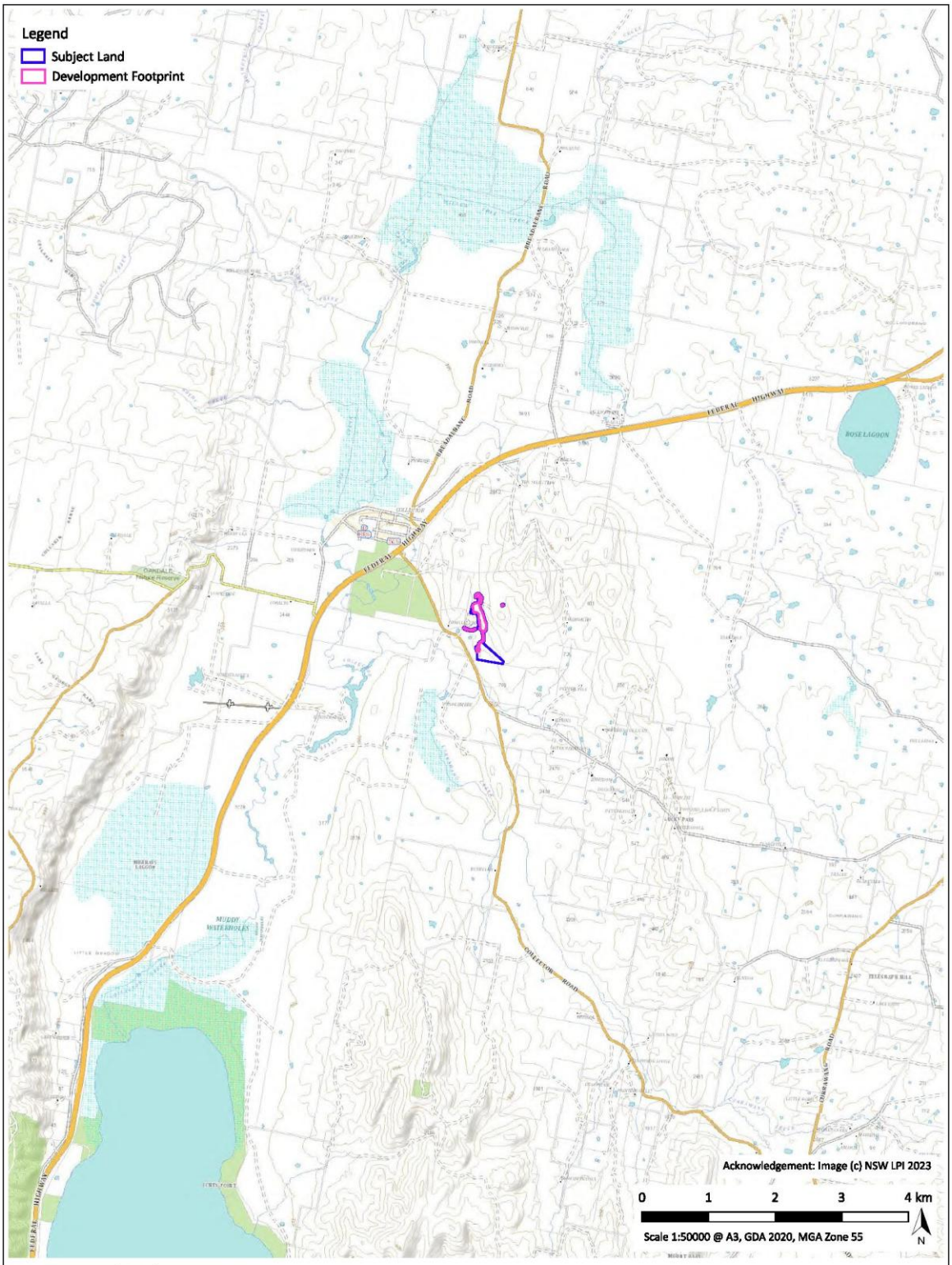

Figure 1. Locality Plan

Capital Ecology Project No: 3487
Drawn by: Jarmin Thornberry
Date: 07/01/2026

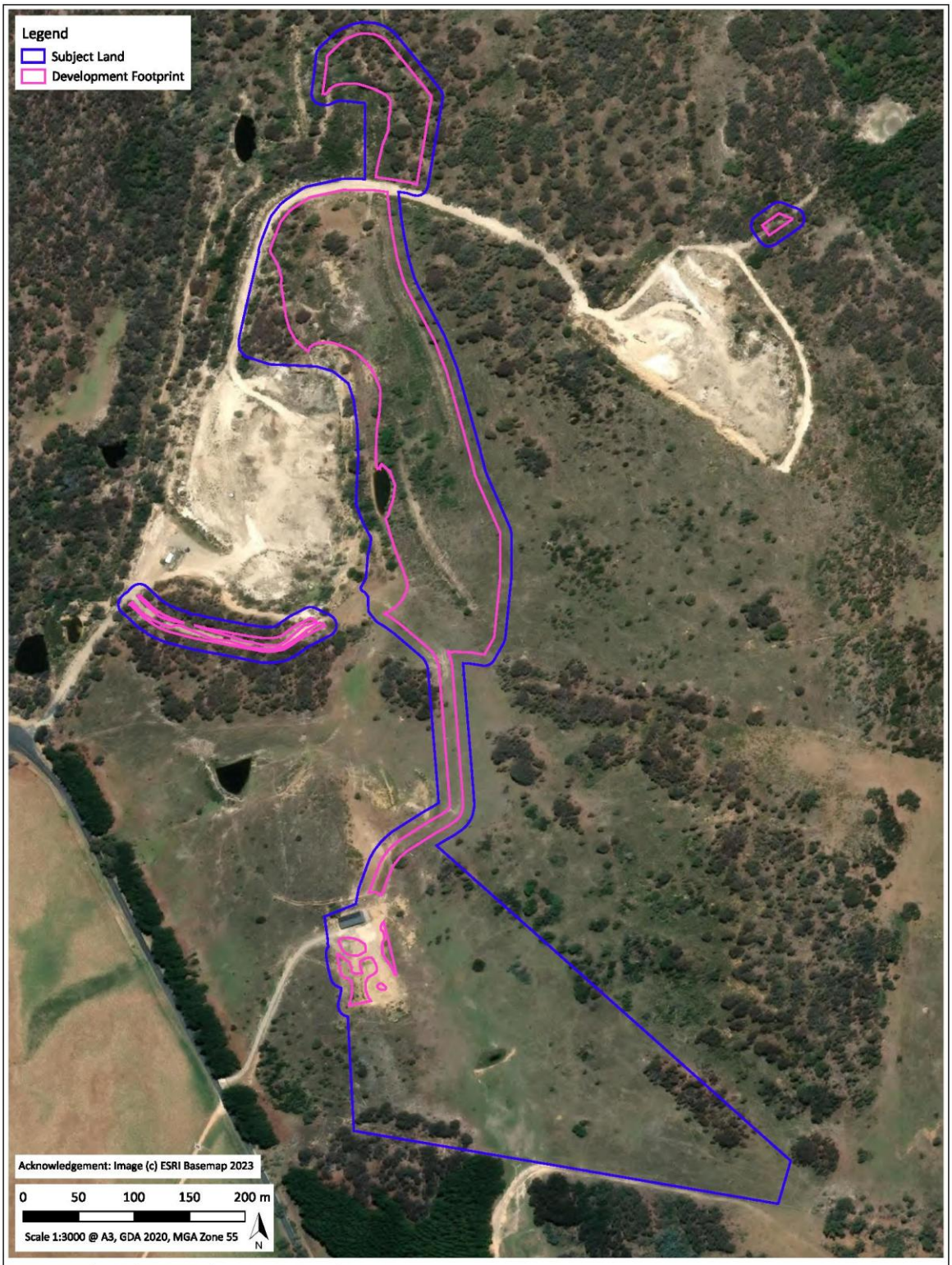

Figure 2. The Subject Land on Recent Aerial Imagery

Capital Ecology Project No: 3487
Drawn by: Jarmin Thornberry
Date: 07/01/2026

capital ecology

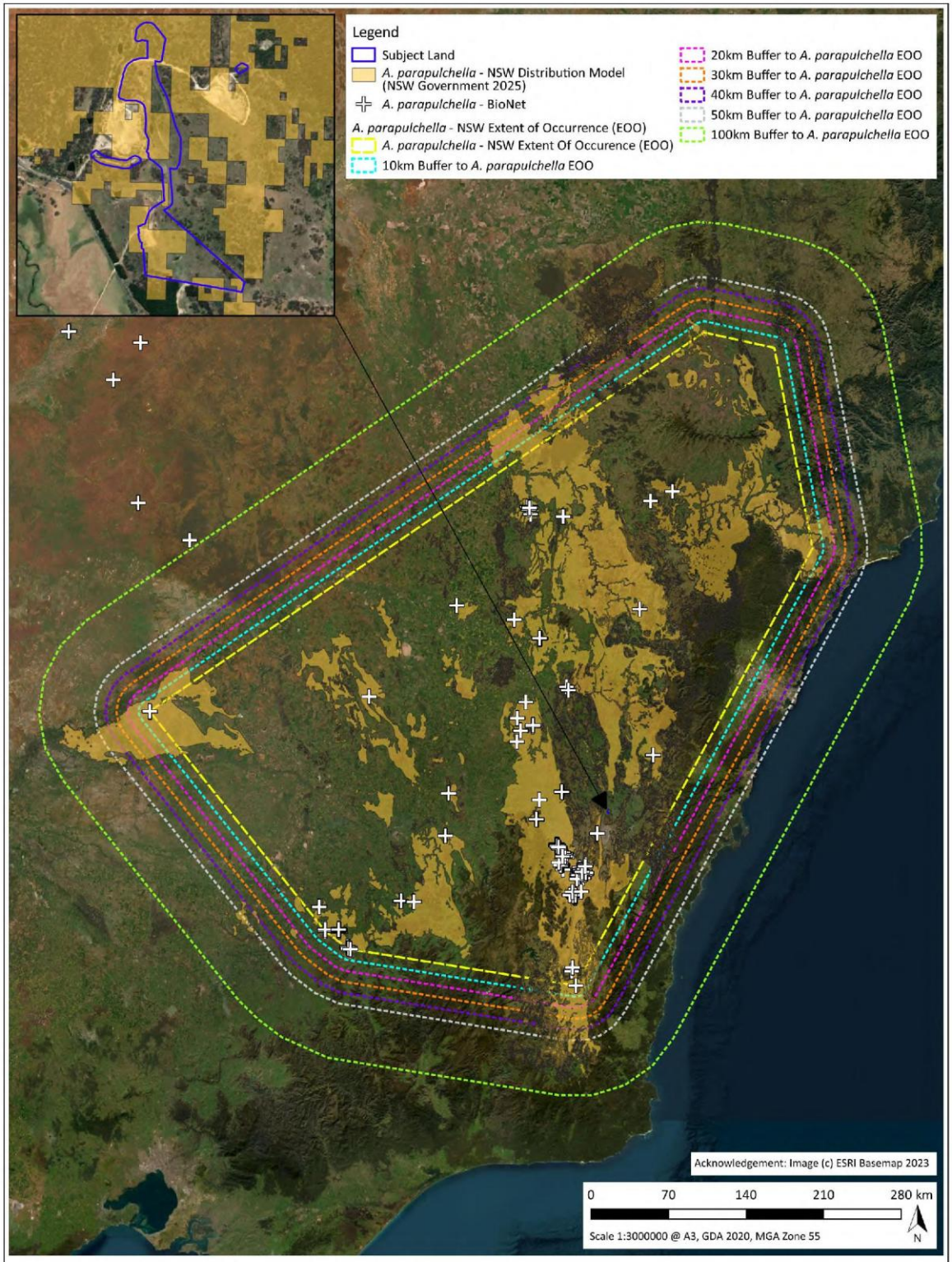

Figure 3. Pink-tailed Legless Lizard - NSW Records and Extent of Occurrence

Capital Ecology Project No: 3487
Drawn by: Jarmin Thornberry
Date: 07/01/2026

capital ecology

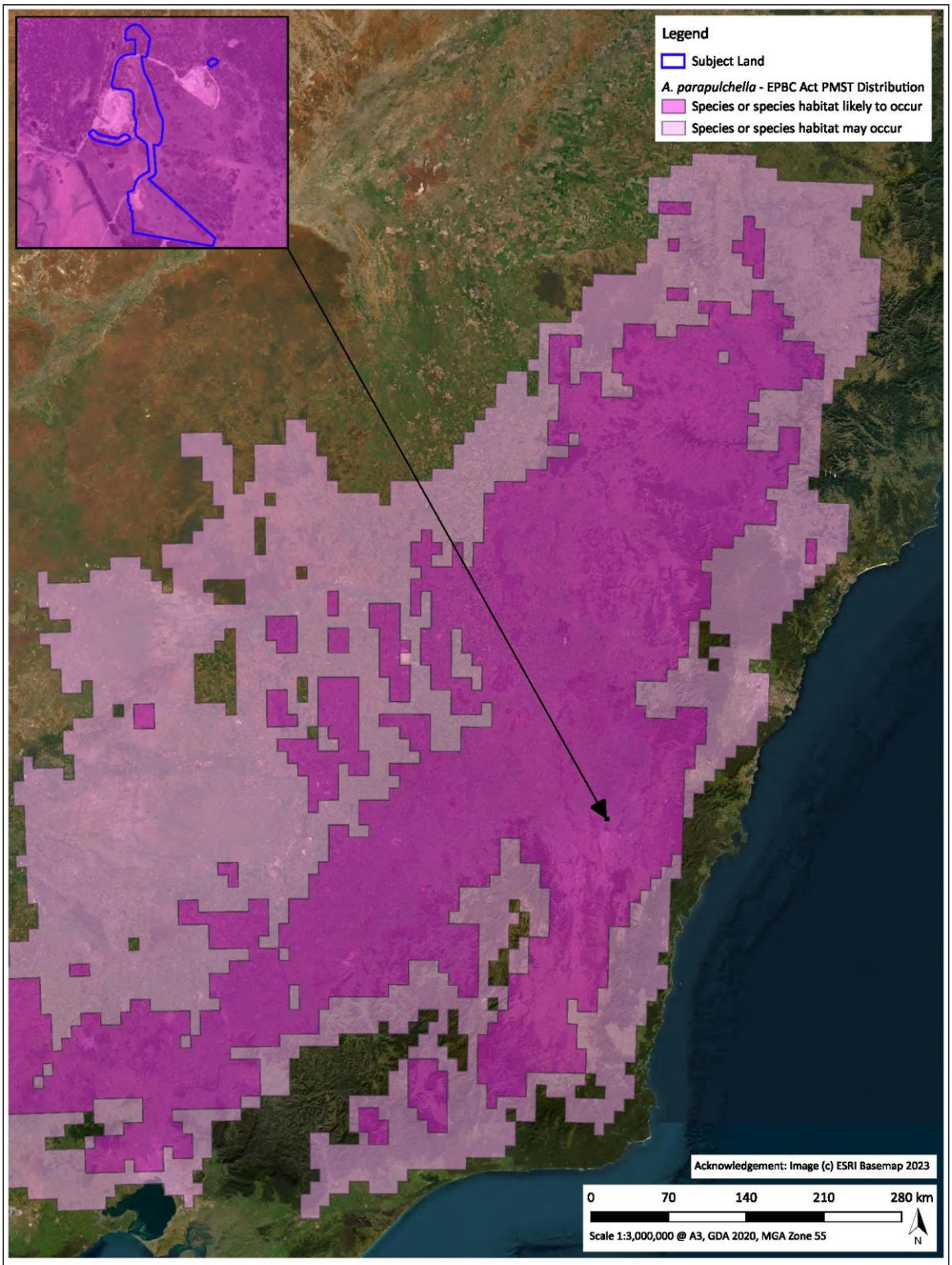

Figure 4. Pink-tailed Legless Lizard - Commonwealth Species Distribution Model

Capital Ecology Project No: 3487
Drawn by: Jarmin Thornberry
Date: 07/01/2026

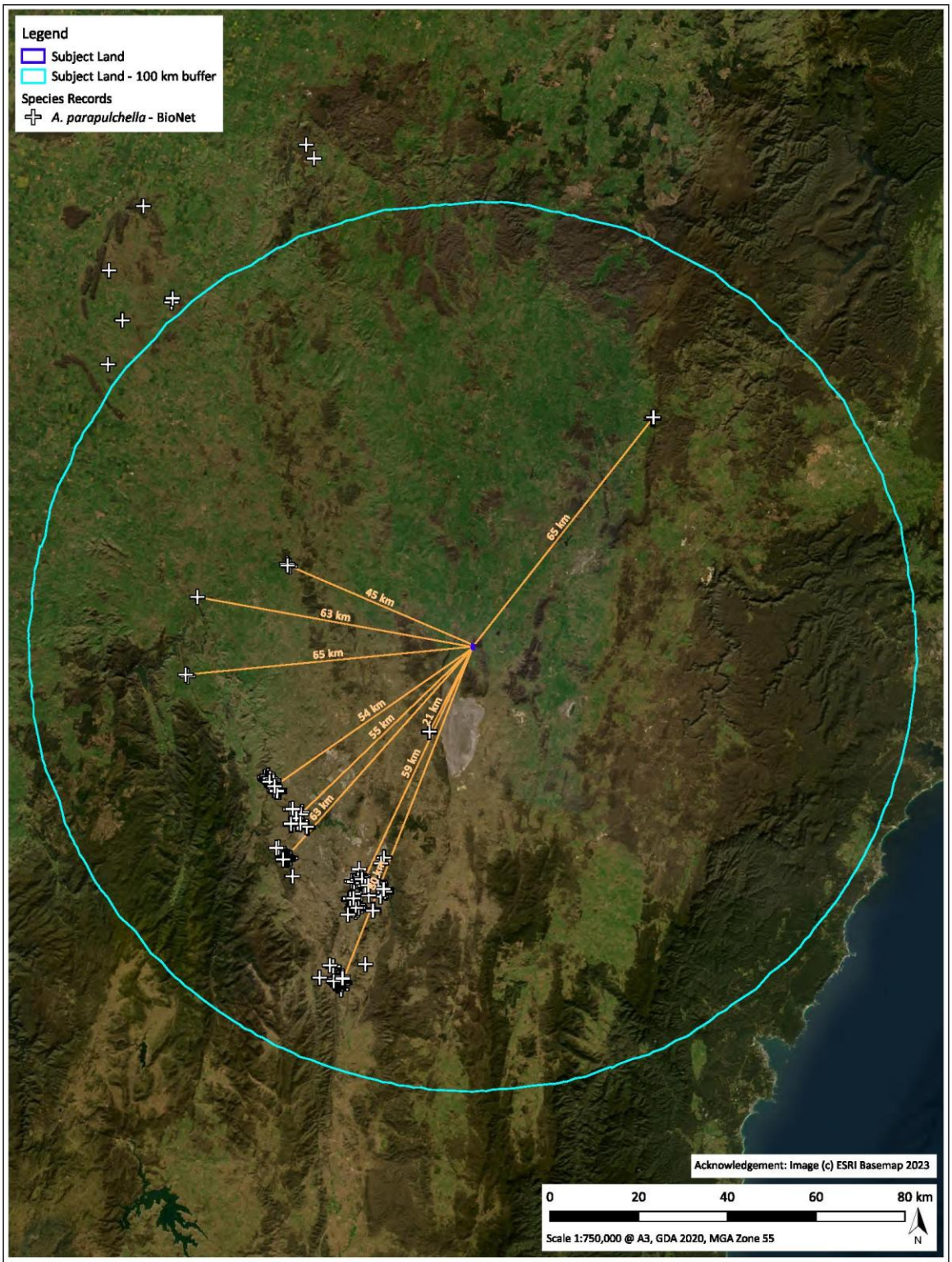

Figure 5. Pink-tailed Legless Lizard - NSW Records within 100 km of the Subject Land

Capital Ecology Project No: 3487
Drawn by: Jarmin Thornberry
Date: 07/01/2026

capital ecology

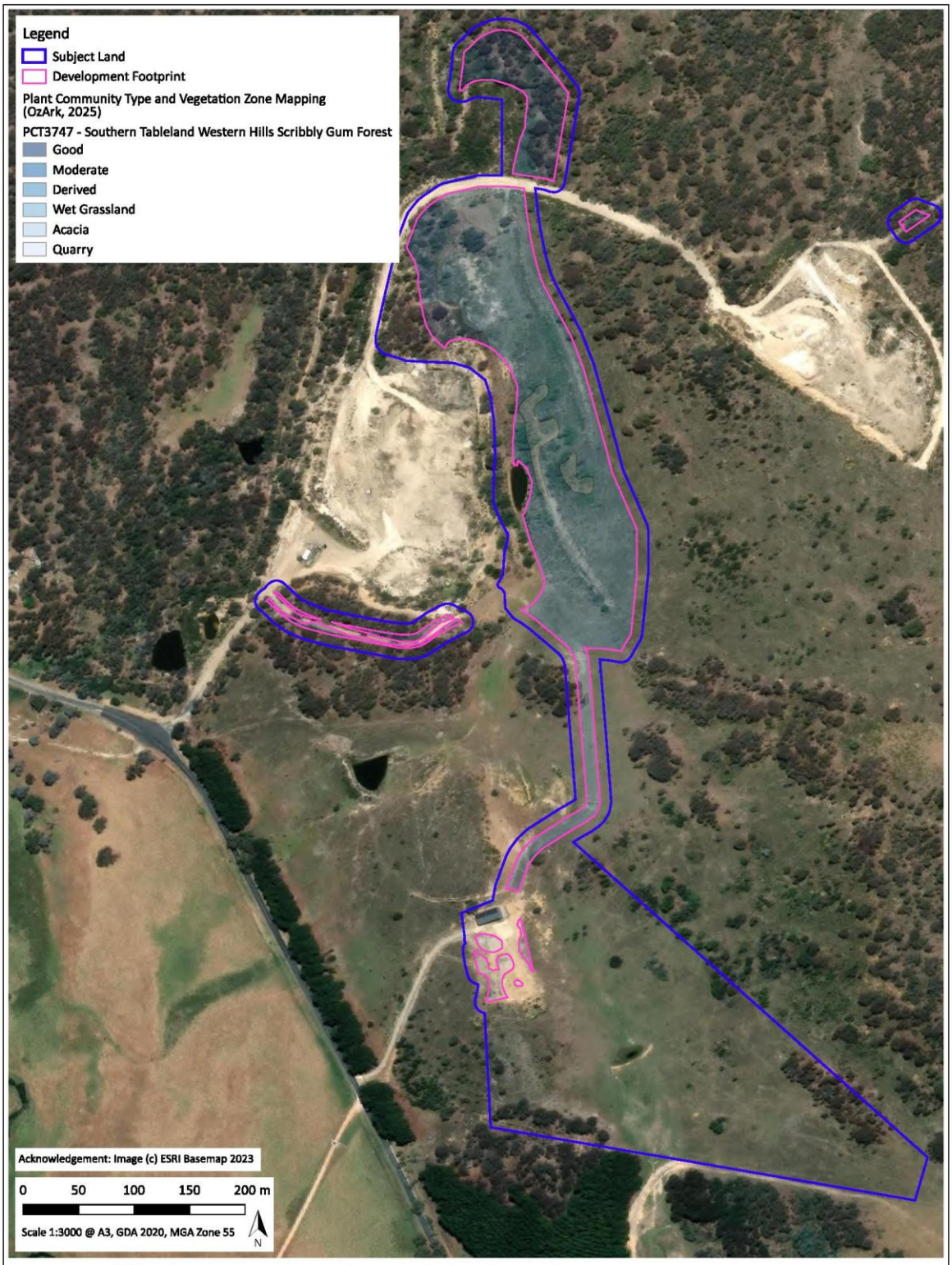

Figure 6. Candidate Plant Community Types for Pink-tailed Legless Lizard

Capital Ecology Project No: 3487
Drawn by: Jarmin Thornberry
Date: 07/01/2026

capital ecology

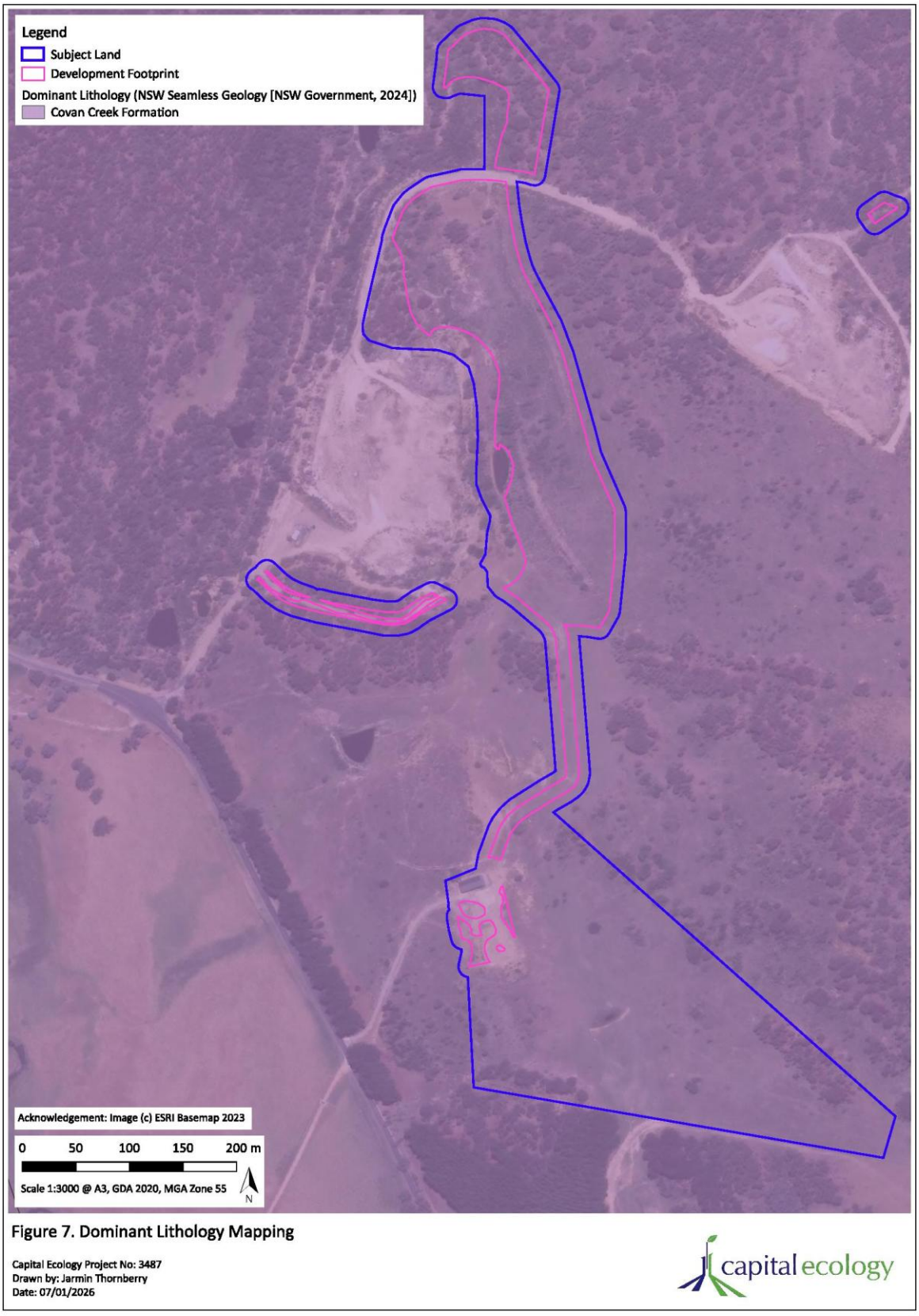

Figure 7. Dominant Lithology Mapping

Capital Ecology Project No: 3487
Drawn by: Jarmin Thornberry
Date: 07/01/2026

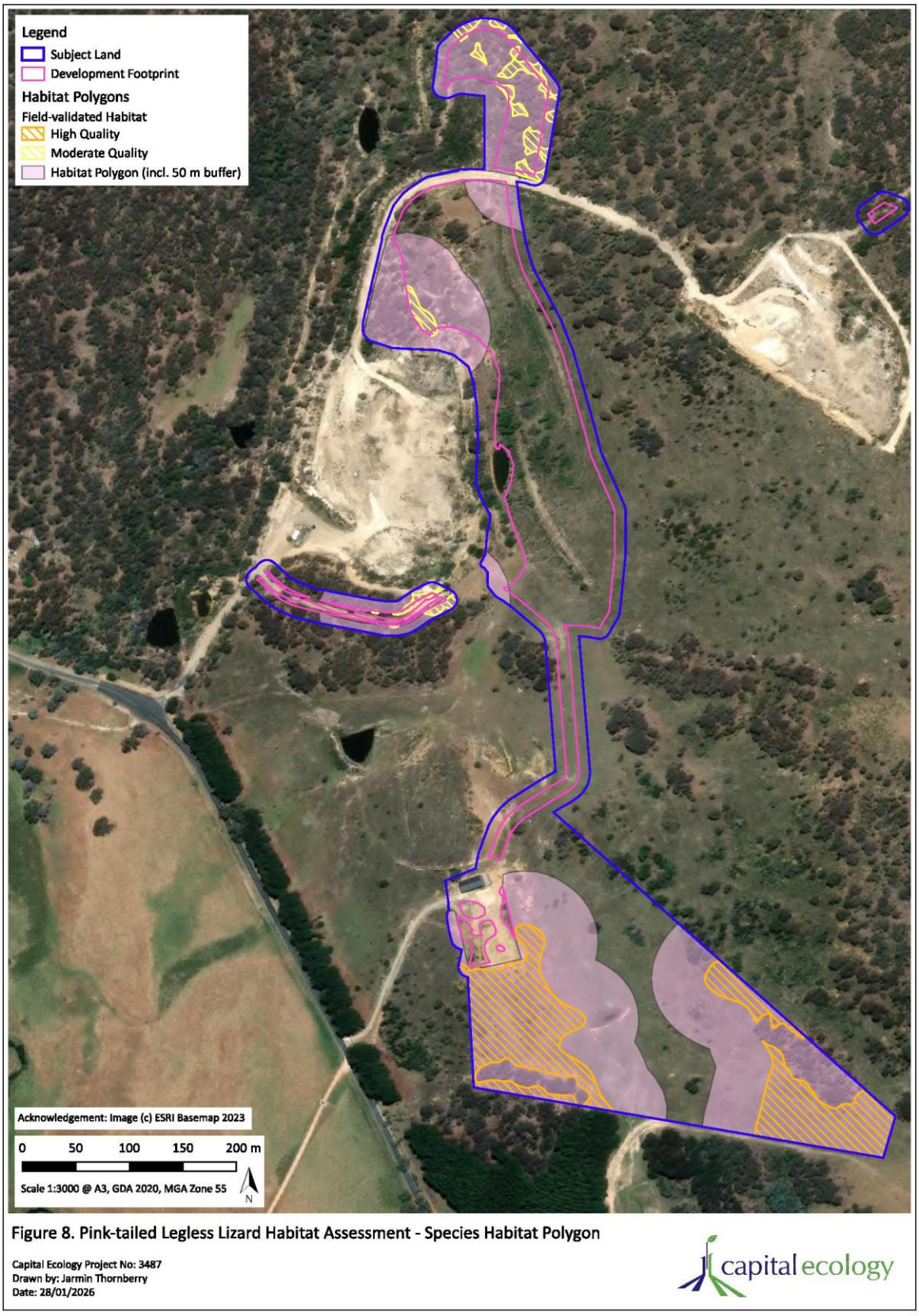

Figure 8. Pink-tailed Legless Lizard Habitat Assessment - Species Habitat Polygon

Capital Ecology Project No: 3487
Drawn by: Jarmin Thornberry
Date: 28/01/2026

capital ecology

Appendix I: Credit reports

Appended are copies of the following BAM-C credit reports with finalised status:

- Credits summary report
- Biodiversity credit report (Like-for-like)
- Candidate threatened species report
- Predicted species report.

BAM Credit Summary Report

Proposal Details

Assessment Id
00037322/BAAS21028/25/00057457

Proposal Name
Barina Quarry - Stage 1a

BAM data last updated *
05/08/2025

Assessor Name
David Orchard

Report Created
02/02/2026

BAM Data version *
Current classification (live - default) (82)

Assessor Number
BAAS21028

BAM Case Status
Finalised

Date Finalised
02/02/2026

Assessment Revision
3

BOS entry trigger

Assessment Type
Major Projects

* Disclaimer: BAM data last updated may indicate either complete or partial update of the BAM calculator database. BAM calculator database may not be completely aligned with Bionet.

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

Zone	Vegetation zone name	TEC name	Current Vegetation integrity score	Change in Vegetation integrity (loss / gain)	Area (ha)	Sensitivity to loss (Justification)	Species sensitivity to gain class	BC Act Listing status	EPBC Act listing status	Biodiversity risk weighting	Potential SAII	Ecosystem credits
Southern Tableland Western Hills Scribbly Gum Forest												
1	3747_Good	Not a TEC	84	84.0	0.12	PCT Cleared - 65%	High Sensitivity to Gain			1.75		4

2	3747_Quarry	Not a TEC	21	21.0	0.01	PCT Cleared - 65%	High Sensitivity to Gain			1.75		1
											Subtotal	**5**
											Total	**5**

Species credits for threatened species

Vegetation zone name	Habitat condition (Vegetation Integrity)	Change in habitat condition	Area (ha)/Count (no. individuals)	Sensitivity to loss (Justification)	Sensitivity to gain (Justification)	BC Act Listing status	EPBC Act listing status	Potential SAII	Species credits
Aprasia parapulchella / Pink-tailed Legless Lizard (Fauna)									
3747_Good	84.0	84.0	0.02	Biodiversity Conservation Act listing status	Species dependent on habitat attributes	Vulnerable	Vulnerable	False	1
3747_Quarry	21.0	21.0	0.01	Biodiversity Conservation Act listing status	Species dependent on habitat attributes	Vulnerable	Vulnerable	False	1
								Subtotal	**2**
Petaurus norfolcensis / Squirrel Glider (Fauna)									
3747_Good	84.0	84.0	0.12	Biodiversity Conservation Act listing status	Species dependent on habitat attributes	Vulnerable	Not Listed	False	5

3747_Quarry	21.0	21.0	0.01	Biodiversity Conservation Act listing status	Species dependent on habitat attributes	Vulnerable	Not Listed	False	1
								Subtotal	**6**

BAM Biodiversity Credit Report (Like for like)

Proposal Details

Assessment Id
00037322/BAAS21028/25/00057457

Proposal Name
Barina Quarry - Stage 1a

BAM data last updated *
05/08/2025

Assessor Name
David Orchard

Assessor Number
BAAS21028

BAM Data version *
Current classification (live - default) (82)

Proponent Names

Report Created
02/02/2026

BAM Case Status
Finalised

Assessment Revision
3

BOS entry trigger

Assessment Type
Major Projects

Date Finalised
02/02/2026

* Disclaimer: BAM data last updated may indicate either complete or partial update of the BAM calculator database. BAM calculator database may not be completely aligned with Bionet.

Potential Serious and Irreversible Impacts

Name of threatened ecological community	Listing status	Name of Plant Community Type/ID
Nil		

Species
Nil

Additional Information for Approval

BAM Biodiversity Credit Report (Like for like)

PCT Outside Ibra Added

None added

PCTs With Customized Benchmarks

PCT
No Changes

Predicted Threatened Species Not On Site

Name
Calyptorhynchus lathami lathami / South-eastern Glossy Black-Cockatoo
Ephippiorhynchus asiaticus / Black-necked Stork
Haliaeetus leucogaster / White-bellied Sea-Eagle

Ecosystem Credit Summary (Number and class of biodiversity credits to be retired)

Name of Plant Community Type/ID	Name of threatened ecological community	Area of impact	HBT Cr	No HBT Cr	Total credits to be retired
3747-Southern Tableland Western Hills Scribbly Gum Forest	Not a TEC	0.1	4	1	5

BAM Biodiversity Credit Report (Like for like)

3747-Southern Tableland Western Hills Scribbly Gum Forest

Like-for-like credit retirement options

Class	Trading group	Zone	HBT	Credits	IBRA region
Southern Tableland Dry Sclerophyll Forests This includes PCT's: 299, 344, 349, 351, 352, 653, 701, 727, 730, 957, 1093, 1177, 3730, 3732, 3734, 3735, 3737, 3738, 3741, 3743, 3744, 3746, 3747	Southern Tableland Dry Sclerophyll Forests >=50% and <70%	3747_Good	Yes	4	Monaro, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
Southern Tableland Dry Sclerophyll Forests This includes PCT's: 299, 344, 349, 351, 352, 653, 701, 727, 730, 957, 1093, 1177, 3730, 3732, 3734, 3735, 3737, 3738, 3741, 3743, 3744, 3746, 3747	Southern Tableland Dry Sclerophyll Forests >=50% and <70%	3747_Quarry	No	1	Monaro, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

Species Credit Summary

BAM Biodiversity Credit Report (Like for like)

Species	Vegetation Zone/s	Area / Count	Credits
Aprasia parapulchella / Pink-tailed Legless Lizard	**3747_Good, 3747_Quarry**	0.0	2.00
Petaurus norfolcensis / Squirrel Glider	**3747_Good, 3747_Quarry**	0.1	6.00

Credit Retirement Options

Like-for-like credit retirement options

Aprasia parapulchella / Pink-tailed Legless Lizard	Spp	IBRA subregion
	Aprasia parapulchella / Pink-tailed Legless Lizard	Any in NSW
Petaurus norfolcensis / Squirrel Glider	Spp	IBRA subregion
	Petaurus norfolcensis / Squirrel Glider	Any in NSW

BAM Candidate Species Report

Proposal Details

Assessment Id 00037322/BAAS21028/25/00057457	Proposal Name Barina Quarry - Stage 1a	BAM data last updated * 05/08/2025
Assessor Name David Orchard	Report Created 02/02/2026	BAM Data version * Current classification (live - default) (82)
Assessor Number BAAS21028	Assessment Type Major Projects	BAM Case Status Finalised
Assessment Revision 3	BOS entry trigger	Date Finalised 02/02/2026

* Disclaimer: BAM data last updated may indicate either complete or partial update of the BAM calculator database. BAM calculator database may not be completely aligned with Bionet.

List of Species Requiring Survey

Name	Presence	Survey Months
Aprasia parapulchella Pink-tailed Legless Lizard	Yes (expert report)	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?
Callocephalon fimbriatum Gang-gang Cockatoo	No (surveyed)	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☐ Survey month outside the specified months?
Calyptorhynchus lathami lathami South-eastern Glossy Black-Cockatoo	No (surveyed) *Survey months are outside of the months specified in Bionet.	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☑ Survey month outside the specified months?

Cercartetus nanus Eastern Pygmy-possum	No (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☐ Survey month outside the specified months?
Hieraaetus morphnoides Little Eagle	No (surveyed)	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☑ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?
Leucochrysum albicans subsp. tricolor Hoary Sunray	No (surveyed)	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☑ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?
Litoria castanea Yellow-spotted Tree Frog	No (surveyed)	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☐ Survey month outside the specified months?
Litoria raniformis Southern Bell Frog	No (surveyed)	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☐ Survey month outside the specified months?
Lophoictinia isura Square-tailed Kite	No (surveyed)	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☑ Oct ☑ Nov ☐ Dec ☐ Survey month outside the specified months?

Myotis macropus Southern Myotis	No (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?
Ninox connivens Barking Owl	No (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?
Ninox strenua Powerful Owl	No (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?
Petauroides volans Southern Greater Glider	No (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☐ Survey month outside the specified months?
Petaurus norfolcensis Squirrel Glider	Yes (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☐ Survey month outside the specified months?
Petrogale penicillata Brush-tailed Rock-wallaby	No (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☑ Oct ☑ Nov ☐ Dec ☐ Survey month outside the specified months?

Phascogale tapoatafa Brush-tailed Phascogale	No (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?
Phascolarctos cinereus Koala	No (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☐ Survey month outside the specified months?
Synemon plana Golden Sun Moth	No (surveyed)	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☐ Survey month outside the specified months?
Zieria citriodora Lemon Zieria	No (surveyed)	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☑ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?

Threatened species Manually Added

None added

Threatened species assessed as not on site

Refer to BAR for detailed justification

Common name	Scientific name	Justification in the BAM-C
Grey-headed Flying-fox	Pteropus poliocephalus	Habitat constraints
Large Bent-winged Bat	Miniopterus orianae oceanensis	Habitat constraints
Pale Pomaderris	Pomaderris pallida	Refer to BAR
Swift Parrot	Lathamus discolor	Habitat constraints

White-bellied Sea-Eagle	Haliaeetus leucogaster	Habitat constraints

BAM Predicted Species Report

Proposal Details

Assessment Id	Proposal Name	BAM data last updated *
00037322/BAAS21028/25/00057457	Barina Quarry - Stage 1a	05/08/2025
Assessor Name	Report Created	BAM Data version *
David Orchard	02/02/2026	Current classification (live - default) (82)
Assessor Number	Assessment Type	BAM Case Status
BAAS21028	Major Projects	Finalised
Assessment Revision	BOS entry trigger	Date Finalised
3		02/02/2026

* Disclaimer: BAM data last updated may indicate either complete or partial update of the BAM calculator database. BAM calculator database may not be completely aligned with Bionet.

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

Common Name	Scientific Name	Vegetation Types(s)
Black Falcon	Falco subniger	3747-Southern Tableland Western Hills Scribbly Gum Forest
Brown Treecreeper (eastern subspecies)	Climacteris picumnus victoriae	3747-Southern Tableland Western Hills Scribbly Gum Forest
Diamond Firetail	Stagonopleura guttata	3747-Southern Tableland Western Hills Scribbly Gum Forest
Dusky Woodswallow	Artamus cyanopterus cyanopterus	3747-Southern Tableland Western Hills Scribbly Gum Forest
Eastern False Pipistrelle	Falsistrellus tasmaniensis	3747-Southern Tableland Western Hills Scribbly Gum Forest
Flame Robin	Petroica phoenicea	3747-Southern Tableland Western Hills Scribbly Gum Forest
Gang-gang Cockatoo	Callocephalon fimbriatum	3747-Southern Tableland Western Hills Scribbly Gum Forest
Grey-headed Flying-fox	Pteropus poliocephalus	3747-Southern Tableland Western Hills Scribbly Gum Forest
Large Bent-winged Bat	Miniopterus orianae oceanensis	3747-Southern Tableland Western Hills Scribbly Gum Forest
Little Eagle	Hieraaetus morphnoides	3747-Southern Tableland Western Hills Scribbly Gum Forest

Little Lorikeet	Glossopsitta pusilla	3747-Southern Tableland Western Hills Scribbly Gum Forest
Olive Whistler	Pachycephala olivacea	3747-Southern Tableland Western Hills Scribbly Gum Forest
Rosenberg's Goanna	Varanus rosenbergi	3747-Southern Tableland Western Hills Scribbly Gum Forest
Scarlet Robin	Petroica boodang	3747-Southern Tableland Western Hills Scribbly Gum Forest
South-eastern Hooded Robin	Melanodryas cucullata cucullata	3747-Southern Tableland Western Hills Scribbly Gum Forest
Southern Whiteface	Aphelocephala leucopsis	3747-Southern Tableland Western Hills Scribbly Gum Forest
Speckled Warbler	Chthonicola sagittata	3747-Southern Tableland Western Hills Scribbly Gum Forest
Spotted-tailed Quoll	Dasyurus maculatus	3747-Southern Tableland Western Hills Scribbly Gum Forest
Square-tailed Kite	Lophoictinia isura	3747-Southern Tableland Western Hills Scribbly Gum Forest
Swift Parrot	Lathamus discolor	3747-Southern Tableland Western Hills Scribbly Gum Forest
Varied Sittella	Daphoenositta chrysoptera	3747-Southern Tableland Western Hills Scribbly Gum Forest
White-throated Needletail	Hirundapus caudacutus	3747-Southern Tableland Western Hills Scribbly Gum Forest
Yellow-bellied Sheathtail-bat	Saccolaimus flaviventris	3747-Southern Tableland Western Hills Scribbly Gum Forest

Threatened species Manually Added

None added

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

Common Name	Scientific Name	Plant Community Type(s)
Black-necked Stork	Ephippiorhynchus asiaticus	3747-Southern Tableland Western Hills Scribbly Gum Forest
South-eastern Glossy Black-Cockatoo	Calyptorhynchus lathami lathami	3747-Southern Tableland Western Hills Scribbly Gum Forest
White-bellied Sea-Eagle	Haliaeetus leucogaster	3747-Southern Tableland Western Hills Scribbly Gum Forest

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

Refer to BAR for detailed justification

Common Name	Scientific Name	Justification in the BAM-C
Black-necked Stork	Ephippiorhynchus asiaticus	Habitat constraints

South-eastern Glossy Black-Cockatoo	Calyptorhynchus lathami lathami	Habitat constraints
White-bellied Sea-Eagle	Haliaeetus leucogaster	Habitat constraints

BAM Credit Summary Report

Proposal Details

Assessment Id
00037322/BAAS21028/25/00057459

Proposal Name
Barina Quarry - Stage 1b

BAM data last updated *
05/08/2025

Assessor Name
David Orchard

Report Created
02/02/2026

BAM Data version *
Current classification (live - default) (82)

Assessor Number
BAAS21028

BAM Case Status
Finalised

Date Finalised
02/02/2026

Assessment Revision
2

BOS entry trigger

Assessment Type
Major Projects

* Disclaimer: BAM data last updated may indicate either complete or partial update of the BAM calculator database. BAM calculator database may not be completely aligned with Bionet.

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

Zone	Vegetation zone name	TEC name	Current Vegetation integrity score	Change in Vegetation integrity (loss / gain)	Area (ha)	Sensitivity to loss (Justification)	Species sensitivity to gain class	BC Act Listing status	EPBC Act listing status	Biodiversity risk weighting	Potential SAII	Ecosystem credits
Southern Tableland Western Hills Scribbly Gum Forest												
1	3747_Good	Not a TEC	84	84.0	0.01	PCT Cleared - 65%	High Sensitivity to Gain			1.75		1

2	3747_Derived	Not a TEC	40.1	40.1	0.2	PCT Cleared - 65%	High Sensitivity to Gain			1.75		4
3	3747_Moderate	Not a TEC	58.1	58.1	0.01	PCT Cleared - 65%	High Sensitivity to Gain			1.75		1
4	3747_Quarry	Not a TEC	21	21.0	0.13	PCT Cleared - 65%	High Sensitivity to Gain			1.75		1
5	3747_Wet Grassland	Not a TEC	12.3	12.3	0.15	PCT Cleared - 65%	High Sensitivity to Gain			1.75		0
											Subtotal	**7**
											Total	**7**

Species credits for threatened species

Vegetation zone name	Habitat condition (Vegetation Integrity)	Change in habitat condition	Area (ha)/Count (no. individuals)	Sensitivity to loss (Justification)	Sensitivity to gain (Justification)	BC Act Listing status	EPBC Act listing status	Potential SAII	Species credits
Aprasia parapulchella / Pink-tailed Legless Lizard (Fauna)									
3747_Quarry	21.0	21.0	0.01	Biodiversity Conservation Act listing status	Species dependent on habitat attributes	Vulnerable	Vulnerable	False	1
								Subtotal	**1**

Petaurus norfolcensis / Squirrel Glider (Fauna)									
3747_Good	84.0	84.0	0.01	Biodiversity Conservation Act listing status	Species dependent on habitat attributes	Vulnerable	Not Listed	False	1
3747_Derived	40.1	40.1	0.2	Biodiversity Conservation Act listing status	Species dependent on habitat attributes	Vulnerable	Not Listed	False	4
3747_Moderate	58.1	58.1	0.01	Biodiversity Conservation Act listing status	Species dependent on habitat attributes	Vulnerable	Not Listed	False	1
3747_Quarry	21.0	21.0	0.13	Biodiversity Conservation Act listing status	Species dependent on habitat attributes	Vulnerable	Not Listed	False	1
3747_WetGrassland	12.3	12.3	0.15	Biodiversity Conservation Act listing status	Species dependent on habitat attributes	Vulnerable	Not Listed	False	1
								Subtotal	**8**

BAM Biodiversity Credit Report (Like for like)

Proposal Details

Assessment Id
00037322/BAAS21028/25/00057459

Proposal Name
Barina Quarry - Stage 1b

BAM data last updated *
05/08/2025

Assessor Name
David Orchard

Assessor Number
BAAS21028

BAM Data version *
Current classification (live - default) (82)

Proponent Names

Report Created
02/02/2026

BAM Case Status
Finalised

Assessment Revision
2

BOS entry trigger

Assessment Type
Major Projects

Date Finalised
02/02/2026

* Disclaimer: BAM data last updated may indicate either complete or partial update of the BAM calculator database. BAM calculator database may not be completely aligned with Bionet.

Potential Serious and Irreversible Impacts

Name of threatened ecological community	Listing status	Name of Plant Community Type/ID
Nil		

Species
Nil

Additional Information for Approval

BAM Biodiversity Credit Report (Like for like)

PCT Outside Ibra Added

None added

PCTs With Customized Benchmarks

PCT
No Changes

Predicted Threatened Species Not On Site

Name
Ephippiorhynchus asiaticus / Black-necked Stork
Haliaeetus leucogaster / White-bellied Sea-Eagle

Ecosystem Credit Summary (Number and class of biodiversity credits to be retired)

Name of Plant Community Type/ID	Name of threatened ecological community	Area of impact	HBT Cr	No HBT Cr	Total credits to be retired
3747-Southern Tableland Western Hills Scribbly Gum Forest	Not a TEC	0.5	1	6	7

3747-Southern Tableland Western Hills Scribbly Gum Forest	**Like-for-like credit retirement options**					
	Class	Trading group	Zone	HBT	Credits	IBRA region

	Southern Tableland Dry Sclerophyll Forests This includes PCT's: 299, 344, 349, 351, 352, 653, 701, 727, 730, 957, 1093, 1177, 3730, 3732, 3734, 3735, 3737, 3738, 3741, 3743, 3744, 3746, 3747	Southern Tableland Dry Sclerophyll Forests >=50% and <70%	3747_Good	Yes	1	Monaro, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
	Southern Tableland Dry Sclerophyll Forests This includes PCT's: 299, 344, 349, 351, 352, 653, 701, 727, 730, 957, 1093, 1177, 3730, 3732, 3734, 3735, 3737, 3738, 3741, 3743, 3744, 3746, 3747	Southern Tableland Dry Sclerophyll Forests >=50% and <70%	3747_Derived	No	4	Monaro, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

	Southern Tableland Dry Sclerophyll Forests This includes PCT's: 299, 344, 349, 351, 352, 653, 701, 727, 730, 957, 1093, 1177, 3730, 3732, 3734, 3735, 3737, 3738, 3741, 3743, 3744, 3746, 3747	Southern Tableland Dry Sclerophyll Forests >=50% and <70%	3747_Moderate	No	1	Monaro, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
	Southern Tableland Dry Sclerophyll Forests This includes PCT's: 299, 344, 349, 351, 352, 653, 701, 727, 730, 957, 1093, 1177, 3730, 3732, 3734, 3735, 3737, 3738, 3741, 3743, 3744, 3746, 3747	Southern Tableland Dry Sclerophyll Forests >=50% and <70%	3747_Quarry	No	1	Monaro, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

	Southern Tableland Dry Sclerophyll Forests This includes PCT's: 299, 344, 349, 351, 352, 653, 701, 727, 730, 957, 1093, 1177, 3730, 3732, 3734, 3735, 3737, 3738, 3741, 3743, 3744, 3746, 3747	Southern Tableland Dry Sclerophyll Forests >=50% and <70%	3747_WetGrassland	No	0	Monaro, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

Species Credit Summary

Species	Vegetation Zone/s	Area / Count	Credits
Aprasia parapulchella / Pink-tailed Legless Lizard	**3747_Quarry**	0.0	1.00
Petaurus norfolcensis / Squirrel Glider	**3747_Good, 3747_Derived, 3747_Moderate, 3747_Quarry, 3747_WetGrassland**	0.5	8.00

Credit Retirement Options

Like-for-like credit retirement options

Aprasia parapulchella / Pink-tailed Legless Lizard	Spp	IBRA subregion

	Aprasia parapulchella / Pink-tailed Legless Lizard	Any in NSW
Petaurus norfolcensis / Squirrel Glider	Spp	IBRA subregion
	Petaurus norfolcensis / Squirrel Glider	Any in NSW

BAM Candidate Species Report

Proposal Details

Assessment Id 00037322/BAAS21028/25/00057459	Proposal Name Barina Quarry - Stage 1b	BAM data last updated * 05/08/2025
Assessor Name David Orchard	Report Created 02/02/2026	BAM Data version * Current classification (live - default) (82)
Assessor Number BAAS21028	Assessment Type Major Projects	BAM Case Status Finalised
Assessment Revision 2	BOS entry trigger	Date Finalised 02/02/2026

* Disclaimer: BAM data last updated may indicate either complete or partial update of the BAM calculator database. BAM calculator database may not be completely aligned with Bionet.

List of Species Requiring Survey

Name	Presence	Survey Months
Aprasia parapulchella Pink-tailed Legless Lizard	Yes (expert report)	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?
Callocephalon fimbriatum Gang-gang Cockatoo	No (surveyed) *Survey months are outside of the months specified in Bionet.	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☑ Survey month outside the specified months?
Calyptorhynchus lathami lathami South-eastern Glossy Black-Cockatoo	No (surveyed) *Survey months are outside of the months specified in Bionet.	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☑ Survey month outside the specified months?

Cercartetus nanus Eastern Pygmy-possum	No (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☐ Survey month outside the specified months?
Hieraaetus morphnoides Little Eagle	No (surveyed) *Survey months are outside of the months specified in Bionet.	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☑ Oct ☑ Nov ☐ Dec ☑ Survey month outside the specified months?
Leucochrysum albicans subsp. tricolor Hoary Sunray	No (surveyed)	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☑ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?
Litoria castanea Yellow-spotted Tree Frog	No (surveyed)	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☐ Survey month outside the specified months?
Litoria raniformis Southern Bell Frog	No (surveyed)	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☐ Survey month outside the specified months?
Lophoictinia isura Square-tailed Kite	No (surveyed) *Survey months are outside of the months specified in Bionet.	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☑ Oct ☑ Nov ☐ Dec ☑ Survey month outside the specified months?

Myotis macropus Southern Myotis	No (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?
Ninox connivens Barking Owl	No (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?
Ninox strenua Powerful Owl	No (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?
Petauroides volans Southern Greater Glider	No (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☐ Survey month outside the specified months?
Petaurus norfolcensis Squirrel Glider	Yes (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☐ Survey month outside the specified months?
Petrogale penicillata Brush-tailed Rock-wallaby	No (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☑ Oct ☑ Nov ☐ Dec ☐ Survey month outside the specified months?

Phascogale tapoatafa Brush-tailed Phascogale	No (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?
Phascolarctos cinereus Koala	No (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☐ Survey month outside the specified months?
Synemon plana Golden Sun Moth	No (surveyed) *Survey months are outside of the months specified in Bionet.	☐ Jan ☐ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☑ Survey month outside the specified months?
Zieria citriodora Lemon Zieria	No (surveyed)	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☑ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?

Threatened species Manually Added

None added

Threatened species assessed as not on site

Refer to BAR for detailed justification

Common name	Scientific name	Justification in the BAM-C
Grey-headed Flying-fox	Pteropus poliocephalus	Habitat constraints
Large Bent-winged Bat	Miniopterus orianae oceanensis	Habitat constraints
Pale Pomaderris	Pomaderris pallida	Refer to BAR
Swift Parrot	Lathamus discolor	Habitat constraints

White-bellied Sea-Eagle	Haliaeetus leucogaster	Habitat constraints

BAM Predicted Species Report

Proposal Details

Assessment Id	Proposal Name	BAM data last updated *
00037322/BAAS21028/25/00057459	Barina Quarry - Stage 1b	05/08/2025
Assessor Name	Report Created	BAM Data version *
David Orchard	02/02/2026	Current classification (live - default) (82)
Assessor Number	Assessment Type	BAM Case Status
BAAS21028	Major Projects	Finalised
Assessment Revision	BOS entry trigger	Date Finalised
2		02/02/2026

* Disclaimer: BAM data last updated may indicate either complete or partial update of the BAM calculator database. BAM calculator database may not be completely aligned with Bionet.

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

Common Name	Scientific Name	Vegetation Types(s)
Black Falcon	Falco subniger	3747-Southern Tableland Western Hills Scribbly Gum Forest
Brown Treecreeper (eastern subspecies)	Climacteris picumnus victoriae	3747-Southern Tableland Western Hills Scribbly Gum Forest
Diamond Firetail	Stagonopleura guttata	3747-Southern Tableland Western Hills Scribbly Gum Forest
Dusky Woodswallow	Artamus cyanopterus cyanopterus	3747-Southern Tableland Western Hills Scribbly Gum Forest
Eastern False Pipistrelle	Falsistrellus tasmaniensis	3747-Southern Tableland Western Hills Scribbly Gum Forest
Flame Robin	Petroica phoenicea	3747-Southern Tableland Western Hills Scribbly Gum Forest
Gang-gang Cockatoo	Callocephalon fimbriatum	3747-Southern Tableland Western Hills Scribbly Gum Forest
Grey-headed Flying-fox	Pteropus poliocephalus	3747-Southern Tableland Western Hills Scribbly Gum Forest
Large Bent-winged Bat	Miniopterus orianae oceanensis	3747-Southern Tableland Western Hills Scribbly Gum Forest
Little Eagle	Hieraaetus morphnoides	3747-Southern Tableland Western Hills Scribbly Gum Forest

Little Lorikeet	Glossopsitta pusilla	3747-Southern Tableland Western Hills Scribbly Gum Forest
Olive Whistler	Pachycephala olivacea	3747-Southern Tableland Western Hills Scribbly Gum Forest
Rosenberg's Goanna	Varanus rosenbergi	3747-Southern Tableland Western Hills Scribbly Gum Forest
Scarlet Robin	Petroica boodang	3747-Southern Tableland Western Hills Scribbly Gum Forest
South-eastern Glossy Black-Cockatoo	Calyptorhynchus lathami lathami	3747-Southern Tableland Western Hills Scribbly Gum Forest
South-eastern Hooded Robin	Melanodryas cucullata cucullata	3747-Southern Tableland Western Hills Scribbly Gum Forest
Southern Whiteface	Aphelocephala leucopsis	3747-Southern Tableland Western Hills Scribbly Gum Forest
Speckled Warbler	Chthonicola sagittata	3747-Southern Tableland Western Hills Scribbly Gum Forest
Spotted-tailed Quoll	Dasyurus maculatus	3747-Southern Tableland Western Hills Scribbly Gum Forest
Square-tailed Kite	Lophoictinia isura	3747-Southern Tableland Western Hills Scribbly Gum Forest
Swift Parrot	Lathamus discolor	3747-Southern Tableland Western Hills Scribbly Gum Forest
Varied Sittella	Daphoenositta chrysoptera	3747-Southern Tableland Western Hills Scribbly Gum Forest
White-throated Needletail	Hirundapus caudacutus	3747-Southern Tableland Western Hills Scribbly Gum Forest
Yellow-bellied Sheathtail-bat	Saccolaimus flaviventris	3747-Southern Tableland Western Hills Scribbly Gum Forest

Threatened species Manually Added

None added

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

Common Name	Scientific Name	Plant Community Type(s)
Black-necked Stork	Ephippiorhynchus asiaticus	3747-Southern Tableland Western Hills Scribbly Gum Forest
White-bellied Sea-Eagle	Haliaeetus leucogaster	3747-Southern Tableland Western Hills Scribbly Gum Forest

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

Refer to BAR for detailed justification

Common Name	Scientific Name	Justification in the BAM-C
Black-necked Stork	Ephippiorhynchus asiaticus	Habitat constraints

White-bellied Sea-Eagle	Haliaeetus leucogaster	Habitat constraints

BAM Credit Summary Report

Proposal Details

Assessment Id
00037322/BAAS21028/25/00057460

Proposal Name
Barina Quarry - Stage 2a

BAM data last updated *
05/08/2025

Assessor Name
David Orchard

Report Created
02/02/2026

BAM Data version *
Current classification (live - default) (82)

Assessor Number
BAAS21028

BAM Case Status
Finalised

Date Finalised
02/02/2026

Assessment Revision
2

BOS entry trigger

Assessment Type
Major Projects

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

Zone	Vegetation zone name	TEC name	Current Vegetation integrity score	Change in Vegetation integrity (loss / gain)	Area (ha)	Sensitivity to loss (Justification)	Species sensitivity to gain class	BC Act Listing status	EPBC Act listing status	Biodiversity risk weighting	Potential SAII	Ecosystem credits
Southern Tableland Western Hills Scribbly Gum Forest												
1	3747_AcaciaShrubland	Not a TEC	42.4	42.4	0.02	PCT Cleared - 65%	High Sensitivity to Gain			1.75		1

2	3747_Derived	Not a TEC	40.1	40.1	1.4	PCT Cleared - 65%	High Sensitivity to Gain			1.75		25
3	3747_Moderate	Not a TEC	58.1	58.1	0.01	PCT Cleared - 65%	High Sensitivity to Gain			1.75		1
											Subtotal	**27**
											Total	**27**

Species credits for threatened species

Vegetation zone name	Habitat condition (Vegetation Integrity)	Change in habitat condition	Area (ha)/Count (no. individuals)	Sensitivity to loss (Justification)	Sensitivity to gain (Justification)	BC Act Listing status	EPBC Act listing status	Potential SAII	Species credits
Aprasia parapulchella / Pink-tailed Legless Lizard (Fauna)									
3747_Derived	40.1	40.1	0.03	Biodiversity Conservation Act listing status	Species dependent on habitat attributes	Vulnerable	Vulnerable	False	1
3747_Moderate	58.1	58.1	0.01	Biodiversity Conservation Act listing status	Species dependent on habitat attributes	Vulnerable	Vulnerable	False	1
								Subtotal	**2**

Petaurus norfolcensis / Squirrel Glider (Fauna)									
3747_AcaciaShrubland	42.4	42.4	0.02	Biodiversity Conservation Act listing status	Species dependent on habitat attributes	Vulnerable	Not Listed	False	1
3747_Derived	40.1	40.1	1.4	Biodiversity Conservation Act listing status	Species dependent on habitat attributes	Vulnerable	Not Listed	False	28
3747_Moderate	58.1	58.1	0.01	Biodiversity Conservation Act listing status	Species dependent on habitat attributes	Vulnerable	Not Listed	False	1
								Subtotal	**30**

BAM Biodiversity Credit Report (Like for like)

Proposal Details

Assessment Id
00037322/BAAS21028/25/00057460

Proposal Name
Barina Quarry - Stage 2a

BAM data last updated *
05/08/2025

Assessor Name
David Orchard

Assessor Number
BAAS21028

BAM Data version *
Current classification (live - default) (82)

Proponent Names

Report Created
02/02/2026

BAM Case Status
Finalised

Assessment Revision
2

BOS entry trigger

Assessment Type
Major Projects

Date Finalised
02/02/2026

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Potential Serious and Irreversible Impacts

Name of threatened ecological community	Listing status	Name of Plant Community Type/ID
Nil		

Species
Nil

Additional Information for Approval

BAM Biodiversity Credit Report (Like for like)

PCT Outside Ibra Added

None added

PCTs With Customized Benchmarks

PCT
No Changes

Predicted Threatened Species Not On Site

Name
Ephippiorhynchus asiaticus / Black-necked Stork
Haliaeetus leucogaster / White-bellied Sea-Eagle

Ecosystem Credit Summary (Number and class of biodiversity credits to be retired)

Name of Plant Community Type/ID	Name of threatened ecological community	Area of impact	HBT Cr	No HBT Cr	Total credits to be retired
3747-Southern Tableland Western Hills Scribbly Gum Forest	Not a TEC	1.4	0	27	27

3747-Southern Tableland Western Hills Scribbly Gum Forest	**Like-for-like credit retirement options**					
	Class	Trading group	Zone	HBT	Credits	IBRA region

	Southern Tableland Dry Sclerophyll Forests This includes PCT's: 299, 344, 349, 351, 352, 653, 701, 727, 730, 957, 1093, 1177, 3730, 3732, 3734, 3735, 3737, 3738, 3741, 3743, 3744, 3746, 3747	Southern Tableland Dry Sclerophyll Forests >=50% and <70%	3747_AcaciaShrubland	No	1	Monaro, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
	Southern Tableland Dry Sclerophyll Forests This includes PCT's: 299, 344, 349, 351, 352, 653, 701, 727, 730, 957, 1093, 1177, 3730, 3732, 3734, 3735, 3737, 3738, 3741, 3743, 3744, 3746, 3747	Southern Tableland Dry Sclerophyll Forests >=50% and <70%	3747_Derived	No	25	Monaro, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

	Southern Tableland Dry Sclerophyll Forests This includes PCT's: 299, 344, 349, 351, 352, 653, 701, 727, 730, 957, 1093, 1177, 3730, 3732, 3734, 3735, 3737, 3738, 3741, 3743, 3744, 3746, 3747	Southern Tableland Dry Sclerophyll Forests >=50% and <70%	3747_Moderate	No	1	Monaro, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

Species Credit Summary

Species	Vegetation Zone/s	Area / Count	Credits
Aprasia parapulchella / Pink-tailed Legless Lizard	**3747_Derived, 3747_Moderate**	0.0	2.00
Petaurus norfolcensis / Squirrel Glider	**3747_AcaciaShrubland, 3747_Derived, 3747_Moderate**	1.4	30.00

Credit Retirement Options

Like-for-like credit retirement options

	Spp	IBRA subregion
Aprasia parapulchella / Pink-tailed Legless Lizard		

	Aprasia parapulchella / Pink-tailed Legless Lizard	Any in NSW
Petaurus norfolcensis / Squirrel Glider	Spp	IBRA subregion
	Petaurus norfolcensis / Squirrel Glider	Any in NSW

BAM Candidate Species Report

Proposal Details

Assessment Id 00037322/BAAS21028/25/00057460	Proposal Name Barina Quarry - Stage 2a	BAM data last updated * 05/08/2025
Assessor Name David Orchard	Report Created 02/02/2026	BAM Data version * Current classification (live - default) (82)
Assessor Number BAAS21028	Assessment Type Major Projects	BAM Case Status Finalised
Assessment Revision 2	BOS entry trigger	Date Finalised 02/02/2026

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List of Species Requiring Survey

Name	Presence	Survey Months
Aprasia parapulchella Pink-tailed Legless Lizard	Yes (expert report)	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?
Callocephalon fimbriatum Gang-gang Cockatoo	No (surveyed) *Survey months are outside of the months specified in Bionet.	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☑ Survey month outside the specified months?
Calyptorhynchus lathami lathami South-eastern Glossy Black-Cockatoo	No (surveyed) *Survey months are outside of the months specified in Bionet.	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☑ Survey month outside the specified months?

Cercartetus nanus Eastern Pygmy-possum	No (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☐ Survey month outside the specified months?
Hieraaetus morphnoides Little Eagle	No (surveyed) *Survey months are outside of the months specified in Bionet.	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☑ Oct ☑ Nov ☐ Dec ☑ Survey month outside the specified months?
Leucochrysum albicans subsp. tricolor Hoary Sunray	No (surveyed)	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☑ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?
Litoria castanea Yellow-spotted Tree Frog	No (surveyed)	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☐ Survey month outside the specified months?
Litoria raniformis Southern Bell Frog	No (surveyed)	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☐ Survey month outside the specified months?
Lophoictinia isura Square-tailed Kite	No (surveyed) *Survey months are outside of the months specified in Bionet.	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☑ Oct ☑ Nov ☐ Dec ☑ Survey month outside the specified months?

Myotis macropus Southern Myotis	No (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?
Ninox connivens Barking Owl	No (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?
Ninox strenua Powerful Owl	No (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?
Petauroides volans Southern Greater Glider	No (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☑ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?
Petaurus norfolcensis Squirrel Glider	Yes (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☐ Survey month outside the specified months?
Petrogale penicillata Brush-tailed Rock-wallaby	No (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☑ Oct ☑ Nov ☐ Dec ☐ Survey month outside the specified months?

Phascogale tapoatafa Brush-tailed Phascogale	No (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?
Phascolarctos cinereus Koala	No (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☐ Survey month outside the specified months?
Synemon plana Golden Sun Moth	No (surveyed) *Survey months are outside of the months specified in Bionet.	☐ Jan ☐ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☑ Survey month outside the specified months?
Zieria citriodora Lemon Zieria	No (surveyed)	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☑ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?

Threatened species Manually Added

None added

Threatened species assessed as not on site

Refer to BAR for detailed justification

Common name	Scientific name	Justification in the BAM-C
Grey-headed Flying-fox	Pteropus poliocephalus	Habitat constraints
Large Bent-winged Bat	Miniopterus orianae oceanensis	Habitat constraints
Pale Pomaderris	Pomaderris pallida	Refer to BAR
Swift Parrot	Lathamus discolor	Habitat constraints

White-bellied Sea-Eagle	Haliaeetus leucogaster	Habitat constraints

BAM Predicted Species Report

Proposal Details

Assessment Id	Proposal Name	BAM data last updated *
00037322/BAAS21028/25/00057460	Barina Quarry - Stage 2a	05/08/2025
Assessor Name	Report Created	BAM Data version *
David Orchard	02/02/2026	Current classification (live - default) (82)
Assessor Number	Assessment Type	BAM Case Status
BAAS21028	Major Projects	Finalised
Assessment Revision	BOS entry trigger	Date Finalised
2		02/02/2026

* Disclaimer: BAM data last updated may indicate either complete or partial update of the BAM calculator database. BAM calculator database may not be completely aligned with Bionet.

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

Common Name	Scientific Name	Vegetation Types(s)
Black Falcon	Falco subniger	3747-Southern Tableland Western Hills Scribbly Gum Forest
Brown Treecreeper (eastern subspecies)	Climacteris picumnus victoriae	3747-Southern Tableland Western Hills Scribbly Gum Forest
Diamond Firetail	Stagonopleura guttata	3747-Southern Tableland Western Hills Scribbly Gum Forest
Dusky Woodswallow	Artamus cyanopterus cyanopterus	3747-Southern Tableland Western Hills Scribbly Gum Forest
Eastern False Pipistrelle	Falsistrellus tasmaniensis	3747-Southern Tableland Western Hills Scribbly Gum Forest
Flame Robin	Petroica phoenicea	3747-Southern Tableland Western Hills Scribbly Gum Forest
Gang-gang Cockatoo	Callocephalon fimbriatum	3747-Southern Tableland Western Hills Scribbly Gum Forest
Grey-headed Flying-fox	Pteropus poliocephalus	3747-Southern Tableland Western Hills Scribbly Gum Forest
Large Bent-winged Bat	Miniopterus orianae oceanensis	3747-Southern Tableland Western Hills Scribbly Gum Forest
Little Eagle	Hieraaetus morphnoides	3747-Southern Tableland Western Hills Scribbly Gum Forest

Little Lorikeet	Glossopsitta pusilla	3747-Southern Tableland Western Hills Scribbly Gum Forest
Olive Whistler	Pachycephala olivacea	3747-Southern Tableland Western Hills Scribbly Gum Forest
Rosenberg's Goanna	Varanus rosenbergi	3747-Southern Tableland Western Hills Scribbly Gum Forest
Scarlet Robin	Petroica boodang	3747-Southern Tableland Western Hills Scribbly Gum Forest
South-eastern Glossy Black-Cockatoo	Calyptorhynchus lathami lathami	3747-Southern Tableland Western Hills Scribbly Gum Forest
South-eastern Hooded Robin	Melanodryas cucullata cucullata	3747-Southern Tableland Western Hills Scribbly Gum Forest
Southern Whiteface	Aphelocephala leucopsis	3747-Southern Tableland Western Hills Scribbly Gum Forest
Speckled Warbler	Chthonicola sagittata	3747-Southern Tableland Western Hills Scribbly Gum Forest
Spotted-tailed Quoll	Dasyurus maculatus	3747-Southern Tableland Western Hills Scribbly Gum Forest
Square-tailed Kite	Lophoictinia isura	3747-Southern Tableland Western Hills Scribbly Gum Forest
Swift Parrot	Lathamus discolor	3747-Southern Tableland Western Hills Scribbly Gum Forest
Varied Sittella	Daphoenositta chrysoptera	3747-Southern Tableland Western Hills Scribbly Gum Forest
White-throated Needletail	Hirundapus caudacutus	3747-Southern Tableland Western Hills Scribbly Gum Forest
Yellow-bellied Sheathtail-bat	Saccolaimus flaviventris	3747-Southern Tableland Western Hills Scribbly Gum Forest

Threatened species Manually Added

None added

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

Common Name	Scientific Name	Plant Community Type(s)
Black-necked Stork	Ephippiorhynchus asiaticus	3747-Southern Tableland Western Hills Scribbly Gum Forest
White-bellied Sea-Eagle	Haliaeetus leucogaster	3747-Southern Tableland Western Hills Scribbly Gum Forest

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

Refer to BAR for detailed justification

Common Name	Scientific Name	Justification in the BAM-C
Black-necked Stork	Ephippiorhynchus asiaticus	Habitat constraints

White-bellied Sea-Eagle	Haliaeetus leucogaster	Habitat constraints

BAM Credit Summary Report

Proposal Details

Assessment Id
00037322/BAAS21028/25/00057461

Proposal Name
Barina Quarry - Stage 2b

BAM data last updated *
05/08/2025

Assessor Name
David Orchard

Report Created
02/02/2026

BAM Data version *
Current classification (live - default) (82)

Assessor Number
BAAS21028

BAM Case Status
Finalised

Date Finalised
02/02/2026

Assessment Revision
3

BOS entry trigger

Assessment Type
Major Projects

* Disclaimer: BAM data last updated may indicate either complete or partial update of the BAM calculator database. BAM calculator database may not be completely aligned with Bionet.

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

Zone	Vegetation zone name	TEC name	Current Vegetation integrity score	Change in Vegetation integrity (loss / gain)	Area (ha)	Sensitivity to loss (Justification)	Species sensitivity to gain class	BC Act Listing status	EPBC Act listing status	Biodiversity risk weighting	Potential SAII	Ecosystem credits
Southern Tableland Western Hills Scribbly Gum Forest												
1	3747_AcaciaShrubland	Not a TEC	42.4	42.4	0.17	PCT Cleared - 65%	High Sensitivity to Gain			1.75		3

2	3747_Derived	Not a TEC	40.1	40.1	0.64	PCT Cleared - 65%	High Sensitivity to Gain			1.75		11
3	3747_Moderate	Not a TEC	58.1	58.1	0.01	PCT Cleared - 65%	High Sensitivity to Gain			1.75		1
											Subtotal	**15**
											Total	**15**

Species credits for threatened species

Vegetation zone name	Habitat condition (Vegetation Integrity)	Change in habitat condition	Area (ha)/Count (no. individuals)	Sensitivity to loss (Justification)	Sensitivity to gain (Justification)	BC Act Listing status	EPBC Act listing status	Potential SAII	Species credits
Aprasia parapulchella / Pink-tailed Legless Lizard (Fauna)									
3747_Derived	40.1	40.1	0.01	Biodiversity Conservation Act listing status	Species dependent on habitat attributes	Vulnerable	Vulnerable	False	1
								Subtotal	**1**
Petaurus norfolcensis / Squirrel Glider (Fauna)									
3747_AcaciaShrubland	42.4	42.4	0.17	Biodiversity Conservation Act listing status	Species dependent on habitat attributes	Vulnerable	Not Listed	False	4

3747_Derived	40.1	40.1	0.64	Biodiversity Conservation Act listing status	Species dependent on habitat attributes	Vulnerable	Not Listed	False	13
3747_Moderate	58.1	58.1	0.01	Biodiversity Conservation Act listing status	Species dependent on habitat attributes	Vulnerable	Not Listed	False	1
								Subtotal	**18**

BAM Biodiversity Credit Report (Like for like)

Proposal Details

Assessment Id
00037322/BAAS21028/25/00057461

Proposal Name
Barina Quarry - Stage 2b

BAM data last updated *
05/08/2025

Assessor Name
David Orchard

Assessor Number
BAAS21028

BAM Data version *
Current classification (live - default) (82)

Proponent Names

Report Created
02/02/2026

BAM Case Status
Finalised

Assessment Revision
3

BOS entry trigger

Assessment Type
Major Projects

Date Finalised
02/02/2026

* Disclaimer: BAM data last updated may indicate either complete or partial update of the BAM calculator database. BAM calculator database may not be completely aligned with Bionet.

Potential Serious and Irreversible Impacts

Name of threatened ecological community	Listing status	Name of Plant Community Type/ID
Nil		

Species
Nil

Additional Information for Approval

PCT Outside Ibra Added

None added

PCTs With Customized Benchmarks

PCT
No Changes

Predicted Threatened Species Not On Site

Name
Ephippiorhynchus asiaticus / Black-necked Stork
Haliaeetus leucogaster / White-bellied Sea-Eagle

Ecosystem Credit Summary (Number and class of biodiversity credits to be retired)

Name of Plant Community Type/ID	Name of threatened ecological community	Area of impact	HBT Cr	No HBT Cr	Total credits to be retired
3747-Southern Tableland Western Hills Scribbly Gum Forest	Not a TEC	0.8	0	15	15

3747-Southern Tableland Western Hills Scribbly Gum Forest	**Like-for-like credit retirement options**					
	Class	Trading group	Zone	HBT	Credits	IBRA region

	Southern Tableland Dry Sclerophyll Forests This includes PCT's: 299, 344, 349, 351, 352, 653, 701, 727, 730, 957, 1093, 1177, 3730, 3732, 3734, 3735, 3737, 3738, 3741, 3743, 3744, 3746, 3747	Southern Tableland Dry Sclerophyll Forests >=50% and <70%	3747_AcaciaShrubland	No	3	Monaro, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
	Southern Tableland Dry Sclerophyll Forests This includes PCT's: 299, 344, 349, 351, 352, 653, 701, 727, 730, 957, 1093, 1177, 3730, 3732, 3734, 3735, 3737, 3738, 3741, 3743, 3744, 3746, 3747	Southern Tableland Dry Sclerophyll Forests >=50% and <70%	3747_Derived	No	11	Monaro, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

	Southern Tableland Dry Sclerophyll Forests This includes PCT's: 299, 344, 349, 351, 352, 653, 701, 727, 730, 957, 1093, 1177, 3730, 3732, 3734, 3735, 3737, 3738, 3741, 3743, 3744, 3746, 3747	Southern Tableland Dry Sclerophyll Forests >=50% and <70%	3747_Moderate	No	1	Monaro, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

Species Credit Summary

Species	Vegetation Zone/s	Area / Count	Credits
Aprasia parapulchella / Pink-tailed Legless Lizard	**3747_Derived**	0.0	1.00
Petaurus norfolcensis / Squirrel Glider	**3747_AcaciaShrubland, 3747_Derived, 3747_Moderate**	0.8	18.00

Credit Retirement Options

Like-for-like credit retirement options

	Spp	IBRA subregion
Aprasia parapulchella / Pink-tailed Legless Lizard	**Aprasia parapulchella /** Pink-tailed Legless Lizard	Any in NSW

Petaurus norfolcensis / Squirrel Glider	Spp	IBRA subregion
	Petaurus norfolcensis / Squirrel Glider	Any in NSW

BAM Candidate Species Report

Proposal Details

Assessment Id 00037322/BAAS21028/25/00057461	Proposal Name Barina Quarry - Stage 2b	BAM data last updated * 05/08/2025
Assessor Name David Orchard	Report Created 02/02/2026	BAM Data version * Current classification (live - default) (82)
Assessor Number BAAS21028	Assessment Type Major Projects	BAM Case Status Finalised
Assessment Revision 3	BOS entry trigger	Date Finalised 02/02/2026

* Disclaimer: BAM data last updated may indicate either complete or partial update of the BAM calculator database. BAM calculator database may not be completely aligned with Bionet.

List of Species Requiring Survey

Name	Presence	Survey Months
Aprasia parapulchella Pink-tailed Legless Lizard	Yes (expert report)	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?
Callocephalon fimbriatum Gang-gang Cockatoo	No (surveyed) *Survey months are outside of the months specified in Bionet.	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☑ Survey month outside the specified months?
Calyptorhynchus lathami lathami South-eastern Glossy Black-Cockatoo	No (surveyed) *Survey months are outside of the months specified in Bionet.	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☑ Survey month outside the specified months?

Cercartetus nanus Eastern Pygmy-possum	No (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☐ Survey month outside the specified months?
Hieraaetus morphnoides Little Eagle	No (surveyed) *Survey months are outside of the months specified in Bionet.	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☑ Oct ☑ Nov ☐ Dec ☑ Survey month outside the specified months?
Leucochrysum albicans subsp. tricolor Hoary Sunray	No (surveyed)	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☑ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?
Litoria castanea Yellow-spotted Tree Frog	No (surveyed)	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☐ Survey month outside the specified months?
Litoria raniformis Southern Bell Frog	No (surveyed)	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☐ Survey month outside the specified months?
Lophoictinia isura Square-tailed Kite	No (surveyed) *Survey months are outside of the months specified in Bionet.	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☑ Oct ☑ Nov ☐ Dec ☑ Survey month outside the specified months?

Myotis macropus Southern Myotis	No (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?
Ninox connivens Barking Owl	No (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?
Ninox strenua Powerful Owl	No (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?
Petauroides volans Southern Greater Glider	No (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☐ Survey month outside the specified months?
Petaurus norfolcensis Squirrel Glider	Yes (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☐ Survey month outside the specified months?
Petrogale penicillata Brush-tailed Rock-wallaby	No (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☑ Oct ☑ Nov ☐ Dec ☐ Survey month outside the specified months?

Phascogale tapoatafa Brush-tailed Phascogale	No (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?
Phascolarctos cinereus Koala	No (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☐ Survey month outside the specified months?
Synemon plana Golden Sun Moth	No (surveyed) *Survey months are outside of the months specified in Bionet.	☐ Jan ☐ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☑ Survey month outside the specified months?
Zieria citriodora Lemon Zieria	No (surveyed)	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☑ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?

Threatened species Manually Added

None added

Threatened species assessed as not on site

Refer to BAR for detailed justification

Common name	Scientific name	Justification in the BAM-C
Grey-headed Flying-fox	Pteropus poliocephalus	Habitat constraints
Large Bent-winged Bat	Miniopterus orianae oceanensis	Habitat constraints
Pale Pomaderris	Pomaderris pallida	Refer to BAR
Swift Parrot	Lathamus discolor	Habitat constraints

White-bellied Sea-Eagle	Haliaeetus leucogaster	Habitat constraints

BAM Predicted Species Report

Proposal Details

Assessment Id	Proposal Name	BAM data last updated *
00037322/BAAS21028/25/00057461	Barina Quarry - Stage 2b	05/08/2025
Assessor Name	Report Created	BAM Data version *
David Orchard	02/02/2026	Current classification (live - default) (82)
Assessor Number	Assessment Type	BAM Case Status
BAAS21028	Major Projects	Finalised
Assessment Revision	BOS entry trigger	Date Finalised
3		02/02/2026

* Disclaimer: BAM data last updated may indicate either complete or partial update of the BAM calculator database. BAM calculator database may not be completely aligned with Bionet.

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

Common Name	Scientific Name	Vegetation Types(s)
Black Falcon	Falco subniger	3747-Southern Tableland Western Hills Scribbly Gum Forest
Brown Treecreeper (eastern subspecies)	Climacteris picumnus victoriae	3747-Southern Tableland Western Hills Scribbly Gum Forest
Diamond Firetail	Stagonopleura guttata	3747-Southern Tableland Western Hills Scribbly Gum Forest
Dusky Woodswallow	Artamus cyanopterus cyanopterus	3747-Southern Tableland Western Hills Scribbly Gum Forest
Eastern False Pipistrelle	Falsistrellus tasmaniensis	3747-Southern Tableland Western Hills Scribbly Gum Forest
Flame Robin	Petroica phoenicea	3747-Southern Tableland Western Hills Scribbly Gum Forest
Gang-gang Cockatoo	Callocephalon fimbriatum	3747-Southern Tableland Western Hills Scribbly Gum Forest
Grey-headed Flying-fox	Pteropus poliocephalus	3747-Southern Tableland Western Hills Scribbly Gum Forest
Large Bent-winged Bat	Miniopterus orianae oceanensis	3747-Southern Tableland Western Hills Scribbly Gum Forest
Little Eagle	Hieraaetus morphnoides	3747-Southern Tableland Western Hills Scribbly Gum Forest

Little Lorikeet	Glossopsitta pusilla	3747-Southern Tableland Western Hills Scribbly Gum Forest
Olive Whistler	Pachycephala olivacea	3747-Southern Tableland Western Hills Scribbly Gum Forest
Rosenberg's Goanna	Varanus rosenbergi	3747-Southern Tableland Western Hills Scribbly Gum Forest
Scarlet Robin	Petroica boodang	3747-Southern Tableland Western Hills Scribbly Gum Forest
South-eastern Glossy Black-Cockatoo	Calyptorhynchus lathami lathami	3747-Southern Tableland Western Hills Scribbly Gum Forest
South-eastern Hooded Robin	Melanodryas cucullata cucullata	3747-Southern Tableland Western Hills Scribbly Gum Forest
Southern Whiteface	Aphelocephala leucopsis	3747-Southern Tableland Western Hills Scribbly Gum Forest
Speckled Warbler	Chthonicola sagittata	3747-Southern Tableland Western Hills Scribbly Gum Forest
Spotted-tailed Quoll	Dasyurus maculatus	3747-Southern Tableland Western Hills Scribbly Gum Forest
Square-tailed Kite	Lophoictinia isura	3747-Southern Tableland Western Hills Scribbly Gum Forest
Swift Parrot	Lathamus discolor	3747-Southern Tableland Western Hills Scribbly Gum Forest
Varied Sittella	Daphoenositta chrysoptera	3747-Southern Tableland Western Hills Scribbly Gum Forest
White-throated Needletail	Hirundapus caudacutus	3747-Southern Tableland Western Hills Scribbly Gum Forest
Yellow-bellied Sheathtail-bat	Saccolaimus flaviventris	3747-Southern Tableland Western Hills Scribbly Gum Forest

Threatened species Manually Added

None added

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

Common Name	Scientific Name	Plant Community Type(s)
Black-necked Stork	Ephippiorhynchus asiaticus	3747-Southern Tableland Western Hills Scribbly Gum Forest
White-bellied Sea-Eagle	Haliaeetus leucogaster	3747-Southern Tableland Western Hills Scribbly Gum Forest

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

Refer to BAR for detailed justification

Common Name	Scientific Name	Justification in the BAM-C
Black-necked Stork	Ephippiorhynchus asiaticus	Habitat constraints

White-bellied Sea-Eagle	Haliaeetus leucogaster	Habitat constraints

BAM Credit Summary Report

Proposal Details

Assessment Id
00037322/BAAS21028/25/00057462

Proposal Name
Barina Quarry - Stage 2c

BAM data last updated *
05/08/2025

Assessor Name
David Orchard

Report Created
02/02/2026

BAM Data version *
Current classification (live - default) (82)

Assessor Number
BAAS21028

BAM Case Status
Finalised

Date Finalised
02/02/2026

Assessment Revision
2

BOS entry trigger

Assessment Type
Major Projects

* Disclaimer: BAM data last updated may indicate either complete or partial update of the BAM calculator database. BAM calculator database may not be completely aligned with Bionet.

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

Zone	Vegetation zone name	TEC name	Current Vegetation integrity score	Change in Vegetation integrity (loss / gain)	Area (ha)	Sensitivity to loss (Justification)	Species sensitivity to gain class	BC Act Listing status	EPBC Act listing status	Biodiversity risk weighting	Potential SAII	Ecosystem credits
Southern Tableland Western Hills Scribbly Gum Forest												
1	3747_Derived	Not a TEC	40.1	40.1	0.65	PCT Cleared - 65%	High Sensitivity to Gain			1.75		11

2	3747_Moderate	Not a TEC	58.1	58.1	0.04	PCT Cleared - 65%	High Sensitivity to Gain			1.75		1
											Subtotal	**12**
											Total	**12**

Species credits for threatened species

Vegetation zone name	Habitat condition (Vegetation Integrity)	Change in habitat condition	Area (ha)/Count (no. individuals)	Sensitivity to loss (Justification)	Sensitivity to gain (Justification)	BC Act Listing status	EPBC Act listing status	Potential SAII	Species credits
Aprasia parapulchella / Pink-tailed Legless Lizard (Fauna)									
3747_Derived	40.1	40.1	0.15	Biodiversity Conservation Act listing status	Species dependent on habitat attributes	Vulnerable	Vulnerable	False	3
3747_Moderate	58.1	58.1	0.01	Biodiversity Conservation Act listing status	Species dependent on habitat attributes	Vulnerable	Vulnerable	False	1
								Subtotal	**4**
Petaurus norfolcensis / Squirrel Glider (Fauna)									
3747_Derived	40.1	40.1	0.65	Biodiversity Conservation Act listing status	Species dependent on habitat attributes	Vulnerable	Not Listed	False	13

3747_Moderate	58.1	58.1	0.04	Biodiversity Conservation Act listing status	Species dependent on habitat attributes	Vulnerable	Not Listed	False	1
								Subtotal	**14**

BAM Biodiversity Credit Report (Like for like)

Proposal Details

Assessment Id
00037322/BAAS21028/25/00057462

Proposal Name
Barina Quarry - Stage 2c

BAM data last updated *
05/08/2025

Assessor Name
David Orchard

Assessor Number
BAAS21028

BAM Data version *
Current classification (live - default) (82)

Proponent Names

Report Created
02/02/2026

BAM Case Status
Finalised

Assessment Revision
2

BOS entry trigger

Assessment Type
Major Projects

Date Finalised
02/02/2026

* Disclaimer: BAM data last updated may indicate either complete or partial update of the BAM calculator database. BAM calculator database may not be completely aligned with Bionet.

Potential Serious and Irreversible Impacts

Name of threatened ecological community	Listing status	Name of Plant Community Type/ID
Nil		

Species
Nil

Additional Information for Approval

BAM Biodiversity Credit Report (Like for like)

PCT Outside Ibra Added

None added

PCTs With Customized Benchmarks

PCT
No Changes

Predicted Threatened Species Not On Site

Name
Ephippiorhynchus asiaticus / Black-necked Stork
Haliaeetus leucogaster / White-bellied Sea-Eagle

Ecosystem Credit Summary (Number and class of biodiversity credits to be retired)

Name of Plant Community Type/ID	Name of threatened ecological community	Area of impact	HBT Cr	No HBT Cr	Total credits to be retired
3747-Southern Tableland Western Hills Scribbly Gum Forest	Not a TEC	0.7	0	12	12

BAM Biodiversity Credit Report (Like for like)

3747-Southern Tableland Western Hills Scribbly Gum Forest

Like-for-like credit retirement options

Class	Trading group	Zone	HBT	Credits	IBRA region
Southern Tableland Dry Sclerophyll Forests This includes PCT's: 299, 344, 349, 351, 352, 653, 701, 727, 730, 957, 1093, 1177, 3730, 3732, 3734, 3735, 3737, 3738, 3741, 3743, 3744, 3746, 3747	Southern Tableland Dry Sclerophyll Forests >=50% and <70%	3747_Derived	No	11	Monaro, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
Southern Tableland Dry Sclerophyll Forests This includes PCT's: 299, 344, 349, 351, 352, 653, 701, 727, 730, 957, 1093, 1177, 3730, 3732, 3734, 3735, 3737, 3738, 3741, 3743, 3744, 3746, 3747	Southern Tableland Dry Sclerophyll Forests >=50% and <70%	3747_Moderate	No	1	Monaro, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

Species Credit Summary

BAM Biodiversity Credit Report (Like for like)

Species	Vegetation Zone/s	Area / Count	Credits
Aprasia parapulchella / Pink-tailed Legless Lizard	**3747_Derived, 3747_Moderate**	0.2	4.00
Petaurus norfolcensis / Squirrel Glider	**3747_Derived, 3747_Moderate**	0.7	14.00

Credit Retirement Options

Like-for-like credit retirement options

Aprasia parapulchella / Pink-tailed Legless Lizard	Spp	IBRA subregion
	Aprasia parapulchella / Pink-tailed Legless Lizard	Any in NSW
Petaurus norfolcensis / Squirrel Glider	Spp	IBRA subregion
	Petaurus norfolcensis / Squirrel Glider	Any in NSW

BAM Candidate Species Report

Proposal Details

Assessment Id 00037322/BAAS21028/25/00057462	Proposal Name Barina Quarry - Stage 2c	BAM data last updated * 05/08/2025
Assessor Name David Orchard	Report Created 02/02/2026	BAM Data version * Current classification (live - default) (82)
Assessor Number BAAS21028	Assessment Type Major Projects	BAM Case Status Finalised
Assessment Revision 2	BOS entry trigger	Date Finalised 02/02/2026

* Disclaimer: BAM data last updated may indicate either complete or partial update of the BAM calculator database. BAM calculator database may not be completely aligned with Bionet.

List of Species Requiring Survey

Name	Presence	Survey Months
Aprasia parapulchella Pink-tailed Legless Lizard	Yes (expert report)	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?
Callocephalon fimbriatum Gang-gang Cockatoo	No (surveyed) *Survey months are outside of the months specified in Bionet.	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☑ Survey month outside the specified months?
Calyptorhynchus lathami lathami South-eastern Glossy Black-Cockatoo	No (surveyed) *Survey months are outside of the months specified in Bionet.	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☑ Survey month outside the specified months?

Cercartetus nanus Eastern Pygmy-possum	No (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☐ Survey month outside the specified months?
Hieraaetus morphnoides Little Eagle	No (surveyed) *Survey months are outside of the months specified in Bionet.	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☑ Oct ☑ Nov ☐ Dec ☑ Survey month outside the specified months?
Leucochrysum albicans subsp. tricolor Hoary Sunray	No (surveyed)	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☑ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?
Litoria castanea Yellow-spotted Tree Frog	No (surveyed)	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☐ Survey month outside the specified months?
Litoria raniformis Southern Bell Frog	No (surveyed)	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☐ Survey month outside the specified months?
Lophoictinia isura Square-tailed Kite	No (surveyed) *Survey months are outside of the months specified in Bionet.	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☑ Oct ☑ Nov ☐ Dec ☑ Survey month outside the specified months?

Myotis macropus Southern Myotis	No (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?
Ninox connivens Barking Owl	No (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?
Ninox strenua Powerful Owl	No (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?
Petauroides volans Southern Greater Glider	No (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☐ Survey month outside the specified months?
Petaurus norfolcensis Squirrel Glider	Yes (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☐ Survey month outside the specified months?
Petrogale penicillata Brush-tailed Rock-wallaby	No (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☑ Oct ☑ Nov ☐ Dec ☐ Survey month outside the specified months?

Phascogale tapoatafa Brush-tailed Phascogale	No (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?
Phascolarctos cinereus Koala	No (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☐ Survey month outside the specified months?
Synemon plana Golden Sun Moth	No (surveyed) *Survey months are outside of the months specified in Bionet.	☐ Jan ☐ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☑ Survey month outside the specified months?
Zieria citriodora Lemon Zieria	No (surveyed)	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☑ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?

Threatened species Manually Added

None added

Threatened species assessed as not on site

Refer to BAR for detailed justification

Common name	Scientific name	Justification in the BAM-C
Grey-headed Flying-fox	Pteropus poliocephalus	Habitat constraints
Large Bent-winged Bat	Miniopterus orianae oceanensis	Habitat constraints
Pale Pomaderris	Pomaderris pallida	Refer to BAR
Swift Parrot	Lathamus discolor	Habitat constraints

White-bellied Sea-Eagle	Haliaeetus leucogaster	Habitat constraints

BAM Predicted Species Report

Proposal Details

Assessment Id	Proposal Name	BAM data last updated *
00037322/BAAS21028/25/00057462	Barina Quarry - Stage 2c	05/08/2025
Assessor Name	Report Created	BAM Data version *
David Orchard	02/02/2026	Current classification (live - default) (82)
Assessor Number	Assessment Type	BAM Case Status
BAAS21028	Major Projects	Finalised
Assessment Revision	BOS entry trigger	Date Finalised
2		02/02/2026

* Disclaimer: BAM data last updated may indicate either complete or partial update of the BAM calculator database. BAM calculator database may not be completely aligned with Bionet.

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

Common Name	Scientific Name	Vegetation Types(s)
Black Falcon	Falco subniger	3747-Southern Tableland Western Hills Scribbly Gum Forest
Brown Treecreeper (eastern subspecies)	Climacteris picumnus victoriae	3747-Southern Tableland Western Hills Scribbly Gum Forest
Diamond Firetail	Stagonopleura guttata	3747-Southern Tableland Western Hills Scribbly Gum Forest
Dusky Woodswallow	Artamus cyanopterus cyanopterus	3747-Southern Tableland Western Hills Scribbly Gum Forest
Eastern False Pipistrelle	Falsistrellus tasmaniensis	3747-Southern Tableland Western Hills Scribbly Gum Forest
Flame Robin	Petroica phoenicea	3747-Southern Tableland Western Hills Scribbly Gum Forest
Gang-gang Cockatoo	Callocephalon fimbriatum	3747-Southern Tableland Western Hills Scribbly Gum Forest
Grey-headed Flying-fox	Pteropus poliocephalus	3747-Southern Tableland Western Hills Scribbly Gum Forest
Large Bent-winged Bat	Miniopterus orianae oceanensis	3747-Southern Tableland Western Hills Scribbly Gum Forest
Little Eagle	Hieraaetus morphnoides	3747-Southern Tableland Western Hills Scribbly Gum Forest

Little Lorikeet	Glossopsitta pusilla	3747-Southern Tableland Western Hills Scribbly Gum Forest
Olive Whistler	Pachycephala olivacea	3747-Southern Tableland Western Hills Scribbly Gum Forest
Rosenberg's Goanna	Varanus rosenbergi	3747-Southern Tableland Western Hills Scribbly Gum Forest
Scarlet Robin	Petroica boodang	3747-Southern Tableland Western Hills Scribbly Gum Forest
South-eastern Glossy Black-Cockatoo	Calyptorhynchus lathami lathami	3747-Southern Tableland Western Hills Scribbly Gum Forest
South-eastern Hooded Robin	Melanodryas cucullata cucullata	3747-Southern Tableland Western Hills Scribbly Gum Forest
Southern Whiteface	Aphelocephala leucopsis	3747-Southern Tableland Western Hills Scribbly Gum Forest
Speckled Warbler	Chthonicola sagittata	3747-Southern Tableland Western Hills Scribbly Gum Forest
Spotted-tailed Quoll	Dasyurus maculatus	3747-Southern Tableland Western Hills Scribbly Gum Forest
Square-tailed Kite	Lophoictinia isura	3747-Southern Tableland Western Hills Scribbly Gum Forest
Swift Parrot	Lathamus discolor	3747-Southern Tableland Western Hills Scribbly Gum Forest
Varied Sittella	Daphoenositta chrysoptera	3747-Southern Tableland Western Hills Scribbly Gum Forest
White-throated Needletail	Hirundapus caudacutus	3747-Southern Tableland Western Hills Scribbly Gum Forest
Yellow-bellied Sheathtail-bat	Saccolaimus flaviventris	3747-Southern Tableland Western Hills Scribbly Gum Forest

Threatened species Manually Added

None added

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

Common Name	Scientific Name	Plant Community Type(s)
Black-necked Stork	Ephippiorhynchus asiaticus	3747-Southern Tableland Western Hills Scribbly Gum Forest
White-bellied Sea-Eagle	Haliaeetus leucogaster	3747-Southern Tableland Western Hills Scribbly Gum Forest

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

Refer to BAR for detailed justification

Common Name	Scientific Name	Justification in the BAM-C
Black-necked Stork	Ephippiorhynchus asiaticus	Habitat constraints

White-bellied Sea-Eagle	Haliaeetus leucogaster	Habitat constraints

BAM Credit Summary Report

Proposal Details

Assessment Id
00037322/BAAS21028/25/00057463

Proposal Name
Barina Quarry - Stage 2d

BAM data last updated *
05/08/2025

Assessor Name
David Orchard

Report Created
02/02/2026

BAM Data version *
Current classification (live - default) (82)

Assessor Number
BAAS21028

BAM Case Status
Finalised

Date Finalised
02/02/2026

Assessment Revision
2

BOS entry trigger

Assessment Type
Major Projects

* Disclaimer: BAM data last updated may indicate either complete or partial update of the BAM calculator database. BAM calculator database may not be completely aligned with Bionet.

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

Zone	Vegetation zone name	TEC name	Current Vegetation integrity score	Change in Vegetation integrity (loss / gain)	Area (ha)	Sensitivity to loss (Justification)	Species sensitivity to gain class	BC Act Listing status	EPBC Act listing status	Biodiversity risk weighting	Potential SAII	Ecosystem credits
Southern Tableland Western Hills Scribbly Gum Forest												
1	3747_Derived	Not a TEC	40.1	40.1	0.32	PCT Cleared - 65%	High Sensitivity to Gain			1.75		6

2	3747_Moderate	Not a TEC	58.1	58.1	0.29	PCT Cleared - 65%	High Sensitivity to Gain			1.75		7
3	3747_Good	Not a TEC	84	84.0	0.13	PCT Cleared - 65%	High Sensitivity to Gain			1.75		5
											Subtotal	**18**
											Total	**18**

Species credits for threatened species

Vegetation zone name	Habitat condition (Vegetation Integrity)	Change in habitat condition	Area (ha)/Count (no. individuals)	Sensitivity to loss (Justification)	Sensitivity to gain (Justification)	BC Act Listing status	EPBC Act listing status	Potential SAII	Species credits
Aprasia parapulchella / Pink-tailed Legless Lizard (Fauna)									
3747_Derived	40.1	40.1	0.23	Biodiversity Conservation Act listing status	Species dependent on habitat attributes	Vulnerable	Vulnerable	False	5
3747_Moderate	58.1	58.1	0.13	Biodiversity Conservation Act listing status	Species dependent on habitat attributes	Vulnerable	Vulnerable	False	4
3747_Good	84.0	84.0	0.13	Biodiversity Conservation Act listing status	Species dependent on habitat attributes	Vulnerable	Vulnerable	False	5

								Subtotal	**14**
Petaurus norfolcensis / Squirrel Glider (Fauna)									
3747_Derived	40.1	40.1	0.32	Biodiversity Conservation Act listing status	Species dependent on habitat attributes	Vulnerable	Not Listed	False	6
3747_Moderate	58.1	58.1	0.29	Biodiversity Conservation Act listing status	Species dependent on habitat attributes	Vulnerable	Not Listed	False	8
3747_Good	84.0	84.0	0.13	Biodiversity Conservation Act listing status	Species dependent on habitat attributes	Vulnerable	Not Listed	False	5
								Subtotal	**19**

BAM Biodiversity Credit Report (Like for like)

Proposal Details

Assessment Id
00037322/BAAS21028/25/00057463

Proposal Name
Barina Quarry - Stage 2d

BAM data last updated *
05/08/2025

Assessor Name
David Orchard

Assessor Number
BAAS21028

BAM Data version *
Current classification (live - default) (82)

Proponent Names

Report Created
02/02/2026

BAM Case Status
Finalised

Assessment Revision
2

BOS entry trigger

Assessment Type
Major Projects

Date Finalised
02/02/2026

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Potential Serious and Irreversible Impacts

Name of threatened ecological community	Listing status	Name of Plant Community Type/ID
Nil		

Species
Nil

Additional Information for Approval

BAM Biodiversity Credit Report (Like for like)

PCT Outside Ibra Added

None added

PCTs With Customized Benchmarks

PCT
No Changes

Predicted Threatened Species Not On Site

Name
Ephippiorhynchus asiaticus / Black-necked Stork
Haliaeetus leucogaster / White-bellied Sea-Eagle

Ecosystem Credit Summary (Number and class of biodiversity credits to be retired)

Name of Plant Community Type/ID	Name of threatened ecological community	Area of impact	HBT Cr	No HBT Cr	Total credits to be retired
3747-Southern Tableland Western Hills Scribbly Gum Forest	Not a TEC	0.7	5	13	18

3747-Southern Tableland Western Hills Scribbly Gum Forest	**Like-for-like credit retirement options**					
	Class	Trading group	Zone	HBT	Credits	IBRA region

	Southern Tableland Dry Sclerophyll Forests This includes PCT's: 299, 344, 349, 351, 352, 653, 701, 727, 730, 957, 1093, 1177, 3730, 3732, 3734, 3735, 3737, 3738, 3741, 3743, 3744, 3746, 3747	Southern Tableland Dry Sclerophyll Forests >=50% and <70%	3747_Derived	No	6	Monaro, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
	Southern Tableland Dry Sclerophyll Forests This includes PCT's: 299, 344, 349, 351, 352, 653, 701, 727, 730, 957, 1093, 1177, 3730, 3732, 3734, 3735, 3737, 3738, 3741, 3743, 3744, 3746, 3747	Southern Tableland Dry Sclerophyll Forests >=50% and <70%	3747_Moderate	No	7	Monaro, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

	Southern Tableland Dry Sclerophyll Forests This includes PCT's: 299, 344, 349, 351, 352, 653, 701, 727, 730, 957, 1093, 1177, 3730, 3732, 3734, 3735, 3737, 3738, 3741, 3743, 3744, 3746, 3747	Southern Tableland Dry Sclerophyll Forests >=50% and <70%	3747_Good	Yes	5	Monaro, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

Species Credit Summary

Species	Vegetation Zone/s	Area / Count	Credits
Aprasia parapulchella / Pink-tailed Legless Lizard	**3747_Derived, 3747_Moderate, 3747_Good**	0.5	14.00
Petaurus norfolcensis / Squirrel Glider	**3747_Derived, 3747_Moderate, 3747_Good**	0.7	19.00

Credit Retirement Options

Like-for-like credit retirement options

	Spp	IBRA subregion
Aprasia parapulchella / Pink-tailed Legless Lizard	**Aprasia parapulchella /** Pink-tailed Legless Lizard	Any in NSW

Petaurus norfolcensis / Squirrel Glider	Spp	IBRA subregion
	Petaurus norfolcensis / Squirrel Glider	Any in NSW

BAM Candidate Species Report

Proposal Details

Assessment Id 00037322/BAAS21028/25/00057463	Proposal Name Barina Quarry - Stage 2d	BAM data last updated * 05/08/2025
Assessor Name David Orchard	Report Created 02/02/2026	BAM Data version * Current classification (live - default) (82)
Assessor Number BAAS21028	Assessment Type Major Projects	BAM Case Status Finalised
Assessment Revision 2	BOS entry trigger	Date Finalised 02/02/2026

* Disclaimer: BAM data last updated may indicate either complete or partial update of the BAM calculator database. BAM calculator database may not be completely aligned with Bionet.

List of Species Requiring Survey

Name	Presence	Survey Months
Aprasia parapulchella Pink-tailed Legless Lizard	Yes (expert report)	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?
Callocephalon fimbriatum Gang-gang Cockatoo	No (surveyed) *Survey months are outside of the months specified in Bionet.	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☑ Survey month outside the specified months?
Calyptorhynchus lathami lathami South-eastern Glossy Black-Cockatoo	No (surveyed) *Survey months are outside of the months specified in Bionet.	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☑ Survey month outside the specified months?

Cercartetus nanus Eastern Pygmy-possum	No (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☐ Survey month outside the specified months?
Hieraaetus morphnoides Little Eagle	No (surveyed) *Survey months are outside of the months specified in Bionet.	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☑ Oct ☑ Nov ☐ Dec ☑ Survey month outside the specified months?
Leucochrysum albicans subsp. tricolor Hoary Sunray	No (surveyed)	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☑ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?
Litoria castanea Yellow-spotted Tree Frog	No (surveyed)	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☐ Survey month outside the specified months?
Litoria raniformis Southern Bell Frog	No (surveyed)	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☐ Survey month outside the specified months?
Lophoictinia isura Square-tailed Kite	No (surveyed) *Survey months are outside of the months specified in Bionet.	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☑ Oct ☑ Nov ☐ Dec ☑ Survey month outside the specified months?

Myotis macropus Southern Myotis	No (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?
Ninox connivens Barking Owl	No (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?
Ninox strenua Powerful Owl	No (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?
Petauroides volans Southern Greater Glider	No (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☐ Survey month outside the specified months?
Petaurus norfolcensis Squirrel Glider	Yes (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☐ Survey month outside the specified months?
Petrogale penicillata Brush-tailed Rock-wallaby	No (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☑ Oct ☑ Nov ☐ Dec ☐ Survey month outside the specified months?

Phascogale tapoatafa Brush-tailed Phascogale	No (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?
Phascolarctos cinereus Koala	No (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☐ Survey month outside the specified months?
Synemon plana Golden Sun Moth	No (surveyed) *Survey months are outside of the months specified in Bionet.	☐ Jan ☐ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☑ Survey month outside the specified months?
Zieria citriodora Lemon Zieria	No (surveyed)	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☑ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?

Threatened species Manually Added

None added

Threatened species assessed as not on site

Refer to BAR for detailed justification

Common name	Scientific name	Justification in the BAM-C
Grey-headed Flying-fox	Pteropus poliocephalus	Habitat constraints
Large Bent-winged Bat	Miniopterus orianae oceanensis	Habitat constraints
Pale Pomaderris	Pomaderris pallida	Refer to BAR
Swift Parrot	Lathamus discolor	Habitat constraints

White-bellied Sea-Eagle	Haliaeetus leucogaster	Habitat constraints

BAM Predicted Species Report

Proposal Details

Assessment Id	Proposal Name	BAM data last updated *
00037322/BAAS21028/25/00057463	Barina Quarry - Stage 2d	05/08/2025
Assessor Name	Report Created	BAM Data version *
David Orchard	02/02/2026	Current classification (live - default) (82)
Assessor Number	Assessment Type	BAM Case Status
BAAS21028	Major Projects	Finalised
Assessment Revision	BOS entry trigger	Date Finalised
2		02/02/2026

* Disclaimer: BAM data last updated may indicate either complete or partial update of the BAM calculator database. BAM calculator database may not be completely aligned with Bionet.

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

Common Name	Scientific Name	Vegetation Types(s)
Black Falcon	Falco subniger	3747-Southern Tableland Western Hills Scribbly Gum Forest
Brown Treecreeper (eastern subspecies)	Climacteris picumnus victoriae	3747-Southern Tableland Western Hills Scribbly Gum Forest
Diamond Firetail	Stagonopleura guttata	3747-Southern Tableland Western Hills Scribbly Gum Forest
Dusky Woodswallow	Artamus cyanopterus cyanopterus	3747-Southern Tableland Western Hills Scribbly Gum Forest
Eastern False Pipistrelle	Falsistrellus tasmaniensis	3747-Southern Tableland Western Hills Scribbly Gum Forest
Flame Robin	Petroica phoenicea	3747-Southern Tableland Western Hills Scribbly Gum Forest
Gang-gang Cockatoo	Callocephalon fimbriatum	3747-Southern Tableland Western Hills Scribbly Gum Forest
Grey-headed Flying-fox	Pteropus poliocephalus	3747-Southern Tableland Western Hills Scribbly Gum Forest
Large Bent-winged Bat	Miniopterus orianae oceanensis	3747-Southern Tableland Western Hills Scribbly Gum Forest
Little Eagle	Hieraaetus morphnoides	3747-Southern Tableland Western Hills Scribbly Gum Forest

Little Lorikeet	Glossopsitta pusilla	3747-Southern Tableland Western Hills Scribbly Gum Forest
Olive Whistler	Pachycephala olivacea	3747-Southern Tableland Western Hills Scribbly Gum Forest
Rosenberg's Goanna	Varanus rosenbergi	3747-Southern Tableland Western Hills Scribbly Gum Forest
Scarlet Robin	Petroica boodang	3747-Southern Tableland Western Hills Scribbly Gum Forest
South-eastern Glossy Black-Cockatoo	Calyptorhynchus lathami lathami	3747-Southern Tableland Western Hills Scribbly Gum Forest
South-eastern Hooded Robin	Melanodryas cucullata cucullata	3747-Southern Tableland Western Hills Scribbly Gum Forest
Southern Whiteface	Aphelocephala leucopsis	3747-Southern Tableland Western Hills Scribbly Gum Forest
Speckled Warbler	Chthonicola sagittata	3747-Southern Tableland Western Hills Scribbly Gum Forest
Spotted-tailed Quoll	Dasyurus maculatus	3747-Southern Tableland Western Hills Scribbly Gum Forest
Square-tailed Kite	Lophoictinia isura	3747-Southern Tableland Western Hills Scribbly Gum Forest
Swift Parrot	Lathamus discolor	3747-Southern Tableland Western Hills Scribbly Gum Forest
Varied Sittella	Daphoenositta chrysoptera	3747-Southern Tableland Western Hills Scribbly Gum Forest
White-throated Needletail	Hirundapus caudacutus	3747-Southern Tableland Western Hills Scribbly Gum Forest
Yellow-bellied Sheathtail-bat	Saccolaimus flaviventris	3747-Southern Tableland Western Hills Scribbly Gum Forest

Threatened species Manually Added

None added

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

Common Name	Scientific Name	Plant Community Type(s)
Black-necked Stork	Ephippiorhynchus asiaticus	3747-Southern Tableland Western Hills Scribbly Gum Forest
White-bellied Sea-Eagle	Haliaeetus leucogaster	3747-Southern Tableland Western Hills Scribbly Gum Forest

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

Refer to BAR for detailed justification

Common Name	Scientific Name	Justification in the BAM-C
Black-necked Stork	Ephippiorhynchus asiaticus	Habitat constraints

White-bellied Sea-Eagle	Haliaeetus leucogaster	Habitat constraints

BAM Credit Summary Report

Proposal Details

Assessment Id
00037322/BAAS21028/25/00057479

Proposal Name
Barina Quarry - Stage 3a

BAM data last updated *
05/08/2025

Assessor Name
David Orchard

Report Created
02/02/2026

BAM Data version *
Current classification (live - default) (82)

Assessor Number
BAAS21028

BAM Case Status
Finalised

Date Finalised
02/02/2026

Assessment Revision
2

BOS entry trigger

Assessment Type
Major Projects

* Disclaimer: BAM data last updated may indicate either complete or partial update of the BAM calculator database. BAM calculator database may not be completely aligned with Bionet.

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

Zone	Vegetation zone name	TEC name	Current Vegetation integrity score	Change in Vegetation integrity (loss / gain)	Area (ha)	Sensitivity to loss (Justification)	Species sensitivity to gain class	BC Act Listing status	EPBC Act listing status	Biodiversity risk weighting	Potential SAII	Ecosystem credits
Southern Tableland Western Hills Scribbly Gum Forest												
1	3747_Derived	Not a TEC	40.1	40.1	0.08	PCT Cleared - 65%	High Sensitivity to Gain			1.75		1

2	3747_Good	Not a TEC	84	84.0	0.53	PCT Cleared - 65%	High Sensitivity to Gain			1.75		19
											Subtotal	**20**
											Total	**20**

Species credits for threatened species

Vegetation zone name	Habitat condition (Vegetation Integrity)	Change in habitat condition	Area (ha)/Count (no. individuals)	Sensitivity to loss (Justification)	Sensitivity to gain (Justification)	BC Act Listing status	EPBC Act listing status	Potential SAII	Species credits
Aprasia parapulchella / Pink-tailed Legless Lizard (Fauna)									
3747_Derived	40.1	40.1	0.08	Biodiversity Conservation Act listing status	Species dependent on habitat attributes	Vulnerable	Vulnerable	False	2
3747_Good	84.0	84.0	0.53	Biodiversity Conservation Act listing status	Species dependent on habitat attributes	Vulnerable	Vulnerable	False	22
								Subtotal	**24**
Petaurus norfolcensis / Squirrel Glider (Fauna)									
3747_Derived	40.1	40.1	0.08	Biodiversity Conservation Act listing status	Species dependent on habitat attributes	Vulnerable	Not Listed	False	2

3747_Good	84.0	84.0	0.53	Biodiversity Conservation Act listing status	Species dependent on habitat attributes	Vulnerable	Not Listed	False	22
								Subtotal	**24**

BAM Biodiversity Credit Report (Like for like)

Proposal Details

Assessment Id
00037322/BAAS21028/25/00057479

Proposal Name
Barina Quarry - Stage 3a

BAM data last updated *
05/08/2025

Assessor Name
David Orchard

Assessor Number
BAAS21028

BAM Data version *
Current classification (live - default) (82)

Proponent Names

Report Created
02/02/2026

BAM Case Status
Finalised

Assessment Revision
2

BOS entry trigger

Assessment Type
Major Projects

Date Finalised
02/02/2026

* Disclaimer: BAM data last updated may indicate either complete or partial update of the BAM calculator database. BAM calculator database may not be completely aligned with Bionet.

Potential Serious and Irreversible Impacts

Name of threatened ecological community	Listing status	Name of Plant Community Type/ID
Nil		

Species
Nil

Additional Information for Approval

PCT Outside Ibra Added

None added

PCTs With Customized Benchmarks

PCT
No Changes

Predicted Threatened Species Not On Site

Name
Ephippiorhynchus asiaticus / Black-necked Stork
Haliaeetus leucogaster / White-bellied Sea-Eagle

Ecosystem Credit Summary (Number and class of biodiversity credits to be retired)

Name of Plant Community Type/ID	Name of threatened ecological community	Area of impact	HBT Cr	No HBT Cr	Total credits to be retired
3747-Southern Tableland Western Hills Scribbly Gum Forest	Not a TEC	0.6	19	1	20

BAM Biodiversity Credit Report (Like for like)

3747-Southern Tableland Western Hills Scribbly Gum Forest

Like-for-like credit retirement options

Class	Trading group	Zone	HBT	Credits	IBRA region
Southern Tableland Dry Sclerophyll Forests This includes PCT's: 299, 344, 349, 351, 352, 653, 701, 727, 730, 957, 1093, 1177, 3730, 3732, 3734, 3735, 3737, 3738, 3741, 3743, 3744, 3746, 3747	Southern Tableland Dry Sclerophyll Forests >=50% and <70%	3747_Derived	No	1	Monaro, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
Southern Tableland Dry Sclerophyll Forests This includes PCT's: 299, 344, 349, 351, 352, 653, 701, 727, 730, 957, 1093, 1177, 3730, 3732, 3734, 3735, 3737, 3738, 3741, 3743, 3744, 3746, 3747	Southern Tableland Dry Sclerophyll Forests >=50% and <70%	3747_Good	Yes	19	Monaro, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

Species Credit Summary

BAM Biodiversity Credit Report (Like for like)

Species	Vegetation Zone/s	Area / Count	Credits
Aprasia parapulchella / Pink-tailed Legless Lizard	**3747_Derived, 3747_Good**	0.6	24.00
Petaurus norfolcensis / Squirrel Glider	**3747_Derived, 3747_Good**	0.6	24.00

Credit Retirement Options

Like-for-like credit retirement options

Aprasia parapulchella / Pink-tailed Legless Lizard	Spp	IBRA subregion
	Aprasia parapulchella / Pink-tailed Legless Lizard	Any in NSW
Petaurus norfolcensis / Squirrel Glider	Spp	IBRA subregion
	Petaurus norfolcensis / Squirrel Glider	Any in NSW

BAM Candidate Species Report

Proposal Details

Assessment Id 00037322/BAAS21028/25/00057479	Proposal Name Barina Quarry - Stage 3a	BAM data last updated * 05/08/2025
Assessor Name David Orchard	Report Created 02/02/2026	BAM Data version * Current classification (live - default) (82)
Assessor Number BAAS21028	Assessment Type Major Projects	BAM Case Status Finalised
Assessment Revision 2	BOS entry trigger	Date Finalised 02/02/2026

* Disclaimer: BAM data last updated may indicate either complete or partial update of the BAM calculator database. BAM calculator database may not be completely aligned with Bionet.

List of Species Requiring Survey

Name	Presence	Survey Months
Aprasia parapulchella Pink-tailed Legless Lizard	Yes (expert report)	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?
Callocephalon fimbriatum Gang-gang Cockatoo	No (surveyed) *Survey months are outside of the months specified in Bionet.	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☑ Survey month outside the specified months?
Calyptorhynchus lathami lathami South-eastern Glossy Black-Cockatoo	No (surveyed) *Survey months are outside of the months specified in Bionet.	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☑ Survey month outside the specified months?

Cercartetus nanus Eastern Pygmy-possum	No (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☐ Survey month outside the specified months?
Hieraaetus morphnoides Little Eagle	No (surveyed) *Survey months are outside of the months specified in Bionet.	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☑ Oct ☑ Nov ☐ Dec ☑ Survey month outside the specified months?
Leucochrysum albicans subsp. tricolor Hoary Sunray	No (surveyed)	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☑ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?
Litoria castanea Yellow-spotted Tree Frog	No (surveyed)	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☐ Survey month outside the specified months?
Litoria raniformis Southern Bell Frog	No (surveyed)	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☐ Survey month outside the specified months?
Lophoictinia isura Square-tailed Kite	No (surveyed) *Survey months are outside of the months specified in Bionet.	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☑ Oct ☑ Nov ☐ Dec ☑ Survey month outside the specified months?

Myotis macropus Southern Myotis	No (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?
Ninox connivens Barking Owl	No (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?
Ninox strenua Powerful Owl	No (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?
Petauroides volans Southern Greater Glider	No (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☐ Survey month outside the specified months?
Petaurus norfolcensis Squirrel Glider	Yes (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☐ Survey month outside the specified months?
Petrogale penicillata Brush-tailed Rock-wallaby	No (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☑ Oct ☑ Nov ☐ Dec ☐ Survey month outside the specified months?

Phascogale tapoatafa Brush-tailed Phascogale	No (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?
Phascolarctos cinereus Koala	No (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☐ Survey month outside the specified months?
Synemon plana Golden Sun Moth	No (surveyed) *Survey months are outside of the months specified in Bionet.	☐ Jan ☐ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☑ Survey month outside the specified months?
Zieria citriodora Lemon Zieria	No (surveyed)	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☑ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?

Threatened species Manually Added

None added

Threatened species assessed as not on site

Refer to BAR for detailed justification

Common name	Scientific name	Justification in the BAM-C
Grey-headed Flying-fox	Pteropus poliocephalus	Habitat constraints
Large Bent-winged Bat	Miniopterus orianae oceanensis	Habitat constraints
Pale Pomaderris	Pomaderris pallida	Refer to BAR
Swift Parrot	Lathamus discolor	Habitat constraints

White-bellied Sea-Eagle	Haliaeetus leucogaster	Habitat constraints

BAM Predicted Species Report

Proposal Details

Assessment Id	Proposal Name	BAM data last updated *
00037322/BAAS21028/25/00057479	Barina Quarry - Stage 3a	05/08/2025
Assessor Name	Report Created	BAM Data version *
David Orchard	02/02/2026	Current classification (live - default) (82)
Assessor Number	Assessment Type	BAM Case Status
BAAS21028	Major Projects	Finalised
Assessment Revision	BOS entry trigger	Date Finalised
2		02/02/2026

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

Common Name	Scientific Name	Vegetation Types(s)
Black Falcon	Falco subniger	3747-Southern Tableland Western Hills Scribbly Gum Forest
Brown Treecreeper (eastern subspecies)	Climacteris picumnus victoriae	3747-Southern Tableland Western Hills Scribbly Gum Forest
Diamond Firetail	Stagonopleura guttata	3747-Southern Tableland Western Hills Scribbly Gum Forest
Dusky Woodswallow	Artamus cyanopterus cyanopterus	3747-Southern Tableland Western Hills Scribbly Gum Forest
Eastern False Pipistrelle	Falsistrellus tasmaniensis	3747-Southern Tableland Western Hills Scribbly Gum Forest
Flame Robin	Petroica phoenicea	3747-Southern Tableland Western Hills Scribbly Gum Forest
Gang-gang Cockatoo	Callocephalon fimbriatum	3747-Southern Tableland Western Hills Scribbly Gum Forest
Grey-headed Flying-fox	Pteropus poliocephalus	3747-Southern Tableland Western Hills Scribbly Gum Forest
Large Bent-winged Bat	Miniopterus orianae oceanensis	3747-Southern Tableland Western Hills Scribbly Gum Forest
Little Eagle	Hieraaetus morphnoides	3747-Southern Tableland Western Hills Scribbly Gum Forest

Little Lorikeet	Glossopsitta pusilla	3747-Southern Tableland Western Hills Scribbly Gum Forest
Olive Whistler	Pachycephala olivacea	3747-Southern Tableland Western Hills Scribbly Gum Forest
Rosenberg's Goanna	Varanus rosenbergi	3747-Southern Tableland Western Hills Scribbly Gum Forest
Scarlet Robin	Petroica boodang	3747-Southern Tableland Western Hills Scribbly Gum Forest
South-eastern Glossy Black-Cockatoo	Calyptorhynchus lathami lathami	3747-Southern Tableland Western Hills Scribbly Gum Forest
South-eastern Hooded Robin	Melanodryas cucullata cucullata	3747-Southern Tableland Western Hills Scribbly Gum Forest
Southern Whiteface	Aphelocephala leucopsis	3747-Southern Tableland Western Hills Scribbly Gum Forest
Speckled Warbler	Chthonicola sagittata	3747-Southern Tableland Western Hills Scribbly Gum Forest
Spotted-tailed Quoll	Dasyurus maculatus	3747-Southern Tableland Western Hills Scribbly Gum Forest
Square-tailed Kite	Lophoictinia isura	3747-Southern Tableland Western Hills Scribbly Gum Forest
Swift Parrot	Lathamus discolor	3747-Southern Tableland Western Hills Scribbly Gum Forest
Varied Sittella	Daphoenositta chrysoptera	3747-Southern Tableland Western Hills Scribbly Gum Forest
White-throated Needletail	Hirundapus caudacutus	3747-Southern Tableland Western Hills Scribbly Gum Forest
Yellow-bellied Sheathtail-bat	Saccolaimus flaviventris	3747-Southern Tableland Western Hills Scribbly Gum Forest

Threatened species Manually Added

None added

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

Common Name	Scientific Name	Plant Community Type(s)
Black-necked Stork	Ephippiorhynchus asiaticus	3747-Southern Tableland Western Hills Scribbly Gum Forest
White-bellied Sea-Eagle	Haliaeetus leucogaster	3747-Southern Tableland Western Hills Scribbly Gum Forest

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

Refer to BAR for detailed justification

Common Name	Scientific Name	Justification in the BAM-C
Black-necked Stork	Ephippiorhynchus asiaticus	Habitat constraints

White-bellied Sea-Eagle	Haliaeetus leucogaster	Habitat constraints

BAM Credit Summary Report

Proposal Details

Assessment Id
00037322/BAAS21028/25/00057480

Proposal Name
Barina Quarry - Stage 3b

BAM data last updated *
05/08/2025

Assessor Name
David Orchard

Report Created
28/01/2026

BAM Data version *
Current classification (live - default) (82)

Assessor Number
BAAS21028

BAM Case Status
Finalised

Date Finalised
28/01/2026

Assessment Revision
1

BOS entry trigger

Assessment Type
Major Projects

* Disclaimer: BAM data last updated may indicate either complete or partial update of the BAM calculator database. BAM calculator database may not be completely aligned with Bionet.

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

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

Southern Tableland Western Hills Scribbly Gum Forest												
1	3747_Good	Not a TEC	84	84.0	0.02	PCT Cleared - 65%	High Sensitivity to Gain			1.75		1
											Subtotal	**1**
											Total	**1**

Species credits for threatened species

Vegetation zone name	Habitat condition (Vegetation Integrity)	Change in habitat condition	Area (ha)/Count (no. individuals)	Sensitivity to loss (Justification)	Sensitivity to gain (Justification)	BC Act Listing status	EPBC Act listing status	Potential SAII	Species credits
Petaurus norfolcensis / Squirrel Glider (Fauna)									
3747_Good	84.0	84.0	0.02	Biodiversity Conservation Act listing status	Species dependent on habitat attributes	Vulnerable	Not Listed	False	1
								Subtotal	**1**

BAM Biodiversity Credit Report (Like for like)

Proposal Details

Assessment Id
00037322/BAAS21028/25/00057480

Proposal Name
Barina Quarry - Stage 3b

BAM data last updated *
05/08/2025

Assessor Name
David Orchard

Assessor Number
BAAS21028

BAM Data version *
Current classification (live - default) (82)

Proponent Names

Report Created
28/01/2026

BAM Case Status
Finalised

Assessment Revision
1

BOS entry trigger

Assessment Type
Major Projects

Date Finalised
28/01/2026

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Potential Serious and Irreversible Impacts

Name of threatened ecological community	Listing status	Name of Plant Community Type/ID
Nil		

Species
Nil

Additional Information for Approval

BAM Biodiversity Credit Report (Like for like)

PCT Outside Ibra Added

None added

PCTs With Customized Benchmarks

PCT
No Changes

Predicted Threatened Species Not On Site

Name
Ephippiorhynchus asiaticus / Black-necked Stork
Haliaeetus leucogaster / White-bellied Sea-Eagle

Ecosystem Credit Summary (Number and class of biodiversity credits to be retired)

Name of Plant Community Type/ID	Name of threatened ecological community	Area of impact	HBT Cr	No HBT Cr	Total credits to be retired
3747-Southern Tableland Western Hills Scribbly Gum Forest	Not a TEC	0.0	1	0	1

BAM Biodiversity Credit Report (Like for like)

3747-Southern Tableland Western Hills Scribbly Gum Forest	Like-for-like credit retirement options					
	Class	Trading group	Zone	HBT	Credits	IBRA region
	Southern Tableland Dry Sclerophyll Forests This includes PCT's: 299, 344, 349, 351, 352, 653, 701, 727, 730, 957, 1093, 1177, 3730, 3732, 3734, 3735, 3737, 3738, 3741, 3743, 3744, 3746, 3747	Southern Tableland Dry Sclerophyll Forests >=50% and <70%	3747_Good	Yes	1	Monaro, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

Species Credit Summary

Species	Vegetation Zone/s	Area / Count	Credits
Petaurus norfolcensis / Squirrel Glider	**3747_Good**	0.0	1.00

Credit Retirement Options

Like-for-like credit retirement options

Petaurus norfolcensis / Squirrel Glider	Spp	IBRA subregion
	Petaurus norfolcensis / Squirrel Glider	Any in NSW

BAM Candidate Species Report

Proposal Details

Assessment Id 00037322/BAAS21028/25/00057480	Proposal Name Barina Quarry - Stage 3b	BAM data last updated * 05/08/2025
Assessor Name David Orchard	Report Created 28/01/2026	BAM Data version * Current classification (live - default) (82)
Assessor Number BAAS21028	Assessment Type Major Projects	BAM Case Status Finalised
Assessment Revision 1	BOS entry trigger	Date Finalised 28/01/2026

* Disclaimer: BAM data last updated may indicate either complete or partial update of the BAM calculator database. BAM calculator database may not be completely aligned with Bionet.

List of Species Requiring Survey

Name	Presence	Survey Months
Aprasia parapulchella Pink-tailed Legless Lizard	No (surveyed) *Survey months are outside of the months specified in Bionet.	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☑ Survey month outside the specified months?
Callocephalon fimbriatum Gang-gang Cockatoo	No (surveyed) *Survey months are outside of the months specified in Bionet.	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☑ Survey month outside the specified months?
Calyptorhynchus lathami lathami South-eastern Glossy Black-Cockatoo	No (surveyed) *Survey months are outside of the months specified in Bionet.	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☑ Survey month outside the specified months?

Cercartetus nanus Eastern Pygmy-possum	No (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☐ Survey month outside the specified months?
Hieraaetus morphnoides Little Eagle	No (surveyed) *Survey months are outside of the months specified in Bionet.	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☑ Oct ☑ Nov ☐ Dec ☑ Survey month outside the specified months?
Leucochrysum albicans subsp. tricolor Hoary Sunray	No (surveyed)	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☑ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?
Litoria castanea Yellow-spotted Tree Frog	No (surveyed)	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☐ Survey month outside the specified months?
Litoria raniformis Southern Bell Frog	No (surveyed)	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☐ Survey month outside the specified months?
Lophoictinia isura Square-tailed Kite	No (surveyed) *Survey months are outside of the months specified in Bionet.	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☑ Oct ☑ Nov ☐ Dec ☑ Survey month outside the specified months?

Myotis macropus Southern Myotis	No (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?
Ninox connivens Barking Owl	No (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?
Ninox strenua Powerful Owl	No (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?
Petauroides volans Southern Greater Glider	No (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☐ Survey month outside the specified months?
Petaurus norfolcensis Squirrel Glider	Yes (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☐ Survey month outside the specified months?
Petrogale penicillata Brush-tailed Rock-wallaby	No (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☑ Oct ☑ Nov ☐ Dec ☐ Survey month outside the specified months?

Phascogale tapoatafa Brush-tailed Phascogale	No (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?
Phascolarctos cinereus Koala	No (surveyed)	☐ Jan ☑ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☐ Survey month outside the specified months?
Synemon plana Golden Sun Moth	No (surveyed) *Survey months are outside of the months specified in Bionet.	☐ Jan ☐ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☑ Nov ☐ Dec ☑ Survey month outside the specified months?
Zieria citriodora Lemon Zieria	No (surveyed)	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☑ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?

Threatened species Manually Added

None added

Threatened species assessed as not on site

Refer to BAR for detailed justification

Common name	Scientific name	Justification in the BAM-C
Grey-headed Flying-fox	Pteropus poliocephalus	Habitat constraints
Large Bent-winged Bat	Miniopterus orianae oceanensis	Habitat constraints
Pale Pomaderris	Pomaderris pallida	Refer to BAR
Swift Parrot	Lathamus discolor	Habitat constraints

White-bellied Sea-Eagle	Haliaeetus leucogaster	Habitat constraints

BAM Predicted Species Report

Proposal Details

Assessment Id	Proposal Name	BAM data last updated *
00037322/BAAS21028/25/00057480	Barina Quarry - Stage 3b	05/08/2025
Assessor Name	Report Created	BAM Data version *
David Orchard	28/01/2026	Current classification (live - default) (82)
Assessor Number	Assessment Type	BAM Case Status
BAAS21028	Major Projects	Finalised
Assessment Revision	BOS entry trigger	Date Finalised
1		28/01/2026

* Disclaimer: BAM data last updated may indicate either complete or partial update of the BAM calculator database. BAM calculator database may not be completely aligned with Bionet.

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

Common Name	Scientific Name	Vegetation Types(s)
Black Falcon	Falco subniger	3747-Southern Tableland Western Hills Scribbly Gum Forest
Brown Treecreeper (eastern subspecies)	Climacteris picumnus victoriae	3747-Southern Tableland Western Hills Scribbly Gum Forest
Diamond Firetail	Stagonopleura guttata	3747-Southern Tableland Western Hills Scribbly Gum Forest
Dusky Woodswallow	Artamus cyanopterus cyanopterus	3747-Southern Tableland Western Hills Scribbly Gum Forest
Eastern False Pipistrelle	Falsistrellus tasmaniensis	3747-Southern Tableland Western Hills Scribbly Gum Forest
Flame Robin	Petroica phoenicea	3747-Southern Tableland Western Hills Scribbly Gum Forest
Gang-gang Cockatoo	Callocephalon fimbriatum	3747-Southern Tableland Western Hills Scribbly Gum Forest
Grey-headed Flying-fox	Pteropus poliocephalus	3747-Southern Tableland Western Hills Scribbly Gum Forest
Large Bent-winged Bat	Miniopterus orianae oceanensis	3747-Southern Tableland Western Hills Scribbly Gum Forest
Little Eagle	Hieraaetus morphnoides	3747-Southern Tableland Western Hills Scribbly Gum Forest

Little Lorikeet	Glossopsitta pusilla	3747-Southern Tableland Western Hills Scribbly Gum Forest
Olive Whistler	Pachycephala olivacea	3747-Southern Tableland Western Hills Scribbly Gum Forest
Rosenberg's Goanna	Varanus rosenbergi	3747-Southern Tableland Western Hills Scribbly Gum Forest
Scarlet Robin	Petroica boodang	3747-Southern Tableland Western Hills Scribbly Gum Forest
South-eastern Glossy Black-Cockatoo	Calyptorhynchus lathami lathami	3747-Southern Tableland Western Hills Scribbly Gum Forest
South-eastern Hooded Robin	Melanodryas cucullata cucullata	3747-Southern Tableland Western Hills Scribbly Gum Forest
Southern Whiteface	Aphelocephala leucopsis	3747-Southern Tableland Western Hills Scribbly Gum Forest
Speckled Warbler	Chthonicola sagittata	3747-Southern Tableland Western Hills Scribbly Gum Forest
Spotted-tailed Quoll	Dasyurus maculatus	3747-Southern Tableland Western Hills Scribbly Gum Forest
Square-tailed Kite	Lophoictinia isura	3747-Southern Tableland Western Hills Scribbly Gum Forest
Swift Parrot	Lathamus discolor	3747-Southern Tableland Western Hills Scribbly Gum Forest
Varied Sittella	Daphoenositta chrysoptera	3747-Southern Tableland Western Hills Scribbly Gum Forest
White-throated Needletail	Hirundapus caudacutus	3747-Southern Tableland Western Hills Scribbly Gum Forest
Yellow-bellied Sheathtail-bat	Saccolaimus flaviventris	3747-Southern Tableland Western Hills Scribbly Gum Forest

Threatened species Manually Added

None added

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

Common Name	Scientific Name	Plant Community Type(s)
Black-necked Stork	Ephippiorhynchus asiaticus	3747-Southern Tableland Western Hills Scribbly Gum Forest
White-bellied Sea-Eagle	Haliaeetus leucogaster	3747-Southern Tableland Western Hills Scribbly Gum Forest

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

Refer to BAR for detailed justification

Common Name	Scientific Name	Justification in the BAM-C
Black-necked Stork	Ephippiorhynchus asiaticus	Habitat constraints

White-bellied Sea-Eagle	Haliaeetus leucogaster	Habitat constraints