Streamlined Biodiversity Development Assessment Report

Lot 26 Corriedale Drive Marulan

Prepared by Narla Environmental

for Merhebi Holding Pty Ltd

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NARLA
environmental

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Report Certification

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As the accredited assessor, I Chris Moore, certify that:

- The information presented in this report is a true and accurate record of the study findings in the opinion of the authors.

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Glossary

Acronym/ Term	Definition
Accredited Biodiversity Assessor	Individuals accredited by the Department of Planning and Environment (DPE) to apply the Biodiversity Assessment Method.
asl	above sea level
APZ	Asset Protection Zone
BAM	The NSW Biodiversity Assessment Method (2020)
BAMC	The NSW Biodiversity Assessment Method Calculator
BC Act	New South Wales Biodiversity Conservation Act 2016
BDAR	Biodiversity Development Assessment Report
Biodiversity credit report	The report produced by the Credit Calculator that sets out the number and class of biodiversity credits required to offset the remaining adverse impacts on biodiversity values at a development site, or on land to be biodiversity certified.
Biodiversity offsets	Management actions that are undertaken to achieve a gain in biodiversity values on areas of land in order to compensate for losses to biodiversity from the impacts of development.
Biodiversity values	The composition, structure and function of ecosystems, including threatened species, populations and ecological communities, and their habitats.
BOS	NSW Biodiversity Offset Scheme
DA	Development Application
DPE	NSW Department of Planning and Environment (formerly DPIE)
DPIE	NSW Department of Planning, Industry and Environment (now DPE)
Ecosystem credit	The class of biodiversity credit that relates to a vegetation type and the threatened species that are reliably predicted by that vegetation type (as a habitat surrogate).
EMA	Effluent Management Area
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999
ha	Hectares
HTE	High Threat Exotic
IBRA7	Interim Biogeographic Regionalisation for Australia 7
IPA	Inner Protection Area
km	Kilometres
LALC	Local Aboriginal Land Council
LGA	Local Government Area
Locality	A 1,500m buffer area surrounding the Subject Land
m	metres

Acronym/ Term	Definition
Native Vegetation	Any of the following types of plants native to New South Wales: (a) trees (including any sapling or shrub), (b) understorey plants, (c) groundcover (being any type of herbaceous vegetation), (d) plants occurring in a wetland.
NSW	The State of New South Wales
OEH	Office of Environment and Heritage (now DPE)
OPA	Outer Protection Area
PCT	NSW Plant Community Type
PPOS	Principal Private Open Space
Proposal	The development, activity or action proposed
SAII	Serious and Irreversible Impacts
SAII entity	Species and ecological communities that are likely to be the subject of serious and irreversible impacts (SAIIs)
SBDAR	Streamlined Biodiversity Development Assessment Report
SEPP	State Environmental Planning Policy
Species credit	The class of biodiversity credit that relate to threatened species that cannot be reliably predicted to use an area of land based on habitat surrogates. Species that require species credits are listed in the Threatened Biodiversity Data Collection.
Subject Land	The footprint of the proposed subdivision, including APZ
Subject Property	Lot 26 Corriedale Drive, Marulan NSW 2579 (Lot 26/-/DP1271846)
TEC	Threatened Ecological Community
Threatened species, populations and ecological communities	Species, populations and ecological communities specified in Schedules 1 and 2 of the BC Act 2016
VI	Vegetation Integrity
VIS Plot	Vegetation Integrity Survey Plot

Executive Summary

Narla Environmental Pty Ltd (Narla) was engaged by Merhebi Holding Pty Ltd to prepare a Streamlined Biodiversity Development Assessment Report (SBDAR) to accompany a Development Application (DA) for the proposed subdivision at Lot 26 Corriedale Drive Marulan (Lot 26/-/DP1271846; the 'Subject Property'). This SBDAR has assessed the biodiversity impacts of the proposed subdivision in accordance with the requirements of the Biodiversity Conservation Act 2016 and Biodiversity Conservation Regulation 2017. This SBDAR is required as the proposed works exceed the clearing threshold for entry into the Biodiversity Offset Scheme. The assessment has been completed in accordance with Appendix L of the Biodiversity Assessment Method (BAM; DPIE 2020a).

The proposed subdivision will involve the dividing of the current lot into nine (9) new lots. Each new lot includes a proposed building envelope as well as the creation of an Asset Protection Zone (APZ) to be managed as an Inner Protection Zone (IPA). All areas associated within the proposed subdivision will hereafter be referred to as the Subject Land.

Owing to the vegetated nature of the property, and the requirements of a subdivision, complete avoidance of impacts was not possible. The proposed subdivision however has been sited to minimise impacts as much as possible, by choosing modest building envelopes that largely utilise the more cleared areas of the property.

The initial plan for the proposed subdivision was for the creation of 10 lots and for the whole property to be managed as an IPA. However, consultation occurred with Narla Environmental during the design phase of the proposed subdivision, which saw the proposal reduced to nine (9) lots and the proposed APZs reduced to 12m surrounding the building envelopes in lots 1-6 and 8-9 and 16m in lot 7 to minimise impacts to native vegetation.

The proposed subdivision has not taken into account the 10/50 Clearing Threshold Entitlement as to minimise impacts to native vegetation it is proposed that this entitlement gets removed from the property upon receiving DA consent.

The proposed subdivision is expected to impact two (2) Plant Community Types (PCT):

- PCT 3738: Goulburn-Lithgow Tableland Hills Grassy Forest; and
- PCT 3376: Southern Tableland Grassy Box Woodland.

The following ecosystem credits are required to be offset in order to mitigate the impacts upon biodiversity as a result of the proposed subdivision:

- Three (3) ecosystem credits for PCT 3738; and
- One (1) ecosystem credit for PCT 3376

PCT 3376 within the Subject Land conforms to the BC Act listed, Critically Endangered Ecological Community (CEEC), White Box – Yellow Box – Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions (WBYBBRG). White Box – Yellow Box- Blakely's Red Gum is listed as an 'SAII entity' within the BioNet Threatened Biodiversity Data Collection (DPE 2024c). Due to the potential sensitivity of this ecological community to any impact, a determination of whether or not the proposed impacts are serious and irreversible has been undertaken in accordance with Section 9.1 of the BAM (DPIE 2020a) 'Additional impact assessment provisions for ecological communities'. This PCT within the Subject Land was found to not conform to the minimum condition threshold of listing under the EPBC Act for the threatened ecological community.

No candidate species credit species at risk of Serious and Irreversible Impacts (SAII) were considered likely to utilise the Subject Land and therefore no offsetting of species credits is required as a result of the proposed subdivision.

In order to minimise potential impacts associated with the proposed subdivision on local biodiversity values, a series of mitigation and management measures have been identified, which are to be implemented as part of any Construction Environmental Management Plan (CEMP) produced for the site. This includes assigning a Project Ecologist to undertake an extensive pre-clearing survey, and to supervise the clearing of all vegetation in relation to the proposed subdivision, and the recommendation for a Vegetation Management Plan (VMP) to be prepared for the areas to the east of the Subject Land to reduce any potential indirect impacts that may arise as a result of the project.

1. Introduction

1.1 Overview

Narla Environmental Pty Ltd (Narla) was engaged by Merhebi Holding Pty Ltd to prepare a Streamlined Biodiversity Development Assessment Report (SBDAR) to accompany a Development Application (DA) for the proposed subdivision at Lot 26 Corriedale Drive Marulan (Lot 26/-/DP1271846), hereafter referred to as the Subject Property (**Figure 1**). The proposed subdivision is subject to DA approval and has triggered a SBDAR as it will exceed the clearing threshold (0.25ha) for a property with a minimum lot size of less than 1ha. This SBDAR will assess the biodiversity impacts of the proposed subdivision in accordance with the requirements of the BC Act, Biodiversity Conservation Regulation 2017 and BAM (DPIE 2020a).

Narla have produced this report in order to assess any potential impacts associated with the DA and recommend appropriate measures to mitigate any potential ecological impacts in line with the requirements of the Consent Authority. The assessment has been completed in accordance with Appendix L of the BAM (DPIE 2020a).

1.2 Assessment Method Applied

This SBDAR will be prepared as a site-based 'Streamlined assessment module – small area development that requires consent' as impacts to native vegetation do not exceed the area clearing threshold for small area developments as outlined in the BAM (DPIE 2020a; **Table 1**).

Table 1. Area limits for application of small area development threshold. Dark border indicates clearing threshold relevant to this report.

Minimum lot size associated with the property	Maximum area limit for application of the small area development module
Less than 1ha	≤1ha
Less than 40ha but not less than 1ha	≤2ha
Less than 1000ha but not less than 40ha	≤3ha
1000ha or more	≤5ha

1.3 The Proposed Subdivision

The proposed subdivision will involve the dividing of the current lot into nine (9) new lots. Each new lot includes a proposed building envelope as well as the creation of an APZ to be managed as an Inner Protection Zone (IPA). All areas associated within the proposed subdivision will hereafter be referred to as the Subject Land.

The Subject Land covers an area of approximately 1.19ha and consisted of and existing dwelling and container as well as areas of exotic grassland, regenerating grass and shrubland and areas of remnant trees.

1.4 Site Location and Description

The Subject Property is situated within a rural landscape in the suburb of Marulan in the Goulburn Mulwaree Council Local Government Area (LGA; **Figure 2**) and is located within the boundaries of the Pejar Local Land Council (Pejar LALC; Aboriginal Land Council 2024). It has an area of approximately 2.22ha and contains an existing dwelling and container as well as areas of exotic grassland, regenerating grass and shrubland and areas of remnant trees. The property also contains a third order watercourse running parallel to its eastern border.

Figure 1. Components of the Subject Land.

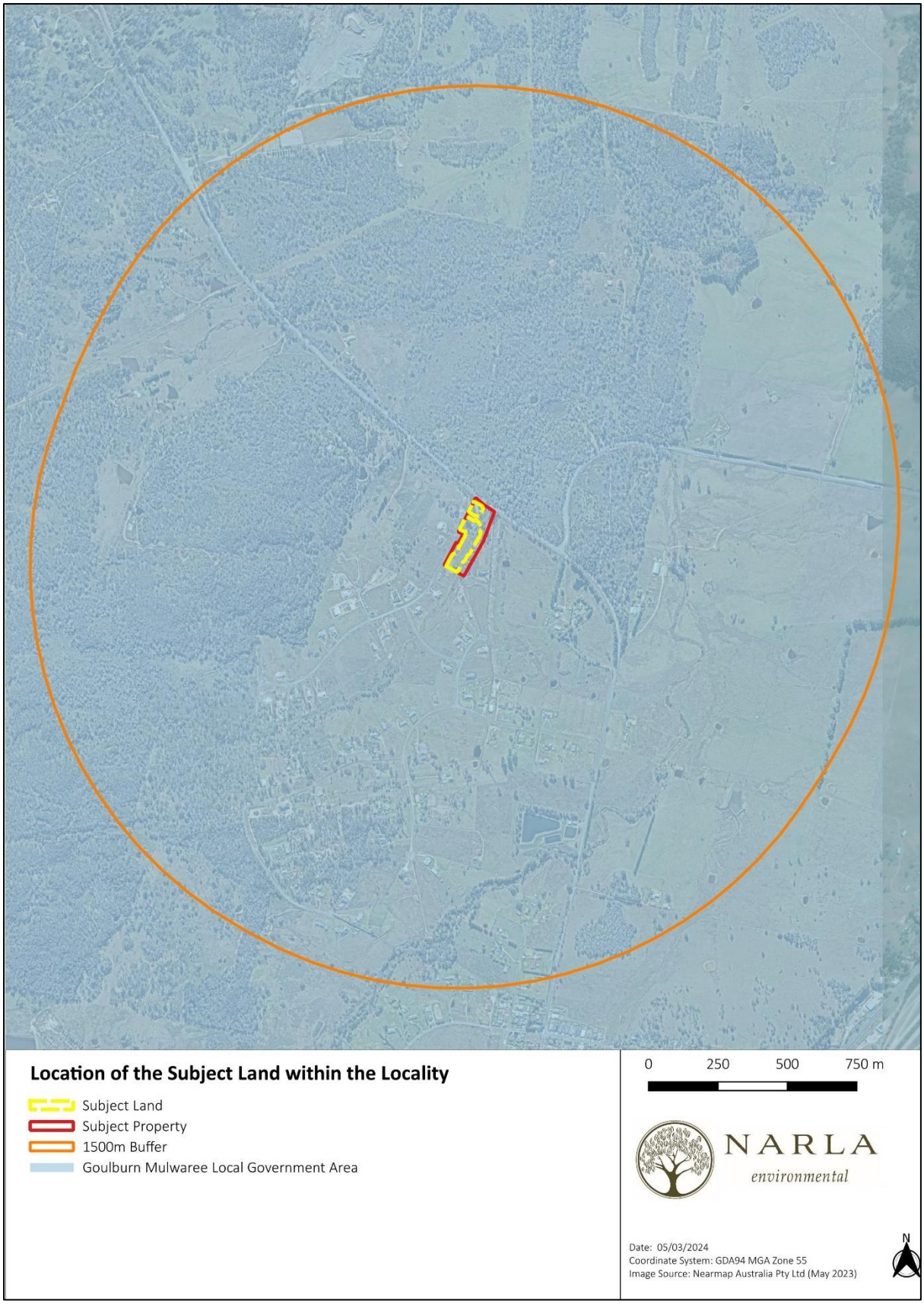

Figure 2. The location of the Subject Land within the locality.

1.5 Aim and Approach

This report has been prepared in accordance with the BAM (DPIE 2020a) and aims to:

- Describe the biodiversity values present within the Subject Land, including the extent of native vegetation, vegetation integrity and the presence of Threatened Ecological Communities (TECs);
- Determine the habitat suitability within the Subject Land for candidate threatened species;
- Prepare an impact assessment in regard to potential impacts of the proposed subdivision on biodiversity values, including potential prescribed impacts and SAIIs within the Subject Land;
- Discuss and recommend efforts to avoid and minimise impacts on biodiversity values; and
- Calculate the biodiversity credits (i.e., ecosystem credits and species credits) that measure potential impacts of the development on biodiversity values. This calculation will inform the decision maker as to the number and class of offset credits required to be purchased and retired as a result of the proposed subdivision.

1.6 Sources of Information Used

A thorough literature review was undertaken to gain an insight into the ecology and applicable legislation within the locality and the Goulburn Mulwaree LGA, including:

- Relevant State and Commonwealth Databases & Datasets:
    - NSW BioNet. Vegetation Classification System (DPE 2024c);
    - NSW BioNet. The website of the Atlas of NSW Wildlife (DPE 2024d);
    - NSW BioNet. Threatened Biodiversity Data Collection (DPE 2024e); and
    - Six Maps Clip & Ship (NSW Government Spatial Services 2024).
- Vegetation, Soil and Geology Mapping:
    - State Vegetation Type Map (DPE 2022);
    - Soil Landscapes of the Goulburn 1:250,000 Sheet map and report (Hird C., 1991); and
    - NSW Seamless Geology (Department of Regional NSW 2022).
- NSW State Guidelines:
    - Biodiversity Assessment Method (DPIE 2020a);
    - Guidance to assist a decision-maker to determine a serious and irreversible impact (DPIE 2019);
    - Biodiversity Assessment Method Calculator Version 1.4.0.00 (DPE 2024f);
    - Biodiversity Offsets and Agreement Management System (BOAMS);
    - Surveying threatened plants and their habitats - NSW survey guide for the Biodiversity Assessment Method (DPIE 2020b);
    - NSW Survey Guide for Threatened Frogs: A guide for the survey of threatened frogs and their habitats for the Biodiversity Assessment Method (DPIE 2020c); and
    - Threatened Species Survey and Assessment: Guidelines for developments and activities. Working Draft (DEC 2004);
- Council Documents:
    - Goulburn Mulwaree Local Environmental Plan 2009; and
    - Goulburn Mulwaree DCP 2009.

Preparation of this SBDAR also involved the review of the following accompanying project documents:

- Bush Fire Assessment– 84 Corriedale Drive Marulan (Bushfire Planning and Design 2024); and

- Subdivision Plan (AKT Engineering and Consulting 2023; **Appendix A**)

These sources were used to gain an understanding of the natural environment and ecology of the Subject Land and its surrounds. Searches using NSW Wildlife Atlas (BioNet; DPE 2024d) were conducted to identify current threatened flora and fauna records within and surrounding the Subject Land. These data were used to assist in establishing the presence or likelihood of any biodiversity values as occurring on, or adjacent the Subject Land and helped inform our Ecologist on what to look for during the site assessment.

2. Landscape

2.1 IBRA Bioregion and Subregion

The Subject Land occurs within the 'Bungonia' Interim Biogeographic Regionalisation for Australia 7 (IBRA7) Subregion, which is part of the 'South Eastern Highlands' IBRA7 Bioregion (**Figure 3**).

2.2 NSW (Mitchell) Landscapes

Mitchell (2002) groups ecosystems into meso-ecosystems representing larger natural entities based on topography and geology. The naming of ecosystems and meso-ecosystems was standardised so that each name provided information on location and a meaningful descriptive landscape term.

The Subject Land occurs within two (2) Mitchell landscapes, the 'Bungonia Tableland and Gorge' and the 'Wollondilly – Bindook Tablelands and Gorge' (**Figure 4**). As the majority of the Subject Land is located within the Bungonia Tableland and Gorge Mitchell Landscape, this landscape has been utilised within the BAMC.

This landscape is characterised by tablelands on Ordovician and Devonian slate, phyllite and quartzite, a small Carboniferous granodiorite stock, caps of Tertiary quartz sands and gravels and limited basalt. The margin of the tableland is the Great Escarpment and is cut by a 400m deep gorge with vertical walls through west dipping Silurian limestones. Numerous deep caves and dolines present. General elevation 600 to 800m, local relief 500m. Red-brown well-structured clay with alkaline pH on limestone, skeletal rubble on scree slopes from slates and volcanics, red and red-yellow texture-contrast profiles over sedimentary rocks on the tableland. Tableland covered by woodland of Apple Box *(Eucalyptus bridgesiana*), Argyle Apple *(Eucalyptus cinerea*), Broad-leaved Peppermint *(Eucalyptus dives*), Brittle Gum (*Eucalyptus mannifera*), Drooping Red Gum *(Eucalyptus parramattensis*), Forest Red Gum *(Eucalyptus tereticornis*), Black Wattle (*Acacia mearnsii*), Parramatta Wattle (*Acacia parramattensis*), Kurrajong (*Brachychiton populneus*), Black She-oak (*Allocasuarina littoralis*) with numerous shrubs and grasses. The same trees extend onto the limestone. Species largely limited to the limestone include; Eastern Bitter Bush (*Adriana glabrata*), Silver Banksia (*Banksia marginata*), Australian Senna (*Senna aciphylla*), Narrow-leaf Logania (*Logania albiflora*), Mock Olive (N*otelaea longifolia*), Slender Westringia (*Westringia eremicola*), and Passion Flower (*Passiflora herbertiana*). Within the gorge, on scree slopes and at the base of high waterfalls rainforest elements occur including; Stinging Tree (*Dendrocnide* sp.), Maiden's Gum *(Eucalyptus maidenii*), Sandpaper Fig (*Ficus coronata*), Rusty Fig (*Ficus rubiginosa*), White Cedar (*Melia azedarach*), Red Cedar (*Toona australis*), Bleeding Heart (H*omalanthus populifolius*), and Sweet Pittosporum (*Pittosporum undulatum*). River Oak (*Casuarina cunninghamiana*) is abundant along the stream banks with some River Peppermint *(Eucalyptus elata*).

2.3 Topography, Geology and Soils

The Subject Land occurred on a mostly flat landscaped with elevation ranging slightly from 640m to 638m above sea level (asl; Google Earth 2024).

The Subject Land is situated on the Bindook Road soil landscape (Hird 1991) according to the Soil Landscapes of Goulburn 1:250 000 sheet. The Bindook Road soil landscape is characterised by undulating rises. Low relief (10 – 40 m) and gentle slopes, typically with permanent erosional stream channels, closely to very widely spaced, which form a non-directional and diverging tributary pattern. Most of the rocks are porphyritic with quartz and feldspar set in a greenish to black groundmass. Soils have formed in situ and from alluvial-colluvial material derived from the parent rock.

The Subject Land did not contain any areas of geological significance, such as karsts, caves, cliffs or crevices nor are any considered likely to occur in the immediate vicinity owing to the relatively flat nature of the landscape. No areas within the Subject Land or broader locality (1500m buffer) were mapped as occurring on Acid Sulfate Soils nor were they mapped as having risk/probability of exhibiting occurrence of acid sulfate soils.

2.4 Hydrology

One (1) mapped 3rd order watercourses and its assocaited 30m riparian buffer intersects the Subject Land (**Figure 6**). A number of mapped watercourses and associated riparian buffer zones also occur within the 1,500m buffer surrounding the Subject Land, ranging from 1st to 4th Order streams (**Figure 5**).

2.5 State Environmental Planning Policy (Resilience and Hazards) 2021: Chapter 2 Coastal Management

No areas mapped as Coastal Wetlands or Littoral Rainforest under Chapter 2 of the State Environmental Planning Policy (Resilience and Hazards) were located within the Subject Land or the broader locality (1500m buffer).

2.6 Native Vegetation Cover and Connectivity

Native vegetation cover and connectivity have been assessed in accordance with Section 3.1.3 and 3.2 of the BAM (DPIE 2020a). The native vegetation cover will be used to assess the habitat suitability of the Subject Land for threatened species. Areas of connectivity will determine the extent of habitat that may facilitate the movement of threatened species across their range. A 1,500m buffer around the boundary of the Subject Land was calculated to determine the extent of native vegetation and habitat connectivity. Native vegetation covered approximately 406ha within the buffer circle (total area = 796ha) and was assigned to the >30–70% class.

Large, continuous areas of habitat connectivity that may facilitate the movement of threatened species were evident within the 1,500m surrounding the Subject Land (**Figure 7**).

2.7 Areas of Outstanding Biodiversity Value

No Areas of Outstanding Biodiversity Value occur on the Subject Land or surrounding area.

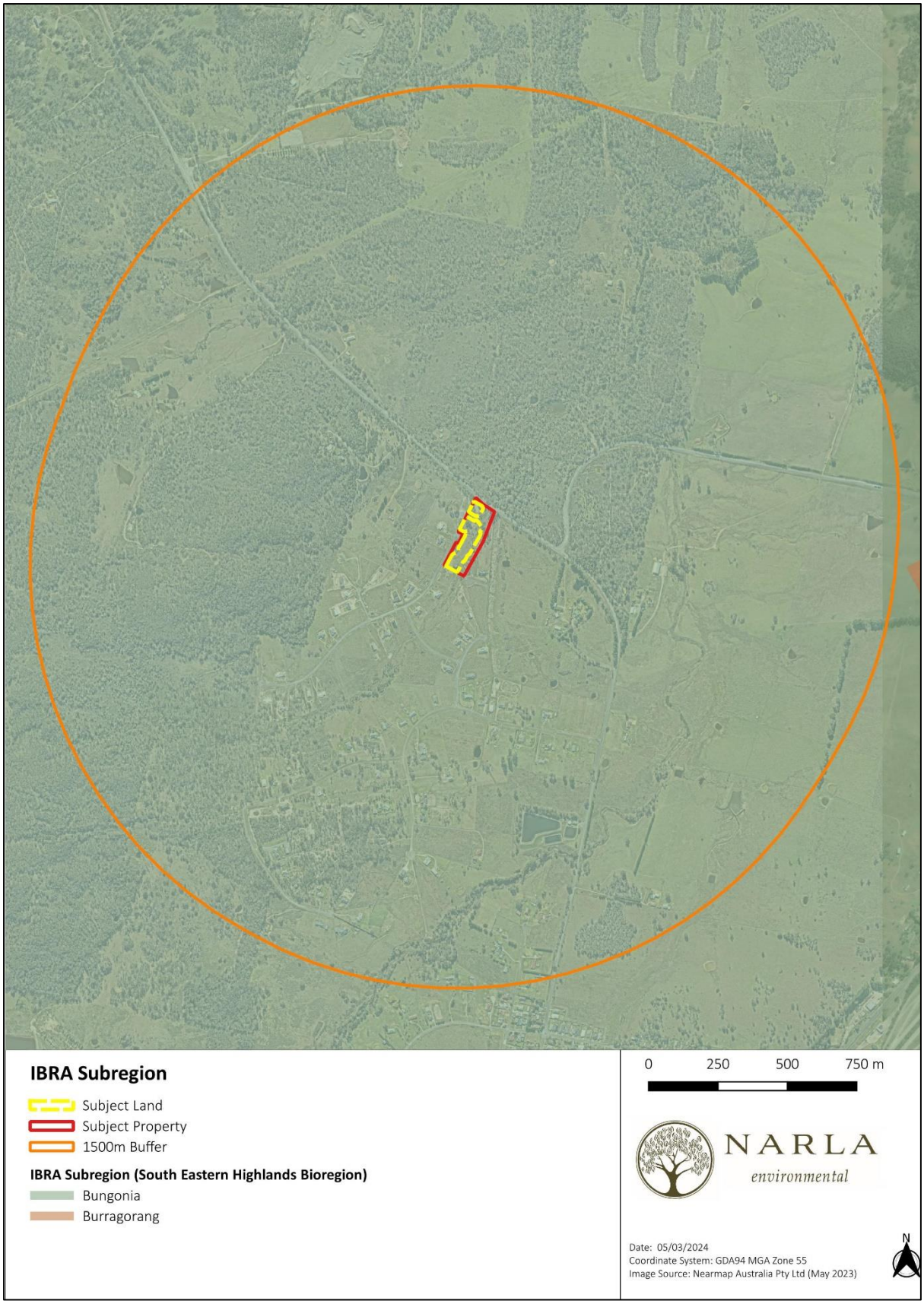

Figure 3. IBRA Bioregion and Subregion of the Subject Property, Subject Land and within a 1,500m buffer.

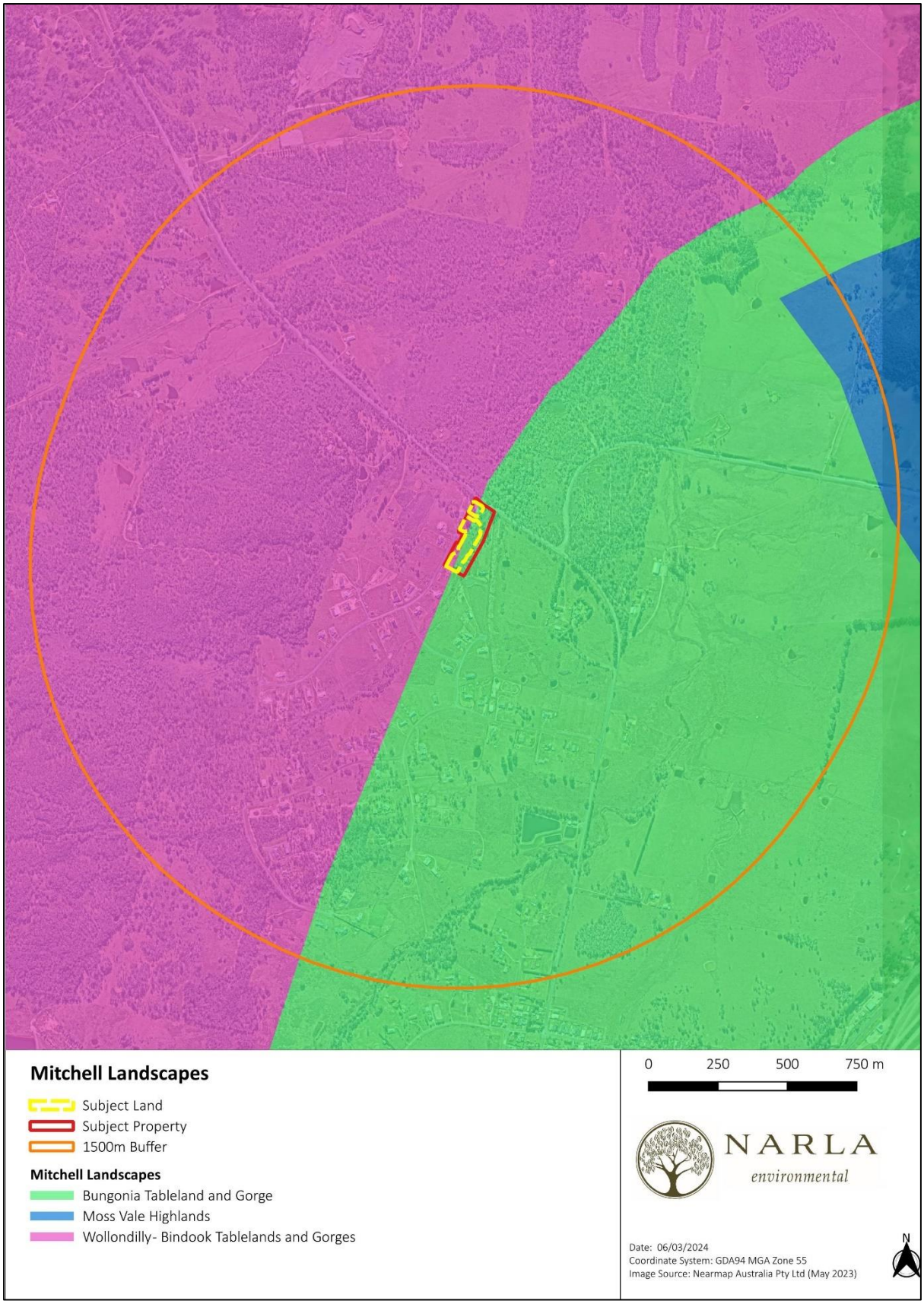

Figure 4. NSW (Mitchell) Landscapes of the Subject Property, Subject Land and within a 1,500m buffer.

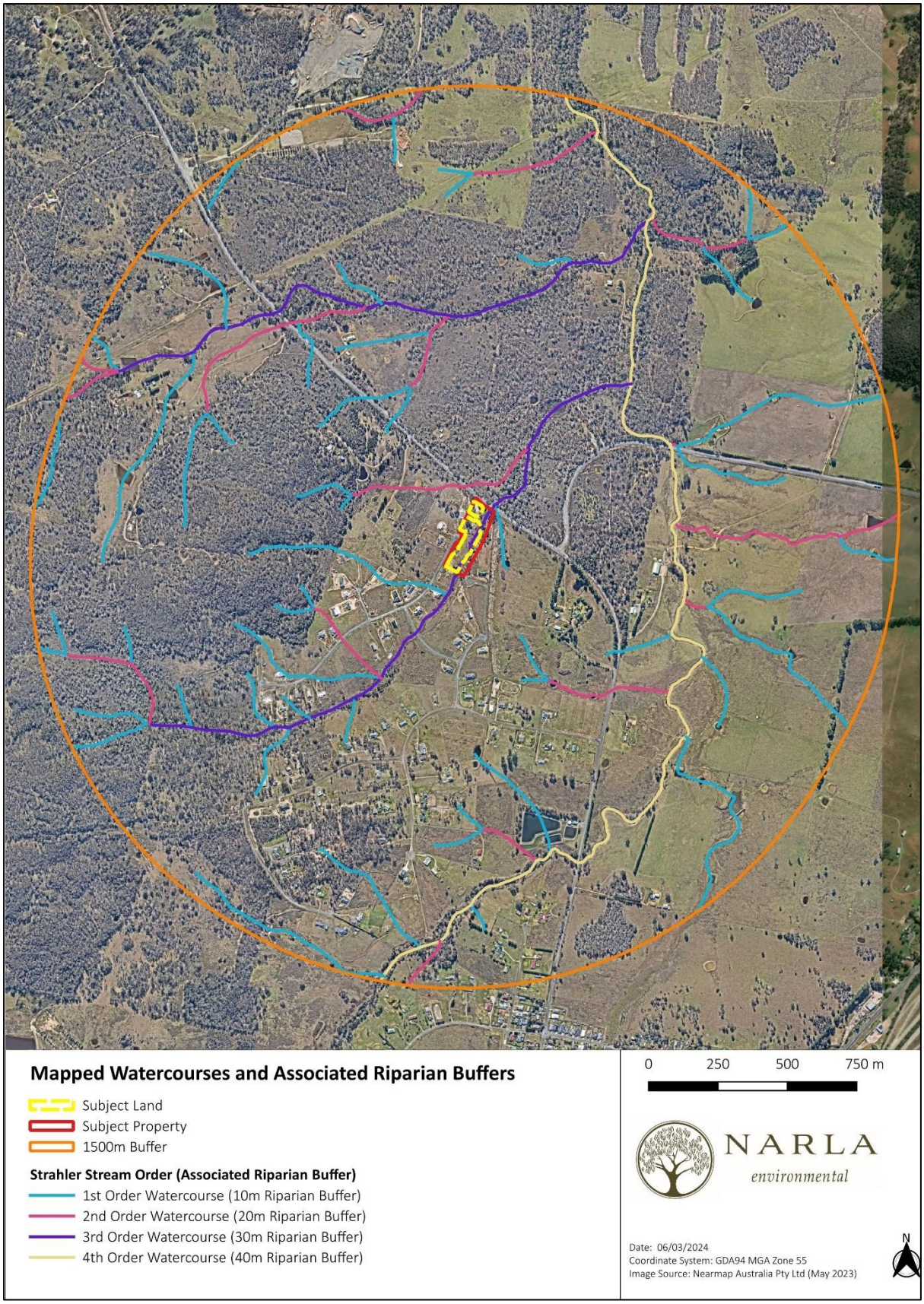

Figure 5. Rivers and streams (with associated riparian buffers) occurring within the 1,500m buffer.

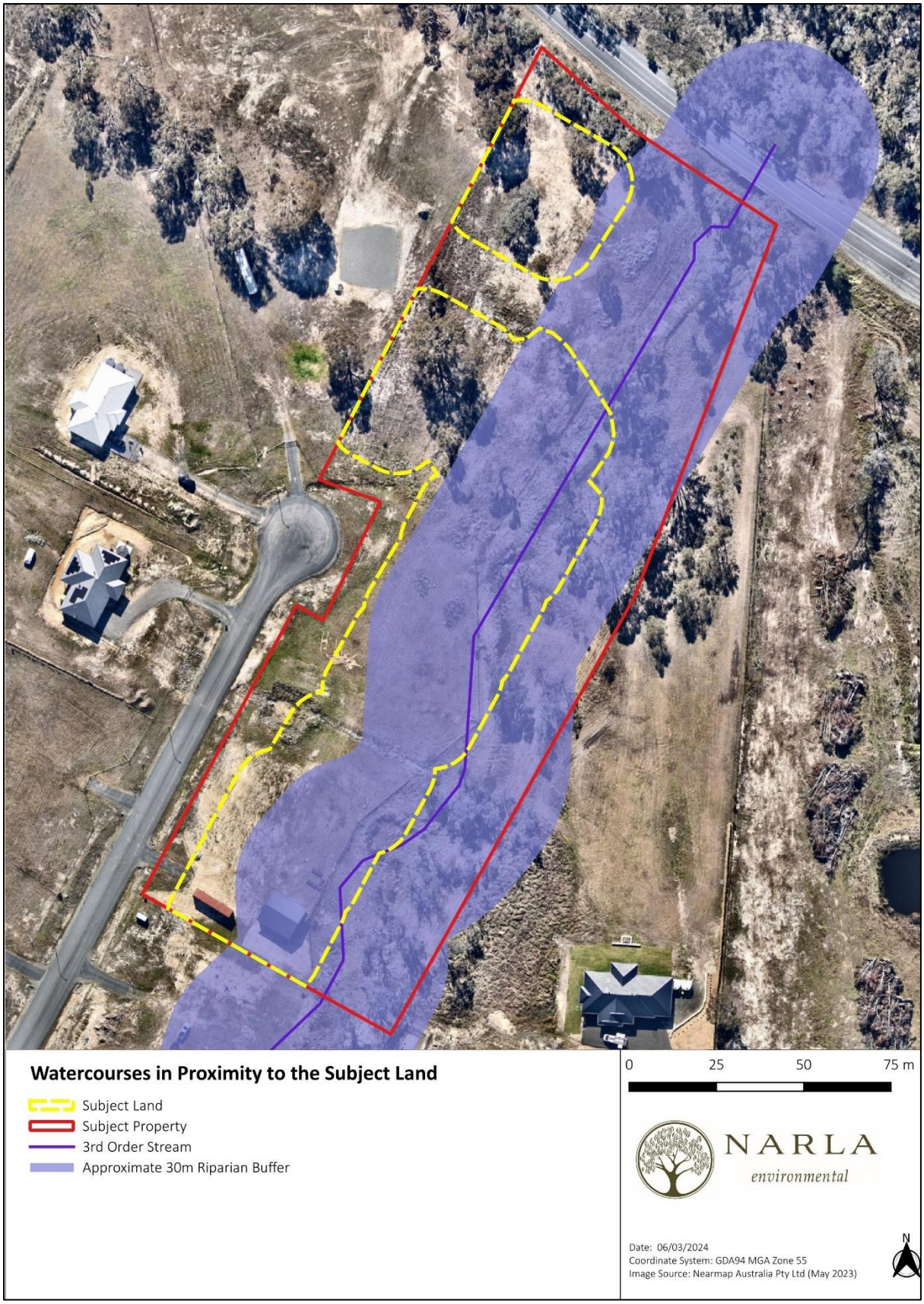

Figure 6. Watercourses in close proximity to the Subject Land (SIXMaps 2024).

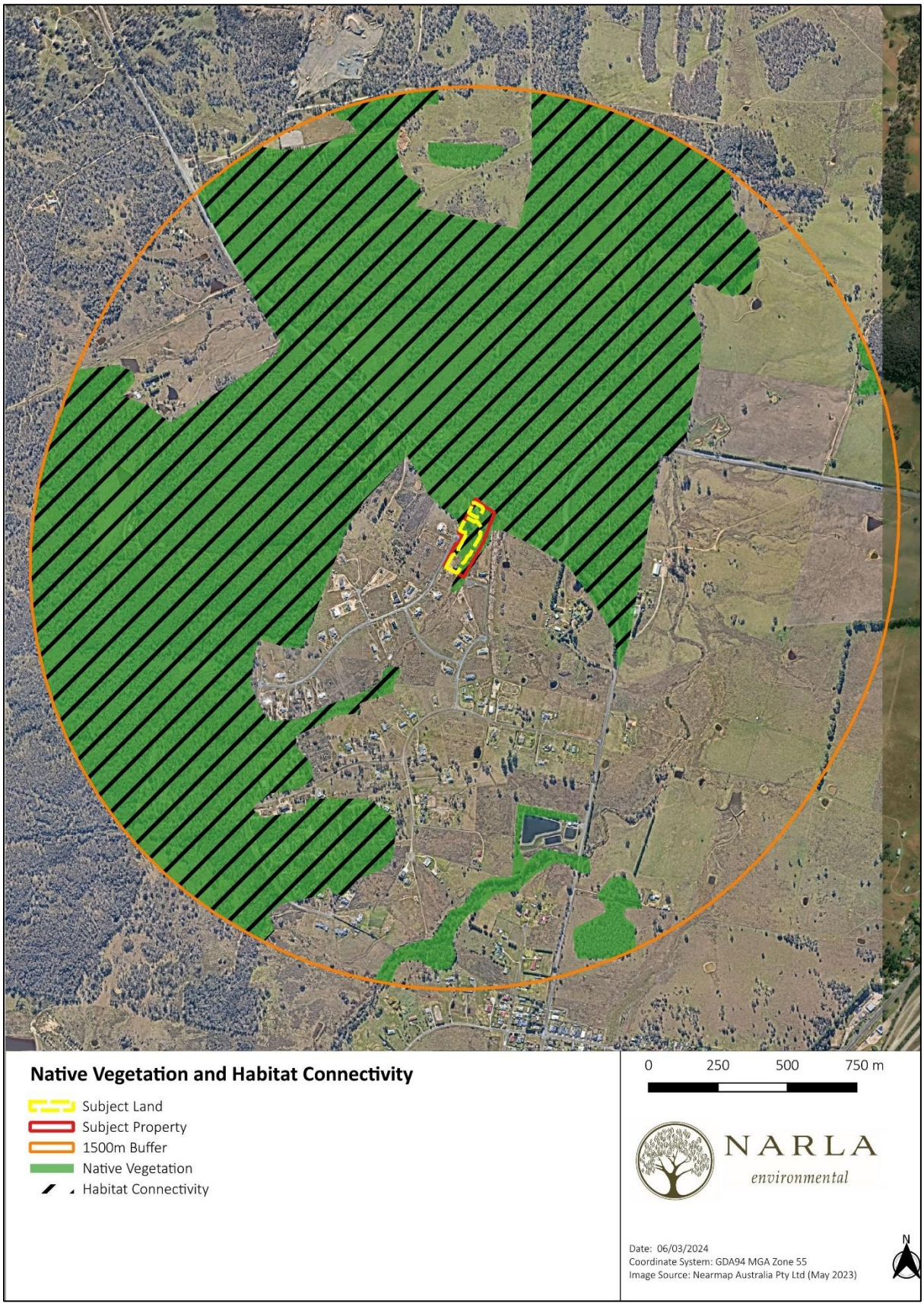

Figure 7. The extent of native vegetation and habitat connectivity within the 1,500m buffer.

3. Native Vegetation

3.1 Plant Community Type (PCT) Identified within the Subject Land

3.1.1 Historically Mapped Vegetation

The State Vegetation Type Map (DPE 2022) identifies the following vegetation communities as occurring within and surrounding the Subject Land (**Figure 8**):

- Not Classified; and
- PCT 3373: Goulburn Tableland Box-Gum Grassy Forest.

3.1.2 Dominant Plant Community Type Selection Process

Plant Community Type (PCT) selection for the dominant vegetation community occurring on the Subject Land was undertaken using information and databases provided in the BioNet Vegetation Classification System (DPE 2024c). The following selection criteria were used in the PCT Filter Tool to develop the PCT shortlist:

- IBRA Bioregion: South Eastern Highlands
- IBRA Subregion: Bungonia
- Dominant Species: *Eucalyptus mannifera, Eucalyptus cinerea* and *Poa sieberiana*.

This process delivered a selection of twelve (12) PCTs that occur within the Bungonia IBRA Subregion (and South Eastern Highlands Bioregion) and that contained 3 out of 3 of the observed dominant species (i.e., the highest potential of occurring within the Subject Land).

The geographical distribution, geology and landscape position characterised by each shortlisted PCT was then compared against the location, geology and landscape of the Subject Land. It was found that the Subject Land was located in the right distribution and contained the appropriate landscape attributes and geology for five (5) candidate PCTs (**Table 2**). The steps taken to justify the presence of the best-fit PCT within the Subject Land are detailed in **Table 3.**

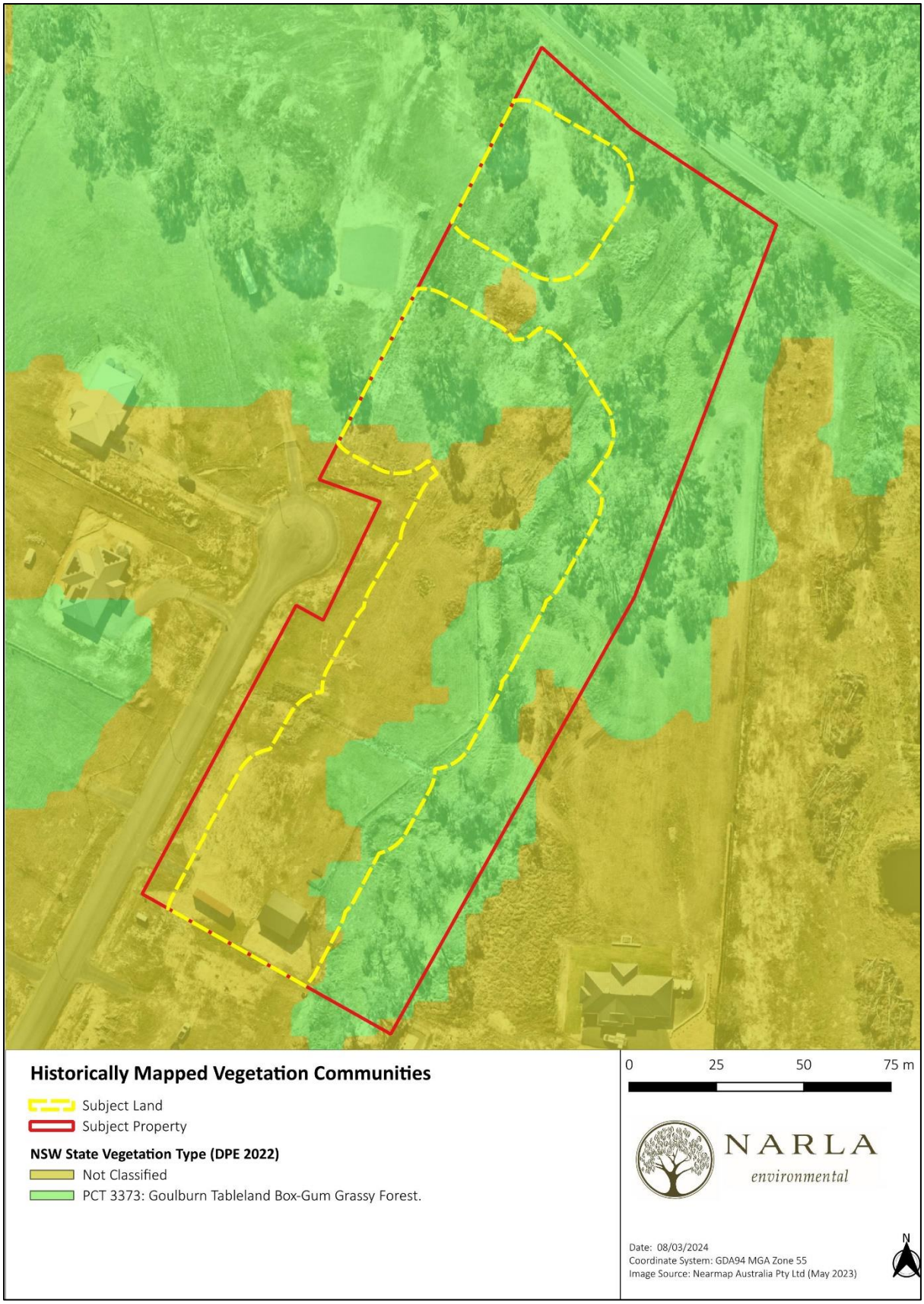

Figure 8. Historical Mapping within and surrounding the Subject Land.

Table 2. Output from the PCT Filter Tool (DPE 2024c) and subsequent shortlisting of dominant PCTs. Green shading indicates the selected best fit dominant PCT.

Plant Community Type (PCT)	Subject Land within known distribution/ landscape position and on appropriate geology?	No. of Floristic Matches	*Eucalyptus mannifera*	*Eucalyptus cinerea*	*Poa sieberiana*
PCT 3228: Wollondilly-Shoalhaven Siltstones Sheltered Forest	No. This PCT is associated with deep gullies and moist sheltered slopes of upper gorge and rolling plateau landscapes. The Subject Land only occurs on a mostly flat landscape not a deep gully or sheltered slope.	3	✓	✓	✓
PCT 3373: Goulburn Tableland Box-Gum Grassy Forest	Yes. This PCT is located from Canberra and Queanbeyan north to Pejar and east to Durran Durra and Canyonleigh, with a northern outlier at Golspie. The Subject Land is located within this distribution.	3	✓	✓	✓
PCT 3376: Southern Tableland Grassy Box Woodland	Yes. This PCT is located between Bredbo and Rylstone primarily in Bredbo, Canberra, Goulburn, and Boorowa Areas. The Subject Land is located in this distribution.	3	✓	✓	✓
PCT 3473: Bungonia Slates Shrubby Open Forest	No. This PCT is found on the dry upper gorge slopes along the Shoalhaven River. The Subject Land is not located on dry upper gorge slopes along the Shoalhaven River.	3	✓	✓	✓
PCT 3486: Wollondilly-Shoalhaven Slopes Grassy Open Forest	No. This PCT occurs on the upper slopes of the gorges of the mid Shoalhaven and mid Wollondilly River (and tributaries). The Subject Land is not located on the upper slopes of the gorges of these rivers or their tributaries.	3	✓	✓	✓
PCT 3498: Wingecarribee Gorges Stringybark-Grey Gum Forest	No. This PCT is restricted to the western margins of the Southern Highlands, from Canyonleigh to Wollondilly Lookout. The Subject Land is not located within this distribution.	3	✓	✓	✓
PCT 3643: Bungonia Tableland Silvertop Ash-Stringybark Forest	No. This PCT is listed as occurring on rocky hills and ranges of the south-east central tablelands and adjacent north-east southern tablelands. The Subject Land is not located on rocky hills or ranges.	3	✓	✓	✓
PCT 3667: Southern Highlands Enriched Sandstone Forest	No. This PCT is distributed throughout the central plateau south from Colo Vale, west to Canyonleigh to Wingello with	3	✓	✓	✓

Plant Community Type (PCT)	Subject Land within known distribution/ landscape position and on appropriate geology?	No. of Floristic Matches	*Eucalyptus mannifera*	*Eucalyptus cinerea*	*Poa sieberiana*
	southern outliers on the Tolwong Plateau. The Subject Land is not located within this distribution.				
PCT 3737: Bungonia Tableland Scribbly Gum Shrub Forest	Yes. This PCT is distributed from Cookbundoon Range foothills east to Arthursleigh and Penrose, and south to Larbert and Wog Wog, at elevations of 550-700 metres asl. The Subject Land is located within this distribution and within this elevation range.	3	✓	✓	✓
PCT 3738: Goulburn-Lithgow Tableland Hills Grassy Forest	Yes. This PCT is known from two disjunct areas, around Goulburn (Wombeyan to Bangadilly, Windellama and Collector) and around Lithgow (Ben Bullen, Hartley Vale and Cheetham Flats). The Subject Land is located within this distribution.	3	✓	✓	✓
PCT 3746: Southern Tableland Snow Gum – Candlebark Shrub Forest	No. This PCT is known from Nerriga west to Boro and south to Snowball, and from Mandemar south to Penrose and west to Brayton, with a northern outlier at Hartley. The Subject Land is located just outside of this distribution	3	✓	✓	✓
PCT 3747: Southern Tableland Western Hills Scribbly Gum Forest.	Yes. This PCT is widely distributed from Mullions Range east to the slopes of Mount Vincent and to Windeyer and Rylstone in the north, south to Mundoonen Range, Bungonia, and Cuumbeun east of Queanbeyan in the south. The Subject Land is located within this distribution.	3	✓	✓	✓

Table 3. PCT selection criteria. Green indicates the selected PCT.

Candidate PCT	Description (DPE 2024f)	Justification
PCT 3373: Goulburn Tableland Box-Gum Grassy Forest	A mid-high to tall dry sclerophyll grassy open forest to woodland of northern parts of the southern tablelands, occurring from Canberra and Queanbeyan north to Pejar and east to Durran Durra and Canyonleigh, with a northern outlier at Golspie. It is found in landscape positions with moderately deep soil profiles, particularly footslopes of gently undulating low hills, on a wide range of substrates including sedimentary (sandstone, arenite, greywacke, shale), acid volcanic (ignimbrite, rhyolite) and granitic rocks. This PCT is found at elevations of 600-850 metres asl with mean annual rainfall of 650-800 mm. Remnants of this community often have a long history of disturbance and the tree canopy may be sparse to very sparse, commonly including *Eucalyptus melliodora* and occasionally with *Eucalyptus macrorhyncha, Eucalyptus blakelyi* or *Eucalyptus dives*. A very sparse shrub stratum commonly includes scattered *Lissanthe strigosa, Pimelea curviflora, Melichrus urceolatus* or *Hibbertia obtusifolia*, while the ground layer is predominantly grassy and commonly includes *Themeda triandra, Microlaena stipoides, Poa sieberiana, Elymus scaber* and *Aristida ramosa*, with occasional high cover of *Rytidosperma laeve. Common forbs include Lomandra filiformis, Lomandra multiflora subsp. multiflora, Goodenia hederacea, Hydrocotyle laxiflora, Oxalis perennans, Chrysocephalum apiculatum, Tricoryne elatior, Gonocarpus tetragynus* and *Hypericum gramineum*. In lower landscape positions subject to cold air drainage this community may be replaced by PCT 3338, while on stony dry hills it commonly grades into PCT 3747.	Narla have **NOT** assigned this PCT to the vegetation within the Subject Land. Owing to the similarities in landscape position, geology and distribution between the candidate PCTs, the distinguishing factor was the presence of *Eucalyptus mannifera* and *Eucalyptus cinerea*. It was determined that PCT 3738 better accounted for the presence of both of these eucalypts. Therefore PCT 3738 was considered the best fit PCT.
PCT 3376: Southern Tableland Grassy Box Woodland	A tall sclerophyll woodland with a dry shrub layer that is patchy to absent and a mid dense, grassy groundcover, widespread in the low hills of the drier parts of the Southern Tablelands between Bredbo and Rylstone. The canopy almost always includes box eucalypts (*Eucalyptus melliodora* or *Eucalyptus bridgesiana*), occasionally associated with *Eucalyptus blakelyi* which may be locally prominent in lower parts of the landscape. The shrub layer is sparse to absent with occasional, scattered *Melichrus urceolatus, Lissanthe strigosa* or various *Acacia* species. The mid-dense ground layer typically includes grasses, forbs, graminoids and some twiners, very frequently	Narla have **NOT** assigned this PCT to the vegetation within the Subject Land. Owing to the similarities in landscape position, geology and distribution between the candidate PCTs, the distinguishing factor was the presence of *Eucalyptus mannifera* and *Eucalyptus cinerea*.

Candidate PCT	Description (DPE 2024f)	Justification
	including *Hydrocotyle laxiflora, Austrostipa scabra, Lomandra filiformis, Microlaena stipoides* and *Elymus scaber*. The PCT primarily occurs in the Bredbo, Canberra, Goulburn and Boorowa areas, with more scattered occurrences extending north to Bathurst, Orange and Rylstone. It occurs on granite, volcanic and sedimentary substrates in cold, dry environments with a mean annual rainfall typically below 760 mm. While widespread, this PCT primarily occurs in small, often disturbed patches with a long history of grazing. It is not closely related floristically to nearby PCTs, however it grades into PCT 3373 which has a more diverse shrub layer and some subtle differences in canopy species. *Eucalyptus macrorhyncha, Eucalyptus dives, Bossiaea buxifolia, Dillwynia sericea* and *Brachyloma daphnoides* are only occasional in PCT 3373 however collectively represent a suite of species that are rare in this PCT. In the Boorowa area, PCT 3376 grades into PCT 3400 which are both grassy woodlands featuring Eucalyptus melliodora and Eucalyptus blakelyi. This represents the transition from the colder environment of the tablelands (PCT 3376) to the woodlands of the lower elevation, warmer climate of the South West Slopes (PCT 3400).	It was determined that PCT 3738 better accounted for the presence of both of these eucalypts. Therefore PCT 3738 was considered the best fit PCT.
PCT 3737: Bungonia Tableland Scribbly Gum Shrub Forest	A dry shrubby sclerophyll open forest of shallow soils on rolling low tableland hills, primarily within the Bungonia subregion of the South Eastern Highlands. This PCT is distributed from Cookbundoon Range foothills east to Arthursleigh and Penrose, and south to Larbert and Wog Wog, at elevations of 550-700 metres asl with 650-950 mm mean annual rainfall. This community is strongly associated with moderately infertile sandy clay soils derived from sedimentary rocks, particularly sandstones of the Abercrombie Formation, however also has scattered occurrences on other geologies including other sedimentary, granite and ignimbrite rocks. A mid-high to tall tree canopy is very frequently dominated by *Eucalyptus rossii*, commonly with *Eucalyptus mannifera* and/or *Eucalyptus dives* and occasionally *Eucalyptus macrorhyncha*. An occasional sparse small tree layer includes scattered *Allocasuarina littoralis*, and a sparse to mid-dense shrub layer commonly includes *Brachyloma daphnoides* and *Persoonia mollis*, with diverse occasional species including	Narla have NOT assigned this PCT to the vegetation within the Subject Land. Owing to the similarities in landscape position, geology and distribution between the candidate PCTs, the distinguishing factor was the presence of *Eucalyptus mannifera* and *Eucalyptus cinerea*. It was determined that PCT 3738 better accounted for the presence of both of these eucalypts. Therefore PCT 3738 was considered the best fit PCT.

Candidate PCT	Description (DPE 2024f)	Justification
	Daviesia leptophylla, Gompholobium minus, Melichrus urceolatus, Hakea dactyloides, Aotus ericoides, Hibbertia obtusifolia, Lomatia ilicifolia, Persoonia linearis, Leucopogon virgatus and *Xanthorrhoea concava*. The sparse to mid-dense ground layer has a suite of tough, wiry plants that very frequently includes *Goodenia hederacea, Dianella revoluta* and *Lomandra multiflora subsp. multiflora*, and commonly *Gonocarpus tetragynus, Lomandra filiformis, Patersonia sericea, Rytidosperma pallidum, Lomandra obliqua, Lepidosperma gunnii* and *Entolasia stricta*. Occasionally present are *Hovea linearis*, *Opercularia diphylla, Stylidium graminifolium, Microlaena stipoides, Lomandra glauca* or *Poa sieberiana*. On higher rugged hills this community is replaced by PCT 3643, while on gentle footslopes with deeper soils it may grade into PCT 3738	
PCT 3738: Goulburn-Lithgow Tableland Hills Grassy Forest	A tall dry shrubby sclerophyll open forest of gentle slopes in undulating tableland landscapes of the upper Wollondilly and upper Coxs River catchments of the central and southern tablelands. This PCT is known from two disjunct areas, around Goulburn (Wombeyan to Bangadilly, Windellama and Collector) and around Lithgow (Ben Bullen, Hartley Vale and Cheetham Flats). It occurs at elevations of 500-950 metres asl and with mean annual precipitation of 650-950 mm, predominantly on sedimentary substrates (siltstones, shales and margins of sandstone with some enrichment) however sometimes on acid volcanic and granitic rocks. A mid-dense canopy commonly includes patches of *Eucalyptus dives* or sparse *Eucalyptus mannifera*, occasionally with clumps of *Eucalyptus macrorhyncha* or scattered *Eucalyptus cinerea*. A sparse small tree stratum may include occasional *Allocasuarina littoralis, Acacia falciformis* or *Acacia decurrens*, while a sparse to patchy shrub layer commonly includes scattered *Hibbertia obtusifolia, Cassinia aculeata, Melichrus urceolatus, Persoonia linearis*, or occasional *Lissanthe strigosa*. The ground layer is mid-dense to dense and often grassy, commonly with *Microlaena stipoides* and *Poa sieberiana* and occasionally *Echinopogon ovatus, Austrostipa rudis, Rytidosperma racemosum* and *Themeda triandra*. Very frequent forb species include *Lomandra filiformis, Gonocarpus tetragynus, Goodenia hederacea, Hydrocotyle laxiflora* and	Narla have assigned this PCT to the vegetation within the Subject Land. Owing to the similarities in landscape position, geology and distribution between the candidate PCTs, the distinguishing factor was the presence of *Eucalyptus mannifera* and *Eucalyptus cinerea*. Therefore PCT 3738 was considered the best fit PCT as it described as containing "sparse *Eucalyptus mannifera*, occasionally with clumps of *Eucalyptus macrorhyncha* or scattered *Eucalyptus cinerea*".

Candidate PCT	Description (DPE 2024f)	Justification
	Hypericum gramineum, while *Lomandra longifolia, Dianella revoluta, Veronica plebeia, Oxalis perennans, Poranthera microphylla, Billardiera scandens* and *Opercularia diphylla* are all common. This community tends to occur on undulating to rolling hill slopes and may be replaced by PCT 3643 on steep exposed rocky crests or by PCT 3373 on lower parts of the landscape with deeper accumulated soils.	
PCT 3747: Southern Tableland Western Hills Scribbly Gum Forest.	A mid-high to tall dry shrubby sclerophyll open forest of slopes and crests of dry, rocky tableland hills and ranges, at moderate altitudes across the Central Tablelands and northern parts of the Southern Tablelands. This PCT is widely distributed from Mullions Range east to the slopes of Mount Vincent and to Windeyer and Rylstone in the north, south to Mundoonen Range, Bungonia, and Cuumbeun east of Queanbeyan in the south. It generally occurs at elevations of 500-1200 metres asl and in locations receiving 600-920 mm mean annual rainfall, commonly on quartz-rich sedimentary, acid volcanic and granitoid substrates, with scattered occurrences in areas mapped as shales or mudstones. A sparse to mid-dense tree canopy very frequently includes *Eucalyptus macrorhyncha* and or *Eucalyptus rossii*, commonly with *Eucalyptus mannifera* and occasionally *Eucalyptus goniocalyx*. A sparse shrub layer very frequently includes *Hibbertia obtusifolia*, commonly with *Daviesia leptophylla* and *Brachyloma daphnoides* and occasionally *Acacia gunnii, Monotoca scoparia* or *Melichrus urceolatus*. The ground layer is sparse to mid-dense, and very frequently includes large tussocks of *Rytidosperma pallidum*, which dominates with a high cover, and *Lomandra filiformis, Poa sieberiana, Dianella revoluta, Gonocarpus tetragynus* and *Goodenia hederacea.* Also common is *Hovea linearis* (most records likely to be *Hovea heterophylla*), with *Lomandra multiflora subsp. multiflora* occasional. On lower slopes with increasing depth of accumulated soil, this community may grade into a variety of grassy open forest communities, such as PCT 3370 in relatively moist parts of its range or PCT 3372 in relatively dry parts. With decreasing rainfall and increasing temperatures it is replaced on similar rocky hills to the west by PCT 3353.	Narla have **NOT** assigned this PCT to the vegetation within the Subject Land. Owing to the similarities in landscape position, geology and distribution between the candidate PCTs, the distinguishing factor was the presence of *Eucalyptus rossii* and *Eucalyptus cinerea*. It was determined that PCT 3738 better accounted for the presence of both of these eucalypts. Therefore PCT 3738 was considered the best fit PCT.

3.1.3 Additional Plant Community Type Identified Selection Process

An additional PCT was identified within the Subject Land that was determined to be a threatened ecological community (TEC) therefore, it was required to be added into the BAMC. The selection process for this PCT occurring on the Subject Land was undertaken using information and databases provided in the BioNet Vegetation Classification System (DPE 2024c). The following selection criteria were used in the PCT Filter Tool to develop the PCT shortlist:

- IBRA Bioregion: South Eastern Highlands
- IBRA Subregion: Bungonia
- Dominant Species: *Eucalyptus Blakelyi, Eucalyptus mannifera* and *Eucalyptus cinerea*.

This process delivered a selection of five (5) PCTs that occur within the Bungonia IBRA Subregion (and South Eastern Highlands Bioregion) and that contained 3 out of 3 of the observed dominant species (i.e., the highest potential of occurring within the Subject Land).

The geographical distribution, geology and landscape position characterised by each shortlisted PCT was then compared against the location, geology and landscape of the Subject Land. It was found that the Subject Land was located in the right distribution and contained the appropriate landscape attributes and geology for five (5) candidate PCTs (Table 4). The steps taken to justify the presence of the best-fit PCT within the Subject Land are detailed in Table 5.

Table 4. Output from the PCT Filter Tool (DPE 2024c) and subsequent shortlisting of dominant PCTs. Green shading indicates the selected best fit dominant PCT.

Plant Community Type (PCT)	Subject Land within known distribution/ landscape position and on appropriate geology?	No. of Floristic Matches	*Eucalyptus blakelyi*	*Eucalyptus mannifera*	*Eucalyptus cinerea*
PCT 3373: Goulburn Tableland Box-Gum Grassy Forest	Yes. This PCT is located from Canberra and Queanbeyan north to Pejar and east to Durran Durra and Canyonleigh, with a northern outlier at Golspie. The Subject Land is located within this distribution.	3	✓	✓	✓
PCT 3376: Southern Tableland Grassy Box Woodland	Yes. This PCT is located between Bredbo and Rylstone primarily in Bredbo, Canberra, Goulburn, and Boorowa Areas. The Subject Land is located in this distribution.	3	✓	✓	✓
PCT 3486: Wollondilly-Shoalhaven Slopes Grassy Open Forest	No. This PCT occurs on the upper slopes of the gorges of the mid Shoalhaven and mid Wollondilly River (and tributaries). The Subject Land is not located on the upper slopes of the gorges of these rivers or their tributaries.	3	✓	✓	✓
PCT 3738: Goulburn-Lithgow Tableland Hills Grassy Forest	Yes. This PCT is known from two disjunct areas, around Goulburn (Wombeyan to Bangadilly, Windellama and Collector) and around Lithgow (Ben Bullen, Hartley Vale and Cheetham Flats). The Subject Land is located within this distribution.	3	✓	✓	✓
PCT 3747: Southern Tableland Western Hills Scribbly Gum Forest.	Yes. This PCT is widely distributed from Mullions Range east to the slopes of Mount Vincent and to Windeyer and Rylstone in the north, south to Mundoonen Range, Bungonia, and Cuumbeun east of Queanbeyan in the south. The Subject Land is located within this distribution.	3	✓	✓	✓

Table 5. PCT selection criteria. Green indicates the selected PCT.

Candidate PCT	Description (DPE 2024f)	Justification
PCT 3373: Goulburn Tableland Box-Gum Grassy Forest	A mid-high to tall dry sclerophyll grassy open forest to woodland of northern parts of the southern tablelands, occurring from Canberra and Queanbeyan north to Pejar and east to Durran Durra and Canyonleigh, with a northern outlier at Golspie. It is found in landscape positions with moderately deep soil profiles, particularly footslopes of gently undulating low hills, on a wide range of substrates including sedimentary (sandstone, arenite, greywacke, shale), acid volcanic (ignimbrite, rhyolite) and granitic rocks. This PCT is found at elevations of 600-850 metres asl with mean annual rainfall of 650-800 mm. Remnants of this community often have a long history of disturbance and the tree canopy may be sparse to very sparse, commonly including *Eucalyptus melliodora* and occasionally with *Eucalyptus macrorhyncha, Eucalyptus blakelyi* or *Eucalyptus dives*. A very sparse shrub stratum commonly includes scattered *Lissanthe strigosa, Pimelea curviflora, Melichrus urceolatus* or *Hibbertia obtusifolia*, while the ground layer is predominantly grassy and commonly includes *Themeda triandra, Microlaena stipoides, Poa sieberiana, Elymus scaber* and *Aristida ramosa*, with occasional high cover of *Rytidosperma laeve. Common forbs include Lomandra filiformis, Lomandra multiflora subsp. multiflora, Goodenia hederacea, Hydrocotyle laxiflora, Oxalis perennans, Chrysocephalum apiculatum, Tricoryne elatior, Gonocarpus tetragynus* and *Hypericum gramineum*. In lower landscape positions subject to cold air drainage this community may be replaced by PCT 3338, while on stony dry hills it commonly grades into PCT 3747.	Narla have **NOT** assigned this PCT to the vegetation within the Subject Land. Owing to the similarities in landscape position, geology, and distribution between the candidate PCTs, the distinguishing factor was prevalence of *Eucalyptus blakelyi* in this small section of Subject Land. It was determined that PCT 3376 better accounted for the prevalence of *Eucalyptus blakelyi*. Therefore PCT 3376 was considered the best fit PCT.
PCT 3376: Southern Tableland Grassy Box Woodland	A tall sclerophyll woodland with a dry shrub layer that is patchy to absent and a mid dense, grassy groundcover, widespread in the low hills of the drier parts of the Southern Tablelands between Bredbo and Rylstone. The canopy almost always includes box eucalypts (*Eucalyptus melliodora* or *Eucalyptus bridgesiana*), occasionally associated with *Eucalyptus blakelyi* which may be locally prominent in lower parts of the landscape. The shrub layer is sparse to absent with occasional, scattered *Melichrus urceolatus, Lissanthe strigosa* or various *Acacia* species. The mid-dense ground layer typically includes grasses, forbs, graminoids and some twiners, very frequently	Narla have assigned this PCT to the vegetation within the Subject Land. Owing to the similarities in landscape position, geology and distribution between the candidate PCTs, the distinguishing factor was prevalence of *Eucalyptus blakelyi* in this small section of Subject Land.

Candidate PCT	Description (DPE 2024f)	Justification
	including *Hydrocotyle laxiflora, Austrostipa scabra, Lomandra filiformis, Microlaena stipoides* and *Elymus scaber*. The PCT primarily occurs in the Bredbo, Canberra, Goulburn and Boorowa areas, with more scattered occurrences extending north to Bathurst, Orange and Rylstone. It occurs on granite, volcanic and sedimentary substrates in cold, dry environments with a mean annual rainfall typically below 760 mm. While widespread, this PCT primarily occurs in small, often disturbed patches with a long history of grazing. It is not closely related floristically to nearby PCTs, however it grades into PCT 3373 which has a more diverse shrub layer and some subtle differences in canopy species. *Eucalyptus macrorhyncha, Eucalyptus dives, Bossiaea buxifolia, Dillwynia sericea* and *Brachyloma daphnoides* are only occasional in PCT 3373 however collectively represent a suite of species that are rare in this PCT. In the Boorowa area, PCT 3376 grades into PCT 3400 which are both grassy woodlands featuring Eucalyptus melliodora and Eucalyptus blakelyi. This represents the transition from the colder environment of the tablelands (PCT 3376) to the woodlands of the lower elevation, warmer climate of the South West Slopes (PCT 3400).	As PCT 3376 notes that *Eucalyptus blakelyi* "may be locally prominent" which matched this vegetation zone within the Subject Land, PCT 3376 was considered the best fit PCT.
PCT 3738: Goulburn-Lithgow Tableland Hills Grassy Forest	A tall dry shrubby sclerophyll open forest of gentle slopes in undulating tableland landscapes of the upper Wollondilly and upper Coxs River catchments of the central and southern tablelands. This PCT is known from two disjunct areas, around Goulburn (Wombeyan to Bangadilly, Windellama and Collector) and around Lithgow (Ben Bullen, Hartley Vale and Cheetham Flats). It occurs at elevations of 500-950 metres asl and with mean annual precipitation of 650-950 mm, predominantly on sedimentary substrates (siltstones, shales and margins of sandstone with some enrichment) however sometimes on acid volcanic and granitic rocks. A mid-dense canopy commonly includes patches of *Eucalyptus dives* or sparse *Eucalyptus mannifera*, occasionally with clumps of *Eucalyptus macrorhyncha* or scattered *Eucalyptus cinerea*. A sparse small tree stratum may include occasional *Allocasuarina littoralis, Acacia falciformis* or *Acacia decurrens*, while a sparse to patchy shrub layer commonly includes scattered *Hibbertia obtusifolia, Cassinia aculeata,*	Narla have NOT assigned this PCT to the vegetation within the Subject Land. Owing to the similarities in landscape position, geology, and distribution between the candidate PCTs, the distinguishing factor was prevalence of *Eucalyptus blakelyi* in this small section of Subject Land. It was determined that PCT 3376 better accounted for the prevalence of *Eucalyptus blakelyi*. Therefore PCT 3376 was considered the best fit PCT.

Candidate PCT	Description (DPE 2024f)	Justification
	Melichrus urceolatus, Persoonia linearis, or occasional *Lissanthe strigosa*. The ground layer is mid-dense to dense and often grassy, commonly with *Microlaena stipoides* and *Poa sieberiana* and occasionally *Echinopogon ovatus, Austrostipa rudis, Rytidosperma racemosum* and *Themeda triandra*. Very frequent forb species include *Lomandra filiformis, Gonocarpus tetragynus, Goodenia hederacea, Hydrocotyle laxiflora* and *Hypericum gramineum*, while *Lomandra longifolia, Dianella revoluta, Veronica plebeia, Oxalis perennans, Poranthera microphylla, Billardiera scandens* and *Opercularia diphylla* are all common. This community tends to occur on undulating to rolling hill slopes and may be replaced by PCT 3643 on steep exposed rocky crests or by PCT 3373 on lower parts of the landscape with deeper accumulated soils.	
PCT 3747: Southern Tableland Western Hills Scribbly Gum Forest.	A mid-high to tall dry shrubby sclerophyll open forest of slopes and crests of dry, rocky tableland hills and ranges, at moderate altitudes across the Central Tablelands and northern parts of the Southern Tablelands. This PCT is widely distributed from Mullions Range east to the slopes of Mount Vincent and to Windeyer and Rylstone in the north, south to Mundoonen Range, Bungonia, and Cuumbeun east of Queanbeyan in the south. It generally occurs at elevations of 500-1200 metres asl and in locations receiving 600-920 mm mean annual rainfall, commonly on quartz-rich sedimentary, acid volcanic and granitoid substrates, with scattered occurrences in areas mapped as shales or mudstones. A sparse to mid-dense tree canopy very frequently includes *Eucalyptus macrorhyncha* and or *Eucalyptus rossii*, commonly with *Eucalyptus mannifera* and occasionally *Eucalyptus goniocalyx*. A sparse shrub layer very frequently includes *Hibbertia obtusifolia*, commonly with *Daviesia leptophylla* and *Brachyloma daphnoides* and occasionally *Acacia gunnii, Monotoca scoparia* or *Melichrus urceolatus*. The ground layer is sparse to mid-dense, and very frequently includes large tussocks of *Rytidosperma pallidum*, which dominates with a high cover, and *Lomandra filiformis, Poa sieberiana, Dianella revoluta, Gonocarpus tetragynus* and *Goodenia hederacea.* Also common is *Hovea linearis* (most records likely to be *Hovea heterophylla*), with *Lomandra multiflora subsp. multiflora* occasional. On lower slopes with increasing depth of accumulated soil, this community may grade into a variety of grassy open	Narla have **NOT** assigned this PCT to the vegetation within the Subject Land. Owing to the similarities in landscape position, geology, and distribution between the candidate PCTs, the distinguishing factor was prevalence of *Eucalyptus blakelyi* in this small section of Subject Land. It was determined that PCT 3376 better accounted for the prevalence of *Eucalyptus blakelyi*. Therefore PCT 3376 was considered the best fit PCT.

Candidate PCT	Description (DPE 2024f)	Justification
	forest communities, such as PCT 3370 in relatively moist parts of its range or PCT 3372 in relatively dry parts. With decreasing rainfall and increasing temperatures it is replaced on similar rocky hills to the west by PCT 3353.	

3.1.4 Final PCT and Vegetation Zone Selection

The field survey conducted by experienced Narla Ecologists, Chris Moore and Kayla Spithoven identified the presence of exotic vegetation as well as two (2) PCTs within the Subject Land:

- PCT 3738: Goulburn-Lithgow Tableland Hills Grassy Forest; and
- PCT 3376: Southern Tableland Grassy Box Woodland.

These PCTs were then assigned to the following vegetation zone based on the condition identified within the Subject Land:

- Vegetation Zone 1: PCT 3738 – Moderate Condition (Canopy and Regenerating Vegetation);
- Vegetation Zone 2: PCT 3738 – Low Condition (Historically Cleared Regenerating Vegetation);
- Vegetation Zone 3: PCT 3376 – Low Condition (Remnant Canopy Above Disturbed Understory); and
- Historically Cleared Exotic Dominated Vegetation.

These vegetation zones are detailed in **Table 6**, **Table 7**and **Table 8** and displayed in **Figure 9.**

Table 6. PCT 3738 identified within the Subject Land.

PCT 3738: Goulburn-Lithgow Tableland Hills Grassy Forest;		
Vegetation Class	Southern Tableland Dry Sclerophyll Forests	
Total Area within the Subject Land	0.90ha	
Vegetation Zone	Zone 1: Moderate Condition (Canopy and Regenerating Vegetation)	Zone 2: Low Condition (Historically Cleared Regenerating Vegetation).
Area (ha)	0.46ha	0.44ha
Field survey effort	Two (2) VIS plots were established.	One (1) VIS plot was established
Description of vegetation	This vegetation zone consisted of an open canopy layer consisting of species such as *Eucalyptus mannifera* and *Eucalyptus cinerea*. The mid and ground layers were sparse however contained a high diversity of regenerating native species such as *Kunzea parvifolia, Dillwynia sericea, Gonocarpus teucrioides, Poa sieberiana, Pimelea linifolia, Patersonia sericea, Goodenia hederacea and Lomandra obliqua.* Exotic species were in low densities (**Plate 1**).	This vegetation zone lacked a canopy and consisted as a historically cleared grass and shrub land with regenerating native shrubs and ground cover species, including *Kunzea parvifolia Chrysocephalum apiculatum, Brachyloma daphnoides, Pimelea curviflora var. sericea* and *Gonocarpus teucrioides.* This zone also had a high percentage of exotic species including *Vulpia bromoides, Holcus lunatus* and *Hypochaeris radicata* (**Plate 2**).
Structure of vegetation	Sparse canopy cover was evident within the VIS plots, with native trees accounting for 12% cover. Shrub cover was low recorded at just 4.2%. Native groundcovers were low to moderate including coverages of 10.95% grasses, 1.25% forbs, 0% ferns and 0% other. A moderate cover of leaf litter (26%) was apparent. Minimal High Threat Exotics were identified within the VIS plots. Fallen logs were low, with 10m present on average between the plots. The VIS plots contained a high diversity of tree stem sizes including regenerating stems. One (1) hollow bearing tree and one (1) large tree trees (greater than 50dbh) was recorded on average within the VIS plots.	No canopy cover was evident within the VIS plot. Shrub cover was low recorded at just 5.6%. Native groundcovers were similarly low including coverages of 0.2% grasses, 3.7% forbs, 0% ferns and 0% other. A low cover of leaf litter (2.4%) was apparent. Minimal High Threat Exotics were identified within the VIS plot. Fallen logs were absent. The VIS plot contained no tree stem sizes, regenerating stems or hollows.
TEC Status (BC Act 2016 and EPBC Act 1999)	No associated TECs	

PCT 3738: Goulburn-Lithgow Tableland Hills Grassy Forest;	
Scientific Reference from VIS (DPE 2024c)	Connolly, D., Binns, D., Turner, K., Hager, T., Lyons, M., Magarey, E. (in prep.) A revised classification of Plant Community Types for eastern New South Wales. NSW DPIE, Parramatta;
Estimate of percent historically cleared in the major catchment area	68.60%

Table 7. PCT 3376 identified within the Subject Land.

PCT 3376: Southern Tableland Grassy Box Woodland	
Vegetation Class	Southern Tableland Grassy Woodlands
Vegetation Zone	Zone 3: PCT 3376 – Low Condition (Remnant Canopy Above Disturbed Understory)
Total Area within the Subject Land	0.07ha
Field survey effort	One (1) VIS plot was established.
Description of vegetation	This vegetation zone consisted of remnant *Eucalyptus blakelyi* as well as select *Eucalyptus mannifera* and *Eucalyptus cinerea*. The understory was highly disturbed with minimal native resilience and dominated by exotic species such as *Holcus lunatus, Vulpia bromoides, Anthoxanthum odoratum* and the priority weed *Rubus fruticosus sp. agg* (Plate 3).
Structure of vegetation	Low to moderate canopy cover was evident within the VIS plot, with native trees accounting for 15% cover. Shrub cover was almost absent, recorded at just 0.2%, with native groundcovers similarly low including 1% grasses, 0% forbs, 0% ferns and 0% other. A moderate cover of leaf litter (21%) was apparent. High Threat Exotics were identified within the VIS plot however at low densities accounting for just 2%. Fallen logs were low, with 2m identified. The VIS plots contained a high diversity of tree stem sizes including regenerating stems. One (1) hollow bearing tree was recorded within the VIS plot, as well as four (4) large trees (greater than 50dbh).
TEC Status (BC Act 2016)	This Vegetation Zone is associated with the BC Act listed CEEC, White Box- Yellow Box- Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions (see section 3.2).
TEC Status (EPBC Act 1999)	This Vegetation Zone within the Subject Land DOES NOT meet the minimum condition thresholds for protection under the EPBC Act as the CEEC, White Box- Yellow Box- Blakely's Red Gum Grassy Woodland and Derived Native Grassland (see section 3.3).
Scientific Reference from VIS (DPE 2024c)	Connolly, D., Binns, D., Turner, K., Hager, T., Lyons, M., Magarey, E. (in prep.) A revised classification of Plant Community Types for eastern New South Wales. NSW DPIE, Parramatta;
Estimate of percent historically cleared in the major catchment area	92.96%

Table 8. Historically Cleared Exotic Dominated Vegetation within the Subject Land.

Historically Cleared Exotic Dominated Vegetation.	
Total Area within the Subject Land	0.20ha
Vegetation Zone	NA
Field survey effort	One (1) VIS plot was established to demonstrate the exotic nature of this zone (**Appendix B**).
Description of vegetation	This vegetation zone consisted of a historically cleared portion of the Subject Land that was dominated by exotic species such as *Vulpia bromoides, Holcus lunatus, Briza minor* and *Hypochaeris radicata* (**Plate 4**). Native species were largely absent bar sporadic *Wahlenbergia communis, Juncus spp.* and *Eragrostis curvula* which totalled just 0.3% cover across the zone.
Justification of vegetation assignment	The vegetation within this zone comprised of common agricultural weeds which do not conform to a locally occurring PCT and was therefore classified as 'Historically Cleared Exotic Dominated Vegetation'.
TEC Status (BC Act 2016 and EPBC Act 1999)	No associated TECs

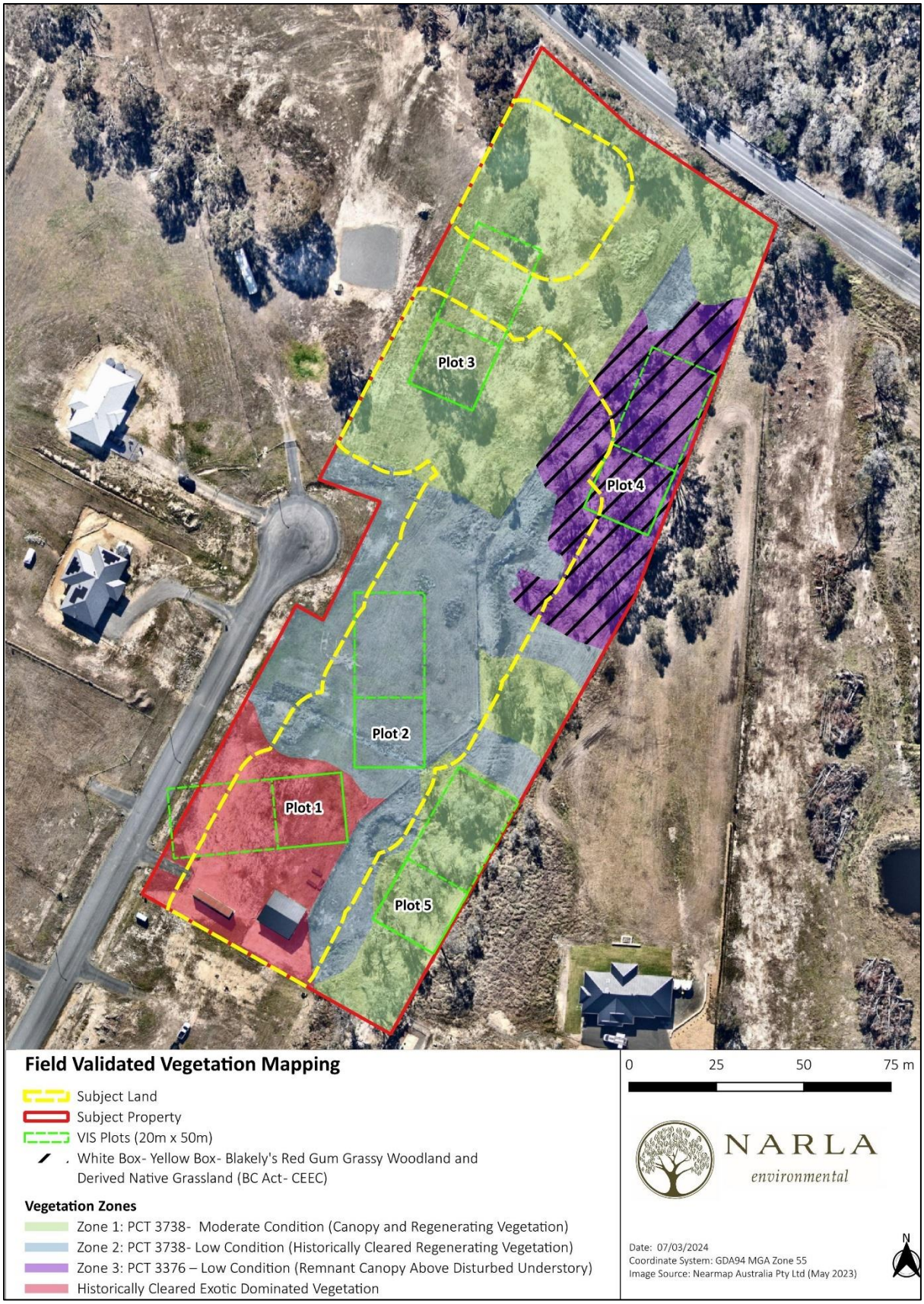

Figure 9. Narla field validated vegetation mapping and location of the VIS plots and TEC within and surrounding the Subject Land.

Plate 1. Representative photo of Vegetation Zone 1: PCT 3738- Moderate Condition (Canopy and Regenerating Vegetation).

Plate 2. Representative photo of Vegetation Zone 2: PCT 3738- Low Condition (Historically Cleared Regenerating Vegetation).

Plate 3. Representative photo of Vegetation Zone 3: PCT 3376- Low Condition (Remnant Canopy Above Disturbed Understory).

Plate 4. Representative photo of Historically Cleared Exotic Dominated Vegetation.

3.2 Biodiversity Conservation Act (BC Act) Listing

The vegetation within Vegetation Zone 3 contained characteristic species of the BC Act listed CEEC White Box- Yellow Box- Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions. The following species listed within the Final Determination (NSW Scientific Committee 2011) were identified within the Subject Property:

- *Eucalyptus blakelyi*

White Box – Yellow Box – Blakely's Red Gum Grassy Woodland and Derived Native Grassland occurs on hilly to undulating landscapes in areas with soils of moderate fertility derived from a range of lithologies, including alkaline and acid volcanics, granites, sediments, serpentinites and metamorphics (Prober and Thiele 2004). This vegetation zone within the subject land occurs on a gently undulating slope which is characteristic of this community.

3.3 Environmental Protection and Biodiversity Conservation Act (EPBC Act) Listing

The native vegetation identified within Vegetation Zone 3 is not considered to meet the criteria for protection under the EPBC Act as the listed CEEC, White Box- Yellow Box- Blakely's Red Gum Grassy Woodland and Derived Native Grassland as this vegetation did not meet the minimum requirements for listing (Threatened Species Scientific Committee 2006; Table 9).

Table 9. Minimum requirements to meet EPBC listing criteria for White Box- Yellow Box- Blakely's Red Gum Grassy Woodland and Derived Native Grassland (Threatened Species Scientific Committee 2006) compared against each condition of Vegetation Zone 3 identified within the Subject Land.

Thresholds	Vegetation Zone 3
Has a predominantly native understorey;	No
The patch size is 0.1ha or greater;	Yes
Has twelve (12) or more native understorey species present (excluding grasses)	No

3.4 Assessing Patch Size

As defined by the BAM, a patch is an area of native vegetation that occurs on the Subject Land and includes native vegetation that has a gap of less than 100m from the next area of native vegetation (or ≤ 30m for non-woody ecosystems). A patch may extend onto adjoining land. For each vegetation zone, the assessor must determine the patch size in hectares and assign it to one of the following classes:

- <5ha;
- 5 – <25ha;
- 25 – <100 ha; or
- ≥100 ha.

The patch size class is used to assess habitat suitability on the Subject Land for threatened species. The assessor may assign more than one patch size class to the vegetation zone if both of the following apply:

- A vegetation zone comprises two or more discontinuous areas of native vegetation, and
- The areas of discontinuous native vegetation have more than one patch size class.

As areas outside of the Subject Property were not assessed as part of the scope of this assessment, the vegetation zone identified within the Subject Land was separated into the following categories to allow for aerial mapping of patch size within the broader area (**Table 10**; **Figure 10**):

- Woody Ecosystems:
    - Vegetation Zone 1: PCT 3738 – Moderate Condition (Canopy and Regenerating Vegetation);
    - Vegetation Zone 2: PCT 3738 – Low Condition (Historically Cleared Regenerating Vegetation); and
    - Vegetation Zone 3: PCT 3376 – Low Condition (Remnant Canopy Above Disturbed Understory).

Table 10. Patch size classes of each PCT and associated vegetation zones.

Plant Community Type	Category	Vegetation Zone	Patch Size Class
PCT 3738	Woody Ecosystems	Zones 1 and 2	>100ha
PCT 3376	Woody Ecosystems	Zone 3	>100ha

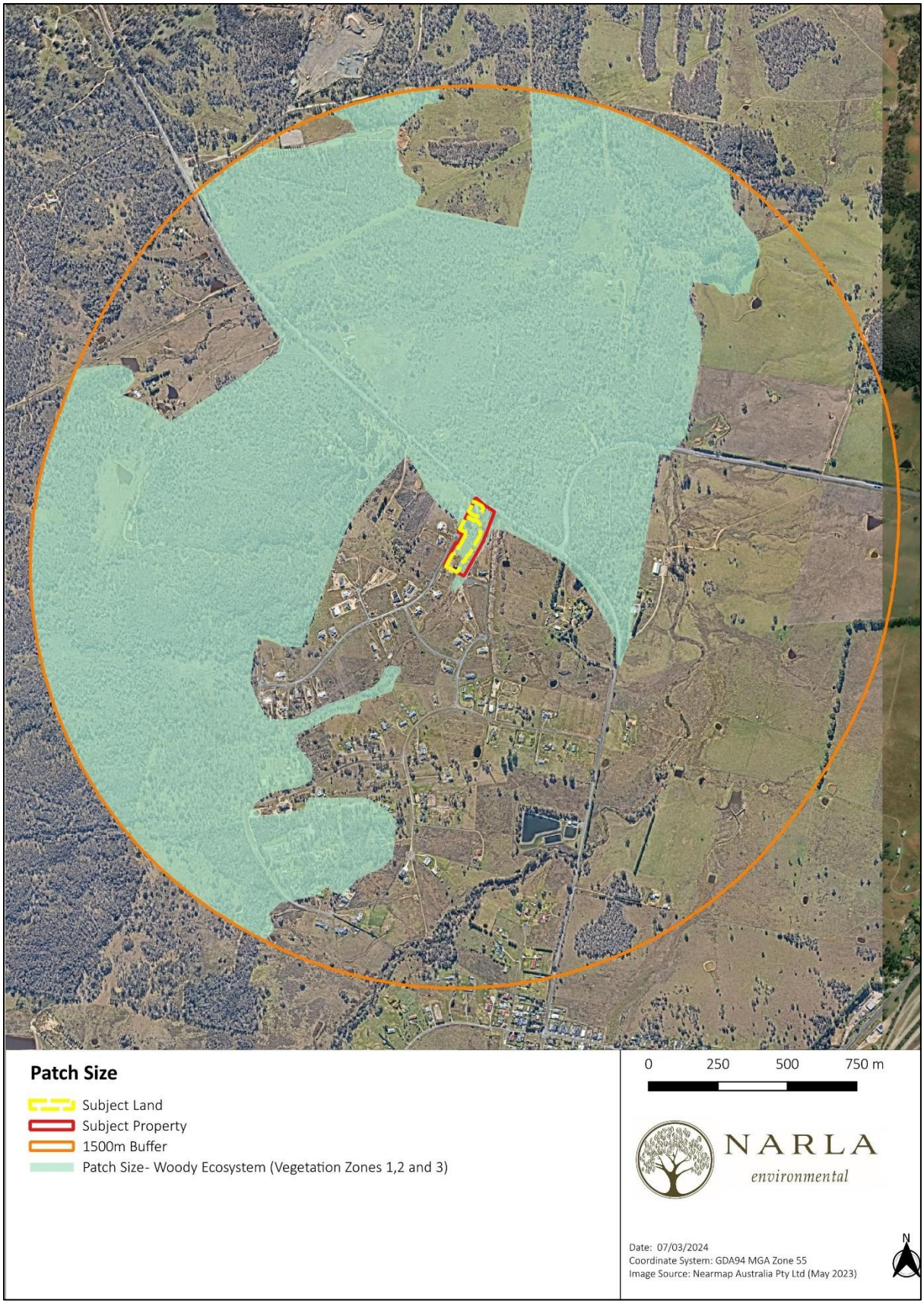

Figure 10. Patch size within the 1,500m buffer for each vegetation zone identified within the Subject Land.

3.5 Vegetation Integrity Survey (VIS) Plots

Five (5) BAM VIS plots were established within the Subject Property. Plot 1 was conducted as justification for the designation of a section of the Subject Land as "Historically Cleared Exotic Dominated Vegetation' and has not been entered into the BAMC but is provided in **Appendix B**. Plots 2- 5 were conducted to determine the vegetation integrity for each of the mapped native vegetation zones with data gathered for each attribute used to assess the function of the Subject Land vegetation. This data is detailed in **Appendix C**. Vegetation Integrity (VI) Scores represented by existing vegetation within the vegetation zone is detailed in **Table 11**.

3.5.1 Determining Future Vegetation Integrity Scores

Most projects will result in complete clearing of vegetation and threatened species habitat within the development footprint. In this scenario, the assessor must assess the proposed future value of each of the VI attributes as zero in the BAMC. However, in circumstances where partial clearing of vegetation is proposed and remaining vegetation will be maintained, the assessor may determine that the future value of the relevant VI attributes is greater than zero (DPIE 2020a).

The Subject Land will be exposed to varying degrees of clearing due to the location of the proposed building envelopes and the requirements of the associated APZs. Subsequently, the vegetation zones within the Subject Land have been divided into the following management zones to account for the varying clearing levels (**Figure 11**):

- Vegetation Zone 1: PCT 3738 – Moderate Condition (Canopy and Regenerating Vegetation);
    - Management Zone 1a: PCT 3738 (Moderate Condition)- Complete Removal to facilitate the proposed building envelopes.
    - Management Zone 1b: PCT 3738 (Moderate Condition)- IPA management – this area is defined by the APZ that requires ongoing management to achieve and maintain IPA standards
- Vegetation Zone 2: PCT 3738 – Low Condition (Historically Cleared Regenerating Vegetation);
    - Management Zone 2a: PCT 3738 (Low Condition)- Complete Removal to facilitate the proposed building envelopes.
    - Management Zone 2b: PCT 3738 (Low Condition)- IPA management – this area is defined by the APZ that requires ongoing management to achieve and maintain IPA standards.
- Vegetation Zone 3: PCT 3376 – Low Condition (Remnant Canopy Above Disturbed Understory);
    - Management Zone 3: PCT 3376 (Low Condition)- IPA management – this area is defined by the APZ that requires ongoing management to achieve and maintain IPA standards.

The attributes influencing future vegetation scores within each management zone are detailed in **Table 12**. Owing to the exotic nature of the vegetation within the area mapped as Historically Cleared Exotic Dominated Vegetation, it has not been assigned to a management zone and will not require further assessment.

Figure 11. Management zones within the Subject Land.

Table 11. Vegetation integrity scores for each identified zone.

Vegetation Zone	Management Zone	Area (ha)	Survey Effort	Composition Condition Score	Structure Condition Score	Function Condition Score	VI Score	Future VI Score	Change in VI Score	Total VI Loss	Hollow bearing trees
Zone 1: PCT 3738 – Moderate Condition	1a – Complete removal	0.13	Two (2) 1,000m2 (20mx50m) VIS Plot	42.1	23.4	44.6	35.3	0	-35.3	-14.5	Present
	1b – IPA management	0.33						29	-6.3		
Zone 2: PCT 3738 – Low Condition	2a – Complete removal	013	One (1) 1,000m2 (20mx50m) VIS Plot	26.9	9.7	0	1.5	0	-1.5	-0.5	Absent
	2b – IPA management	0.31						1.5	0		
Zone 3: PCT 3376 – Low Condition	3 – IPA management	0.07	One (1) 1,000m2 (20mx50m) VIS Plot	10.6	25.1	73	26.9	23.6	-3.2	-3.2	Present

Table 12. Management zones within the Subject Land and relevant vegetation attributes (composition, structure and function) affecting future VI scores.

Vegetation Zone	Management Zone	Changes in Current Vegetation Attributes	Vegetation Attributes Not Changed	Future Vegetation Scores and Justification
Zone 1: PCT 3738 – Moderate Condition	1a – Complete Removal	All vegetation will be removed	N/A	▪ All vegetation within this zone requires removal to facilitate the proposed subdivision. Future composition, structure and function score is 0.
	1b – IPA Management	Regenerating stems, leaf litter and coarse woody debris will be removed.	Coverage and diversity of all growth forms retained, stem size classes the same.	▪ Tree and shrub coverage and diversity expected to remain the same as both currently at levels compliant with an IPA ▪ Extant grasses and forbs can survive when maintained <100mm in height; ▪ Ferns and Other were absent from the VIS plot. ▪ It is anticipated that with strategic trimming and select tree removal all stem classes should be able to remain (excluding regenerating stems); and ▪ Regenerating stems, logs and leaf litter to be removed from this zone in line with the requirements of an IPA.
Zone 2: PCT 3738 – Low Condition	2a – Complete Removal	All vegetation will be removed	N/A	▪ All vegetation within this zone requires removal to facilitate the proposed subdivision. Future composition, structure and function score is 0.
	2b – IPA Management	Leaf litter and coarse woody debris will be removed.	Coverage and diversity of all growth forms retained, stem size classes the same.	▪ Shrub coverage and diversity expected to remain the same as already currently at levels compliant with an IPA ▪ Extant grasses and forbs can survive when maintained <100mm in height; ▪ Trees, Ferns and Other were absent from the VIS plot; and ▪ Logs and leaf litter to be removed from this zone in line with the requirements of an IPA.
PCT 3376 – Low Condition	3 – IPA Management	Regenerating stems, leaf litter and coarse woody debris will be removed.	Coverage and diversity of all growth forms retained, stem size classes the same.	▪ Canopy and shrub coverage and diversity expected to remain the same as both currently at levels compliant with an IPA ▪ Extant grasses and forbs can survive when maintained <100mm in height; ▪ Ferns and Other were absent from the VIS plot. ▪ It is anticipated that with strategic trimming and select tree removal all stem classes should be able to remain (excluding regenerating stems); and ▪ Regenerating stems, logs and leaf litter to be removed from this zone in line with the requirements of an IPA.

4. Threatened Species

4.1 Candidate Ecosystem Credit Species

Ecosystem credit species associated with the Subject Land are listed below in **Table 13.** No species predicted by the BAM calculator as potential ecosystem credits were excluded from the assessment due to habitat constraints.

Table 13. Candidate ecosystem credits predicted to occur within the Subject Land.

Scientific Name	BC Act Status	Sensitivity to Gain	Excluded from Assessment	Reason for Exclusion from Assessment
Anthochaera phrygia Regent Honeyeater (Foraging)	Critically Endangered	High	-	No
Artamus cyanopterus cyanopterus Dusky Woodswallow	Vulnerable	Moderate	No	-
Botaurus poiciloptilus Australasian Bittern	Endangered	Moderate	No	-
Callocephalon fimbriatum Gang-gang Cockatoo (Foraging)	Vulnerable	Moderate	No	-
Calyptorhynchus lathami Glossy Black-Cockatoo (Foraging)	Vulnerable	High	No	-
Chthonicola sagittata Speckled Warbler	Vulnerable	High	No	-
Climacteris picumnus victoriae Brown Treecreeper (eastern subspecies)	Vulnerable	High	No	-
Daphoenositta chrysoptera Varied Sittella	Vulnerable	Moderate	No	-
Dasyurus maculatus Spotted-tailed Quoll	Vulnerable	High	No	-
Falco subniger Black Falcon	Vulnerable	Moderate	No	-
Falsistrellus tasmaniensis Eastern False Pipistrelle	Vulnerable	High	No	-
Glossopsitta pusilla Little Lorikeet	Vulnerable	High	No	-
Grantiella picta Painted Honeyeater	Vulnerable	Moderate	No	-
Haliaeetus leucogaster White-bellied Sea-Eagle (Foraging)	Vulnerable	High	No	-
Hieraaetus morphnoides Little Eagle (Foraging)	Vulnerable	Moderate	No	-
Hirundapus caudacutus White-throated Needletail	Vulnerable – EPBC Act	High	No	-
Lathamus discolour Swift Parrot (Foraging)	Endangered	Moderate	No	-
Melanodryas cucullata cucullata Hooded Robin (south-eastern form)	Vulnerable	Moderate	No	-

Scientific Name	BC Act Status	Sensitivity to Gain	Excluded from Assessment	Reason for Exclusion from Assessment
Melithreptus gularis gularis Black-chinned Honeyeater (eastern subspecies)	Vulnerable	Moderate	No	-
Miniopterus orianae oceanensis Large Bent-winged Bat (Foraging)	Vulnerable	High	No	-
Ninox connivens Barking Owl (Foraging)	Vulnerable	High	No	-
Ninox strenua Powerful Owl (Foraging)	Vulnerable	High	No	-
Pachycephala olivacea Olive Whistler	Vulnerable	Moderate	No	-
Petroica boodang Scarlet Robin	Vulnerable	Moderate	No	-
Petroica phoenicea Flame robin	Vulnerable	Moderate	No	-
Pteropus poliocephalus Grey-headed Flying-fox (Foraging)	Vulnerable	High	No	-
Saccolaimus flaviventris Yellow-bellied Sheathtail-bat	Vulnerable	High	No	-
Stagonopleura guttata Diamond Firetail	Vulnerable	Moderate	No	-
Suta flagellum Little Whip Snake	Vulnerable	High	No	-
Tyto novaehollandiae Masked Owl (Foraging)	Vulnerable	High	No	-
Varanus rosenbergi Rosenberg's Goanna	Vulnerable	High	No	-

4.2 Candidate Species Credit Species Summary

This section provides a summary of the candidate species credit for the Subject Land derived from BAMC (DPE 2024f). A summary of the targeted survey effort applied to each species is provided along with the results of the survey effort, specifically whether or not the species credit needs to be offset through retiring of Biodiversity Offset Credits (**Table 14**).

Table 14. Candidate Fauna Credit Species predicted to occur within the Subject Land.

Scientific Name	Included in Assessment?	Targeted Survey conducted?	Present within Subject Land?	Biodiversity Risk Weighting	Biodiversity Offset Credits Required?
Anthochaera phrygia Regent Honeyeater (Breeding)	No, the Subject Land is not included on the map of important areas for Regen Honeyeater. Therefore, this species was excluded from the assessment.	NA	NA	Very High – 3	No
Chalinolobus dwyeri Large-eared Pied Bat	No. The SAII threshold for this species is breeding habitat. Potential breeding habitat is vegetation within 100m of rocky areas containing caves, or overhangs or crevices, cliffs or escarpments, or old mines, tunnels, culverts, derelict concrete buildings. As such habitat constraints are not present within the Subject Land, this species was excluded from the assessment.	NA	NA	Very High – 3	No
Lathamus discolour Swift Parrot (Breeding)	No, the Subject Land is not included on the map of important areas for Swift Parrot. Therefore, this species was excluded from the assessment.	NA	NA	Very High – 3	No
Miniopterus orianae oceanensis Large Bent-winged Bat (Breeding)	No. The SAII threshold for this species is breeding habitat. This species is known to breed in caves, tunnels, mines and culverts. No caves, tunnels, mines or culverts exist within the Subject Land. As such, this species was excluded from the assessment.	NA	NA	Very High – 3	No
Mixophyes balbus Stuttering Frog	No. This species is found in rainforest and wet, tall open forest in the foothills and escarpment on the eastern side of the Great Dividing Range (DPIE 2020c). No such habitat was present within the Subject Land, this in conjunction with no proximal records (DPE 2024d) located within 10km of the Subject Land makes the presence of this species highly unlikely and why it has been excluded from the assessment.	NA	NA	Very High- 3	No

Scientific Name	Included in Assessment?	Targeted Survey conducted?	Present within Subject Land?	Biodiversity Risk Weighting	Biodiversity Offset Credits Required?
Petrogale penicillata Brush-tailed Rock-wallaby	No. The SAII threshold for this species is any impacts on rocky habitat that it could use. The Subject Land does not have such habitat and is not expected to occur within 1km of such habitat. As such habitat constraints are not present within the Subject Land, this species was excluded from the assessment.	NA	NA	Very High- 3	No

4.3 Species Credit Surveys

Surveys for SAII species credit species and their habitats were undertaken for species considered likely to have suitable habitat within the Subject Land (**Figure 12**). These surveys were conducted in accordance with Section 5.3 of the BAM and all relevant OEH and DPE threatened species survey guidelines.

Targeted surveys were undertaken on the 17th October 2023 by experienced Narla Ecologists, Chris Moore and Kayla Spithoven, within the Subject Land and the areas adjacent. Weather conditions taken from the nearest weather station (Goulburn, station no. 070263) in the lead up and during the field survey are outlined in **Table 15**. Minimal rainfall leading up to the site assessment may not have been conducive for the survey of threatened flora should they occur within the Subject Land; however numerous species were observed flowering at the time of the assessment.

Table 15. Weather conditions taken from the nearest weather stations (Station number 070263) in the lead up and during the field survey (BOM 2024). Survey date is in bold.

Timing/activities	Date	Day	Temperature		Rainfall (mm)
			Min	Max	
Lead up to the survey	10/10/2023	Tuesday	3.5	22.2	0
	11/10/2023	Wednesday	9.6	23.4	0
	12/10/2023	Thursday	-0.1	27.5	0
	13/10/2023	Friday	5.2	15.5	2.6
	14/10/2023	Saturday	7.8	18.2	0
	15/10/2023	Sunday	1.5	19.6	0
	16/10/2023	Monday	2.9	15.0	0
Site Assessment & Habitat Survey	**17/10/2023**	**Tuesday**	**-1.8**	**17.4**	**5.6**

4.3.1 Fauna Species Credit Survey

Six (6) threatened SAII threatened fauna species were identified within the BAMC (DPE 2024f) as having the potential to occur within the Subject Land. None of the predicted species were surveyed for due to the following (BAM Section 5.2.2, DPIE 2020a):

- The assessor determined that none of the habitat constraints for the species are present on the entire Subject Land. No further assessment is required for that species. The assessor must record their reasoning for this determination in the BDAR.

4.3.2 Flora Species Credit Survey

Zero (0) SAII threatened flora species were identified by the BAMC (DPE 2024f) as having the potential to occur within the Subject Land.

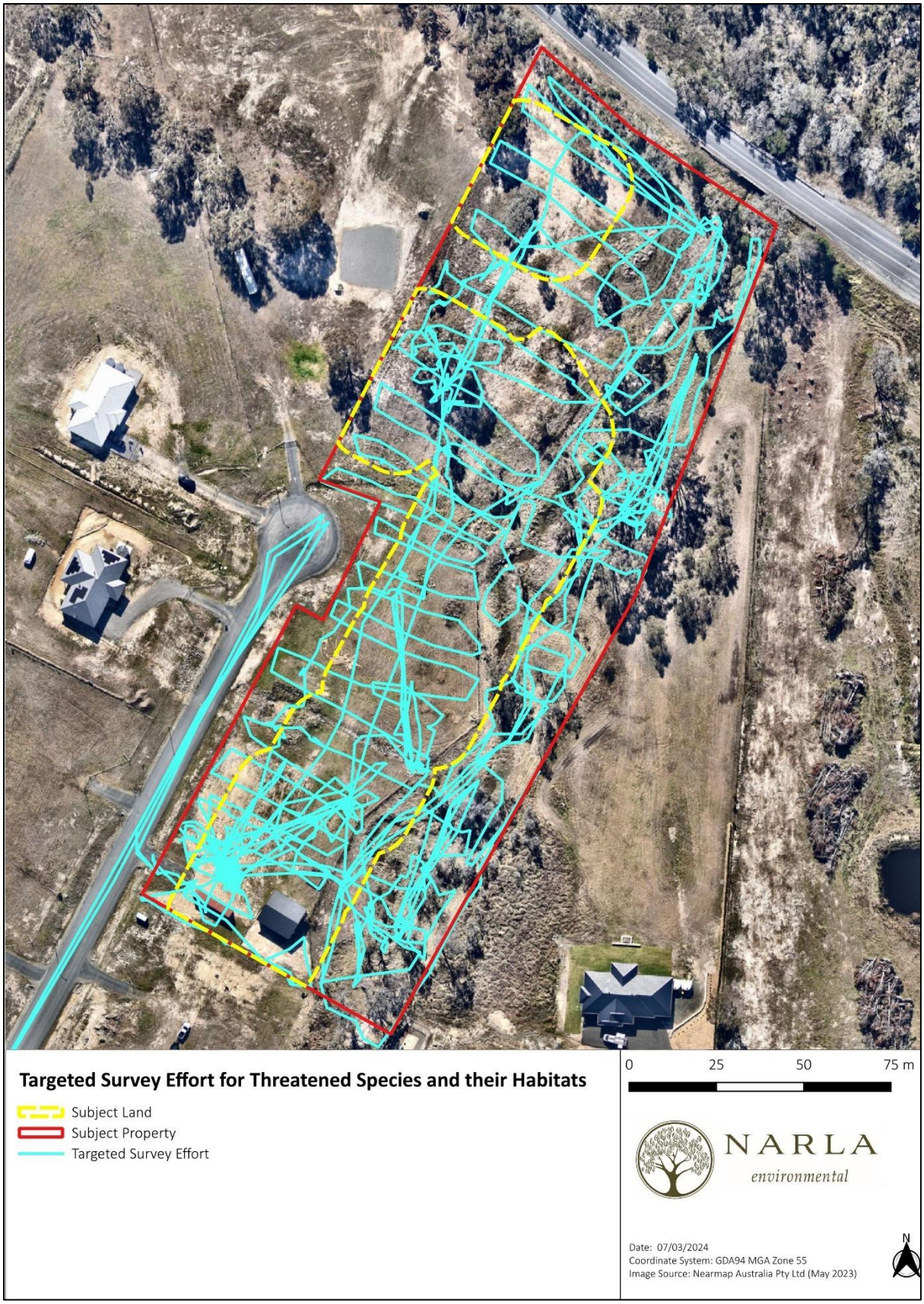

Figure 12. Targeted survey effort for species credit species and their habitats within the Subject Land.

5. Prescribed Impacts

Certain projects may have impacts on biodiversity values in addition to, or instead of, impacts from clearing vegetation and/or loss of habitat. For many of these impacts, the biodiversity values may be difficult to quantify, replace or offset, making avoiding and minimising impacts critical. Prescribed biodiversity impacts require an assessment of the impacts of the development on the habitat of threatened species or ecological communities. This is discussed in Table 16.

Table 16. Prescribed and uncertain impacts associated with the proposed subdivision.

Will there be impacts on any of the following?	Yes/No	If Yes, Address all of the assessment questions from section 6 of the BAM
Habitat of threatened entities including: ▪ karst, caves, crevices, cliffs, rocks and other geological features of significance, or ▪ human-made structures, or ▪ non-native vegetation.	Yes	There are no karsts, caves, crevices, cliffs, rocks and other features of geological significance, on the Subject Land. The Subject Land contains a current dwelling, that will be removed as part of the proposed subdivision. A number of threatened microbat species may utilise the roof space for roosting and breeding, including: ▪ *Falsistrellus tasmaniensis* (Eastern False Pipistrelle); ▪ *Micronomus norfolkensis* (Eastern Coastal Free-tailed Bat); ▪ *Saccolaimus flaviventris* (Yellow-bellied Sheathtail-bat); and ▪ *Scoteanax rueppellii* (Greater Broad-nosed Bat). Non-native vegetation was present within the Subject Land in the form of common agricultural weeds, it is not anticipated that this provides habitat for threatened entities.
On areas connecting threatened species habitat, such as movement corridors.	No	It is unlikely the proposed subdivision will interrupt connectivity for any threatened species, as extensive areas of habitat connectivity will continue to exist in the areas surrounding the Subject Land and Subject Property. The remaining remnant vegetation within the Subject Land that is not proposed for removal will be managed as an APZ, which will still provide connectivity for potentially occurring threatened species
That affect water quality, water bodies and hydrological processes that sustain threatened entities (including from subsidence or upsidence from underground mining).	No	There are no confirmed threatened species and ecological communities within the Subject Land that are sustained by water bodies and hydrological processes. It is also not expected that the removal of vegetation within the Subject Land will impact upon any groundwater processes within the surrounding landscape.

Will there be impacts on any of the following?	Yes/No	If Yes, Address all of the assessment questions from section 6 of the BAM
On threatened and protected animals from turbine strikes from a wind farm.	No	No wind farms are associated with the proposed subdivision.
On threatened species or fauna that are part of a TEC from vehicle strikes.	No	It is unlikely that the proposed subdivision will result in an increase in vehicle strikes in the area owing to the small nature of the works and the low speeds that would be required when accessing the property.

6. Avoid, Minimise and Mitigate Impacts

6.1 Impact Mitigation and Minimisation Measures

This section details the measures to be implemented before, during and post construction to avoid and minimise the impacts of the project (**Table 17**).

Table 17. Mitigation and management of impacts associated with the proposed subdivision.

Action	Outcome	Timing	Responsibility
Avoid and Minimise Impact- Project Location and Design	Owing to the vegetated nature of the property, complete avoidance of impacts was not possible. The proposed subdivision however has been sited to minimise impacts as much as possible, by choosing modest building envelopes that largely utilise the more cleared areas of the property. The initial plan for the proposed subdivision was for the creation of 10 lots and for the whole property to be managed as an IPA. However, consultation occurred with Narla Environmental during the design phase of the proposed subdivision, which saw the proposal reduced to nine (9) lots and the proposed APZs reduced to 12m surrounding the building envelopes in lots 1-6 and 8-9 and 16m in lot to minimise impacts to native vegetation. The proposed design has also avoided any wholesale clearing occurring within areas mapped as containing the Critically Endangered Ecological Community White Box- Yellow Box- Blakely's Red Gum Grassy Woodland with impacts to this area being restricted to minor APZ management.	Pre-construction phase	Proponent
Assigning a Project Ecologist for Vegetation Clearing	Prior to construction, the applicant should commission the services of a qualified and experienced Ecologist Consultant (minimum 3 years' experience) with a minimum tertiary degree in Science, Conservation, Biology, Ecology, Natural Resource Management, Environmental Science or Environmental Management. The Ecologist must be licensed with a current Department of Primary Industries Animal Research Authority permit and New South Wales Scientific License issued under the BC Act. The Ecologist will be commissioned to: ▪ Undertake a pre-clearing assessment to identified any habitat required to be removed;	Pre-construction phase	Proponent Project Ecologist

Action	Outcome	Timing	Responsibility
	▪ Roof assessment of building to be removed for microbat species; and ▪ Supervise the clearance of vegetation in order to capture, treat and/or relocate any displaced fauna.		
Preparation of a Vegetation Management Plan (VMP)	A Vegetation Management Plan (VMP) is to be prepared by a suitably qualified restoration ecologist for the vegetation along the eastern boundary of the Subject Property outside of the Subject Land. This will ensure all potentially occurring indirect impacts to adjacent sensitive vegetation is minimised while maintaining the remaining biodiversity features of the property into the future.	Pre-construction phase	Proponent Project Ecologist
Habitat Replacement	Any hollows bearing trees required to be removed as a result of the proposed subdivision are to be replaced by artificial nest boxes prior to vegetation removal elsewhere within the Subject Property to ensure no net loss of habitat occurs.	Pre-construction phase	Proponent Project Ecologist
Tree Protections	Australian Standard 4970 (2009) Protection of Trees on Development Sites (AS-4970) outlines that a Tree Protection Zone (TPZ) is the principal means of protecting trees on construction sites. It is an area isolated from construction disturbance so that the tree remains viable. Ideally, works should be avoided within the TPZ. A Minor Encroachment is less than 10% of the TPZ and is outside the SRZ. A Minor Encroachment is considered acceptable by AS-4970 when it is compensated for elsewhere and contiguous within the TPZ. A Major Encroachment is greater than 10% of the TPZ or inside the SRZ. Major Encroachments generally require root investigations undertaken by non-destructive methods or the use of tree sensitive construction methods. Tree protection fencing is to be installed around all trees to be retained prior to construction works.	Pre-construction phase	Proponent

Action	Outcome	Timing	Responsibility
APZ Management	The APZ within the Subject Land must be maintained to meet the vegetation attributes as outlined in Table 12, to uphold future vegetation integrity scores. This includes: ▪ Strategic removal or trimming of canopy trees to ensure that canopy composition and stem size classes are retained across management zones where possible; and ▪ Conducting the trimming/slashing of native groundcovers and grasses post-seeding to allow for continued regeneration.	Construction and post-construction phase	Proponent Bushfire Consultant Arborist
Removal of 10/50 Entitlement from the Subject Property.	As an APZ is proposed within each lot, the NSW Rural Fire Service 10/50 Clearing Entitlement should be removed from the newly created lots following development approval. This will protect the vegetation proposed to be retained by the subdivision from any future vegetation clearing around the dwellings under this entitlement.	Pre-construction phase	Proponent Council
Erosion and Sedimentation	Appropriate erosion and sediment control must be erected and maintained at all times during construction in order to avoid the potential of incurring indirect impacts on biodiversity values. As a minimum, such measures should comply with the relevant industry guidelines such as 'the Blue Book' (Landcom 2004).	Construction phase	Proponent Construction Contractor
Erection of temporary fencing	Temporary fencing should be erected around retained native vegetation that may incur indirect impacts on biodiversity values due to the construction works.	Construction phase	Proponent Construction Contractor
Storage and Stockpiling (Soil and Materials)	Allocate all storage, stockpile and laydown sites away from any native vegetation that is planned to be retained. Avoid importing any soil from outside the site as this can introduce weeds and pathogens to the site in order to avoid the potential of incurring indirect impacts on biodiversity values.	Construction phase	Construction Contractors
Stormwater	Potential impacts relating to stormwater and runoff will be managed during construction and operation phases. The CEMP will guide stormwater management during the construction phase of development.	Post-construction phase	Proponent Construction Contractors/ Architect

7. Assessment of Impacts

7.1 Direct Impacts

7.1.1 Full Clearing

The proposed subdivision will require the complete clearing of:

- 0.13ha from Vegetation Zone 1: PCT 3738 – Moderate Condition (Canopy and Regenerating Vegetation);
- 0.13ha from Vegetation Zone 2: PCT 3738 – Low Condition (Historically Cleared Regenerating Vegetation); as well as:
- 0.20ha of Historically Cleared Exotic Dominated Vegetation.

7.1.2 Partial Clearing (IPA)

The proposed subdivision will require the IPA maintenance of:

- 0.33ha from Vegetation Zone 1: PCT 3738 – Moderate Condition (Canopy and Regenerating Vegetation);
- 0.31ha from Vegetation Zone 2: PCT 3738 – Low Condition (Historically Cleared Regenerating Vegetation); and;
- 0.07ha from Vegetation Zone 3: PCT 3376 – Low Condition (Remnant Canopy Above Disturbed Understory).

7.1.1 Prescribed Impacts

As there is potential for the Subject Land to contain habitat for a number of threatened microbat species in the form of human-made structures (**Figure 13**), an assessment of this prescribed impact must be undertaken in accordance with Section 8.3 of the BAM (DPIE 2020a). This is discussed in **Table 18**.

Figure 13. Prescribed impacts within the Subject Land.

Table 18. Prescribed and uncertain impacts associated with the proposed development.

Prescribed Impact	Nature, Extent and Duration	Threatened Species and Their Habitat Likely to be Impacted	Consequences of the Impacts on Threatened Entities
Habitat of threatened entities: ▪ human-made structures.	There is the potential that threatened microbat species use human-made structures (in particular, roof cavities) within the Subject Land for roosting and potentially breeding. The demolition of these structures has the potential to temporarily displace any occurring individuals. These species are highly mobile and there is ample suitable roosting/breeding habitat nearby. It is therefore likely that this prescribed impact will have a low impact of short duration To manage these impacts works should be conducted during warmer months (not winter), with a pre-clearing survey conducted for microbats in the roof space of the building prior to demolition. If any individuals are found to be present, they are to be captured the morning of demolition works, and released at night time into surrounding bushland following demolition works.	▪ *Falsistrellus tasmaniensis* (Eastern False Pipistrelle); ▪ *Micronomus norfolkensis* (Eastern Coastal Free-tailed Bat); ▪ *Saccolaimus flaviventris* (Yellow-bellied Sheathtail-bat); and ▪ *Scoteanax rueppellii* (Greater Broad-nosed Bat).	While the demolition of potential roost/breeding sites may temporarily displace local populations of threatened microbats, these species are highly mobile with large areas of habitat continuing to exist in the broader locality, which would provide alternative roost/ breeding sites. As such, any impacts would be considered minor and temporary.

7.2 Indirect Impacts

Indirect impacts occur when the proposal or activities relating to the construction or operation of the proposal affect native vegetation, threatened ecological communities and threatened species habitat beyond the Subject Land. Impacts may also result from changes to land-use patterns, such as an increase in vehicular access and human activity on native vegetation, threatened ecological communities and threatened species habitat. The indirect impacts associated with the proposed subdivision are outlined in **Table 19.**

Table 19. Indirect impacts associated with the proposed subdivision.

Indirect Impact	Nature, Extent and Duration	TEC's/PCTs and/or Threatened Species and Their Habitat Likely to be Impacted	Consequences of the Impacts for the Bioregional Persistence of the Threatened Species, Threatened Ecological Communities and Their Habitats.
(a) inadvertent impacts on adjacent habitat or vegetation	Vegetation and habitat directly adjacent to the Subject Land has the potential to experience ongoing indirect impacts as a result of the proposed subdivision. The proposed subdivision may increase surface run-off into the adjacent vegetation and habitat which may in turn result in weed infestations.	Plant Community Type 3738 and the TEC White Box- Yellow Box- Blakely's Red Gum Grassy Woodland adjacent to the Subject Land. There is the potential that threatened species occur in areas adjacent to the Subject Land that may be impacted by a decrease in habitat condition.	While changes to vegetation condition may have a localised impact to PCTs, TECs, threatened species and their habitats, this is not expected to impact on their bioregional persistence. Furthermore, a VMP will be prepared to ensure any potential impacts are kept to a minimum.
(b) reduced viability of adjacent habitat due to edge effects	The proposed construction and on-going human-use of the Subject Land may lead to an increase in weed infiltration into adjacent habitat due to enhanced edge effects. This impact is likely to be restricted to the immediate area surrounding the Subject Land to a couple of metres.	Plant Community Type 3738 and the TEC White Box- Yellow Box- Blakely's Red Gum Grassy Woodland adjacent to the Subject Land. There is the potential that threatened species occur in areas adjacent to the Subject Land that may be impacted by edge effects leading to a reduced viability in habitat.	While edge effects may have a localised impact to PCTs, TECs, threatened species and their habitats, this is not expected to impact on their bioregional persistence considering the large habitat connectivity within the surrounding areas. Furthermore, a VMP will be prepared to ensure any

Indirect Impact	Nature, Extent and Duration	TEC's/PCTs and/or Threatened Species and Their Habitat Likely to be Impacted	Consequences of the Impacts for the Bioregional Persistence of the Threatened Species, Threatened Ecological Communities and Their Habitats.
			potential impacts are kept to a minimum.
(c) reduced viability of adjacent habitat due to noise, dust or light spill	An increase in noise is to be expected during construction and the ongoing human-use associated with the proposed subdivision. As the Subject Land is located in a rural area, this may have an impact on any species foraging or roosting adjacent to the site during the day/night that are not adapted to such noises. It is not expected that construction would occur throughout the night, and as such would not impact on nocturnal species that may utilise adjacent habitat, or diurnal species that roost in adjacent habitat. The construction may increase dust in adjacent habitat. Dust can impact on a plant's ability to photosynthesise and may increase plant mortality in the adjacent vegetation. It is expected that the construction would occur during normal working hours and as such, light spill is not expected to affect adjacent habitat. Occupation of the area following construction, may result in a decrease in the viability of the adjacent habitat due to increases in noise and light associated with dwellings.	Plant Community Type 3738 and the TEC White Box- Yellow Box- Blakely's Red Gum Grassy Woodland adjacent to the Subject Land. There is also the potential that threatened species occur in areas adjacent to the Subject Land that may be impacted by an increase in dust spill into adjacent habitats.	While the construction and ongoing utilisation may have a localised impact to PCTs, TECs, threatened species and their habitats, this is not expected to impact on their bioregional persistence, considering large areas of habitat connectivity allows them to move away from impacted areas. Furthermore, a VMP will be prepared to ensure any potential impacts are kept to a minimum.

Indirect Impact	Nature, Extent and Duration	TEC's/PCTs and/or Threatened Species and Their Habitat Likely to be Impacted	Consequences of the Impacts for the Bioregional Persistence of the Threatened Species, Threatened Ecological Communities and Their Habitats.
(d) transport of weeds and pathogens from the site to adjacent vegetation	As previously discussed, the proposed construction and utilisation of the Subject Land may lead to an increase in weed infiltration into adjacent habitat due to enhanced edge effects. It is however not expected that weeds will be transported via human or vehicular traffic into surrounding areas during construction. Temporary fencing will be erected around retained native vegetation to avoid the introduction of weeds as well as pathogens (Myrtle Rust) from spreading into the adjacent vegetation.	Plant Community Type 3738 and the TEC White Box- Yellow Box- Blakely's Red Gum Grassy Woodland adjacent to the Subject Land. There is the potential that threatened species occur in areas adjacent to the Subject Land that may be impacted by a decrease in habitat condition.	While weeds may have a localised impact to PCTs, TECs, threatened species and their habitats, this is not expected to impact on their bioregional persistence considering the large habitat connectivity within the surrounding areas. The introduction of pathogens such as myrtle rust, has the potential to detrimentally impact native vegetation. This impact will be mitigated through the installation of exclusion fencing around vegetation to be retained and the implementation of a VMP.
(e) increased risk of starvation, exposure and loss of shade or shelter	It is highly unlikely that any threatened fauna would be exposed to increased risks from starvation, exposure, and loss of shade and shelter as a result of the proposed subdivision. No habitat is proposed to be impacted beyond the Subject Land, although disturbances from noise during construction and operation may deem such habitats unsuitable for certain species.	N/A	N/A

Indirect Impact	Nature, Extent and Duration	TEC's/PCTs and/or Threatened Species and Their Habitat Likely to be Impacted	Consequences of the Impacts for the Bioregional Persistence of the Threatened Species, Threatened Ecological Communities and Their Habitats.
(f) loss of breeding habitats	An increase in noise is to be expected during and post-construction. As such, there is potential for disturbance to breeding habitats directly adjacent to the Subject Land. However, due to the large areas of habitat connectivity in the broader landscape and no habitat removal proposed beyond the Subject Land, it is not expected for this to significantly impact on species inhabiting such areas.	There is potential that threatened fauna species use habitat adjacent to the Subject Land for breeding. Such species may be impacted by a reduction in habitat viability, which may in turn impact on their breeding capacity.	Any impacts to threatened species adjacent to the Subject Land is expected to be localised and will not have an overall impact on the bioregional persistence of threatened species.
(g) trampling of threatened flora species	Although no threatened flora species have been historically recorded directly adjacent to the Subject Land, there is still the potential for such species to exist in these areas. In order to prevent the trampling of threatened flora species that could potentially occur within adjacent habitat, retained vegetation will be demarcated with temporary fencing to avoid impacts associated with construction.	N/A	N/A
(h) inhibition of nitrogen fixation and increased soil salinity	It is unlikely that the inhibition of nitrogen fixation will affect vegetation adjacent to the Subject Land. A small increase in soil salinity may result due to clearing of vegetation leading to the rising of the water table. However, clearing will be limited to the Subject Land and as such is not expected to affect vegetation directly adjacent within the Subject Property.	N/A	N/A

Indirect Impact	Nature, Extent and Duration	TEC's/PCTs and/or Threatened Species and Their Habitat Likely to be Impacted	Consequences of the Impacts for the Bioregional Persistence of the Threatened Species, Threatened Ecological Communities and Their Habitats.
(i) fertiliser drift	This issue is not likely to affect the vegetation surrounding the Subject Land.	N/A	N/A
(j) rubbish dumping	There is the possibility that rubbish dumping (including littering) in adjacent vegetation increases during construction and occupation. The dumping/littering of food resources may provide a food source for fauna, including threatened species. However, this may also encourage invasive species into such habitats. This impact can be mitigated by the appropriate disposal of rubbish.	There is potential that threatened fauna species use habitat adjacent to the Subject Land. Such species may be impacted by the dumping of rubbish, particularly food resources. This may result in both positive (food source) and negative impacts (increase in predators) to such species.	This impact is expected to be localised and will not have an overall impact on the bioregional persistence of the threatened species.
(k) wood collection	It is unlikely that the proposed subdivision will increase wood collection in the vegetation surrounding the Subject Land.	N/A	N/A
(l) bush rock removal and disturbance	This issue is not likely to affect the vegetation surrounding the Subject Land.	N/A	N/A
(m) increase in predatory species populations	There is potential that predatory species, such as foxes and cats, already inhabit areas surrounding the Subject Land. There is the possibility that other indirect impacts, such as an increase in rubbish dumping, may encourage predatory species into the area.	There is potential that threatened fauna species use habitat adjacent to the Subject Land. Such species may be impacted by an increase in predatory species populations.	As predatory species are already likely to utilise the areas surrounding the Subject Land any increase as a result of the development is expected to be localised and will not have an overall

Indirect Impact	Nature, Extent and Duration	TEC's/PCTs and/or Threatened Species and Their Habitat Likely to be Impacted	Consequences of the Impacts for the Bioregional Persistence of the Threatened Species, Threatened Ecological Communities and Their Habitats.
			impact on the bioregional persistence of the threatened species.
(n) increase in pest animal populations	There is potential that pest animal populations already inhabit areas surrounding the Subject Land. There is the possibility that other indirect impacts, such as an increase in rubbish dumping, may encourage an increase in pest animal populations.	There is potential that threatened fauna and flora species use habitat adjacent to the Subject Land. Such species may be impacted by an increase in pest animal populations.	As pest species are already likely to utilise the areas surrounding the Subject Land any increase as a result of the development is expected to be localised and will not have an overall impact on the bioregional persistence of the threatened species.
(o) increased risk of fire	The Subject Land is identified by the NSW RFS as being within bushfire prone land. Whilst an increase in human occupation within the area may increase the risk of fire, an APZ has been proposed within each new lot to protect the proposed building envelopes from adjacent bushfire prone vegetation. It is not expected that this will significantly alter the bushfire risk of vegetation surrounding the Subject Land.	N/A	N/A
(p) disturbance to specialist breeding and foraging habitat, e.g., beach nesting for shorebirds.	No specialist breeding and foraging habitat was observed immediately adjacent to the Subject Land. Furthermore, no vegetation is proposed for removal outside of the Subject Land.	N/A	N/A

8. Threshold for Assessing and Offsetting

8.1 Impacts on Native Vegetation

The following native vegetation within the Subject Land is proposed to be impacted as a result of the proposed subdivision (areas have been rounded up by the BAMC):

- 0.46ha from Vegetation Zone 1: PCT 3738 – Moderate Condition (Canopy and Regenerating Vegetation);
- 0.44ha from Vegetation Zone 2: PCT 3738 – Low Condition (Historically Cleared Regenerating Vegetation); and;
- 0.07ha from Vegetation Zone 3: PCT 3376 – Low Condition (Remnant Canopy Above Disturbed Understory).

The purchase and retirement of Biodiversity Offset Credits will be required for the following native vegetation within the Subject Land (**Figure 14**):

- 0.46ha from Vegetation Zone 1: PCT 3738 – Moderate Condition (Canopy and Regenerating Vegetation); and
- 0.07ha from Vegetation Zone 3: PCT 3376 – Low Condition (Remnant Canopy Above Disturbed Understory).

No offsets area required for impacts to the vegetation within Zone 2 owing to the low VIS Score. Similarly, no offsets are required to the vegetation mapped as Historically Cleared Exotic Dominated Vegetation owing to its exotic nature.

8.2 Impacts on Threatened Species

No threatened species will require the purchase and retirement of Biodiversity Offset Credits.

Figure 14. Impacts on native vegetation and Ecosystem Credits offset requirements.

8.3 Serious and Irreversible Impacts (SAII's)

One (1) threatened ecological community within the Subject Land has been identified as an entity at risk of an SAII in the Threatened Biodiversity Data Collection (DPE 2024e):

- White Box – Yellow Box – Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions

8.3.1 White Box – Yellow Box – Blakely's Red Gum

Due to the sensitivity of this TEC to any impact, a determination of whether or not the proposed impacts are serious and irreversible is to be undertaken in accordance with Section 9.1 of the BAM (DPIE 2020a) is required. This is outline in **Table 20**.

Table 20. Additional impact assessment provisions for ecological communities that are associated with a serious and irreversible impact.

Serious and Irreversible Impact (SAII) Impact assessment provisions for ecological communities: White Box – Yellow Box – Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions (WBYBBRG)	
BC Act Status: Critically Endangered	
a) the action and measures taken to avoid the direct and indirect impact on the potential entity for a SAII	The proposed subdivision design has avoided any wholesale clearing occurring within areas mapped as containing the Critically Endangered Ecological Community White Box- Yellow Box- Blakely's Red Gum Grassy Woodland with impacts to this area being restricted to minor APZ management.
b) the area (ha) and condition of the threatened ecological community (TEC) to be impacted directly and indirectly by the proposed development. The condition of the TEC is to be represented by the vegetation integrity score for each vegetation zone	The proposed development will impact on approximately 0.07ha of vegetation from Zone 3: Low Condition (Remnant Canopy Above Disturbed Understory) that conformed to this TEC. Vegetation Zone 3 comprised of a native canopy above a historically disturbed mid and ground layer, largely comprised of exotic species with only minor occurrences of native species present. The zone was in low condition, with a VI Score of 26.9 There is the potential for the proposed subdivision to have an indirect impact on areas of WBYBBRG not being removed surrounding the Subject Land. However, the implementation of the mitigation measures proposed in **Table 17**, will ensure any indirect impacts are kept to a minimum.
c) the extent and overall condition of the potential TEC within an	Mapping from the NSW State Vegetation Type Map (DPE 2022) indicates the presence of approximately 257.51ha of WBYBBRG within an area of

Serious and Irreversible Impact (SAII) Impact assessment provisions for ecological communities: White Box – Yellow Box – Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions (WBYBBRG)		
BC Act Status: Critically Endangered		
area of 1,000ha, and then 10,000ha, surrounding the proposed development footprint	1,000ha surrounding the Subject Land, and 1291.78ha of WBYBBRG within an area of 10,000ha surrounding the Subject Land. The WBYBBRG within these areas largely comprises fragmented patches of varying sizes. The conditions of these patches cannot be determined without ground truthing, although are expected to be partially degraded due to their positioning within a residential landscape.	
d) an estimate of the extant area and overall condition of the potential TEC remaining in the IBRA subregion before and after the impact of the proposed development has been taken into consideration	The NSW State Vegetation Type Map (DPE 2022) indicates approximately 6,650.21ha of WBYBBRG occurs within the Bungonia IBRA Subregion. This comprises fragmented patches of varying sizes. The conditions of these patches cannot be determined without ground truthing. Overall, the impact of the proposed subdivision will result in the management of 0.07ha of WBYBBRG from the Bungonia subregion accounting for approximately 0.001% of the extant area of WBYBBRG in the Bungonia IBRA Subregion. This will result in approximately 6,650.14ha of WBYBBRG remaining within the Bungonia IBRA Subregion after the proposed subdivision.	
e) an estimate of the area of the candidate TEC that is in the reserve system within the IBRA region and the IBRA subregion	Less than 10% of the WBYBBRG is protected within the national reserve system (Threatened Species Scientific Committee 2006).	
f) the development, clearing or biodiversity certification proposal's impact on:	i) abiotic factors critical to the long-term survival of the potential TEC; for example, how much the impact will lead to a reduction of groundwater levels or the substantial alteration of surface water patterns	The proposed subdivision has the potential to alter the natural hydrology occurring within and surrounding the Subject Land due to excavation works during construction. This may alter water runoff levels and increase nutrients into adjacent areas of WBYBBRG, causing an increase in weed infestations. However, owing to the

Serious and Irreversible Impact (SAII) Impact assessment provisions for ecological communities: White Box – Yellow Box – Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions (WBYBBRG)		
BC Act Status: Critically Endangered		
		altered nature of the vegetation adjacent to the Subject Land this is not expected to a significant impact.
	ii) characteristic and functionally important species through impacts such as, but not limited to, inappropriate fire/flooding regimes, removal of understorey species or harvesting of plants	The areas of WBYBBRG within the Subject Land are of a low quality with a native canopy above a heavily disturbed understory. Fire and flood regimes have been largely altered due to surrounding land uses that have occurred in the area. Therefore, it is highly unlikely that the proposed subdivision will exacerbate impacts on characteristic and functionally important species as the area is already altered. It is not expected that the proposed subdivision will impact any characteristic and functionally important species outside of the Subject Land.
	iii) the quality and integrity of an occurrence of the potential TEC through threats and indirect impacts including, but not limited to, assisting invasive flora and fauna species to become established or causing regular mobilisation of fertilisers, herbicides or other chemicals or pollutants which may harm or inhibit growth of species in the potential TEC	The proposed subdivision may enhance weed infiltration into adjacent habitat by an increase in edge effects. However, owing to the number of exotic species already present within the vegetation adjacent to the Subject Land this is not expected to a significant impact. It is therefore not expected that the quality and integrity of adjacent WBYBBRG will be significantly reduced by the proposed development.

Serious and Irreversible Impact (SAII) Impact assessment provisions for ecological communities: White Box – Yellow Box – Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions (WBYBBRG)	
BC Act Status: Critically Endangered	
g) direct or indirect fragmentation and isolation of an important area of the potential TEC	The WBYBBRG within the Subject Land and surrounds occurs within a 'Priority Management Area' as defined under the Saving our Species Program (DPIE 2020d).
h) the measures proposed to contribute to the recovery of the potential TEC in the IBRA subregion.	The Saving our Species Program (DPIE 2020d) has identified various measures proposed to manage key threats to conserve this ecological community, including: ▪ Identify and map derived native groundcover remnants to inform future restoration and management. ▪ Supplement lost timber with other woody debris, such as debris from approved clearing impacts. ▪ Supplement lost timber with other woody debris, such as debris from approved clearing impacts. ▪ Where appropriate, increase woodland patch sizes and condition, and reconnect fragmented patches using appropriate landscape configurations, plant species and provenances. Enhance structural complexity and remnant size/configuration. Encourage restoration projects to use genetic material of appropriate provenance in plantings. Undertake connectivity and restoration planting to provide functional habitat to ensure predation of leaf eating insects by insectivores is occurring at a functional rate. Buffer prone areas with appropriate shrub/tree plantings of a sufficient density to mitigate the impacts of blown-on nutrients. Undertake fine scale intervention within remnants such as planting specific species to take up nutrients. ▪ Assist interested landholders to contribute to the recovery of the TEC ▪ Provide landholders with information on appropriate plantings and direct seeding (spacing, provenance, design etc.). Define locally appropriate groundcover condition indices to inform decisions around appropriate grazing regimes. ▪ Consult with landholders about long-term protection and/or restoration via mechanisms such as private land conservation agreements and other conservation mechanisms.

Serious and Irreversible Impact (SAII) Impact assessment provisions for ecological communities: White Box – Yellow Box – Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions (WBYBBRG)	
BC Act Status: Critically Endangered	
	▪ Undertake strategic, coordinated feral predator control of foxes and feral cats, particularly at sites with known key threatened fauna populations that are at risk of predation. Undertake coordinated management of feral pigs, goats, horses, deer and other feral herbivores in line with best management practice. ▪ Install fencing and signage as required to reduce impacts and educate the public on damage associated with recreational activities, dumping and other anthropogenic activities such as firewood collection and 'cleaning up'. A number of impact mitigation measures are to be implemented by the proponent before, during and after construction to avoid and minimise the impacts of the proposed development on WBYBBRG (see Table 17).

9. Biodiversity Offset Credit Requirements

The preferred approach to offset the residual impacts of the proposal is to purchase and retire the appropriate species credits from registered Biodiversity Stewardship Sites that comply with the trading rules of the NSW BOS in accordance with the 'like for like' report generated by the BAM calculator. If such credits are unavailable, credits would be sourced in accordance with the 'variation report' generated by the BAMC.

A payment to the Biodiversity Conservation Trust (BCT) would be considered as a contingency option if a suitable number and type of biodiversity credits cannot be secured.

9.1 Offset Requirement for Ecosystem Credits

A total of four (4) ecosystem credits are required to offset the biodiversity impacts of the proposed subdivision (Table 21).

Table 21. Ecosystem credits required to offset the proposed subdivision.

Plant Community Type (PCT)	BC Act Status	Vegetation Zone	Total Area (ha)	Ecosystem Credits Required
PCT 3738: Goulburn-Lithgow Tableland Hills Grassy Forest	Not a TEC	Zone 1 – Moderate Condition	0.46	3
	Not a TEC	Zone 2 – Low Condition	0.44	0
PCT 3376: Southern Tableland Grassy Box Woodland	White Box – Yellow Box – Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions	Zone 3 – Low Condition	0.07	1
			Total Ecosystem Credits	**4**

9.2 Offset Requirement for Species Credits

No candidate SAII species credit species will require offsetting through the retiring of biodiversity offset species credits under the BOS as a result of the proposed subdivision.

10. Other Relevant Legislation and Planning Policies

10.1 State Environmental Planning Policy (Biodiversity and Conservation): Chapter 4 Koala Habitat Protection 2021

This Policy aims to encourage the conservation and management of areas of natural vegetation that provide habitat for koalas to support a permanent free-living population over their present range and reverse the current trend of koala population decline. This Chapter applies to LGAs that are listed in Schedule 2 'Local government areas' of the SEPP. As the Goulburn Mulwaree LGA is included in Schedule 2, this Chapter applies to the Subject Land. As such, the development control provisions of Part 4.2 of the SEPP apply to development applications relating to the land, as the land:

- Has an area of at least 1 hectare (including adjoining land within the same ownership); and
- Does not have an approved koala plan of management applying to the land.

Before a council may grant consent to a development application for consent to carry out development on the land, the council must assess whether the development is likely to have any impact on koalas or koala habitat. If the council is satisfied that the development is likely to have low or no impact on koalas or koala habitat, the council may grant consent to the development application.

A site assessment was undertaken to determine whether the land contained core koala habitat, which is defined by the SEPP as:

a) an area of land which has been assessed by a suitably qualified and experienced person as being highly suitable koala habitat and where koalas are recorded as being present at the time of assessment of the land as highly suitable koala habitat, or

b) an area of land which has been assessed by a suitably qualified and experienced person as being highly suitable koala habitat and where koalas have been recorded as being present in the previous 18 years.

Although the Subject Land contained suitable habitat (where 15% or greater of the total number of trees are the regionally relevant species of those listed in Schedule 3 of the SEPP), no signs of koala's or koala occupancy (scats, scratch marks) were observed within the Subject Land and there are no Koala records within 2.5km of the Subject Land in the last 18 years. It was therefore determined that the Subject Land was unlikely to contain core koala habitat, and no further assessment under the SEPP (i.e. Koala Assessment Report) should be required.

10.2 State Environmental Planning Policy (Resilience and Hazards): Chapter 2- Coastal Management

State Environmental Planning Policy (Resilience and Hazards): Chapter 2- Coastal Management applies to land within the coastal zone. The coastal zone means the area of land comprised of the following coastal management areas:

- The coastal wetlands and littoral rainforests area;
- The coastal vulnerability area;
- The coastal environment area; or
- The coastal use area.

As the Subject Land does not occur within any of these listed areas, this chapter of the SEPP does not apply.

11. References

Aboriginal Land Council (2024) Land Council Interactive Map https://alc.org.au/land-council-map/

AKT Engineering and Consulting (2023) Subdivision Plan: Lot 26 Corriedale Drive Marulan

Australian Government Department of the Environment and Energy (2018) Interim Biogeographic Regionalisation for Australia (IBRA), Version 7 (Subregions)

Australian Bureau of Meteorology (BOM) (2024) Goulburn, New South Wales. October 2023 Daily Weather Observations

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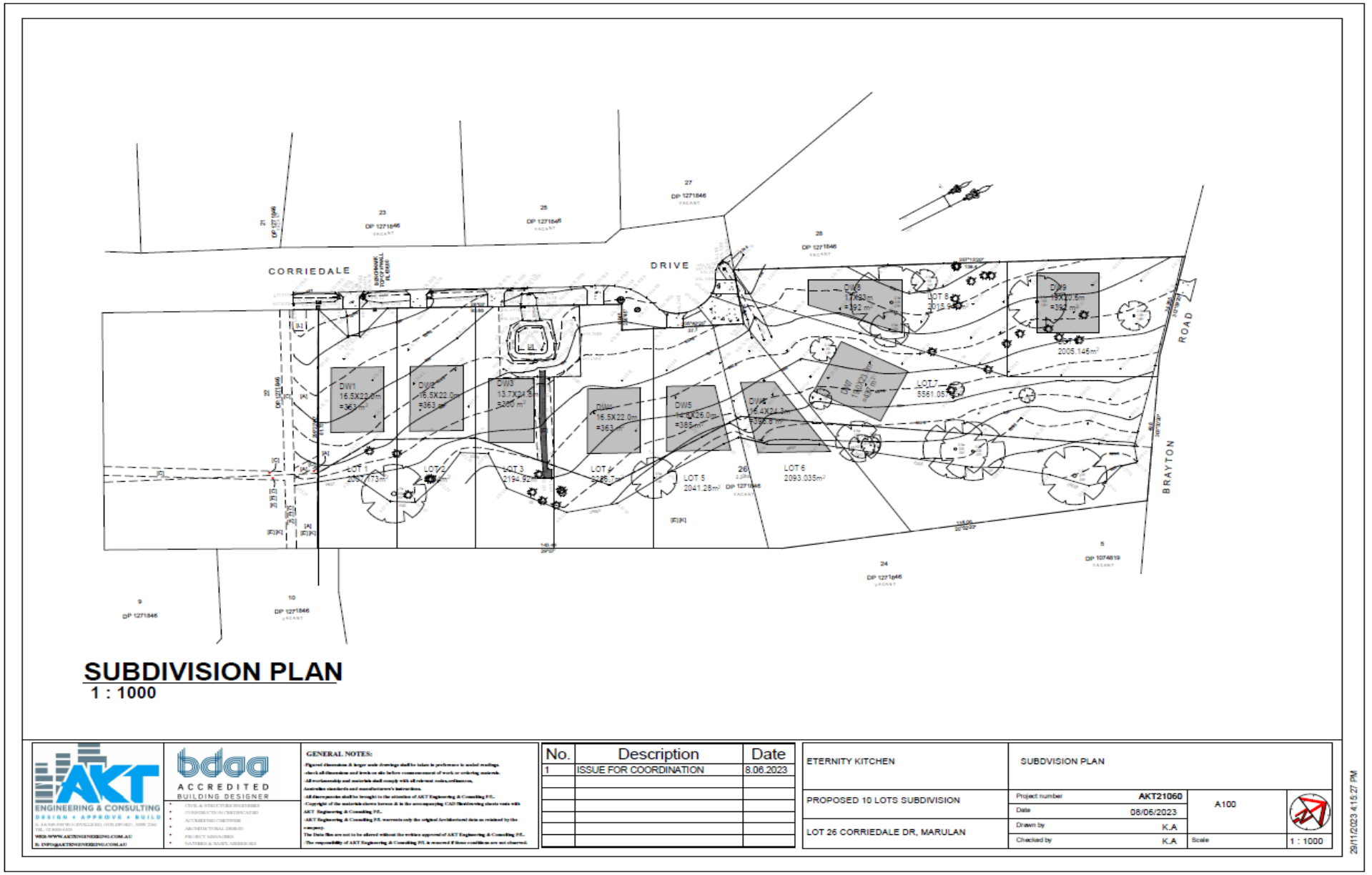
12. Appendices

Appendix A. Subdivision Plan (AKT Engineering and Consulting 2023).
Appendix B. Historically Cleared Exotic Dominated Vegetation Plots- Field Survey Forma (copied directly from Electronic Data Sheet).
Appendix C. BAM Site- Field Survey Forma (copied directly from Electronic Data Sheet).
Appendix D. BAMC Generated Biodiversity Credit Report.

Appendix A. Subdivision Plan (AKT Engineering and Consulting 2023).



Appendix B. Historically Cleared Exotic Dominated Vegetation Plots- Field Survey Forma (copied directly from Electronic Data Sheet).

BAM Site – Field Survey Form					
Date:	17.10.23	**Plot ID:**	plot 1	**Photo #:**	0
Zone:	55H	**Plot Dimensions:**	20m x 50m	**Easting:**	774368.53 m E
Datum:	GDA 94	**Middle bearing from 0m:**	249	**Northing:**	6157110.18 m S
PCT:	Historically Cleared Exotic Dominated Vegetation				

Growth Form	Scientific Name	Cover	Abundance
Exotic	*Holcus lanatus*	7	400
Exotic	*Briza minor*	5	1000
Exotic	*Hypochaeris radicata*	1	300
Exotic	*Vulpia bromoides*	15	150000
Exotic	*Rumex acetosella*	0.3	30
Exotic	*Trifolium repens*	0.1	10
Grass & grasslike (GG)	*Juncus spp.*	0.1	2
Exotic	*Plantago lanceolata*	0.1	10
Exotic	*Lolium perenne*	0.2	20
High Threat Exotic (HTE)	*Rubus fruticosus sp. agg.*	0.1	1
Exotic	*Medicago spp.*	0.1	20
Forb (FG)	*Wahlenbergia communis*	0.1	5
High Threat Exotic (HTE)	*Nassella trichotoma*	0.2	10
Grass & grasslike (GG)	*Eragrostis brownii*	0.1	3
Exotic	*Gamochaeta spp.*	0.3	30
Exotic	*Cirsium vulgare*	0.1	1
Exotic	*Arctotheca calendula*	0.1	1

DBH	# Tree Stems Count	# Hollow Bearing Trees
80+cm	0 =	0
50-79cm	0	
30-49cm	0	
20-29cm	0	
10-19cm	0	
5-9cm	0	
<5cm	0	

Length of Logs (m)	0

BAM Attribute (1x1m)	Litter Cover (%)
1 (5m)	1
2 (15m)	1
3 (25m)	1
4 (35m)	1
5 (45m)	1
Average	1

Growth Form	Composition Data (Count of Native Cover)	Structure Data (Sum of Cover)
Tree	0	0
Shrub	0	0
Grass	2	0.2
Forb	1	0.1
Fern	0	0
Other	0	0
High Threat Exotics	2	0.3

Appendix C. BAM Site- Field Survey Forma (copied directly from Electronic Data Sheet).

BAM Site – Field Survey Form					
Date:	17.10.2023	**Plot ID:**	plot 2	**Photo #:**	0
Zone:	55H	**Plot Dimensions:**	20m x 50m	**Easting:**	774386.88 m E
Datum:	GDA 94	**Middle bearing from 0m:**	355	**Northing:**	6157116.63 m S
PCT:	Vegetation Zone 2: PCT 3738 – Low Condition (Historically Cleared Regenerating Vegetation)				

Growth Form	Scientific Name	Cover	Abundance
Forb (FG)	*Chrysocephalum apiculatum*	3	300
Shrub (SG)	*Kunzea parvifolia*	5	30
Grass & grasslike (GG)	*Lomandra multiflora subsp. Multiflora*	0.1	1
Shrub (SG)	*Cassinia arcuata*	0.1	3
Exotic	*Vulpia bromoides*	40	40000
Exotic	*Hypochaeris radicata*	1	100
Exotic	*Holcus lanatus*	0.5	20
Exotic	*Briza minor*	0.5	30
Grass & grasslike (GG)	*Rytidosperma spp.*	0.1	5
Exotic	*Medicago spp.*	0.1	20
Forb (FG)	*Gonocarpus teucrioides*	0.2	5
Forb (FG)	*Wahlenbergia communis*	0.1	2
Forb (FG)	*Centella asiatica*	0.1	10
High Threat Exotic (HTE	*Rubus fruticosus sp. agg.*	0.1	1
Exotic	*Trifolium repens*	0.1	20
Shrub (SG)	*Leptospermum spp.*	0.3	5
Exotic	*Anthoxanthum odoratum*	0.2	30
Exotic	*Digitaria sanguinalis*	0.1	5
Forb (FG)	*Pimelea curviflora var. sericea*	0.3	30
Shrub (SG)	*Brachyloma daphnoides*	0.2	4
Exotic	*Gamochaeta spp.*	0.1	5

	# Tree Stems Count	# Hollow Bearing Trees
80+cm	0	0
50-79cm	0	
30-49cm	0	
20-29cm	0	
10-19cm	0	
5-9cm	0	
<5cm	0	

Length of Logs (m)	0

BAM Attribute (1x1m)	Litter Cover (%)
1 (5m)	5
2 (15m)	3
3 (25m)	1
4 (35m)	1
5 (45m)	2
Average	2.4

Growth Form	Composition Data (Count of Native Cover)	Structure Data (Sum of Cover)
Tree	0	0
Shrub	4	5.6
Grass	2	0.2
Forb	5	3.7
Fern	0	0
Other	0	0
High Threat Exotics	1	0.1

BAM Site – Field Survey Form					
Date:	17.10.23	**Plot ID:**	plot 3	**Photo #:**	0
Zone:	55H	**Plot Dimensions:**	20m x 50m	**Easting:**	774393.89 m E
Datum:	GDA 94	**Middle bearing from 0m:**	25	**Northing:**	6157225.69 m S
PCT:	PCT 3738 – Moderate Condition (Canopy and Regenerating Vegetation)				

Growth Form	Scientific Name	Cover	Abundance
Tree (TG)	*Eucalyptus mannifera*	12	3
Grass & grasslike (GG)	*Poa sieberiana*	20	50
Shrub (SG)	*Kunzea parvifolia*	2	20
Shrub (SG)	*Dillwynia sericea*	3	30
Forb (FG)	*Gonocarpus teucrioides*	0.5	50
Forb (FG)	*Goodenia hederacea*	0.5	50
Shrub (SG)	*Daviesia leptophylla*	0.3	2
Forb (FG)	*Chrysocephalum apiculatum*	0.1	3
Shrub (SG)	*Pimelea linifolia*	0.2	5
Shrub (SG)	*Brachyloma daphnoides*	0.2	5
Shrub (SG)	*Leptospermum polygalifolium*	1	3
Exotic	*Hypochaeris radicata*	0.1	5
Grass & grasslike (GG)	*Lomandra multiflora subsp. Multiflora*	0.2	5
Forb (FG)	*Hovea heterophylla*	0.1	1
Shrub (SG)	*Acacia spp.*	0.5	4
Shrub (SG)	*Lissanthe strigosa subsp. strigosa*	0.2	5
Forb (FG)	*Patersonia sericea*	1	20
Shrub (SG)	*Platylobium formosum subsp. formosum*	0.2	10
Grass & grasslike (GG)	*Aristida vagans*	0.3	30
Exotic	*Taraxacum officinale*	0.1	5
Grass & grasslike (GG)	*Lomandra obliqua*	0.1	0

	# Tree Stems Count	# Hollow Bearing Trees
80+cm	1	1
50-79cm	0	
30-49cm	present	
20-29cm	present	
10-19cm	present	
5-9cm	present	
<5cm	present	

Length of Logs (m)	5

BAM Attribute (1x1m)	Litter Cover (%)
1 (5m)	90
2 (15m)	60
3 (25m)	30
4 (35m)	30
5 (45m)	5
Average	43

Growth Form	Composition Data (Count of Native Cover)	Structure Data (Sum of Cover)
Tree	1	12
Shrub	9	7.6
Grass	4	20.6
Forb	5	2.2
Fern	0	0
Other	0	0
High Threat Exotics	0	0

BAM Site – Field Survey Form					
Date:	17.10.2023	**Plot ID:**	plot 4	**Photo #:**	0
Zone:	55H	**Plot Dimensions:**	20m x 50m	**Easting:**	774446.93 m E
Datum:	GDA 94	**Middle bearing from 0m:**	23	**Northing:**	6157189.57 m
PCT:	Vegetation Zone 3: PCT 3376 – Low Condition (Remnant Canopy Above Disturbed Understory)				

Growth Form	Scientific Name	Cover	Abundance
Tree (TG)	*Eucalyptus blakelyi*	10	7
Tree (TG)	*Eucalyptus mannifera*	3	3
Tree (TG)	*Eucalyptus cinerea*	2	3
Exotic	*Holcus lanatus*	7	70
High Threat Exotic (HTE)	*Rubus fruticosus sp. agg.*	2	20
Exotic	*Anthoxanthum odoratum*	5	100
Exotic	*Vulpia bromoides*	10	1000
Grass & grasslike (GG)	*Juncus spp.*	1	100
Exotic	*Briza minor*	0.5	50
Shrub (SG)	*Leptospermum polygalifolium*	0.2	1

	# Tree Stems Count	# Hollow Bearing Trees
80+cm	2	1
50-79cm	2	0
30-49cm	present	0
20-29cm	present	0
10-19cm	present	0
5-9cm	present	0
<5cm	present	0

Length of Logs (m)	2

BAM Attribute (1x1m)	Litter Cover (%)
1 (5m)	30
2 (15m)	20
3 (25m)	30
4 (35m)	10
5 (45m)	15
Average	21

BAM Site – Field Survey Form					
Date:	17.10.2023	**Plot ID:**	plot 5	**Photo #:**	0
Zone:	55H	**Plot Dimensions:**	20m x 50m	**Easting:**	774382.40 m E
Datum:	GDA 94	**Middle bearing from 0m:**	25	**Northing:**	6157070.79 m S
PCT:	PCT 3738 – Moderate Condition (Canopy and Regenerating Vegetation)				

Growth Form	Scientific Name	Cover	Abundance
Tree (TG)	*Eucalyptus mannifera*	7	4
Tree (TG)	*Eucalyptus cinerea*	4	3
Exotic	*Holcus lanatus*	10	1000
High Threat Exotic (HTE)	*Rubus fruticosus sp. agg.*	3	300
Exotic	*Anthoxanthum odoratum*	2	200
Shrub (SG)	*Kunzea parvifolia*	0.5	10
Grass & grasslike (GG)	*Juncus spp.*	0.2	20
Exotic	*Hypochaeris radicata*	0.2	20
Exotic	*Plantago lanceolata*	0.2	20
Exotic	*Briza minor*	0.5	50
Forb (FG)	*Gonocarpus teucrioides*	0.2	40
Shrub (SG)	*Cassinia arcuata*	0.2	3
Grass & grasslike (GG)	*Poa sieberiana*	1	50
Grass & grasslike (GG)	*Themeda triandra*	0.1	3
Shrub (SG)	*Brachyloma daphnoides*	0.1	3
Tree (TG)	*Acacia dealbata subsp. dealbata*	1	3
High Threat Exotic (HTE)	*Cyperus eragrostis*	0.2	20
Exotic	*Hippuris vulgaris*	1	100
Exotic	*Medicago spp.*	0.1	10
Exotic	*Lactuca serriola*	0.1	1
Exotic	*Sonchus oleraceus*	0.1	3
Exotic	*Vulpia bromoides*	1	100
Forb (FG)	*Centella asiatica*	0.1	5
Exotic	*Rumex crispus*	0.1	3

	# Tree Stems Count	# Hollow Bearing Trees
80+cm	1	1
50-79cm	0	
30-49cm	present	
20-29cm	present	
10-19cm	present	
5-9cm	present	
<5cm	present	

Length of Logs (m)	15

BAM Attribute (1x1m)	Litter Cover (%)
1 (5m)	5
2 (15m)	10
3 (25m)	10
4 (35m)	15
5 (45m)	5
Average	9

Growth Form	Composition Data (Count of Native Cover)	Structure Data (Sum of Cover)
Tree	3	12
Shrub	3	0.8
Grass	3	1.3
Forb	2	0.3
Fern	0	0
Other	0	0
High Threat Exotics	2	3.2

Appendix D. BAMC Generated Biodiversity Credit Report.

BAM Biodiversity Credit Report (Like for like)

Proposal Details

Assessment Id 00043865/BAAS21009/24/00046614	Proposal Name Lot 26 Corriedale Drive Marulan	BAM data last updated * 14/03/2024
Assessor Name Christopher Moore	Assessor Number BAAS21009	BAM Data version * 67
Proponent Names Oscar Merhebi	Report Created 15/04/2024	BAM Case Status Finalised
Assessment Revision 0	Assessment Type Part 4 Developments (Small Area)	Date Finalised 15/04/2024
BOS entry trigger BOS Threshold: Area clearing threshold	* 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
White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla	Critically Endangered Ecological Community	3376-Southern Tableland Grassy Box Woodland
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
No Changes

Ecosystem Credit Summary (Number and class of biodiversity credits to be retired)

BAM Biodiversity Credit Report (Like for like)

Name of Plant Community Type/ID	Name of threatened ecological community	Area of impact	HBT Cr	No HBT Cr	Total credits to be retired
3738-Goulburn-Lithgow Tableland Hills Grassy Forest	Not a TEC	0.9	3	0	3
3376-Southern Tableland Grassy Box Woodland	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla	0.1	1	0	1

3376-Southern Tableland Grassy Box Woodland

Like-for-like credit retirement options

Name of offset trading group	Trading group	Zone	HBT	Credits	IBRA region
White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla This includes PCT's: 74, 75, 83, 250, 266, 267, 268, 270, 274, 275, 276, 277, 278, 279, 280, 281,	-	3376_Veg_Zone_3_Low	Yes	1	Bungonia, Bateman, Burragorang, Crookwell, Ettrema, Kanangra, Kybeyan-Gourock, Monaro and South East Coastal Ranges. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

	282, 283, 284, 286, 298, 302, 312, 341, 342, 347, 350, 352, 356, 367, 381, 382, 395, 401, 403, 421, 433, 434, 435, 436, 437, 451, 483, 484, 488, 492, 496, 508, 509, 510, 511, 528, 538, 544, 563, 567, 571, 589, 590, 597, 599, 618, 619, 622, 633, 654, 702, 703, 704, 705, 710, 711, 796, 797, 799, 847, 851, 921, 1099, 1303, 1304, 1307, 1324, 1329, 1330, 1332, 1383, 1606, 1608, 1611, 1691, 1693, 1695, 1698, 3314, 3359, 3363, 3373, 3376, 3387, 3388, 3394, 3395, 3396, 3397, 3398, 3399, 3406, 3415, 3533, 4147, 4149, 4150					
3738-Goulburn-Lithgow Tableland Hills Grassy 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%	3738_Veg_Zone_1_Moderate	Yes	3	Bungonia, Bateman, Burragorang, Crookwell, Ettrema, Kanangra, Kybeyan-Gourock, Monaro and South East Coastal Ranges. 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%	3738_Veg_Zone_2_Low	No	0	Bungonia, Bateman, Burragorang, Crookwell, Ettrema, Kanangra, Kybeyan-Gourock, Monaro and South East Coastal Ranges. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

Species Credit Summary

No Species Credit Data

BAM Biodiversity Credit Report (Like for like)

Credit Retirement Options

Like-for-like credit retirement options

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environmental

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