BIODIVERSITY DEVELOPMENT ASSESSMENT REPORT (BDAR)

PREPARED FOR

Proposed Residential Subdivision
82 Henry Bayly Drive, Mudgee
O'Ryan GeoSpatial

Access Environmental Planning

April 2023

ACCESS ENVIRONMENTAL PLANNING

Proponent	*Brian Augustus Jones*		
Client	*O'Ryan Geospatial*		
Purchase Order No			
Document Description	*Biodiversity Development Assessment Report: Proposed residential subdivision*		
	Name	*Signed*	*Date*
Clients Reviewing Officer	*Julie Wells*		
Clients' representative managing this document		*Person(s) managing this document*	
		Author Christopher Botfield, Renae Hill *Reviewed by Christopher Botfield* *Approved by Christopher Botfield*	
Location		*82 Henry Bayly Drive, Mudgee*	
Document Status Draft		*30/03/2023*	
Draft V1.0 Author to Editor Access EP 1st Internal edit		*12/06/2023*	
Draft V1.0 Author to Editor Access EP 2nd internal edit		*12/06/2023*	
Draft V2.0 Report Draft for release for comment to client (Client edit and return)		*13/06/2023*	
FINAL once latest version of draft approved by client		*23/06/2023*	
Prepared for: Private Client Name: O'Ryan Geospatial for Brian Jones Ph.: (02) 9057 4101		*Prepared by:* *Renae Hill* *Christopher Botfield* *Access EP* *Ph: 0429 944 430* *Email: chris@accessep.com.au*	

	Renae Hill	*PO Box 686* *Mudgee NSW 2850*	*Grad Dip Env Management CSU 2022* *BAgr UNE Armidale 2006* *BSc(Hons) UoN Newcastle 1994*
	Christopher Botfield	*PO Box 686* *Mudgee NSW 2850*	*B Env Management CSU 1999*

Access Environmental Planning Copyright and Legal Disclaimers

Disclaimer

Whilst every effort has been made to ensure the accuracy of material which appears in this document, Access Environmental Planning (Access EP or AEP) makes no representation in any form as to the completeness or correctness of the information contained herein and cannot accept any legal responsibility for errors, omissions or consequences of any action taken by users of this information. This document is intended to be used as a guide only. Access EP accepts no responsibility or liability whatsoever for any decision, action, loss, damage or otherwise arising from the supply of this information or for the use of or reliance on this information.

Access EP does not warrant the cadastral data generated by third parties such as the NSW Government and notes imagery used to form map layers, provided by NSW Government Spatial Services (SiX Maps), Google and others, may contain outdated information.

Access EP may at any time amend, modify or retract any, or all, of this document including any opinions, conclusions or recommendations. All information contained herein including costings should not be relied upon for construction or any other purpose other than intended.

Copyright

Conflict of interest

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

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

Signature: 

Date: 14/06/2023

BAM Assessor Accreditation no: 23003

Executive Summary

Access Environmental Planning Pty Ltd (AEP) was commissioned by the proponent to prepare a Biodiversity Development Assessment Report (BDAR) for the proposed new residential subdivision at Mudgee. Inclusions for the assessment and reporting are as prescribed by the NSW Biodiversity Conservation (BC) Act 2016 and the corresponding Biodiversity Assessment Method (BAM) 2020.

The proposal

This proposal involves provision of two additional vacant subdivided lots, the existing house on a separate lot, consideration of bushfire planning for the new and existing developments and asset protection zone (APZ) for bushfire risk mitigation.

Proponent	*O'Ryan Geospatial for Brian Augustus Jones*
Proposal	*New residential subdivision*
Property Location	*82 Henry Bayly Drive, Mudgee, NSW 2850*
Cadastre	*Lot 216 / DP 756894*
Land use zoning	*R2 Low density residential*
Latitude and longitude	*Lat -32.611381 Long 149.57164*
Accredited Assessor	*Christopher Botfield (BAAS No. 18023); Renae Hill (BAAS No. 23003)*

Biodiversity Offset Scheme

The Biodiversity Offset Scheme (BOS) has an area threshold trigger providing an allowance for clearing native vegetation based on the minimum lot size of the property or its associated land zoning. It has an additional trigger which is based on whether the property for the proposed development is identified on the NSW State Biodiversity Values Map (BVM). If the proposed development requires more native vegetation clearance than the area threshold or the proposed development area is on the BVM then the development requires a Biodiversity Assessment resulting in a Biodiversity Development Assessment Report (BDAR). This will determine the Biodiversity Offset Credit (BOC) obligation. A small area of the property is identified as having high biodiversity value and is included on the BVM, so the BOS is triggered and a BDAR is necessary. The BOS scheme allows compensatory measures to be assessed and calculated in an effort to mitigate the loss of ecological value caused by development.

The environment

Vegetation at the site is predominantly dry sclerophyll forest with modified woody areas and sections of grassland that has a high proportion of exotic grasses and weeds. The development site has undergone past management activities that have altered the structure of the existing native vegetation community and groundcover diversity in some places. The Plant Community Type (PCT) found at the proposed development site is PCT 273, *White box shrubby open forest on fine grained sediments on steep slopes in the Mudgee region of the central western slopes of NSW*. There are no threatened ecological communities (TEC) associated with this plant community or found at the site.

Biodiversity Offsets Scheme summary

Site status, habitat suitability factors and efforts to minimise impacts from the development activities, mean threatened species are unlikely to be significantly impacted by site changes. The assessed condition means **15 ecosystem credits** are required to offset the biodiversity impacts of the proposal. Effects of indirect and prescribed impacts will be limited by the implementation of recommended safeguards. While the regent honeyeater is identified with potential serious and irreversible impacts (SAII) the composition and integrity of the existing vegetation, the location of the development – avoiding the zone identified on the Important Areas map and scale of the proposal means that proposed development will not exacerbate factors that contribute to these effects.

Glossary of Terms and Abbreviations

Term	Meaning
APZ	Asset Protection Zone
BAM	Biodiversity Assessment Method
BAM-C	Biodiversity Assessment Method Calculator (online)
BDAR	Biodiversity Development Assessment Report
BC Act	Biodiversity Conservation Act 2016
BOC	Biodiversity Offset Credit
BOS	Biodiversity Offset Scheme
BVM	Biodiversity Values Map
DCCEEW	Department Climate Change, Energy, the Environment and Water
DPE	Department of Planning and Environment
DPIE	Department of Planning, Industry and Environment
EEC	Endangered Ecological Community
EMP	Environmental Management Plan
EP&A Act	Environmental Planning and Assessment Act 1979
EP&A Reg	Environmental Planning and Assessment Regulation 2021
EPA	Environment Protection Authority
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999
EPI	Environmental Planning Instrument
FM Act	Fisheries Management Act 1994
GIS	Geographic Information System
IBRA	Interim Biogeographic Regionalisation of Australia
KTP	Key Threatening Processes
LEP	Local Environmental Plan
LGA	Local Government Area
MNES	Matters of National Environmental Significance
MWRC	Mid-Western Regional Council
NP&W Reg	National Parks and Wildlife Regulation 2009
NP&W Act	National Parks and Wildlife Act 1974
PCT	Plant Community Type
PMST	Protected Matters Search Tool
POEO	Protection of the Environment Operations Act 1997
REP	Regional Environmental Plan
RF Act	Rural Fires Act 1997
SAII	Serious and Irreversible Impacts
SCA	State Conservation Area
SEED	Sharing and Enabling Environmental Data
SEPP	State Environmental Planning Policy
TEC	Threatened Ecological Community
WARR Act	Waste Avoidance and Resource Recovery Act 2001
Note: DPE	Superseded DPIE, previously replacing Office of Environment and Heritage (OEH)

Contents

Figures

Tables

1. INTRODUCTION

Scope

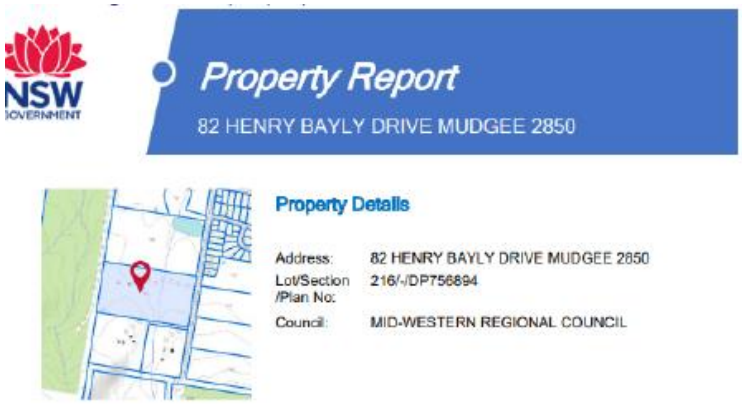
Access Environmental Planning (AEP) was engaged on behalf of the proponent to undertake a Biodiversity Development Assessment Report (BDAR) as specified under the NSW Biodiversity Conservation (BC) Act 2016 using the Biodiversity Assessment Method (BAM) (DPE 2020). This assessment has been undertaken to support a Development Application (DA) for a proposed new residential subdivision (the Proposal) at 82 Henry Bayly Drive, Mudgee NSW, within Lot 216 DP 756894.

Where used throughout this report –

- 'Development Site' is the subject land and describes the area to be directly impacted by the proposed development on Lot 216/-/DP 756894 (**Figure 2**),
- 'the Property' describes the entire land parcel at 82 Henry Bayly Drive (**Figures 2 and 4**) and
- 'the Assessment Area' includes the Development Site and a 1500 metre (m) buffer from the outside edge of the Development Site's boundary (**Figure 5**).

Project Background

The Proposal is located over a small proportion of Lot 216 / DP 756894 at 82 Henry Bayly Drive, Mudgee. The land is owned by the proponent and is in an area zoned as low density residential (R2) in the Mid-Western Regional Council (MWRC) Local Environmental Plan (LEP) 2012.



There is an existing residential dwelling on the property that will remain. The proposal will make provision for two additional land parcels for the future development of habitable residential structures, amenities and services.

The Property is 5.0 hectares (ha) (**Figure 2**) of which only less than one fifth (approximately 16 %) is the Development Site, planned to include two residential lots for future dwelling construction, associated infrastructure and bushfire Asset Protection Zones (APZs). Currently, the Property use is mainly residential with natural bushland areas. Vegetation is a combination of managed areas, grassland and dry sclerophyll forest and while the vegetation across the Property has differences in quality, the Development Site vegetation has been disturbed and has degraded ecological quality features compared to other upslope areas. In conjunction with the existing house, shed and driveway the existing formed infrastructure consists only of a farm dam, power supply / power poles, access tracks and rural boundary fencing.

Local Context

The Development Site occurs within the MWRC Local Government Area (LGA) and is located approximately 2.6 kilometres (km) south west of Mudgee town centre. Surrounding lands include lower slopes of Mount Misery, open paddocks and residential areas. Predominantly woody vegetation exists to the south and west, which incorporates the Avisford Nature Reserve (south 1.5 km distant) and the Mudgee Common (west 2.3 km).

Proposed development

The proposed development consists of a new residential subdivision with associated APZs. There is access to the existing dwelling with planned access for the additional land parcels directly to the public road (Henry Bayly Drive). The site plan prepared by O'Ryan Geospatial, dated December 2022, is shown in **Figure 4**.

The Biodiversity Offsets Scheme (BOS) applies to the development because parts of the Property are identified on the Biodiversity Values Map (BVM) (**Figure 3**) which automatically triggers assessment under the BOS when these areas may be impacted. These same zones are listed as important areas for the critically endangered regent honeyeater.

The Proposal has a capital investment value of approximately $250 000, with future housing development to be completed with an unknown time frame.

Key construction activities for the Proposal include:

- Subdivision of the existing lot creating two additional lots and three lots overall,
- Installation of driveway and site access,
- Installation of water services,
- Electrical cabling, connection and provision of power,
- Provision of Asset Protection Zone (APZ) for bushfire risk mitigation.

Site details / selection

The Property contains existing lots within Mid-Western Regional Local Government Area (LGA) and is identified on the NSW Planning Portal as follows:

- Address: 82 HENRY BAYLY DRIVE MUDGEE NSW 2850
- Development Site –Lot/Section/Plan number: 216/-/756894
- Council: MID-WESTERN REGIONAL (MWRC)
- Land Zoning: R2 Low Density Residential
- Bushfire Prone Land – Vegetation Buffer
- Minimum lot size: 2 hectares (ha)
- Actual lot size Lot 216/-/756894: 5.0 ha

The Development Site was selected as it best satisfies subdivision requirements, allowing adequately sized lots with access to a public road, whilst minimising the potential for environmental impacts.
In planning the Development Site, consideration was given to:

- Available house sites on the land with suitable topographic characteristics.
- Proximity to existing electrical infrastructure.
- Bushfire hazard characteristics.
- Other planned land management activities.
- The disturbance to site vegetation and the Avoid, Minimise, Offset hierarchy of the BOS.

Information sources

Documentation and information sources for this assessment include the following.

- Site plans by O'Ryan Geospatial, dated December 2022 (**Figures 4**),
- Mid-Western Regional Council Local Environmental Plan 2012 (pub. 10/08/2012),
- NSW Planning Portal (https://www.planningportal.nsw.gov.au/),
- NSW Government aerial imagery and other spatial data layers including contours, cadastre, etc. (www.maps.six.nsw.gov.au),
- BioNet databases (www.bionet.nsw.gov.au), including BioNet Atlas, threatened species profiles, species records, vegetation classification and the NSW DPE Threatened Biodiversity Data Collection (TBDC),
- The Department of Climate Change, Energy, the Environment and Water (DCCEEW) Protected Matters Search Tool (PMST) for Matters of National Environmental Significance (MNES),
- Flora NSW Online (www.plantnet.rbgsyd.nsw.gov.au) and *Flora of New South Wales* (Vol 1-4, Harden 1991-2002).

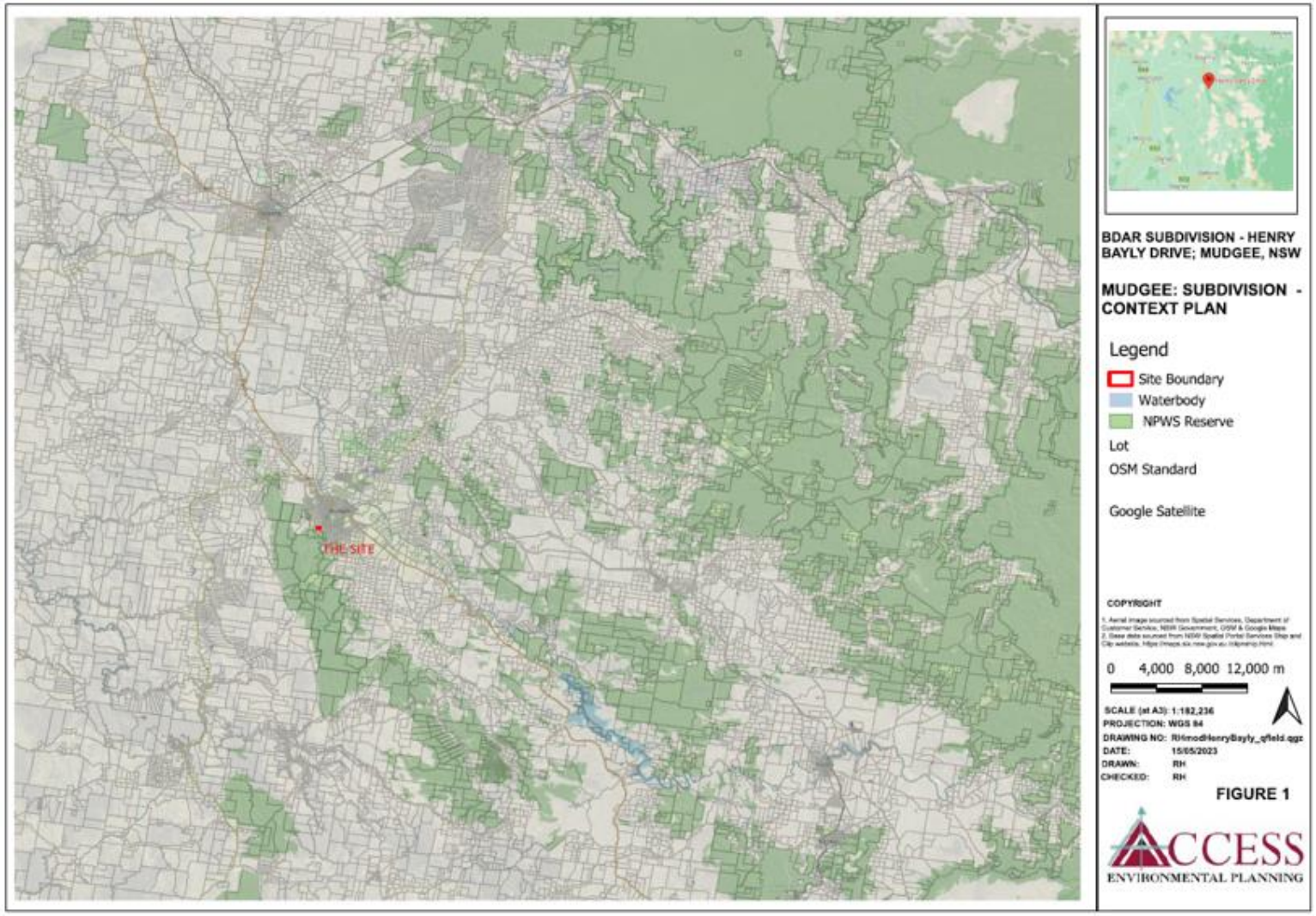


Figure 1: Site context, Henry Bayly Drive Mudgee, NSW.

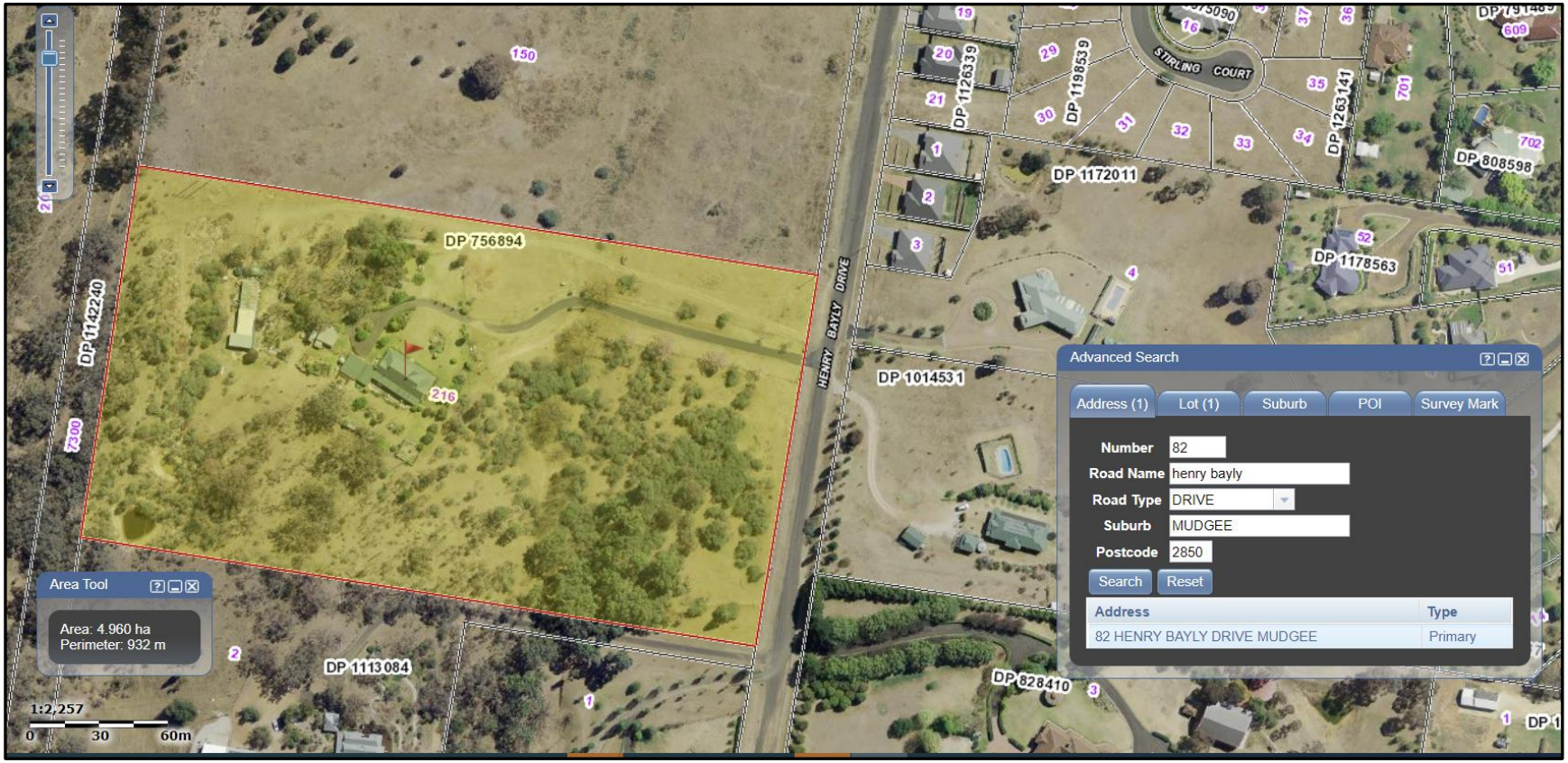


Figure 2: Cadastre and lot size SiX Maps (spatial imagery).

Figure 3: Biodiversity Values Map with relation to the Development Site.

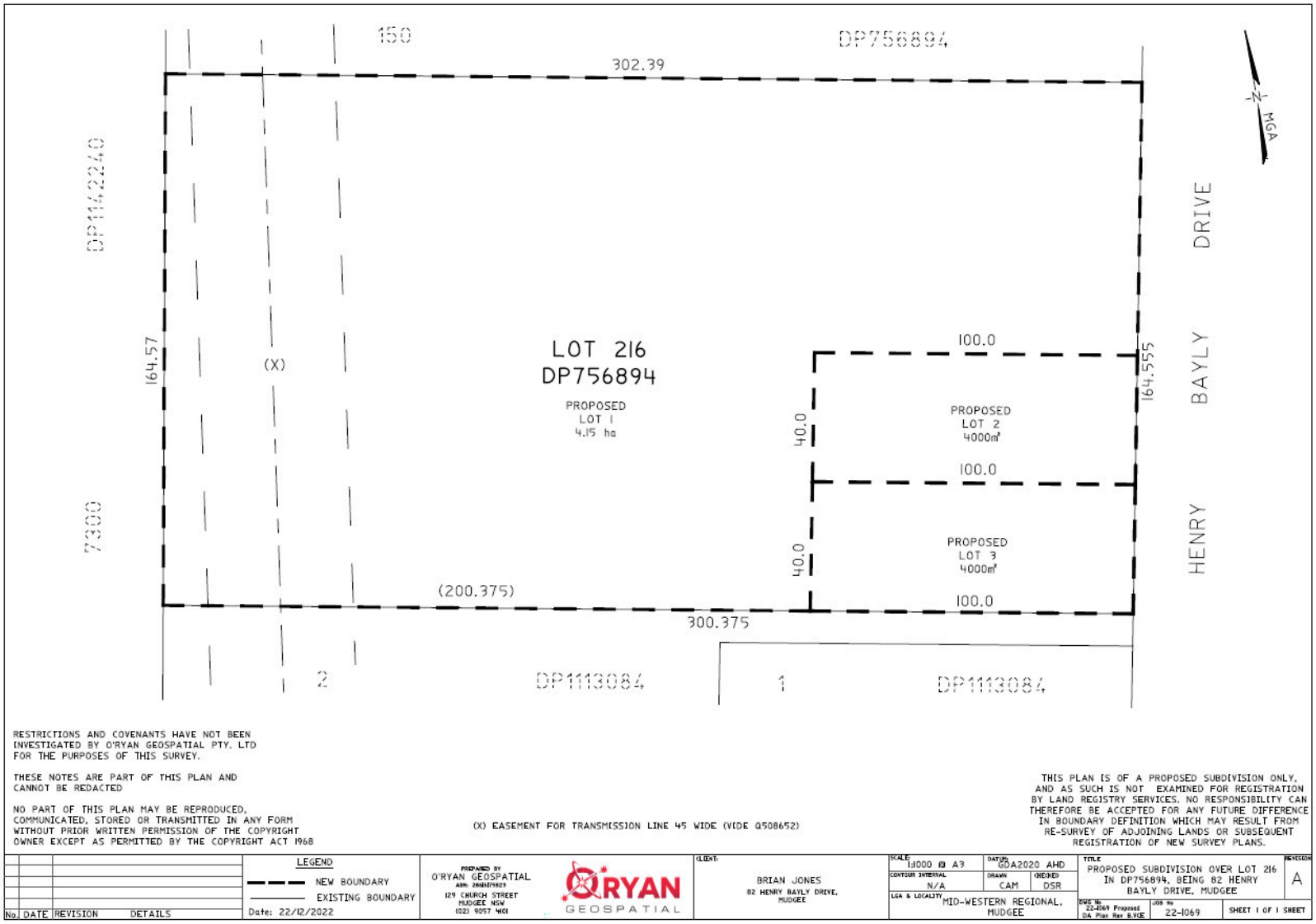


Figure 4: Site plan – additional lots to be created, proposed lot 2 and lot 3.

Consultation

The following consultation has been undertaken for this BDAR:

- Email correspondence, phone discussions and in person contact with the client regarding project details.

Overview of methods

A desktop review of available information including vegetation maps and BioNet Atlas data was undertaken to identify possible native vegetation types and potential threatened species and ecological communities relevant to the site. Predicted species that could be present, including those with suitable habitat at the site, were further assessed under the BAM process.

A site inspection was undertaken on 30/03/2023, by Renae Hill (Accredited BOS Assessor No. 23003), and Aaron Anane of Access Environmental Planning to assess the condition of native vegetation and habitat characteristics found at areas that will be impacted by the development. The following tasks were completed during the site assessment:

- Collation of a flora species list.
- Identification of vegetation communities present at the Development Site.
- Search for predicted threatened flora species and potential habitat for predicted threatened fauna, such as rock outcrops, caves and hollow bearing trees (HBT).

This development has been assessed using the BAM streamlined small areas module which is applicable where the maximum proposed clearing is less than 2 ha when the minimum lot size associated with the property is less than 40 ha but not less than 1 ha and the land is not identified as core koala habitat in a plan of management under the relevant State Environmental Planning Policy.

Author qualifications

In field assessments and report preparation have been conducted by Ms Renae Hill (BAAS No. 23003), an Accredited Biodiversity Assessment Method (BAM) Assessor with oversight by Mr Christopher Botfield.

Mr Christopher Botfield - Principal Access Environment Planning

- Accredited Biodiversity Assessor for the Biodiversity Conservation Act 2016 - BAAS No 18023
- Certified Environmental Practitioner
- B. Environmental Management (B. App.Sc PRH) CSU

Experience in environmental resource and vegetation assessment, Indigenous land management, and landowner consultations. Over 30 years ecological practice and consulting experience in the Central Tablelands, Central West, Far West, North West Slopes and Sydney NSW regions.

Ms Renae Hill - Project Manager

- Accredited Biodiversity Assessor for the Biodiversity Conservation Act 2016 – BAAS No 23003
- Graduate Diploma Environmental Management 2022 CSU
- Bachelor of Agriculture 2006 UNE,
- Bachelor of Science (Hons) 1994 UoN

Ecological practice and consulting experience in the Central Tablelands, Central West, Far West, North West Slopes and Sydney NSW regions, for the past 5 years. Previously 10 years of field agronomy experience, both in the Central West and Hunter regions.

Limitations and assumptions

The following limitations and assumptions of this study are acknowledged.

Not all flora species will have been detected at the site and additional species other than those listed in this report will be present. Some ephemeral or cryptic flora species may have been dormant and not detected at the time of the survey.

Legislative context

Assessment of the Proposal was undertaken in accordance with and in consideration of the following Acts and Policies:

- Commonwealth:
    - Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act).
    - Biosecurity Act 2015;
- State:
    - Biodiversity Conservation Act 2016 (NSW) (BC Act);
    - Biodiversity Conservation Regulation 2017 (NSW) (BC Regulation);
    - Environmental Planning and Assessment Act 1979 (EP&A Act);
    - Local Land Services Act 2013 (LLS Act);
    - Biodiversity Assessment Method (BAM) (DPE, 2020).
- Local:
    - Mid-Western Regional Council Local Environmental Plan 2012 (MWRC LEP 2012),
    - Mid-Western Regional Council Development Control Plan 2013 (MWRC DCP 2013)

EPBC Act 1999

Under the EPBC Act assessment, approval is required for actions that are likely to have a significant impact on matters of national environmental significance (MNES). An action includes a project, development, undertaking, activity, or series of activities. The Act identifies nine MNES:

1. World Heritage properties,
2. National heritage places,
3. Wetlands of international importance (Ramsar Convention),
4. Listed threatened species and communities,
5. Migratory species listed under international agreements,
6. Great Barrier Reef Marine Park,
7. Commonwealth marine areas,
8. Nuclear actions and
9. Water resources in respect to Coal Seam Gas and large coal mines.

While this BDAR is not required to address MNES, the proponent is required to address the EPBC Act as part of their development application. Items 4 and 5 are potentially relevant to this proposal.

EP&A Act 1979

The Environmental Planning and Assessment Act 1979 (NSW) (EP&A Act), the Environmental Planning and Assessment Regulation 2021 (NSW) and associated environmental planning instruments (including State Environmental Planning Policies (SEPPs) and Local Environmental Plans (LEPs)) provide the framework for the assessment of the environmental impact of development proposals in NSW.

BC Act 2016

The BC Act sets out to conserve biodiversity at all levels consistent with the principles of ecologically sustainable development. It seeks to ensure a consistent, scientifically sound methodology for the assessment of biodiversity and to offset the impact of development through a Biodiversity Offset Scheme (BOS). The BC Act lists threatened species and communities, and determining authorities have a statutory obligation under the EP&A Act to consider whether a proposed activity is likely to significantly affect threatened species, populations or ecological communities or their habitats. A BDAR is required for developments if biodiversity values may be impacted.

Biodiversity Assessment Method 2020

The Proposal has been assessed under the BAM (DPE 2020). The Biodiversity Accredited Assessor System (BAAS) Case number for the project is 00040422, with associated BAM Calculator number of 00040422/BAAS23003/23/00040430 Revision 1. The BAM online calculator (BAM-C) version number is 58, updated 14/04/2023.

LLS Act 2013

Legislation with provision for classification of rural land and subsequent treatment of native vegetation on such land. The Property is excluded from LLS provisions due to R2 land zoning (**Figure 8**).

Biosecurity Act 2015

Under the Biosecurity Act 2015 all plants are regulated with a general biosecurity duty "to prevent, eliminate or minimise any biosecurity risk they may pose. Any person who deals with any plant and knows of any biosecurity risk, has a duty to ensure the risk is prevented, eliminated or minimised, so far as is reasonably practicable."

2. LANDSCAPE CONTEXT

The Property is low density residential land located at the south western edge of Mudgee township, with patches of remnant native vegetation on and adjacent to it towards the south and west. It is accessed using Henry Bayly Drive and is located approximately 2.6 km south west of Mudgee town centre (**Figure 1**).

The Property has remnant native dry sclerophyll forest with some exotic plantings, weed incursion and managed areas (**Figures 7 and 10**). The Proposal is to be located on moderately sloping land that has been changed over time by previous land management. The slope for the majority of the Property falls to the east towards an unnamed second order drainage line that runs through the Property. The gradient at the Development Site falls westward towards this same drainage area.

The Development Site is within the Inland Slopes subregion of the NSW South-Western Slopes Interim Biogeographic Regionalisation of Australia (IBRA) bioregion. Subregion landscapes consist of undulating and hilly ranges and isolated peaks amongst wide valleys (DPIE 2020a). Broadly, the vegetation of the subregion consists of woodlands and open woodlands of white box (*Eucalyptus albens*), as well as vegetation communities dominated by grey box (*E. microcarpa*) and white cypress pine (*Callitris glaucophylla*). Other common tree species include red stringybark (*E. macrorhyncha*) on higher slopes, with black cypress pine (*Callitris endlicheri*), kurrajong (*Brachychiton populneus*), yellow box (E. *melliodora*) and Blakely's red gum (*E. blakelyi*) often occupying the lower slopes.

Landscape features

Table 1: Landscape features of the Development Site and Assessment Area

Landscape Features	Development Site
General description	Topography – lower slopes of wooded hills and mountains, the development site slopes to west. The steeper sections of surrounding hills have slopes estimated as 15° (therefore not characterised as steep slopes which are recognised as having slopes greater than 18°). Hydrology – the Property is not identified as being in a vulnerable groundwater zone (MWRC LEP 2012) (**Figure 6**). Geology – Divided into the western section: Silurian sedimentary and volcanic rocks including sandstone and shales with volcanic units from rhyolitic to dacitic lava flows; and the eastern section containing Devonian sedimentary rocks including conglomerate, sandstone, siltstone and mudstone (Sharing and Enabling Environmental Data (SEED) portal (DPIE 2021b)). Soils tend to be chromosols, with strongly contrasting texture between structural horizons. Non-calcic brown soils occur on upper slopes and yellow podzolic soils (which tend to be acidic, erodible and poorly drained) on mid to lower slopes. (Dubbo Soil Landscapes sheet 1:250 000 (Data NSW 2020).
Native vegetation cover	20.2% extant native vegetation cover in Assessment Area (**Figure 7**). Woody native vegetation exists in the nature reserves contained within the Assessment Area. Native vegetation at the Property 1.54 ha, managed vegetation 2.4 ha.
IBRA bioregion	NSW South-Western Slopes (Development Site) (**Figure 5**)
IBRA subregion	Inland Slopes (Development Site)
LGA	Mid-Western Regional
Rivers and streams	Only one minor drainage line, Strahler stream order 2 – within the Development Site and Property (**Figure 5**). The more significant creeks – Kits Gully, Hone Creek (Strahler stream order 3), Waterworks and Marks Gully leading to Redbank Creek have small sections towards the boundary of the 1500 m buffer assessment area.
Wetlands	No wetlands occur within the Development Site, Property, assessment buffer zone or adjacent lands.
Habitat connectivity	The Development Site lies within modified woody areas connected and adjacent to large areas of continuous woody vegetation including Avisford Nature Reserve. The remnant woody vegetation serves as the main connectivity component in the landscape (**Figure 5**).
Significant geological features	There are no significant areas of rock outcrop near the Development Site and Assessment Area. There are no other significant geological features like karst, caves, large crevices or cliffs in the Assessment Area.
Areas of outstanding biodiversity value	There are no areas of outstanding biodiversity value mapped within or adjacent to the Assessment Area.
NSW (Mitchell) landscapes	Gulgong Ranges (Property) For the Assessment Area – Mostly Gulgong Ranges but also includes a section of Cudgegong Channels and Floodplains in the eastern portion.
Any additional features	No

Site Context

Details of the landscape assessment for the Development Site, according to the BAM (DPE 2020) using site-based assessment methodology and Geographic Information System (GIS) capabilities, are reported below.

Native vegetation cover

The Assessment Area (1500 m site buffer) has an area of approximately 852 ha which has extant native vegetation cover of 172 ha (20.2 %). Much of the surrounding land is residential land but native woody vegetation is well represented in areas to the south and west of the Property.

Geology and soils

The Assessment Area is mapped as occurring on Mullamuddy and Burrendong Soil Landscapes of the Dubbo 1:250 000 sheet (Data NSW, 2020). The landscape consists of undulating low hills and steeper footslopes progressing to steep hills. These soils have low to moderately low natural fertility, acidic surface soil and seasonal waterlogging. The subject land would have moderate to high erosion hazard if extensively disturbed or cultivated. Soils tend to be chromosols, with strongly contrasting texture between structural horizons. Non-calcic brown soils occur on upper slopes and yellow podzolic soils (which tend to be acidic, erodible and poorly drained) on mid to lower slopes. (Dubbo Soil Landscapes sheet 1:250 000 (Data NSW 2020)).

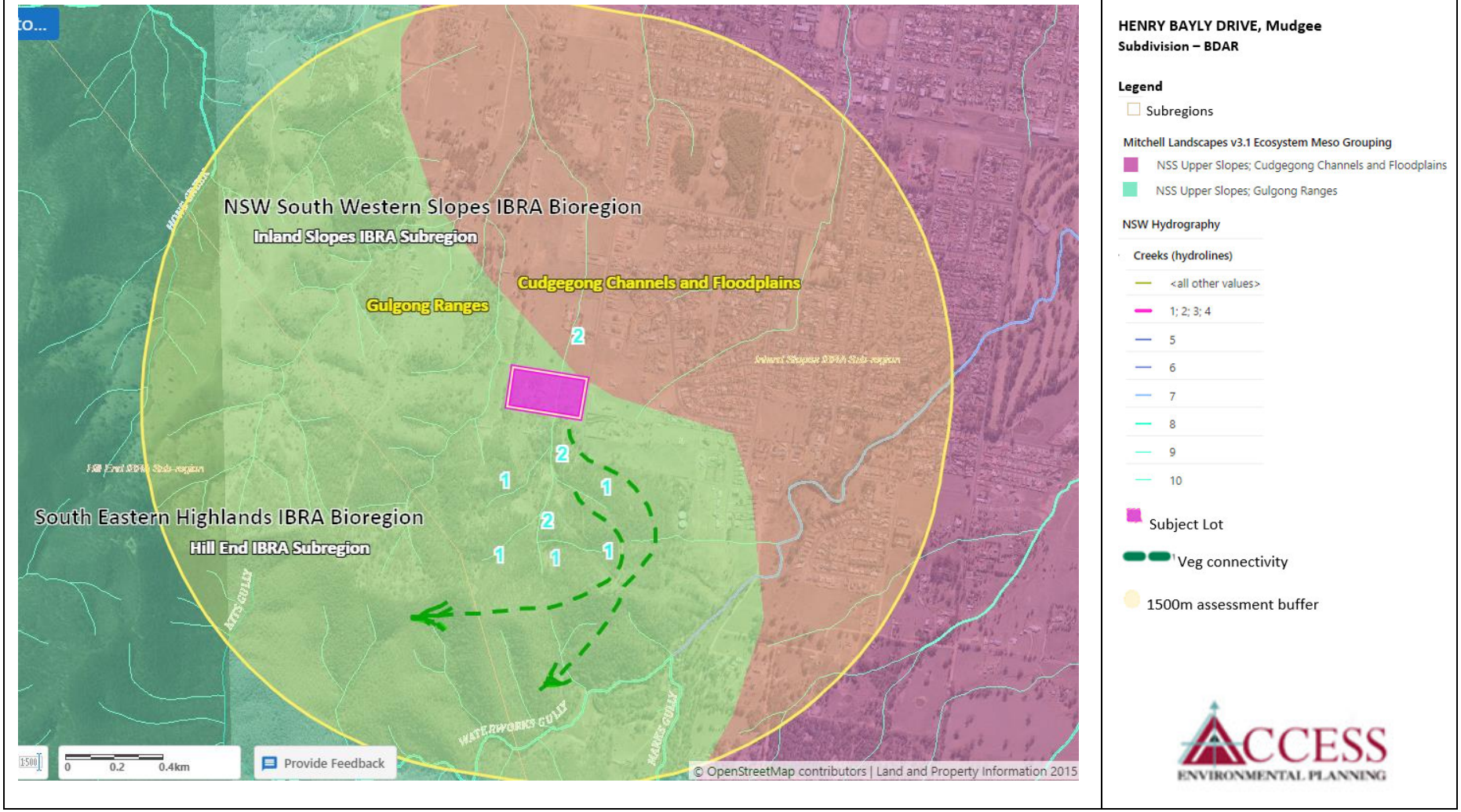


Figure 5: Overview of site landscape context.

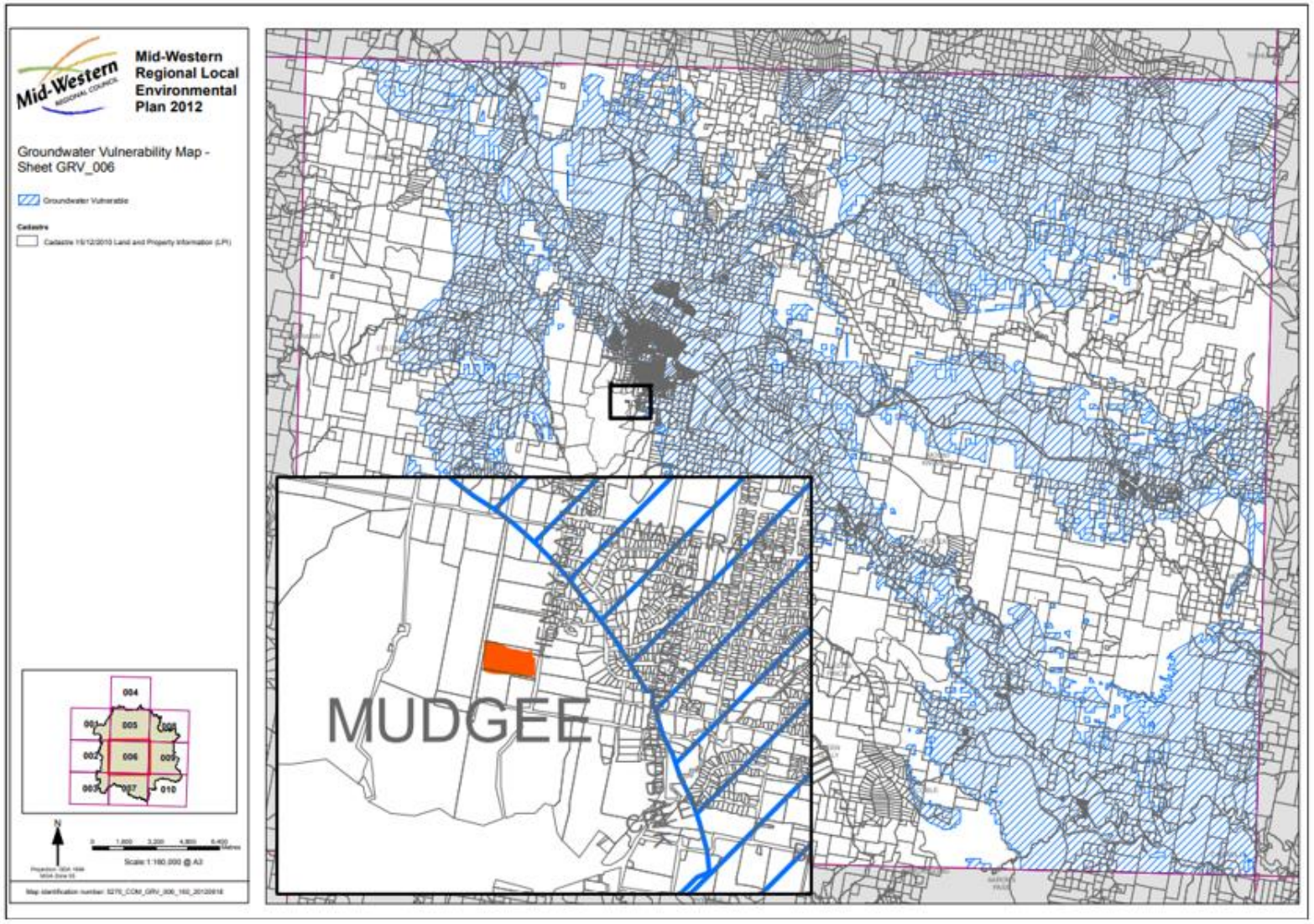


Figure 6: Groundwater vulnerability (MWRC–LEP)

Figure 7: Native vegetation in Assessment Area.

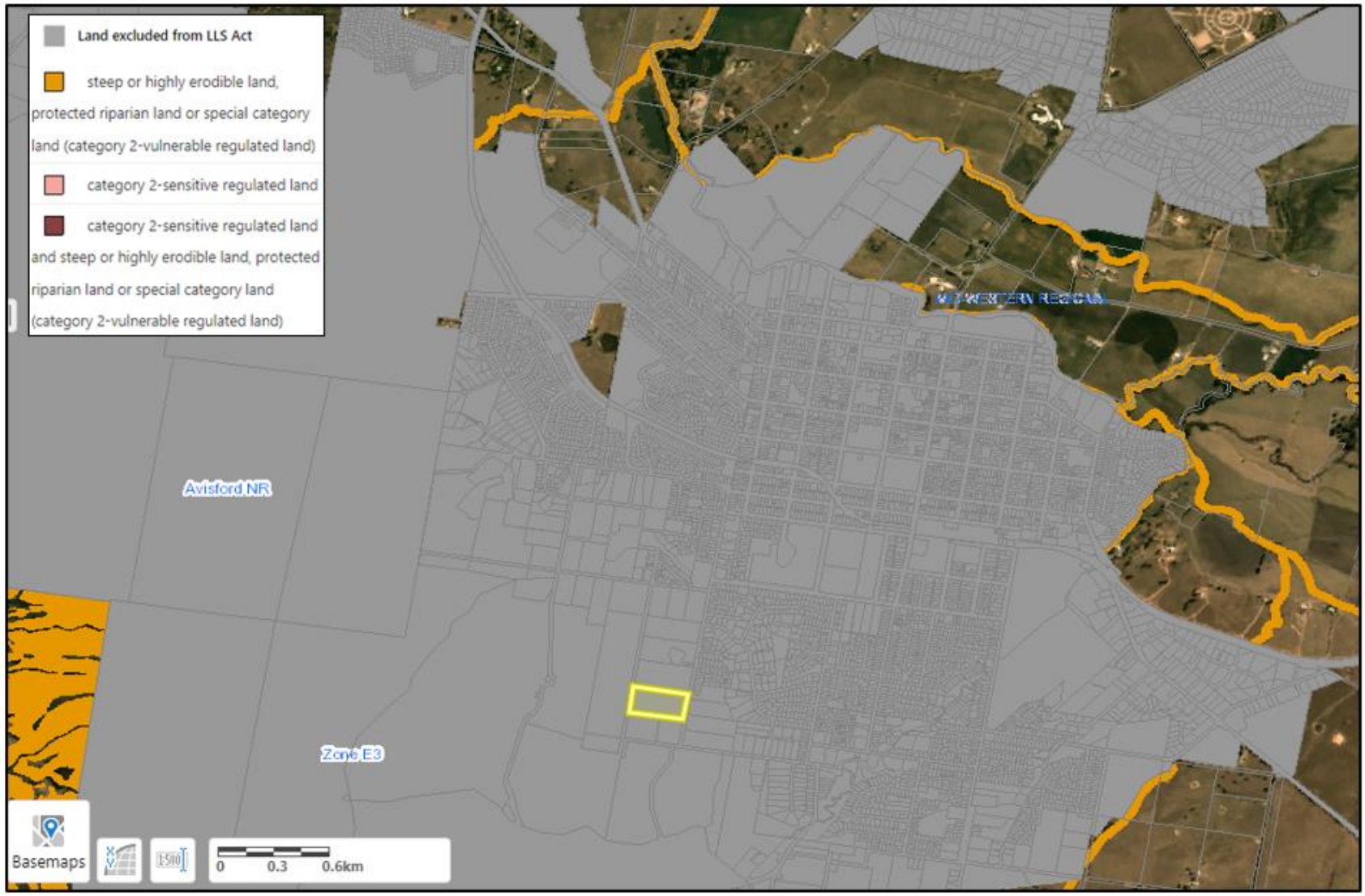


Figure 8: Native Vegetation Regulatory (NVR) Map.

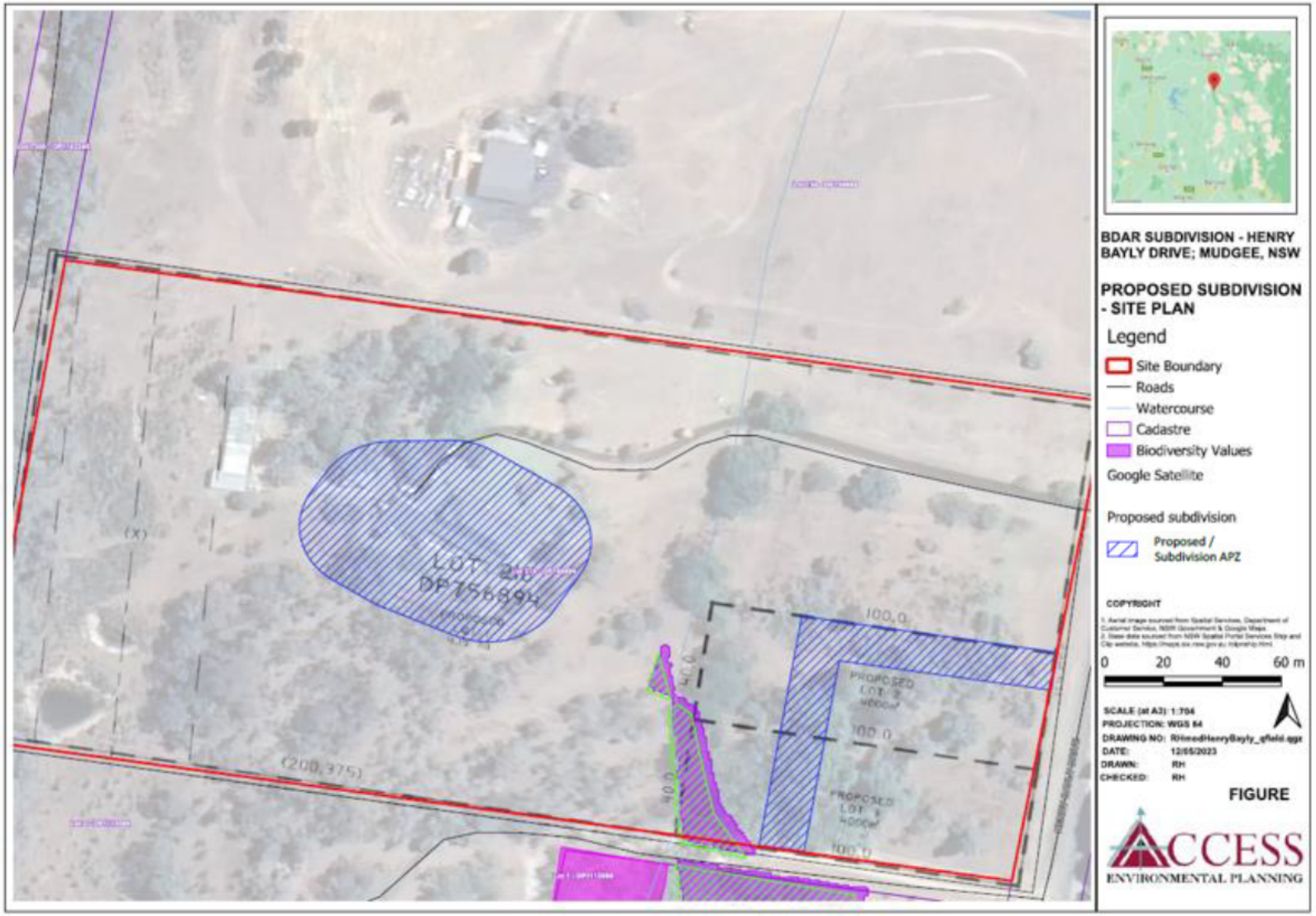


Figure 9: Site plan with proposed development location.

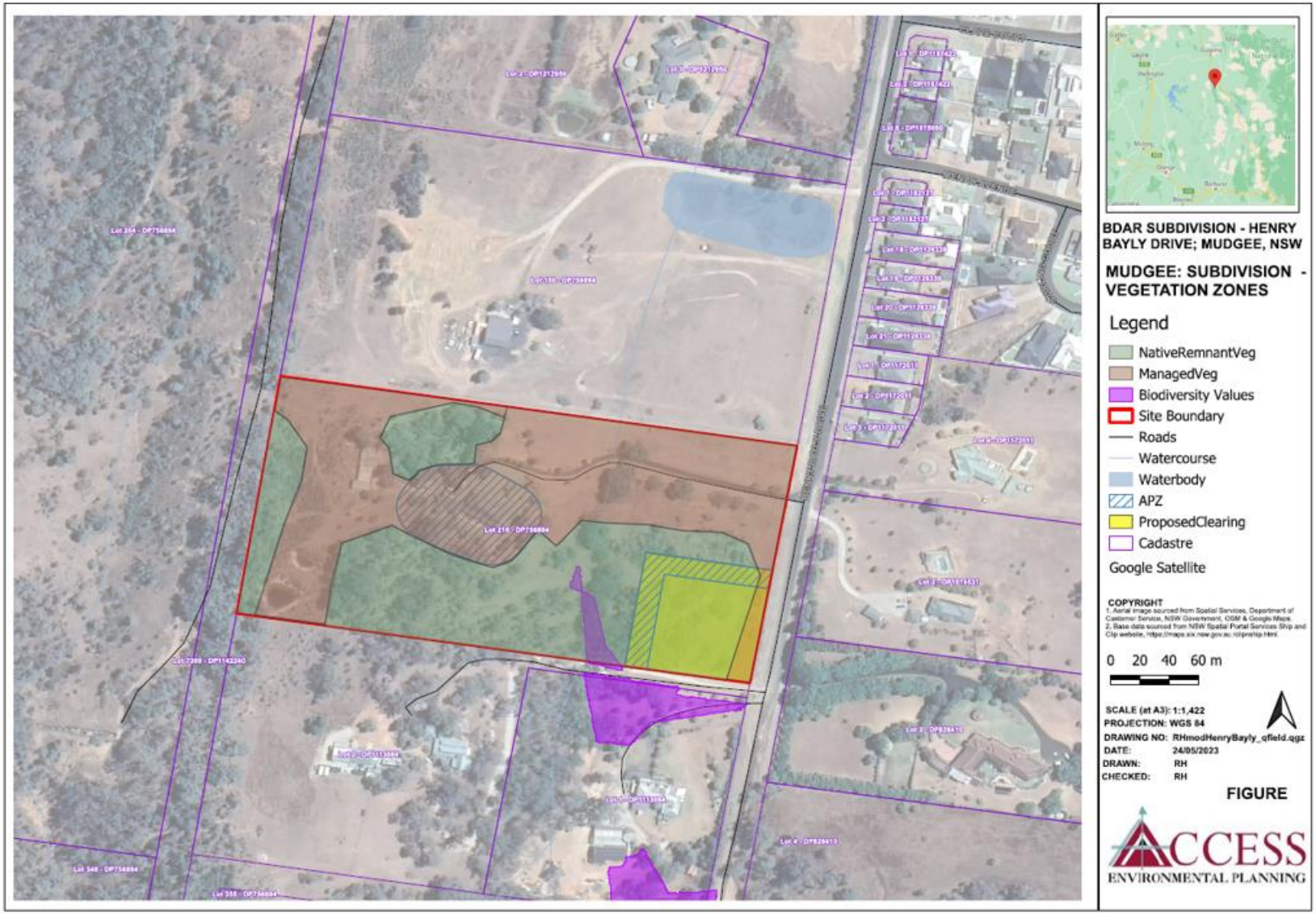


Figure 10: Areas of native and managed vegetation.

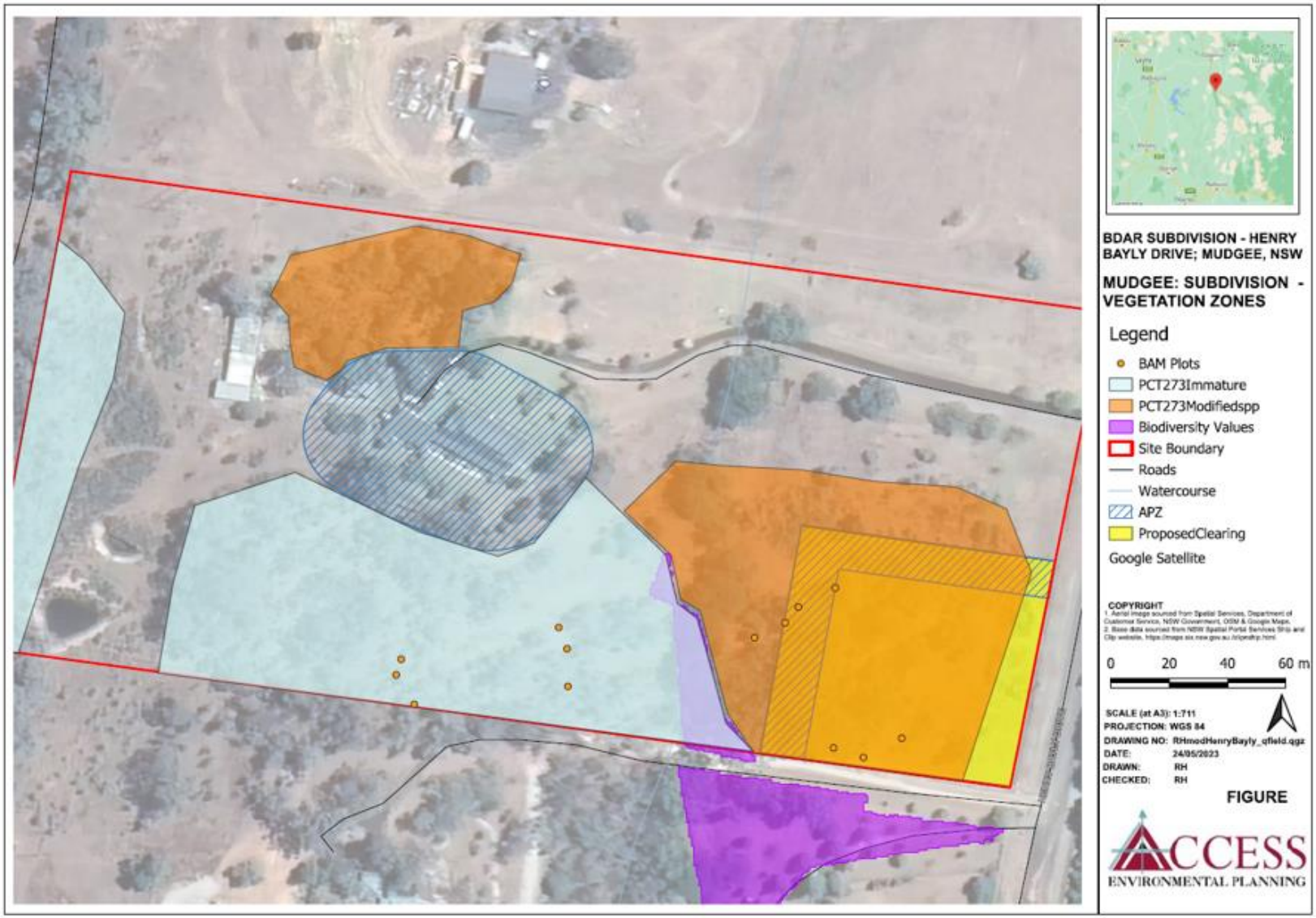


Figure 11: BAM vegetation plot locations and vegetation zones.

Category 1 Land

The transitional Native Vegetation Regulatory (NVR) Map (**Figure 8**) displays some of the land categories established under the LLS Act that apply to land regulated by Part 5A of the LLS Act (excluded land, category 2 - vulnerable land and category 2 - sensitive land). The Property is excluded from the native vegetation provisions of the LLS Act and does not have a history of intensive farming or routine cultivation.

3. NATIVE VEGETATION

Methodology

Native vegetation at the Development Site was assessed in accordance with Section 4 of the BAM (DPE 2020).

Data Review

Vegetation mapping completed as part of the State Vegetation Type Map (SVTM) process, available online through the Sharing and Enabling Environmental Data (SEED) portal was reviewed to assist with the determination of Plant Community Types (PCTs) within the Property. Vegetation mapping is not always accurate and has to be corroborated with field survey and corresponding data analysis. Vegetation information for the site was limited with areas including the vegetation at the Development Site listed as PCT 0 – not recognised as a native vegetation plant community, with adjacent sections of:

PCT 273 - *White box shrubby open forest on fine grained sediments on steep slopes in the Mudgee region of the central western slopes of NSW*.

Considering the vegetation formation, class, IBRA subregion and other characteristics the predominant PCT at the Property was determined as PCT 273, supporting the SVTM information.

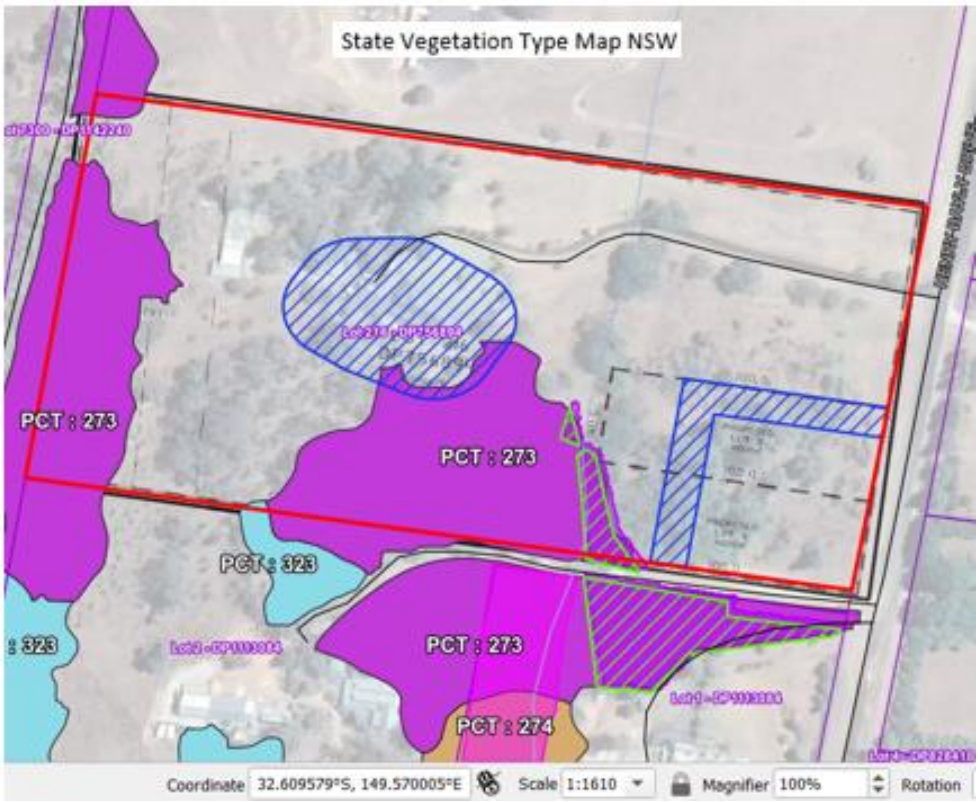


Figure 12: Existing vegetation map and site map.

Vegetation Mapping Surveys

Detailed vegetation survey was conducted across the Development Site and Property in March 2023, with 20 m x 20 m BAM vegetation plots labelled as HB-01 and HB-02 (**Figure 16 and 17**). Ecological function and structure characteristics were measured based on 20 m x 50 m field plots. The ambient weather conditions present on days of site investigations are outlined in **Table 2**. Field conditions particularly at the upslope plot site (HB-02) were quite dry.

Table 2: Weather observations at Mudgee Airport (station 062101) (BoM 2021)

Date	Rainfall (mm)	Temperature Min (°C)	Temperature Max (°C)	Relative Humidity 9am (%)	Relative Humidity 3pm (%)	Site conditions
30/03/23	0	8.5	21.5	76	40	Fine, Dry

Plant Community Type Determination

The vegetation community identified within the Development Site was assigned to the closest equivalent PCT from those listed in the BioNet Vegetation Classification database (DPIE 2020). It was determined through a comparison of the floristic descriptions of PCTs in the database with the plot data collected from the site. In addition to floristic and structural similarity, the location, landscape position, soil type and other diagnostic features of the vegetation communities on the site were compared to the descriptions in the database to determine the most suitable PCT. Where transformation has occurred, for instance the tree layer removed or weed incursion the original PCT is identified. Threatened ecological communities (TECs) as defined in NSW and Commonwealth legislation were considered if present.

A short list of the possible PCTs, collated from comparison with criteria from site location and floral characteristics, was examined to determine the most representative PCT (**Table 3**). For the plot HB-02, PCT 273 was second choice on the list, matching 7 out of 10 criteria (**Table 3**).

Table 3: PCT options for the HB02 plot representing the dominant vegetation type.

PCT	Formation	Class	Common Name	Criteria matches	TEC Association	Comment
3753	DSF (Shrubby sub-formation)	Western Slopes DSF	Dunedoo Sandstone Ironbark-Pine Forest	9	No	✗ No ironbark or cypress pine trees
273	DSF (Shrubby sub-formation)	Western Slopes DSF	White Box shrubby open forest on fine grained sediments on steep slopes in the Mudgee region of the of central western slopes of NSW	7	No	✓ Species match description and concurs with State mapping of PCT 273 on property
403	DSF (Shrubby sub-formation)	Western Slopes DSF	Dapper Mugga Ironbark - Western Grey Box - Blakely's Red Gum - Black Cypress Pine grass shrub hill woodland	7	Yes	✗ No mugga ironbark, stringybark or cypress pine trees and

			(southern Brigalow Belt South Bioregion)			inconsistent location
3781	DSF (Shrubby sub-formation)	Western Slopes DSF	Ulan Sandstone Ironbark-Pine Woodland	7	No	✕ No ironbark, cypress pine trees or other typical tree species and inconsistent location
110	DSF (Shrubby sub-formation)	Western Slopes DSF	Western Grey Box - Cypress Pine shrubby woodland on stony footslopes in the NSW South Western Slopes Bioregion and Riverina Bioregion	6	Yes	✕ Few grey box trees and no ironbark or cypress pines
Definitions:	DSF - Dry Sclerophyll Forest					
	TEC – Threatened Ecological Communities					

Due to the assessment using the streamlined 'Small Areas' process only the dominant PCT needs to be identified. The PCT was determined as:

PCT 273 - *White Box shrubby open forest on fine grained sediments on steep slopes in the Mudgee region of the of central western slopes of NSW*.

Vegetation Zones

A vegetation zone is defined in the BAM (DPE 2020, Section 4) as a relatively homogenous area that is the same vegetation type and broad condition. Two vegetation zones were identified across the Property, with the Development Site impacting only one of these partitions. One condition state of PCT 273 was present in patches in the higher slope areas that had been previously disturbed. It did not have trees representing the larger stem size classes and was assigned *PCT 273 – Immature* as the vegetation zone name for the BAM calculator. The area at the Development Site was dominated by rough barked apple and Cootamundra wattle and was labelled *PCT – 273 Modifiedspp*. The different zones were designated as:

- *Immature* – typical PCT composition but previously disturbed and young formation characteristics (1.4 ha – 1 BAM plot).
- *Modifiedspp* – areas where vegetation shows species not characteristic of the PCT (1.1 ha – 1 BAM plot).

Assessing Vegetation Integrity (Site Condition)

The vegetation plots undertaken at the Property to collect site condition data measures factors relating to the composition, structure and function attributes listed in **Table 4** in accordance with Section 4.3 of the BAM (DPE, 2020). The locations of the plots were randomly selected to provide representative samples across the site with vegetation characteristics noted from 20 x 20 m plots and function aspects from 20 x 50 m plots. The plot number undertaken at the site meets the minimum number required for each vegetation zone as detailed in Section 4.3.4, Table 3 of the BAM (DPE 2020). The locations of the BAM plots undertaken on the Property are shown in **Figure 11**.

Table 4: Composition, structure and function components of vegetation integrity.

Growth form groups used to assess composition (species richness) and structure (% foliage cover)	Function attributes
Tree (TG) Shrub (SG) Grass and grass-like (GG) Forb (FG) Fern (EG) Other (OG)	Number of large trees Tree regeneration (presence/absence) Tree stem size class (presence/absence) Total length of fallen logs Litter cover High threat exotic vegetation cover (HTE) Hollow-bearing trees (HBT)

Assessment Results

Vegetation within the development site

The Development Site showed signs of previous modification and disturbance with a high proportion of native but not typical species for the dominant plant community, such as *Acacia baileyana* (Cootamundra wattle), non-native perennial grasses and exotic weedy species. The majority of native trees on the Development Site were *Angophora floribunda* (rough-barked apple).

The existing native species, structure of the vegetation, soil type and landscape position were used to identify the vegetation types according to the NSW standard Plan Community Type (PCT) classification. The 'best-fit' PCT identified at the Development Site was determined as:

- PCT 273 *White Box shrubby open forest on fine grained sediments on steep slopes in the Mudgee region of the of central western slopes of NSW*.

This vegetation type is a dry sclerophyll forest community with shrubs and grasses present in the understorey, occurring on loamy and clayey sands on low relief foot slopes and hillslopes.

No other significant landscape aspects occur near the Development Site.

Figure 13: Typical vegetation at Development Site.

Figure 14: Many trees/shrubs were native but not characteristic of the identified PCT.

Figure 15: Existing farm dam, near western boundary of the Property.

Figure 16: Vegetation in plot HB01.

Figure 17: Vegetation in plot HB02.

Native vegetation types

Site species lists are provided in **Appendix 1**.

Weeds

No significant woody weeds were observed but the high threat exotic weed kikuyu is at the Development Site.

Threatened ecological communities

The dominant vegetation community identified at the Development Site PCT 273, *White Box shrubby open forest on fine grained sediments on steep slopes in the Mudgee region of the of central western slopes of NSW*, is not associated with any threatened ecological communities (TEC) listed under the *Biodiversity Conservation Act 2016*.

Aquatic habitat

Threatened aquatic species and ecological communities are listed under the *Fisheries Management Act 1995* if they face a very high risk of extinction in the near future as determined by the Fisheries Scientific Committee. The nearest named watercourse is Waterworks Gully / Redbank Creek, approximately 1.1 km to the southeast of the Development Site. The site inspection confirmed a minor drainage line at the western edge of the proposed Development Site and the absence of any significant watercourses or riparian habitat. No key fish habitat is mapped near the Development Site and there are no expected impacts to aquatic habitat or threatened aquatic species or ecosystems. There is a farm dam on the Property that will not be impacted by proposed activities.

4. THREATENED SPECIES

Assessing Habitat Suitability

An assessment of suitable habitat for threatened species and populations within the Development Site was conducted to help assess the significance of proposed works. Preliminary information came from database searches of the NSW Department of Planning and Environment (DPE) BioNet Atlas and the Department of Climate Change, Energy, the Environment and Water (DCCEEW) Protected Matters Search Tool (PMST). Results are summarised in **Appendix 2** with the actual search results presented in **Appendix 3 and 4**.

Threatened flora

The BioNet Wildlife Atlas database contains records for six threatened plant species, *Leucochrysum albicans var. tricolor* (hoary sunray), *Swainsona recta* (small purple pea), *Swainsona sericea* (silky Swainson pea), *Acacia ausfeldii* (Ausfeld's wattle), *Eucalyptus cannonii* (Capertee stringybark) and *Dichanthium setosum* (bluegrass) previously observed within a 10 km^2 range, centred around the Development Site (**Appendix 3**). There was no incidence of these species found at the Property. A short discussion for each species is provided below.

Leucochrysum albicans var. tricolor **(hoary sunray):** a perennial everlasting daisy that can occur in grassland, woodland, forest and sometimes along roadsides. More commonly found on the Southern Tablelands adjacent areas like Albury, Bega and Goulburn, it is known to require bare ground for germination.

Swainsona recta**:** occurs in the grassy understorey of woodlands and open forests dominated by Blakely's red gum and in association with kangaroo grass, poa tussocks and spear-grasses.

Swainsona sericea: typically in natural temperate grassland, box-gum woodland in southern regions, sometimes in association with cypress-pines.

***Acacia ausfeldii* (Ausfeld's wattle)**: grows in the Mudgee, Ulan, Tallawang area in eucalypt woodland with sandy soil. Typically associated species include *Eucalyptus albens* (white box), *E. blakelyi* (Blakely's red gum) and *Callitris spp*.

***Eucalyptus cannonii* (Capertee stringybark):** inhabits the central tablelands and slopes, with altitude from 450 m to 1050 m.

***Dichanthium setosum* (bluegrass):** associated with heavy basaltic black soil and red-brown loams with clay sub soil.

Vegetation assessments did not identify any threatened flora and the Development Site has been previously disturbed.

Threatened fauna

The proposed Development Site contains areas of degraded fauna habitat with no hollow-bearing trees. It also does not contain many other habitat features, such as abundant and varied food resources, a diverse shrub/ground cover layer and leaf litter.

A BioNet Atlas search has identified 20 threatened fauna species that have previously been recorded within 10 km^2 of the site (**Appendix 3**). Threatened species previously seen in the area are listed and discussed below:

***Apus pacificus* (fork tailed swift)**: mostly aerial over inland plains, coastal foothills, urban areas, forest and open areas, they are migratory birds, non-breeding in Australia.

***Hirundapus caudacutus* (white-throated needletail):** migratory, occurring in Australia from October to April, commonly in coastal areas.

***Circus assimilis* (spotted harrier):** typical habitat is grassy open woodland, including acacia and mallee remnants, inland riparian woodland, shrub steppe and most commonly grassland.

***Hieraaetus morphnoides* (little eagle):** open eucalypt forest, woodland, sheoak or acacia woodlands and riparian woodlands; builds large stick nests in tall living trees and preys on birds, reptiles and mammals.

***Calyptorhynchus lathami* (glossy black cockatoo):** feeds almost exclusively on the seeds of forest oak and she-oak (*Casuarina* and *Allocasuarina* species). No *Casuarina or Allocasuarina* feed trees are present at the site, and none will need to be cleared for the development. Habitat for this species will not be impacted.

***Lophochroa leadbeateri* (Major Mitchell's cockatoo):** found in a wide range of treed and treeless inland habitats, within easy reach of water. Feeds mostly on the ground on the seeds of melons, saltbush, wattles and cypress pines.

***Glossopsitta pusilla* (little lorikeet):** Could occasionally be present in the area, utilises forest habitat and flowering eucalypt trees when in season. Favoured feed trees are heavy-flowering eucalyptus.

***Polytelis swainsonii* (superb parrot):** inhabit box-gum, cypress pines and boree woodlands and river red gum forest, using hollows of large trees for nesting.

***Ninox connivens* (barking owl):** lives in woodland and open forest, requiring hollows of large, old trees, with living trees preferred.

***Ninox strenua* (powerful owl):** uses a range of vegetation types including woodland, open sclerophyll forest, open wet forest and rainforest, with very big hollows in large, old trees.

Climacteris picumnus victoriae **(brown treecreeper (eastern subspecies)):** inhabits eucalypt woodlands and dry open forests of the inland slopes and plains; preferring stringybarks or other rough barked eucalypts, typically with grassy understorey rather than a dense shrub layer. They are sedentary and territorial but do require tree hollows for nesting.

Anthochaera phrygia **(regent honeyeater)**: inhabit woodlands with an abundance of mistletoes and feeds mainly on nectars from the few eucalypts that produce high volumes (Mugga ironbark, yellow box, white box and swamp mahogany) and mistletoes.

Pomatostomus temporalis temporalis **(grey-crowned babbler):** typically found in box-gum woodlands on the slopes, box-cypress pine and open box woodlands on alluvial plains and coastal woodlands.

Daphoensitta chrysoptera **(varied sittella):** A relatively sedentary bird with a wide distribution, inhabiting eucalypt forests and woodlands, especially those containing rough-barked species, mature smooth-barked gums with dead branches, mallee and acacia woodland. The proposal will only affect a very small area of open forest habitat for this species and is unlikely to have an adverse effect on any local occurrence of the species.

Artamus cyanopterus cyanopterus **(dusky woodswallow):** Characteristically found in eucalypt forests and woodlands, including mallee communities, with an open understorey but can also inhabit shrubland, heathland and farmland near wooded areas.

Melanodryas cucullata cucullata **(hooded robin (south eastern form)):** Widespread but uncommon. Found in lightly timbered woodland, mainly dominated by acacia and/or eucalypts. The proposal will affect a very small area of forest habitat for this species and is unlikely to have an adverse effect on any local occurrence of the species.

Petroica boodang **(scarlet robin):** lives in dry, eucalypt forests and woodlands with an open, grassy understorey, usually with abundant logs and fallen timber.

Phascolarctos cinereus **(koala):** Koalas have been recorded in the wider Mudgee area and while some trees on the site include koala use species listed for the North West Slopes Management Area, it is not core koala habitat (not highly suitable koala habitat where they have been recorded in the previous 18 years). Impacts to koala habitat are expected to be minimal due to current vegetation location and condition, the small size of the planned disturbance and proximity to established human development.

Petrogale penicillata **(brush-tailed rock wallaby):** habitat consists of rocky escarpments, outcrops and cliffs ideally with fissures, caves and ledges.

Pteropus poliocephalus **(grey-headed flying fox):** can use subtropical and temperate rainforests, tall sclerophyll forests and woodland, heaths and swamps.

The likely presence of these species was considered in relation to whether suitable habitat occurs at the site (**Appendix 2**). Species that depend on swamps, large water bodies, riparian vegetation or caves do not have suitable habitat at the Development Site. Hollow-bearing trees are necessary to provide shelter or nesting sites for hollow-dependant fauna but no hollow-bearing trees were identified. Areas of rock outcrop, important habitat for the brush-tailed rock wallaby and reptiles, do not exist at the proposed Development Site.

Ecosystem credit species

Assessment of habitat suitability for ecosystem credit species has been conducted in accordance with Section 5.2 of the BAM. Ecosystem credits help represent threatened species that can be predicted to be present by the type and condition of vegetation at the Development Site and a habitat assessment has been completed to assess potentially significant impacts.

A list of predicted ecosystem credit species for the Development Site was reviewed in the BAM calculator (BAM-C). The potential for the identified ecosystem credit species to occur on the Development Site was assessed according to species specific location requirements and habitat constraints as detailed in **Table 5**. Where habitat features were not present due to the altered condition of the site vegetation, ecosystem credit species were excluded from further consideration.

Table 5: Assessment of ecosystem credit species within the Development Site.

Scientific name	Common name	Confirmed predicted species	Justification
Ninox connivens	Barking owl	Yes	Foraging could occur but large hollows required for nesting are not available.
Artamus cyanopterus cyanopterus	Dusky woodswallow	Yes	Development Site features adequate for species to occur.
Chalinolobus picatus	Little pied bat	Yes	Development Site features adequate for species to occur.
Chthonicola sagittata	Speckled warbler	Yes	Development Site features adequate for species to occur.
Hieraaetus morphnoides	Little eagle	Yes	Foraging could occur at the site.
Lathamus discolor	Swift parrot	Yes	Preferred tree species are not present but could move through site.
Melithreptus gularis gularis	Black chinned honeyeater	Yes	Development Site features adequate for species to occur.
Miniopterus orianae	Large bent winged bat	Yes	Roosts in caves but hunts in forested areas.
Nyctophilus corbeni	Corben's long-eared bat	Yes	More common where ironbark and cypress pine occurs.
Petroica boodang	Scarlet robin	Yes	Development Site features adequate for species to occur.
Pomatostomus temporalis temporalis	Grey-crowned babbler	Yes	Development Site features adequate for species to occur.
Pteropus poliocephalus	Grey headed flying fox	Yes	Limited forest resources could be available but preferred feed trees, *Melaleuca* and *Banksia* not available.
Saccolaimus flaviventris	Yellow-bellied sheathtail-bat	Yes	Foraging possible but hollows for roosting do not occur at the Development Site.
Stagonopleura guttata	Diamond firetail	Yes	Foraging possible but site condition means grass seed food resources are limited.

Tyto novaehollandiae	Masked owl	Yes	Foraging could occur but large hollows required for nesting are not available.
Climacteris picumnus victoriae	Brown treecreeper	Yes	Woodland and dry open forest, with rough barked tree species, and some grassy understorey is present at the Property.
Melanodryas cucullata cucullata	Hooded robin	Yes	Lightly wooded country, with structural diversity including saplings, shrubs and grasses is present at the Property.
Glossopsitta pusilla	Little lorikeet	Yes	Eucalyptus woodland and areas near intermittent drainage lines exist at the Property, mistletoe and small hollows do not. Species may forage or transit through the Property.
Anthochaera phrygia	Regent honeyeater	Yes	Woodlands containing white box exist on the Property. Parts of the Property are on Important Areas map for this species.
Chthonicola sagittata	Speckled warbler	Yes	Eucalyptus dominated, open canopy communities with a grassy understorey – exist in some areas of the Property.
Dasyurus maculatus	Spotted-tailed quoll	Yes	Prefers mature wet forests and requires den sites such as hollows, rock outcrops or caves.
Lophoictinia isura	Square tailed kite	Yes	Open woodlands exist at the Property.
Neophema pulchella	Turquoise parrot	Yes	Edges of woodland exist at the Property.
Daphoenositta chrysoptera	Varied sitella	Yes	Woodlands with eucalypt species and rough barked trees, exist at the Property.
Hirundapus caudacutus	White-throated needletail	Yes	Largely aerial and more often seen near the coast, they are more likely to be seen above wooded areas, including open forest and rainforest
Grantiella picta	Painted honeyeater	No	No mistletoes on Development Site or adjacent areas of the Property.

All credit determinations are derived from complex algorithms supporting the function of the online BAM calculator (BAM-C). Change in vegetation integrity, area of impact, connectivity in the landscape and adjacent vegetation features are all components of the calculation. A summary of ecosystem credits, from the BAM-C online tool is shown below:

Case
00040422/BAAS23003/23/00040430

App last updated: 13/04/2023 10:00 (Version: 1.4.0.00)
BAM data last updated *: 14/04/2023 (Version: 58) * Disclaimer

Ecosystem credits for plant communities types (PCT), ecological communities & threatened species habitat

Zone	Vegetation zone name	Vegetation integrity loss	Area	Sensitivity to loss	Sensitivity to loss(Justification)	Species sensitivity to gain class	Biodiversity risk weighting	Potential SAII	Ecosystem credits
White Box shrubby open forest on fine grained sediments on steep slopes in the Mudgee region of the of central western slopes of NSW									
1	273_Modifiededspp	28.8	1.1 hectares	Moderate Sensitivity to Loss	PCT Cleared - 60%	High Sensitivity to Gain	1.75		14
2	273_Immature	0	1.4 hectares	Moderate Sensitivity to Loss	PCT Cleared - 60%	High Sensitivity to Gain	1.75		1
									Total: 15

Species credit species

Identify threatened species for assessment

A list of predicted species credit species for the Development Site was reviewed in the BAM-C. Species credits pertain to threatened species that cannot be predicted by the vegetation present and relates primarily to species for which breeding habitat is available.

Habitat constraints and vagrant species

The potential for identified species credit species to occur on the Development Site was assessed according to species particular habitat requirements, as detailed in **Table 6**. Where habitat features were not present due to the condition of the site vegetation, species credit species were found not to be candidate species and no further assessment was required.

Table 6: Assessment of species credit species within the Development Site.

Scientific Name	Common Name	Confirmed candidate species (Yes/No?)	Justification
Anthochaera phrygia	Regent honeyeater	Yes	Assumed present as the Property has a section of the Important Areas Map for this species (0.06 ha in PCT 273 *Immature* vegetation zone).
Chalinolobus dwyeri	Large-eared pied bat	No	The Development Site is not within 2 km of rocky areas containing caves, overhangs, escarpments, mines or tunnels.
Euphrasia arguta	Euphrasia arguta	Yes	No habitat constraints
Lathamus discolor	Swift parrot	No	No important areas mapped near site
Miniopterus orianae oceanensis	Large bent-winged bat	No	No caves, tunnels, mines or other structure for breeding and no nest-roost.

Petrogale penicillata	Brush-tailed rock-wallaby	No	The Development Site is not within 1 km of rocky escarpments, gorges, steep slopes, boulder piles, rock outcrops or cliff-lines.

Due to the site vegetation being unsuitable because of a deficit of mature eucalypt trees, lack of diverse habitat and rocky areas there were only two candidate species that required further assessment.

Threatened Species Surveys

Candidate Threatened Flora

The minimum suggested survey effort for targeted flora survey is two 20 m x 20 m quadrats for every 2 – 50 ha stratification unit (DEC 2004, p. 5-69). Two 20 x 20 m plots were used in a targeted survey for *Euphrasia arguta*. No incidence of this species was observed.

Candidate Threatened Fauna

For diurnal birds multiple timed area searches were conducted, 2 x 30 minute search in the Development Site. This was in conjunction with opportunistic observations, including birds that were flying over the site and in or over adjacent areas. Birds were identified by sight and bird call vocalisations. Observations and surveys were conducted mid-morning and afternoon, the weather on observation days was mild and sunny with moderate ambient wind conditions.

Regent honeyeater: is listed as a candidate species credit species in the BAM-C and a small area of vegetation at the Property is listed as important habitat for regent honeyeaters. Mapped Important Areas are recognised as critical for the survival of the species and typically provide food resources and breeding habitat for the regent honey eater. Areas that coincide with the Important Area Maps do not require survey to determine species presence.

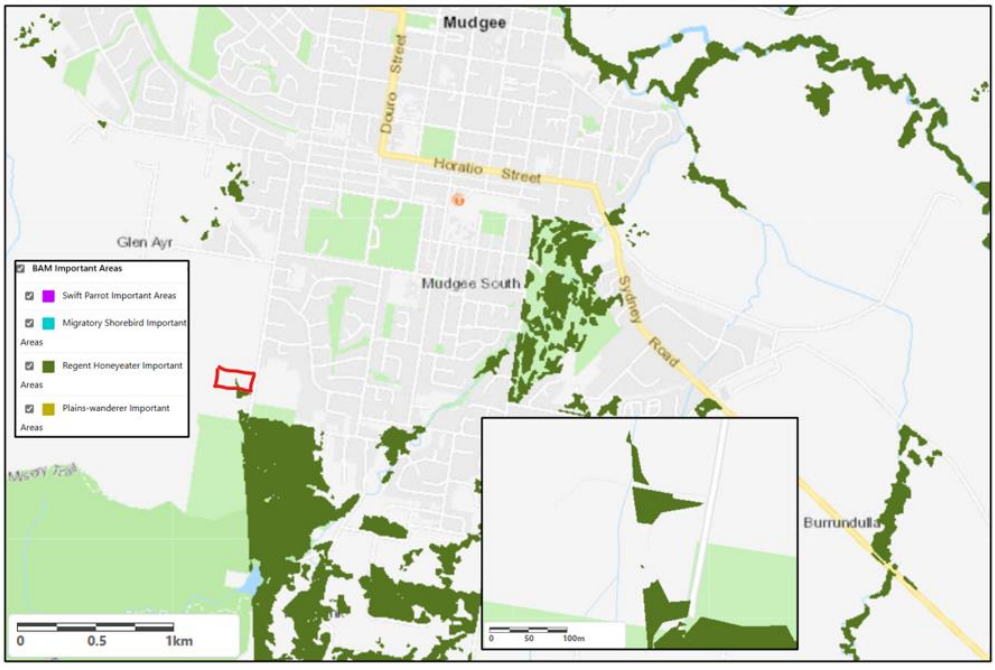


Figure 18: The Important Areas Map identifies critical habitat.

Koalas are not listed as candidate species in the online BAM case and no records of them exist on the subject land. Therefore, further survey is not required for site assessment (Koala BAM Survey Guide, DPE 2022).

Identified Threatened Species

The presence of the regent honeyeater at the Property is assumed for the Important Areas mapped zone, no other threatened fauna species or their habitat requirements were identified on site.

5. AVOID AND MINIMISE IMPACTS ON BIODIVERSITY VALUES

Avoiding and minimising impacts during project planning

Project location

The subdivision is to be situated on land which already has reduced biodiversity values due to previous land disturbance and management practices. The future residential buildings and APZs will be situated on a previously disturbed area meaning any impacts will be localised and reduced in extent. Better quality vegetation will remain undisturbed in other areas of the Property.

The subdivided lots will have access directly from the adjacent public road minimising the degree the area required for ground disturbance and the effects of numerous personnel trafficking the area.

The existing property dam will be retained, which would continue to provide habitat for species utilising the current water resources.

Assessment of Impacts

Impacts on native vegetation and Habitat

Direct Impacts

The area which requires total clearing, 0.54 ha, is comprised of the residential building envelopes and associated service infrastructure including modified vegetation forming the bushfire Asset Protection Zone (APZ). This APZ can retain up to 15 % tree canopy cover and some isolated shrubs.

Trees with hollows were not observed during site surveys so there will not be additional loss of hollows.

No TECs will be impacted and all of the existing vegetation zones (different condition states) of *PCT 273* will still be present on the Property.

Management of APZ will be ongoing, ensuring tree canopy cover is less than 15 %, preferably with shrubs separated by large gaps and groundcover kept short.

The regent honeyeater is identified as at risk of serious and irreversible impacts (SAII). According to the Threatened Biodiversity Data Collection (TBDC) it has:

A population reduction of ≥ 80 % in 10 years or three generations.

A very small population size, prone to extreme fluctuations, with fewer than 250 mature individuals and a projected continuing decline of at least 25 % in three years or one generation.

A very limited geographic range, known from less than three locations in NSW with an area of occupancy less than 10 km^2 of extent of occurrence less than 100 km^2. It also has at least two of the following three conditions: severely fragmented populations, populations continuing to decline, extreme population fluctuations and / or less than three known locations.

Little chance that it will respond to management because: the known reproductive characteristics severely limit its' ability to increase the existing population or occupy new habitats, it relies on habitat resources that cannot be restored or replaced and control of key threatening process that affect the species is currently negligible.

Principles for determining serious and irreversible impacts

An impact is to be regarded as serious and irreversible if it is likely to contribute significantly to the risk of a threatened species (including endangered populations) or ecological community becoming extinct based on the following 4 principles (as set out in clause 6.7 of the Biodiversity Conservation Regulation 2017):

- **Principle 1:** The impact will cause a further decline of a species or ecological community that is currently observed, estimated, inferred or reasonably suspected to be in a rapid rate of decline

- **Principle 2:** The impact will further reduce the population size of the species or ecological community that is currently observed, estimated, inferred or reasonably suspected to have a very small population size

- **Principle 3:** The impact is made on the habitat of the species or ecological community that is currently observed, estimated, inferred or reasonably suspected to have a very limited geographic distribution

- **Principle 4:** The impacted species or ecological community is unlikely to respond to measures to improve its habitat and vegetation integrity, and therefore its members are not replaceable.

Details of the life cycle requirements and threats impacting the regent honeyeater (shown below, from http://www.environment.gov.au/biodiversity/threatened/species/pubs/82338-conservation-advice.pdf) in comparison to the characteristics of the Development Site (**Table 7**), shows SAII are unlikely.

Resources that the regent honeyeater uses:

- nectar from eucalypts including Mugga ironbark, yellow box, white box, swamp mahogany
- flowering of stringybark species can also contribute to nectar resources
- nectar and fruit from mistletoes
- invertebrates / insects and their exudates (lerps and honeydew)

Breeding habitat for the regent honeyeater - nest are made in:

- Horizontal branches or forks in tall mature eucalypts and sheoaks
- Mistletoe haustoria

Threats:

- Clearing, fragmentation and degradation of habitat
- Removal of large trees
- Competition from other more aggressive honeyeaters, noisy miner (*Manorina melanocephala*) and noisy friar bird (*Philemon corniculatus*)
- Predation by nest predators such as pied currawongs (*Strepera graculina*)

Table 7: Consideration of the site with regard to principles indicating SAII.

Principle	Development Site	SAII
1 Further decline	Consists of native trees and shrubs, with native and exotic groundcover species. The favoured nectar producing eucalypts, mugga ironbark, yellow box and white box do not occur - limiting impacts. Works will not significantly affect insects available (potential secondary food source). Breeding resource/critical habitat is mapped (Important Areas Map) as available in an adjacent area which will not be disturbed.	Unlikely – lack of resources in Development Site and no direct impact to mapped Important Area.
2 Reduce population	No individuals will be harmed. Breeding habitat will not be impacted – sheoaks or mistletoe do not exist at the site and mature preferred eucalypts do not occur in the Development Site. The Property is not one of the known breeding areas that exist at Capertee and near Bundarra-Barraba.	No
3 Impact on habitat	The zone on the Property mapped as an Important Area for the regent honeyeater totals 0.06 ha. None of the mapped area will be directly impacted by subdivision and future house construction. The Proposal has been planned to avoid this area. Clearing will occur where habitat has been previously modified. Fragmentation will not be exacerbated as impact is to fringing vegetation. Use of the site for residential purposes is not changing the existing land use and will not enhance natural advantage to aggressive honeyeaters, noisy miners or pied currawongs in the surrounding environment.	Unlikely
4 Limited species response to habitat improvements, members not replaceable	No individuals will be harmed. Breeding habitat will not be impacted – sheoaks or mistletoe do not exist at the site and mature preferred eucalypts do not occur in the Development Site.	No

Indirect Impacts

The Proposal has the potential for edge effects on vegetation located near the Development Site. Adjacent woodland could be impacted resulting in changes to ecological composition, structure and function, possibly reducing habitat resources. Potential indirect impacts include:

- Increased weed invasion due to disturbed ground surfaces and potential spread or introduction of pathogens from the site to adjacent vegetation. These processes could occur anytime during construction but would not be an ongoing issue later in the operational phase, where ground

surfaces and vegetation would have stabilised and vehicular traffic will be reduced. Erosion, sedimentation and contaminated run-off risks would be small in magnitude due to the small extent of disturbed areas and industry standard construction erosion and sediment control measures. The hazard is highest in the early stages of development whenever there are storms and bare, disturbed ground surfaces. The threat of these processes will not continue into the occupation phase unless there is ground disturbance for unforeseen maintenance or future domestic needs.

- Accidental incursions into adjacent vegetation during site deliveries and ground works, due to human error or loss of vehicle control. The extent, frequency and duration of any such incidents would be small and only during construction.
- Reduced viability of adjacent habitat due to edge effects, where disturbing impacts creep further into undisturbed pockets of vegetation. These influences would exist long term through building construction and site residence but the greatest impact could be expected initially during construction and preparation of the APZ, where effects of vegetation modification could continue a few metres further past the actual clearing boundary. The level of existing disturbance at the site minimises the magnitude of the future condition change.
- Reduced viability of adjoining habitats due to increased noise, dust or light spill. Increased noise and dust impacts would occur potentially daily during future construction activities and effects would be greater during windy conditions. The consequences of additional noise and dust would not be ongoing through the Development's operational phase but light spill could be an issue during ongoing operation. Typical residential lighting needs lighting impacts are unlikely to significantly affect surrounding woody habitat.
- Increased risk of starvation or exposure and loss of shade and shelter is potentially an ongoing effect through construction and operation of the Proposal. Increased movement and activity at the site as development work commences will naturally tend to discourage animals from using the area. These effects will continue over the long term.
- Loss of breeding habitat would happen from start of construction and continue through the ongoing occupation of the future residential buildings. This is expected to be a small impact because of the limited size of the Proposal and the degraded condition of the existing site vegetation.
- Trampling of threatened flora species is not expected as none were recorded at the site.
- Inhibition of nitrogen fixation and increased soil salinity through changed land management (removal of deep-rooted trees) affecting soil nutrient and water cycling. Salinity processes could start during construction and continue through occupation but risks are considered low.
- Fertiliser drift would only be a potential impact during occupation of the residential building and could result in the gradual decline of native vegetation. The effects are likely to be minimal as the planned future use of the site is residential, with passive recreation not intensive agriculture.
- Wood collection could occur over the long term during residence for wood fire heating, cooking and recreational purposes. Due to the small area of the proposed subdivided lots there is unlikely to be sufficient wood available to future land owners for use as a domestic heating resource and this impact is likely to be minimal.
- Significant removal and disturbance of rocks is unlikely as there is minimal occurrence at the Development Site.
- Increase in predators and pest animal populations could be facilitated by poor land management practices or if rubbish were to accumulate primarily in the house occupation phase. Routine domestic care and maintenance would make an increase in predators unlikely, minimising the risk.
- Disturbance to specialist breeding and foraging habitat for the regent honeyeater could occur throughout construction and future use of the site. As nectar producing eucalypts and mistletoes do not occur at the Development Site and the identified Important Area will not be disturbed the risk of significant impacts is small.
- There is increased risk of fire during future construction activities from welding, machinery sparks, vehicle ignition or electrical fault. Fire risk potential would be reduced from that present during

construction but would be ongoing through the operational phase. The operational stage would have fire risk similar to the existing residential / recreational land use which can have fires start through lightning strike, loss of control of planned fires and vehicle ignition (driving through or slashing paddocks with long grass or shrubs) and could affect all site vegetation.

- Increase in rubbish dumping in adjoining habitats may occur from illegal and irresponsible treatment of construction waste or domestic rubbish. It could occur throughout both construction and operation, potentially daily or as personnel attend site.

There is better quality woody vegetation to the south and west of the Development Site providing some site resilience and ongoing habitat resources, which will reduce any negative influence of site activities. The listed potential indirect impacts are unlikely to significantly affect the viability of these higher biodiversity woody areas and there will be negligible long term change in the fire regimes or fire threat to this zone.

Provided appropriate mitigation measures are implemented (**Table 8**), the Proposal is unlikely to have a significant long-term effect on threatened species, ecological communities and their habitats.

Avoid and Minimise Impacts on prescribed biodiversity impacts

The following are prescribed impacts which need to be considered as per section 6 of the BAM and constitute impacts which potentially effect habitat, connectivity in the landscape, water quality or hydrological processes, machinery or vehicle impact of threatened species.

Impact of the development on the habitat of threatened species or ecological communities associated with significant geological features, human made structure or non-native vegetation:

No significant geological features, human made structures or abandoned buildings occur within the Property. Non-native trees or shrubs that occur close to the existing house driveway will not be impacted by the Proposal. Future development activities that may cause noise, dust, vibration and potentially sediment runoff effects would be small in extent and short term in nature.

Impacts of the development on the connectivity of different habitat which facilitates movement of threatened species:

The Development Site is located at the edge Mudgee township. The Proposal, therefore, is likely to have only marginal effects on habitat connectivity because of the change in vegetation at the perimeter of extensive human development and better quality less disturbed vegetation in the areas surrounding the Development Site. There is only a minor drainage line in the vicinity of the Proposal, with no nearby larger rivers and it is not anticipated there will be any change in access to water for fauna at the site.

Due to the small extent of the development and its position in a previously modified area on the edge of remnant vegetation it is not expected the Proposal will further exacerbate fragmentation of habitat for threatened fauna species potentially occurring in surrounding vegetation.

Impacts of the development on water bodies, quality and hydrological processes that sustain threatened species or ecological communities:

There are no threatened ecological communities (TEC) associated with the vegetation type at the site. There is an unnamed second order (Strahler stream order) drainage line running south to north which has proximity to future building activity. Ideally second order water courses should have a 20 m buffer either side of the middle of the watercourse to prevent erosion and other adverse effects. The proposed area of clearing satisfies this buffer zone distance. The Property dam will also remain as a potential habitat resource. Possible impacts of future construction activities include leaks and spills

from vehicles, plant and equipment, particulates from internal combustion engines, and dust from plant and vehicle movements. Standard management measures to help mitigate risks associated with routine construction activities include:

- Spill prevention measures
- Maintaining equipment
- Dust suppression if required
- Erosion control

In the long term groundcover will be maintained through normal grounds maintenance activities and hydrological processes are unlikely to be affected by use of the site for residential purposes.

Impact of wind turbine strikes on protected animals:

Not applicable to this development application.

Impacts of vehicle strikes on threatened species or on animals that are part of a TEC:

Site assessment has found no TEC is represented at the Development Site. During future construction, traffic at the Development Site will be increased because currently there is negligible vehicle movement. Access will be via the Property frontage located at Henry Bayly Drive and vehicle movement will be generally low speed, due to the terrain and short travel distances. Vegetation that exists at Property access points is mainly exotic grass and forbs, with patchy shrub cover, reducing the likelihood that occupants of vehicles would encounter any threatened terrestrial animals. Once future construction is completed traffic will again be minimal. In the long term there will be minor increases to existing traffic movement patterns and frequency but no significant additional impacts on threatened species or animals as the location will be used for up to two dwelling houses.

There will be no change to factors that may influence prescribed impacts.

Mitigating and Managing impacts on Biodiversity values

Construction works will be managed, implementing measures outlined in **Table 8**.

Table 8: Summary of direct, indirect and prescribed impacts of the Proposal

Impact	Action and Outcome	Responsibility	Timing
Direct			
Clearing of native vegetation / habitat	Mark out boundary of Development Site and proposed cleared area to prevent unnecessary ground disturbance and protect vegetation in adjacent land Physically exclude area on BVM to ensure no disturbance to that zone	Site Manager	Prior to ground disturbance
	Ensure vehicle and equipment parking areas and unloading zones are designated and positioned to limit any new disturbance Identify and communicate the location of environmentally sensitive areas and exclusion zones at the initial site visit for site personnel and contractors to protect important habitat features	Site Manager	Prior to construction

Impact	Action and Outcome	Responsibility	Timing
	If it is necessary to move any fallen limbs or timber, relocate it to another area of the Property to reduce the impact from removing dead wood, which can be a fauna resource Avoid and minimise clearing impacts by retaining large trees (greater than 30 cm diameter at breast height) in the proposed APZ, if possible	Site Manager	Prior to and during construction
Removal of hollow-bearing trees, habitat trees	No hollow bearing habitat trees require removal	N/A	N/A
Indirect			
Transfer of weeds and pathogens to and from the site	Inspect vehicles to be used on site for soil and plant material residue as a biosecurity measure Clean vehicles by brushing or blowing off any plant material prior to site entry to avoid transferring weed propagules or pathogens Inspect the site and control any new infestations of recognised priority weeds to remediate impact of weed incursion	Site Manager Site Contractors Site Manager	Prior to first use on site During site activities After development
Erosion, sedimentation and contaminated runoff	Erosion and sedimentation controls as per Landcom/Department of Housing Managing Urban Stormwater, Soils and Construction Guidelines (the Blue Book). https://www.environment.nsw.gov.au/research-and-publications/publications-search/managing-urban-stormwater-soils-and-construction-volume-1-4th-editon Maintain vegetation especially downslope of disturbed areas to control water release from the site, improve water quality and reduce pollution risks Spill kit kept on site to control accidental fuel spills	Site Manager	Prior to and during disturbing activities
Accidental incursions	Ensure deliveries to site are unloaded in already disturbed areas Create a buffer zone protecting vegetation Ensure all work is done by licenced and experienced professionals	Site Manager	Prior to and during disturbing activities
Edge effects	Create a buffer and install exclusion fencing / signage, protecting vegetation adjacent to the Development Site	Site Manager	Prior to and during disturbing activities

Impact	Action and Outcome	Responsibility	Timing
Noise, vibration, lighting, waste and air pollution impacts to adjacent habitat	Restrict human traffic to the Development Site, to avoid disturbance in adjacent habitat areas Noise and vibration impacts minimised by using appropriate and well maintained equipment and coordinating disruptive activities where possible No night works requiring lighting and any permanent lighting restricted to the immediate development zone to minimise light spill and possible changes to animal behaviour Any waste materials produced from on-site activities to be recycled or removed to appropriately licenced waste facility To reduce dust generation any loads of bulk material will be covered in transit and work will cease in high wind conditions if required	Site Manager	During disturbing activities
Increased risk of starvation or exposure and loss of shade and shelter	Gradually progress to peak site activity to allow animals the opportunity to move away. Minimise disturbance to the other areas of the property.	Site Manger	Prior to and during, vegetation clearing and construction
Loss of breeding habitat	Minimise clearing of large trees in the APZ where possible	Site Owner	Prior to vegetation clearing
Trampling of threatened flora species	Minimal vegetation disturbance outside of building envelopes and APZ	Site Manager	Prior to vegetation clearing and during disturbing activities
Inhibition of nitrogen fixation and increased soil salinity	Maintain natural water movement across the landscape	Site Manager and Residents	Prior to vegetation clearing During occupation future dwellings
Fertiliser drift	Apply fertiliser if required only to managed landscape areas Minimise off target exposure to bushland Use fertiliser suitable for native plants	Residents	During future occupation

Impact	Action and Outcome	Responsibility	Timing
Wood collection	Leave substantial logs (greater than 10 cm diameter) in bushland areas for habitat where possible	Residents	During future occupation
Removal and disturbance of rocks	Minimal bush rock exists	N/A	N/A
Increase in predators and pest populations	Routine domestic care and maintenance will help prevent pests encroaching near the residence Removal of rubbish before it accumulates will avoid predators and pests gaining competitive advantage by utilising foreign materials.	Residents	During future occupation
Disturbance to specialist breeding and foraging habitat	Avoid any disturbance of hollow bearing trees.	Residents	During future occupation
Increased fire risk	Provision of APZ for a defendable space around the building envelopes. Provision of access for fire fighting vehicles. Provision of water reserves for fire- fighting.	Site Owner	During future construction and occupation
Increased rubbish	Remove rubbish before it accumulates to reduce fire hazard and avoid scavenging animal behaviour.	Site Manager, all site visitors and residents	During future construction and occupation
Prescribed			
Geological features, fabricated structures and non-native vegetation	Minimise the duration of disturbing activities.	Site Manager	During future construction
Connectivity through the landscape	Avoid modification to woodland areas over the long term.	Residents	During future occupation
Impacts to surface and groundwater quality	Standard erosion control measures like sediment fences, maintaining vegetation and mulching, where appropriate. A spill management procedure to be developed in case of accidental spill or fuel leak	Site Manager	During future construction Prior to construction
Vehicle collision with fauna	Low on site vehicle speed to accommodate uneven ground and to reduce accident potential	Site Owner	During disturbing activities

6. IMPACT SUMMARY

The following is an assessment of the impacts requiring offsetting in accordance with Section 9 of the BAM (DPE 2020) and includes impacts:

- on biodiversity values at risk of serious and irreversible impact
- for which offset requirements need to be determined
- for which offset requirements do not need to be determined
- that do not require further assessment

Serious and irreversible impacts

While the regent honeyeater needs consideration regarding Serious and Irreversible Impacts (SAII) these are not expected to occur at the Development Site due to lack of existing foraging and breeding resources. Tree and mistletoe species used by the regent honeyeater are not present at the Development Site. The area on the BVM and Important Areas Map for the regent honeyeater will be excluded from all disturbing activities.

Identification of impacts requiring offsets

Impacts on Native vegetation

The PCT identified at the development site is not representative of any endangered or critically endangered ecological community but is potentially associated with threatened species, notably the regent honeyeater. Such vegetation communities with a vegetation integrity score of greater than 17 require offsets to be determined. The assessed vegetation integrity score was above this threshold requiring biodiversity offset credits to be determined.

A summary of the impacts on native vegetation and the required ecosystem credits is provided in **Table 9**. For *PCT 273 – White Box shrubby open forest on fine grained sediments on steep slopes in the Mudgee region of the of central western slopes of NSW* the closest fit vegetation type in the BAM-C.

Table 9: Summary of required ecosystem credits.

Veg Zone	Veg Zone Name	Management Zone	Area (ha)	Current Vegetation Integrity Score	Future Vegetation Integrity Score	Change in VI Score	Credits Required	BAM Case No.
1	273-Modified	HouseAPZ	0.54	60.8	0	-60.8	14	00040422
		None	0.6	60.8	60.8	0		
3	273-Immature	-	1.4	33.3	33.3	0	1	00040422
	Total Credit Required for PCT 273						**15**	**00040422**

The 'like – for like' Credit Report is provided in **Appendix 5**.

Impacts on Species credit species

Species credits for the regent honeyeater do not require offsetting because the mapped Important Area zone will not be affected (**Appendix 5**).

Impacts not requiring offsets

Impacts on species identified outside the Development Site do not require offsets to be determined. No impacts on threatened species outside the Development Site were identified.

Impacts that do not need further assessment

Established non-native vegetation consisted of deciduous trees lining the driveway and around the existing house. It is only when threatened species may be using non-native vegetation that further assessment may be warranted. Due to the location of these plants near the frequently trafficked areas of the Property threatened species are unlikely to use this vegetation. Also the Proposal will not affect these plants and no detailed field survey of these areas was performed.

7. ASSESSMENT OF OTHER BIODIVERSITY LEGISLATION

EPBC Act

Proposal was not considered likely to have significant impact on MNES:

Table 10: Matters of national environmental significance checklist.

Factor	Impact
a. Any impact on a World Heritage property?	*Nil*
b. Any impact on a National Heritage place?	*Nil*
c. Any impact on a wetland of international importance?	*Nil*
d. Any impact on a listed threatened species or communities?	*Unlikely*
e. Any impacts on listed migratory species?	*Nil*
f. Any impact on a Commonwealth marine area?	*Nil*
g. Does the proposal involve a nuclear action (including uranium mining)?	*Nil*
Additionally, any impact (direct or indirect) on Commonwealth land?	*Nil*

Biosecurity Act

No priority weeds were identified at the Property.

8. CONCLUSION AND RECOMMENDATIONS

A total of 20 native plant species were recorded during the site assessment, with some exotic (weed) species (**Appendix 1**).

BAM assessment has confirmed there are no threatened ecological communities (TECs) at the Development Site. Efforts have been made to minimise impacts through positioning of the planned house building envelopes and APZs to avoid the area marked on the Biodiversity Values Map (also the Important Areas Map) essential for the regent honeyeater. Least disturbance access options directly to the adjacent public road and the future management strategies of the APZs have also been taken into consideration. The dominant vegetation at the Property was confirmed as PCT 273, a shrubby, white box forest plant community. **Fifteen ecosystem credits** are required to be offset for the planned disturbance to vegetation at the proposed subdivision site. Direct impacts to the critically endangered regent honeyeater habitat have been avoided by ensuring all disturbance is confirmed to the east of the vegetation mapped as significant habitat. The BAM process has determined **no species credits** are required. Offset credits will be procured and retired as part of the Development Application process.

The assessment finds that, of the threatened fauna species that have been recorded locally, some have suitable foraging habitat at the Property and may occur there from time to time. Potential breeding resources are very limited at the Development Site due to existing vegetation condition and lack of hollow bearing trees. Overall there are expected to be minimal significant impacts to habitat

features that may be used by any of these threatened fauna species. There are no specialised habitat features such as rock outcrops, cliffs or caves in the Development Site.

Declaration

I declare that this BDAR has been prepared in accordance with the requirements of the BAM and relevant legislation. It contains all available information that is relevant to the environmental assessment of the development to which the statement relates. The site of the proposal has been inspected by Access EP staff to gather the site-specific physical data presented in this report.

Certification under clause 6.15 Biodiversity Conservation Act 2016

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

Signature: [redacted]

Date: _____14/06/2023_____

BAM Assessor Accreditation no: _____23003_____

This BDAR has been prepared to meet the requirements of BAM 2020. The report has been prepared on the basis of the requirements of, and information provided under the BAM as at a 14/06/2023, within 14 days of the date the report is submitted to the decision-maker.

The BAM Calculator (BAM-C) has been finalised and submitted within the Biodiversity Offsets and Agreement Management System (BOAMS) to be considered valid (within 14 days of the finalisation of the BAM-C).

To the best of my knowledge, the information contained in this BDAR is neither false nor misleading.

[redacted]

Christopher Botfield

9. References

Agriculture Victoria, Soil Resources Glossary http://vro.agriculture.vic.gov.au/dpi/vro/vrosite.nsf/pages/gloss_HR Data NSW, (2020), Soil

Bureau of Meteorology (BoM) (2021), Daily Climate Statistcis Mudgee NSW, http://www.bom.gov.au/climate/dwo/202107/html/IDCJDW2088.202107.shtml

Landscape Map of the Dubbo region https://data.nsw.gov.au/data/dataset/soil-landscapes-of-the-dubbo-1-250000-sheet6bb19/resource/bc83c865-49ef-422b-835b-abd278b2116a?inner_span=True https://datasets.seed.nsw.gov.au/dataset/b6f6ab04-9f4d-4505-aa3a-99653d30072f/resource/bb6992f0-6a22-4d16-921a-d5f8bdb6d628/download/dubbosi554ed1slmapl

Department of Climate Change Energy, the Environment and Water (DCCEEW), (2022), Protected Matters Search Tool http://www.environment.gov.au/epbc/pmst/index.html

Department of Environment and Conservation (DEC) NSW, (2004), Threatened Biodiversity Survey and Assessment: Guidelines for Developments and Activities, https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Animals-and-plants/Threatened-species/draft-threatened-biodiversity-survey-guide.pdf

NSW Department of Planning and Environment (DPE) (2020), Biodiversity Assessment Method (BAM) https://www.environment.nsw.gov.au/topics/animals-and-plants/biodiversity-offsets-scheme/accredited-assessors/biodiversity-assessment-method-2020

NSW Department of Planning and Environment (DPE) (2022), Koala (*Phascolarctos cinereus*) Biodiversity Assessment Method Survey Guide https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Animals-and-plants/Threatened-species/koala-phascolarctos-cinereus-biodiversity-assessment-method-survey-guide-220249.pdf

NSW Department of Planning, Industry and Environment, (2021a) BioNet: The website for the Atlas of NSW Wildlife: A whole-of-government system for flora and fauna sightings information. http://www.environment.nsw.gov.au/atlaspublicapp/UI_Modules/ATLAS_/AtlasSearch.aspx

NSW Department of Planning, Industry and Environment (DPIE), (2016) Bioregions https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Animals-and-plants/Bioregions/bioregions-south-western-slopes.pdf

NSW Department of Planning, Industry and Environment (DPIE), (2020a), Land and Soil Information https://www.environment.nsw.gov.au/topics/land-and-soil/information/espade

NSW Department of Planning, Industry and Environment (2020b), Threatened Species found in Inland Slopes IBRA sub-region, Threatened species search tool. https://www.environment.nsw.gov.au/threatenedspeciesapp/AreaHabitatSearch.aspx https://www.environment.nsw.gov.au/threatenedspeciesapp/cmaSearchResults.aspx?SubCmaId=344 Accessed: 05/11/2021

NSW Department of Planning, Industry and Environment (DPIE), (2021b), The Central Resource for Sharing and Enabling Environmental Data (SEED) in NSW, https://www.seed.nsw.gov.au/

NSW Department of Primary Industries - NSW Weedwise, Priority Weeds for the Central West, https://weeds.dpi.nsw.gov.au/WeedBiosecurities?AreaId=59

Spatial Information Exchange, Cadastral and Imagery Data, NSW Government Department of Finance and Services, https://maps.six.nsw.gov.au/

Appendix 1: Flora and Fauna Species Lists

Flora species list for the BAM field plots:

30/03/2023	Field plot HB - 01			
Scientific name	Common name	BAM Growth form	Cover (%)	Type
Angophora floribunda	Rough barked apple	TG	30	N
Acacia baileyana	Cootamundra wattle	SG	20	N
Brachychiton populneus	Kurrajong	TG	2	N
Eucalyptus blakelyi	Blakely's red gum	TG	2	N
Sporobolus creber	Rat's tail grass	GG	5	N
Verbena bonariensis	Purple top	-	-	E
Sisymbrium officinale	Mustard weed	-	-	E
Olearia elliptica	Sticky daisy bush	SG	0.2	N
Lepidium africanus	Peppercress	-	-	E
Cassinia arcuata	Sifton bush	SG	4	N
Senecio jacobaea	Ragwort	-	-	E
Eucalyptus dealbata	Tumble down red gum	TG	0.1	N
Chondrilla juncea	Skeleton weed	-	-	E
Pennisetum clandestinum	Kikuyu	-	10	HTE
Rhagodia nutans	Climbing salt bush	FG	0.01	N
Sporobolus caroli	Fairy grass	GG	2.5	N
Chenopodium album	Fat hen	-	-	E
Solanaceae spp.	-	FG	0.01	N
Dodonaea viscosa	Hop bush	SG	0.2	N
Eragrostis cilianensis	Stink grass	-	-	E
N – Native, E – Exotic, HTE – High Threat Exotic				

HB-01 midline view

HB-01 – midline ground

30/03/2023	Field plot HB - 02			
Scientific name	Common name	BAM Growth form	Cover (%)	Type
Eucalyptus albens	White box	TG	15	N
Aristida vagans	Three awn spear grass	GG	0.5	N
Eucalyptus microcarpa	Grey box	TG	0.5	N
Austrostipa scabra	Rough spear grass	GG	10	N
Cheilanthes sieberi	Mulga fern	EG	0.1	N
Cassinia arcuata	Sifton bush	SG	2	N
Acacia simmonsiana	Wattle	SG	0.5	N
Lissanthe strigosa	Peach heath	SG	0.1	N
Themeda triandra	Kangaroo grass	GG	0.5	N
Verbena bonariensis	Purple top	-	-	E
Sporobolus creber	Rat's tail grass	GG	5	N

HB-02 midline view

HB-02 midline ground

Fauna Species List:

Scientific Name	Common Name	Location
Gymnorhina tibicen	Australian magpie	On site
Cracticus nigrogularis	Pied butcher bird	On site
Philemon corniculatus	Noisy friar bird	On site
Dacelo novaeguineae	Laughing kookaburra	On site
Rhipidura albiscapa	Grey fantail	On site
Macropus giganteus	Eastern grey kangaroo	On site

Appendix 2: Threatened Species Database Search

A list of threatened species, populations and ecological communities that have been reported or modelled to occur from within a specific radius of the Study Area was obtained from the following databases:

NSW Department of Planning and Environment (DPE) Bionet Atlas (10 km^2 search area); and

Department Climate Change, Energy, the Environment and Water (DCCEEW) Protected Matters search tool (PMST) (1 km buffer).

Assessments were then made of the likelihood of the threatened species, populations and ecological communities reported or modelled to have occurred in the locality or using habitat within the Study Area as an essential part of a foraging range.

The following table summarises the likelihood of these threatened species and EPBC Act listed migratory species occurring within the Study Area based on the habitat requirements of each species. The likelihood of occurrence was designated according to specified criteria:

Known – species identified within the site during surveys

High – species previously recorded in the area or suitable habitat (such as roosting or foraging resources) present at the site

Moderate – species may be known from the area, potential habitat resources are available within the site

Low – species not known from the area and / or only marginal habitat is available at the site

Nil – habitat requirements not met within the site

P – Protected, V – Vulnerable, E – Endangered, CE – Critically Endangered

No.	Species		BC Act	EPBC Act	No. of records	Source	Habitat requirements	Likelihood of occurrence	Assessment required (EPBC)?
	Flora								
1	*Dichanthium setosum*	Bluegrass	-	V	2	PMST, Bionet	Associated with heavy basaltic soils and red-brown loams. Soil conditions not suitable and **field survey did not detect the species.**	Low	No
2	*Eucalyptus cannonii*	Capertee stringybark	V		3	BioNet	Known from the area. **Not recorded at site inspection.**	Moderate	-
3	*Euphrasia arguta*	*null*	-	CE	-	PMST	Only known in the Nundle area and likely to decline in routinely disturbed environments.	Nil	No
4	*Leucochrysum albicans var. tricolor*	Hoary sunray	-	E	19	BioNet	Can occur in grassland, woodland and forest on generally heavy soils. Highly dependent on bare ground for germination and disturbance may be required for successful establishment. **Not recorded at site inspection.**	Moderate	No
5	*Lepidium aschersonii*	Spiny Pepper-cress		V	-	PMST	Indicative distribution does not occur within the site. Found on ridges of gilgai clays dominated by Brigalow, Belah, Buloke and Grey Box. **Not recorded at site inspection.**	Low	No
6	*Ozothamnus tesselatus*	null		V		PMST	Found in eucalypt woodland but indicative distribution does not occur within the site. **Not recorded at site inspection.**	Low	No
7	*Prasophyllum petilum*	Tarengo leek orchid	E, P	E	-	PMST	Known from selected sites growing in open areas, grassland or woodland, with river tussock poa, black gum, tea-tress or box-gum with kangaroo grass, unlikely to persist with routine grazing/disturbance. **Not recorded at site inspection.**	Low	No
8	*Swainsona recta*	Small purple-pea	E	E	687	PMST, Bionet	Often in association with box-gum woodland, with understorey dominants including kangaroo grass (*Themeda australis*), poa tussocks (*Poa* spp.) and spear-grasses (*Austrostipa* spp.). **Site is degraded and field survey did not detect the species**.	Moderate	No

No.	Species		BC Act	EPBC Act	No. of records	Source	Habitat requirements	Likelihood of occurrence	Assessment required (EPBC)?
9	*Swainsona sericea*	Silky Swainson-pea	V		149	BioNet	Found in natural temperate grassland, box-gum woodland, sometimes in association with cypress-pines. **Site is degraded and species not recorded at site inspection.**	Moderate	-
10	*Thesium australe*	Austral toadflax	-	V	-	PMST	Indicative distribution does not occur within the site. Occurs in grassland often in association with kangaroo grass. **Not recorded at site inspection.**	Low	No
11	*Acacia ausfeldii*	Ausfeld's Wattle	V	-	689	BioNet	It is found in the Mudgee-Ulan-Gulgong area. **Field survey did not find any occurrence.**	High	-
	Endangered Ecological Communities								
12	*Grey box (Eucalyptus microcarpa) grassy woodlands and derived native grasslands*			E	-	PMST	Community with tree canopy dominated by grey box (*Eucalyptus microcarpa*), with other associated species including *Allocasuarina luehmannii, Brachychiton populneus, Callitris glaucophylla, Eucalyptus albens, E. camaldulensis, E. conica, E. largiflorens, E. melliodora and E. populnea*. **Tree canopy not dominated by grey box.**	Nil	No
13	*Natural temperate grassland of the SE highlands*			CE	-	PMST	A grassland community on sweeping plains above 500 m in altitude. **The structure and composition of site vegetation does not represent this EEC.**	Nil	No
14	*White box-yellow box-Blakely's red gum grassy woodland and derived native grassland*			CE	-	PMST	Characterised by the presence or prior occurrence of white box, yellow box or Blakely's red gum on moderately to highly fertile soils. Community is mainly grassy with sparse shrubs. **Different white box community, shrubs are dense, soils not fertile, EEC not represented.**	Low	No
	Birds								
15	*Anthochaera phrygia*	Regent honeyeater	CE	CE	6	PMST, BioNet	Temperate woodlands, open forests feeds on eucalypt nectar (Mugga ironbark, yellow box, white box). **Potential habitat degraded. Zone on the Important Areas**	High	No

No.	Species		BC Act	EPBC Act	No. of records	Source	Habitat requirements	Likelihood of occurrence	Assessment required (EPBC)?
							map for the regent honeyeater will not be impacted.		
16	*Aphelocephala leucopsis*	Southern whiteface	-	V	-	PMST	Dry open forests and woodland and inland scrubs of mallee, mulga and saltbush are the preferred habitat, especially areas with fallen timber or dead trees and stumps. **The site is not relatively undisturbed open woodland and lacks hollows for nesting.**	Low	No
17	*Artamus cyanopterus cyanopterus*	Dusky woodswallow	V, P		1	BioNet	Found in dry, open eucalypt forests and woodlands, with an open or sparse understorey of shrubs, groundcover and woody debris.	High	-
18	*Botaurus poiciloptilus*	Australasian bittern		E		PMST	Found near fresh water wetlands with tall, dense vegetation like bullrushes (*Typha spp.*). **Habitat does not occur at the site.**	Nil	No
19	*Calidris ferruginea*	Curlew sandpiper	-	CE	-	PMST	Occupies littoral and estuarine habitats, foraging in shallow water and roosting on shingle, shell or sand beaches. **Site does not have adequate habitat features.**	Nil	No
20	*Callocephalon fimbriatum*	Gang-gang Cockatoo	V, P	E	-	PMST,	Can utilise drier open eucalypt forests and woodlands in autumn and winter especially box-gum and box-ironbark but favours old growth requiring 7 cm or larger hollows. **Negligible old growth trees, no hollows.**	Low	No
21	*^Calyptorhynchus lathami*	SE Glossy Black-Cockatoo	V, P	V	5	PMST, BioNet	Open inland woodlands where *Casuarinas* and *Allocasuarinas* are common. **No preferred tree species present at the site.**	Low	No
22	*Circus assimilis*	Spotted Harrier	V, P		2	BioNet	Most commonly found in native grassland, foraging over open habitat. Breeding resources at the site limited due to encroaching urban development.	Moderate	-
23	*Climacteris picumnus victoriae*	Brown treecreeper (eastern subspecies)	V, P	V	5	PMST, BioNet	Inhabits eucalypt woodland and dry open forest, mainly with rough barked tree species like stringybarks or ironbarks, often with a grassy open understorey**. No stringybarks or ironbarks occur, potential habitat degraded.**	Moderate	No

No.	Species		BC Act	EPBC Act	No. of records	Source	Habitat requirements	Likelihood of occurrence	Assessment required (EPBC)?
24	*Daphoenositta chrysoptera*	Varied Sittella	V, P	-	1	BioNet	Eucalypt woodlands & forests, rough barked trees, feeds on insects.	Moderate	-
25	*Falco hypoleucos*	Grey falcon	-	V	-	PMST	Shrubland, grassland and wooded watercourses in arid and semi-arid regions and wetlands. Feeds on birds, reptiles and mammals. **Habitat features not present on site.**	Low	No
26	*Glossopsitta pusilla*	Little lorikeet	V, P	-	2	BioNet	Forages in the canopy of open eucalyptus forest and woodland, often in riparian areas. Feeds mainly on nectar and pollen, sometimes native fruits and mistletoe. Nests are typically hollows in limbs or trunk of smooth barked eucalypts with a small entry hole (3 cm), high above the ground (2 - 15 m). **Site does not contain nectar and mistletoe food resources and lacks hollows.**	Low	-
27	*Grantiella picta*	Painted Honeyeater	V, P	V		PMST	Inhabits Boree/Weeping Myall (*Acacia pendula*), Brigalow (*A. harpophylla*), Box-Gum woodland and Box-Ironbark forests. Feeds on fruits of mistletoes, eucalypts and acacias. **Unsuitable habitat features on site.**	Low	No
28	*Hieraaetus morphnoides*	Little eagle	V, P	-	1	BioNet	Eucalypt forest, woodland or open woodland. Nests in tall living trees, where pairs build large stick nests in winter. Preys on birds, reptiles, mammals and sometimes insects. **Potential foraging habitat.**	Low	-
29	*Lathamus discolor*	Swift Parrot	E	CE	-	PMST	Dry sclerophyll forest & woodland, flowering Eucalypts or lerp infested trees. Favoured feed trees are not present and will not be disturbed. **Unsuitable habitat features on site.**	Low	No
30	*Leipoa ocellata*	Malleefowl	-	V	-	PMST	Predominantly in mallee communities with spinifex understorey; prefers light sandy soils and diverse shrub/herb vegetation with a with a dense but discontinuous canopy. **Inadequate site features.**	Nil	No

No.	Species		BC Act	EPBC Act	No. of records	Source	Habitat requirements	Likelihood of occurrence	Assessment required (EPBC)?
31	*Lophochroa leabeateri*	Major Mitchell's cockatoo	V, P		1	BioNet	Found in a wide range of treed and treeless habitats within easy reach of water. Feeds mostly on the ground on the seeds of melons, saltbush, wattles and cypress pines. **Unsuitable habitat features on site.**	Low	-
32	*Melanodryas cucullata cucullata*	South-eastern Hooded Robin	V	E	-	PMST	Open eucalypt woodland, acacia scrub and mallee, often in open areas. Also requires structural diversity. **Site is disturbed and not structurally diverse.**	Low	No
33	*Ninox connivens*	Barking owl	V, P	-	1	BioNet	Lack of tree hollows would limit prey occurrence and make site less likely to be used. **Site habitat features limited.**	Low	-
34	*Ninox strenua*	Powerful owl	V, P		2	BioNet	Found in woodland, open sclerophyll forest, tall open wet forest and rainforest and requires large hollows for nesting. **Habitat features at the site very limited.**	Low	-
35	*Neophema chrysostoma*	Blue winged parrot		V	-	PMST	Favours grasslands and grassy woodlands often near wetlands. **The site lacks native grasses, hollows for nesting and is not near wetlands.**	Low	No
36	*Numenius madagascariensis*	Eastern curlew	-	CE	-	PMST	Coastal distribution. **The site is not near the coast.**	Nil	No
37	*Petroica boodang*	Scarlet robin	V, P	-	3	BioNet	Dry eucalypt forests and woodlands with an open grassy understorey, usually with abundant logs and fallen timber. In autumn and winter they may live in open grassy woodlands and grasslands or grazed paddocks with scattered trees.	Moderate	-
38	*Polytellis swainsonii*	Superb parrot	V, P	V	1	PMST, BioNet	Found in box-gum, box-cypress pine, boree woodlands and river red gum forest; nest in hollows of large trees mainly in tall riparian forest or woodland; feeds on grass seeds, herbaceous plants, fruits, nectar, insects and grain. May forage up to 10 km from nesting sites primarily in grassy box woodland. **Breeding habitat features are not present.**	Low	No

No.	Species		BC Act	EPBC Act	No. of records	Source	Habitat requirements	Likelihood of occurrence	Assessment required (EPBC)?
39	*Pomatostomus temporalis temporalis*	Grey-crowned babbler (eastern subspecies)	V, P		1	BioNet	Occur in box-gum woodlands, box-cypress pine and open box woodlands on alluvial plains. Nests are built in shrubs or sapling eucalypts. **No evidence of nests or species occurrence at the site.**	Low	-
40	*Pycnoptilus floccosus*	Pilotbird	-	V	-	PMST	Lowland pilotbirds occur in forests from the Blue Mountains, in the wetter forests of eastern Australia, south to Dandenong. They live in dense forests with heavy undergrowth and forage on damp ground or among leaf litter. **Site resources are unlikely to support this species - the forest is not dense with heavy wet undergrowth.**	Low	No
41	*Rostratula australis*	Australian painted snipe	-	E	-	PMST	Prefers swamp edge, dams, marshes where there is grass cover and low scrub or open timber; forages in shallow water. **No wetlands or swamps nearby.**	Nil	No
42	*Stagonopleura guttata*	Diamond firetail	V	V	-	PMST	Eucalypt, acacia or casuarina woodlands, open forests and other lightly timbered habitat. **Site habitat features limited.**	Low	No
	Fish								
43	*Galaxis rostratus*	Flathead galaxias	-	CE	-	PMST	Found in still or slow moving water bodies like wetlands and lowland streams	Nil	No
44	*Macquaria australasica*	Macquarie perch	-	E	-	PMST	Found in waters with lots of cover from aquatic vegetation, snags and overhanging branches	Nil	No
	Mammals								
45	*Chalinolobus dwyeri*	Large-eared pied bat	V, P	V	-	PMST	Roosts in caves and cliff crevices, frequenting dry open forest and woodland near these features. **Unsuitable habitat features on site.**	Low	No
46	*Dasyurus maculatus maculatus*	Spot-tailed quoll	-	E	3	PMST, BioNet	Prefers mature wet forests and need den sites such as hollows, rock outcrops or caves. **Negligible habitat at the site.**	Low	No
47	*Nyctophilus corbeni*	Corben's long-eared bat	-	V	-	PMST	Box/ironbark/cypress pine vegetation, roosts in tree hollows, crevices & under loose bark, hunts in understorey & on	Low	No

No.	Species		BC Act	EPBC Act	No. of records	Source	Habitat requirements	Likelihood of occurrence	Assessment required (EPBC)?
							ground. **No hollows, potential foraging or other habitat.**		
48	*Petrogale penicillata*	Brush-tailed rock wallaby	V		1	BioNet	Occupy rocky outcrops and cliffs with caves, fissure and ledges. **Habitat is not available at the site.**	Low	-
49	*Phascolarctos cinereus*	Koala	V, P	E	7	PMST, BioNet	Koala use trees may be present but there were no koalas recorded at the site inspection and no records of koalas at the site. **The site does not represent core koala habitat.**	Low	No
50	*Pseudomys novaehollandiae*	New Holland mouse	-	V	-	PMST	Open heathlands, woodlands and forests with a heathland understorey and vegetated sand dunes. **Habitat at the site is not suitable.**	Nil	No
51	*Pteropus poliocephalus*	Grey-headed flying-fox	V, P	V	15	PMST, Bionet	Mostly within 200 km of the east coast; in rainforests, tall sclerophyll forests and woodlands with roosting camps located near gullies, close to water in vegetation with a dense canopy. **Site vegetation is not highly suitable being young, not dense and routinely disturbed.**	Low	No
	Reptiles								
52	*Aprasia parapulchella*	Pink-tailed worm-lizard	-	V	-	PMST	Sloping open woodland with native grassy ground layers, particularly kangaroo grass and rocky outcrops or partially buried rocks. **Development Site soils are loamy sands, with sparse native grass.**	Low	No
53	*Delma impar*	Striped legless lizard	-	V	-	PMST	Potential habitat includes areas which have native grasslands or grassy woodlands with tussock structure; mostly on cracking clay soils with some surface rock. **Non-clay surface soils.**	Low	No
54	*Tympanocryptis mccartneyi*	Bathurst grassland earless dragon	CE	CE	-	PMST	Grassland area of high altitude open naturally treeless plains. **Not known or predicted at the site.**	Nil	No

No.	Species		BC Act	EPBC Act	No. of records	Source	Habitat requirements	Likelihood of occurrence	Assessment required (EPBC)?
	Migratory species								
55	*Apus pacificus*	Fork-tailed swift	P		1	PMST, BioNet	Occur over inland plains, foothills or in coastal areas, usually from October-March. They eat insects and can fly as low as 1 m above open areas or water.	Low	No
56	*Hirundapus caudacutus*	White-throated needletail	P	V	2	PMST, BioNet	Largely aerial and more often seen near the coast, they are more likely to be seen above wooded areas, including open forest and rainforest	Low	No
57	*Motacilla flava*	Yellow wagtail				PMST	Mainly coastal distribution	Nil	No
58	*Myiagra cyanoleuca*	Satin flycatcher				PMST	Tall forests, wetter habitats, coastal distribution	Nil	No
59	*Rhipidura rufifrons*	Rufous fantail				PMST	Wet sclerophyll forests, coastal distribution	Nil	No
60	*Actitis hypoleucos*	Common sandpiper	-		-	PMST	Utilise inland floodplain areas in wet years and the grassy edges of wetlands, foraging in shallow water	Nil	No
61	*Calidris acuminata*	Sharp-tailed sandpiper	-		-	PMST	Occupies littoral and estuarine habitats, foraging in shallow water and roosting on shingle, shell or sand beaches.	Nil	No
62	*Calidris ferruginea*	Curlew sandpiper	-	CE	-	PMST	Inhabits muddy marshes and wet grassy zones	Nil	No
63	*Calidris melanotos*	Pectoral sandpiper	-		-	PMST	Can be in freshwater wetlands on or near the coast, generally among dense vegetation cover including sedges, grasses, lignum, reeds and rushes	Nil	No
64	*Gallinago hardwickii*	Latham's snipe	-		-	PMST	Coastal distribution	Nil	No
65	*Numenius madagascariensis*	Eastern curlew	-	CE		PMST	Coastal distribution	Nil	No

Appendix 3: BioNet Atlas of NSW Wildlife search results

Threatened species sightings:

Data from the BioNet Atlas website, which holds records from a number of custodians. The data are only indicative and cannot be considered a comprehensive inventory, and may contain errors and omissions. Species listed under the Sensitive Species Data Policy may have their locations denatured (^ rounded to 0.1°C; ^^ rounded to 0.01°C. Copyright the State of NSW through the Department of Planning, Industry and Environment. Search criteria : Public Report of all Valid Records of Threatened (listed on BC Act 2016) ,Commonwealth listed ,CAMBA listed ,JAMBA listed or ROKAMBA listed Entities in selected area [North: -32.56 West: 149.52 East: 149.62 South: -32.66] returned a total of 1,610 records of 26 species.
Report generated on 24/05/2023 4:52 PM

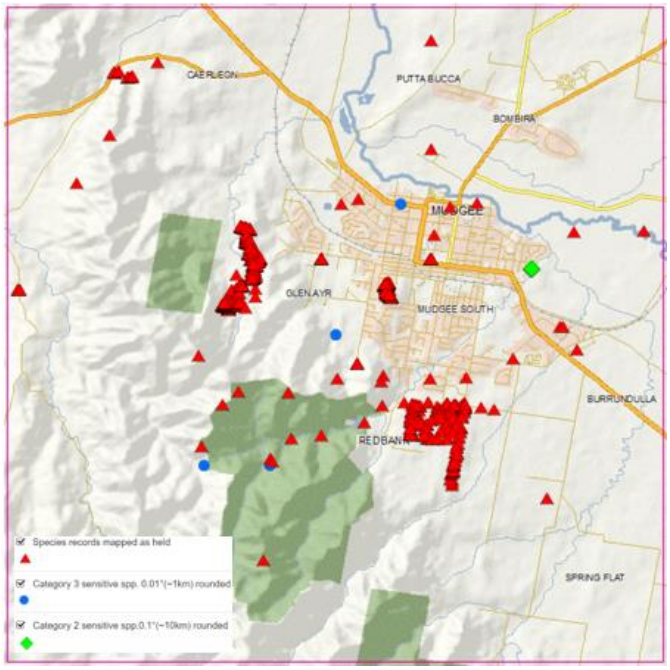
Class	Family	Species Code	Scientific Name	Common Name	NSW status	Comm. status	Records
Aves	Apodidae	0335	*Apus pacificus*	Fork-tailed Swift	P	C,J,K	1
Aves	Apodidae	0334	*Hirundapus caudacutus*	White-throated Needletail	P	V,C,J,K	2
Aves	Accipitridae	0218	*Circus assimilis*	Spotted Harrier	V,P		2
Aves	Accipitridae	0225	*Hieraaetus morphnoides*	Little Eagle	V,P		1
Aves	Cacatuidae	0265	*^Calyptorhynchus lathami*	Glossy Black-Cockatoo	V,P,2	V	5
Aves	Cacatuidae	0270	*^Lophochroa leadbeateri*	Major Mitchell's Cockatoo	V,P,2		1
Aves	Psittacidae	0260	*Glossopsitta pusilla*	Little Lorikeet	V,P		2
Aves	Psittacidae	0277	*^^Polytelis swainsonii*	Superb Parrot	V,P,3	V	1
Aves	Strigidae	0246	*^^Ninox connivens*	Barking Owl	V,P,3		1
Aves	Strigidae	0248	*^^Ninox strenua*	Powerful Owl	V,P,3		2
Aves	Climacteridae	8127	*Climacteris picumnus victoriae*	Brown Treecreeper (eastern subspecies)	V,P		5
Aves	Meliphagidae	0603	*Anthochaera phrygia*	Regent Honeyeater	E4A,P	CE	6
Aves	Pomatostomidae	8388	*Pomatostomus temporalis temporalis*	Grey-crowned Babbler (eastern subspecies)	V,P		1
Aves	Neosittidae	0549	*Daphoenositta chrysoptera*	Varied Sittella	V,P		1
Aves	Artamidae	8519	*Artamus cyanopterus cyanopterus*	Dusky Woodswallow	V,P		1
Aves	Petroicidae	0380	*Petroica boodang*	Scarlet Robin	V,P		3
Mammalia	Dasyuridae	1008	*Dasyurus maculatus*	Spotted-tailed Quoll	V,P	E	3
Mammalia	Phascolarctidae	1162	*Phascolarctos cinereus*	Koala	E1,P	E	7
Mammalia	Macropodidae	1215	*Petrogale penicillata*	Brush-tailed Rock-wallaby	E1,P	V	1
Mammalia	Pteropodidae	1280	*Pteropus poliocephalus*	Grey-headed Flying-fox	V,P	V	15
Flora	Asteraceae	15364	*Leucochrysum albicans subsp. tricolor*	Hoary Sunray	E1	E	19
Flora	Fabaceae (Faboideae)	3056	*Swainsona recta*	Small Purple-pea	E1	E	687
Flora	Fabaceae (Faboideae)	8538	*Swainsona sericea*	Silky Swainson-pea	V		149
Flora	Fabaceae (Mimosoideae)	3708	*Acacia ausfeldii*	Ausfeld's Wattle	V		689
Flora	Myrtaceae	8326	*Eucalyptus cannonii*	Capertee Stringybark	V		3
Flora	Poaceae	4895	*Dichanthium setosum*	Bluegrass	V	V	2

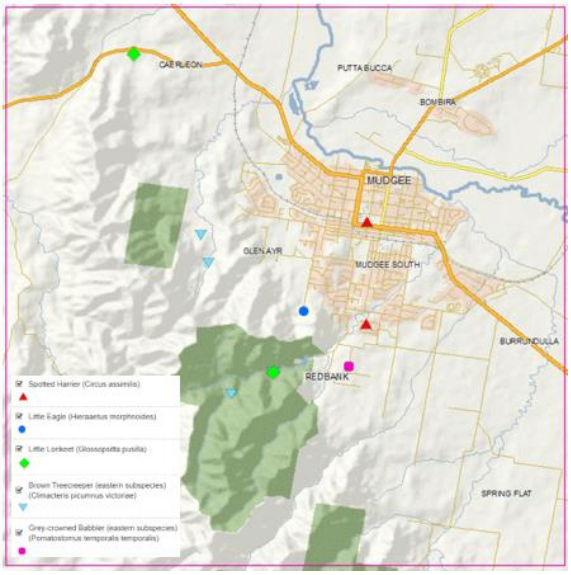
NSW status

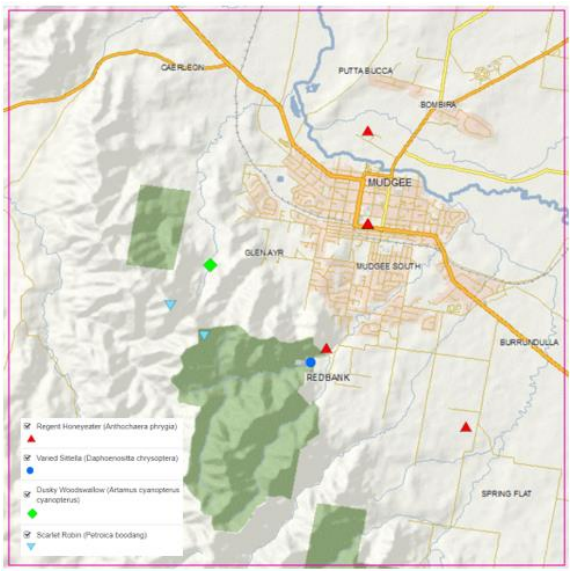
1 Sensitivity Class 1 (Sensitive Species Data Policy)
2 Sensitivity Class 2 (Sensitive Species Data Policy)
3 Sensitivity Class 3 (Sensitive Species Data Policy)
CH Critical Habitat (Threatened Species Conservation Act 1995)
E1 Endangered (Threatened Species Conservation Act 1995)
E2 Endangered Population (Threatened Species Conservation Act 1995)
E3 Endangered Ecological Community (Threatened Species Conservation Act 1995)
E4 Presumed Extinct (Threatened Species Conservation Act 1995)
E4A Critically Endangered (Threatened Species Conservation Act 1995)
E4B Critically Endangered Ecological Community (Threatened Species Conservation Act 1995)
FCE Critically Endangered Fish (Fisheries Management Act 1994)
FE Endangered Fish (Fisheries Management Act 1994)
FEC Endangered Ecological Community of Fish (Fisheries Management Act 1994)
FEP Endangered Population of Fish (Fisheries Management Act 1994)
FKTP Key Threatening Process of Fish (Fisheries Management Act 1994)
FP Protected Fish (Fisheries Management Act 1994)
FV Vulnerable Fish (Fisheries Management Act 1994)
FX Extinct Fish (Fisheries Management Act 1994)
KTP Key Threatening Process (Threatened Species Conservation Act 1995)
P Protected (National Parks & Wildlife Act 1974)
V Vulnerable (Threatened Species Conservation Act 1995)
V2 Vulnerable Ecological Community (Threatened Species Conservation Act 1995)

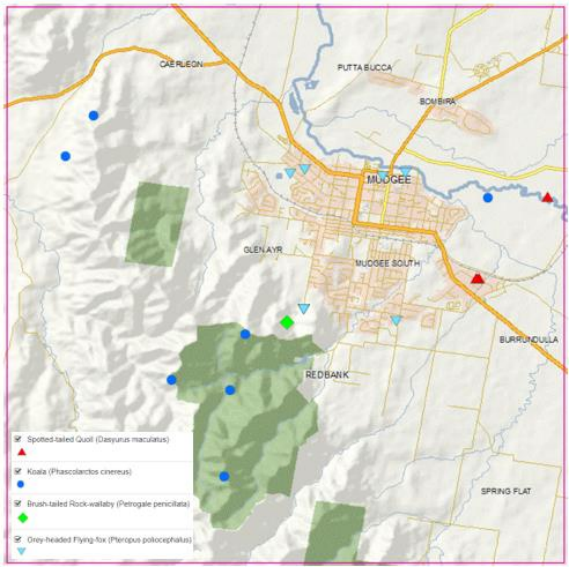
Commonwealth status

C Listed on China Australia Migratory Bird Agreement
CD Conservation Dependent (Commonwealth EPBC Act 1999)
CE Critically Endangered (Commonwealth EPBC Act 1999)
E Endangered (Commonwealth EPBC Act 1999)
J Listed on Japan Australia Migratory Bird Agreement
K Listed on Republic of Korea Australia Migratory Bird Agreement
KTP Key Threatening Process (Commonwealth EPBC Act 1999)
V Vulnerable (Commonwealth EPBC Act 1999)
X Extinct (Commonwealth EPBC Act 1999)
XW Extinct in the Wild (Commonwealth EPBC Act 1999)


CAERLEON
PUTTA BUCCA
BOMBIRA
MUDGEE
GLEN AYR
MUDGEE SOUTH
BURRUNDULLA
REDBANK
SPRING FLAT
Species records mapped as held
Category 3 sensitive spp. 0.01°(~1km) rounded
Category 2 sensitive spp.0.1°(~10km) rounded


CAERLEON
PUTTA BUCCA
BOMBIRA
MUDGEE
GLEN AYR
MUDGEE SOUTH
BURRUNDULLA
REDBANK
SPRING FLAT
Spotted Harrier (Circus assimilis)
Little Eagle (Hieraaetus morphnoides)
Little Lorikeet (Glossopsitta pusilla)
Brown Treecreeper (eastern subspecies) (Climacteris picumnus victoriae)
Grey-crowned Babbler (eastern subspecies) (Pomatostomus temporalis temporalis)


CAERLEON
PUTTA BUCCA
BOMBIRA
MUDGEE
GLEN AYR
MUDGEE SOUTH
BURRUNDULLA
REDBANK
SPRING FLAT
Regent Honeyeater (Anthochaera phrygia)
Varied Sittella (Daphoenositta chrysoptera)
Dusky Woodswallow (Artamus cyanopterus cyanopterus)
Scarlet Robin (Petroica boodang)


CAERLEON
PUTTA BUCCA
BOMBIRA
MUDGEE
GLEN AYR
MUDGEE SOUTH
BURRUNDULLA
REDBANK
SPRING FLAT
Spotted-tailed Quoll (Dasyurus maculatus)
Koala (Phascolarctos cinereus)
Brush-tailed Rock-wallaby (Petrogale penicillata)
Grey-headed Flying-fox (Pteropus poliocephalus)

Appendix 4: Protected Matters Report Summary

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

EPBC Act Protected Matters Report

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

Report created: 08-Jun-2023

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar	4
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	3
Listed Threatened Species:	38
Listed Migratory Species:	11

Commonwealth Lands:	2
Commonwealth Heritage Places:	None
Listed Marine Species:	19
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

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

Listed Threatened Ecological Communities [Resource Information]

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

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

Listed Threatened Species

Species ID	Scientific Name	Common Name	Class	Presence Text	Threatened Category	Buffer Status
847	*Numenius madagascariensis*	Eastern Curlew, Far Eastern Curlew	Bird	Species or species habitat may occur	CE	In feature area
84745	*Galaxias rostratus*	Flathead Galaxias, Beaked Minnow, Flat-headed Galaxias, Flat-headed Jollytail, Flat-headed Minnow	Fish	Species or species habitat may occur	CE	In feature area
81964	*Prasophyllum sp. Wybong (C.Phelps ORG 5269)*	a leek-orchid	Plant	Species or species habitat may occur	CE	In feature area
744	*Lathamus discolor*	Swift Parrot	Bird	Species or species habitat likely to occur	CE	In feature area
4325	*Euphrasia arguta*	null	Plant	Species or species habitat may occur	CE	In feature area
82338	*Anthochaera phrygia*	Regent Honeyeater	Bird	Species or species habitat known to occur	CE	In feature area
90478	*Tympanocryptis mccartneyi*	Bathurst Grassland Earless Dragon	Reptile	Species or species habitat may occur	CE	In feature area
856	*Calidris ferruginea*	Curlew Sandpiper	Bird	Species or species habitat may occur	CE	In feature area
77037	*Rostratula australis*	Australian Painted Snipe	Bird	Species or species habitat likely to occur	E	In feature area

75184	*Dasyurus maculatus maculatus (SE mainland population)*	Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population)	Mammal	Species or species habitat likely to occur	E	In feature area
7580	*Swainsona recta*	Small Purple-pea, Mountain Swainson-pea, Small Purple Pea	Plant	Species or species habitat known to occur	E	In feature area
768	*Callocephalon fimbriatum*	Gang-gang Cockatoo	Bird	Species or species habitat likely to occur within area	E	In feature area
67093	*Melanodryas cucullata cucullata*	South-eastern Hooded Robin, Hooded Robin (south-eastern)	Bird	Species or species habitat likely to occur	E	In feature area
66632	*Macquaria australasica*	Macquarie Perch	Fish	Species or species habitat may occur	E	In feature area
55144	*Prasophyllum petilum*	Tarengo Leek Orchid	Plant	Species or species habitat may occur	E	In feature area
1001	*Botaurus poiciloptilus*	Australasian Bittern	Bird	Species or species habitat may occur	E	In feature area
85104	*Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)*	Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory)	Mammal	Species or species habitat known to occur within area	E	In feature area
10976	*Lepidium aschersonii*	Spiny Peppercress	Plant	Species or species habitat may occur	V	In feature area
96	*Pseudomys novaehollandiae*	New Holland Mouse, Pookila	Mammal	Species or species habitat may occur	V	In feature area
67036	*Calyptorhynchus lathami lathami*	South-eastern Glossy Black-Cockatoo	Bird	Species or species habitat known to occur	V	In feature area
929	*Falco hypoleucos*	Grey Falcon	Bird	Species or species habitat likely to occur	V	In feature area
726	*Neophema chrysostoma*	Blue-winged Parrot	Bird	Species or species habitat may occur	V	In feature area
1649	*Delma impar*	Striped Legless Lizard, Striped Snake-lizard	Reptile	Species or species habitat may occur	V	In feature area
934	*Leipoa ocellata*	Malleefowl	Bird	Species or species habitat may occur	V	In feature area
56203	*Ozothamnus tesselatus*	null	Plant	Species or species habitat likely to occur	V	In feature area
14159	*Dichanthium setosum*	bluegrass	Plant	Species or species habitat likely to occur	V	In feature area
59398	*Stagonopleura guttata*	Diamond Firetail	Bird	Species or species habitat known to occur	V	In feature area
83395	*Nyctophilus corbeni*	Corben's Long-eared Bat, South-eastern Long-eared Bat	Mammal	Species or species habitat likely to occur	V	In feature area
183	*Chalinolobus dwyeri*	Large-eared Pied Bat, Large Pied Bat	Mammal	Species or species habitat likely to occur	V	In feature area
525	*Pycnoptilus floccosus*	Pilotbird	Bird	Species or species habitat may occur	V	In feature area
186	*Pteropus poliocephalus*	Grey-headed Flying-fox	Mammal	Foraging, feeding or related	V	In feature area

				behaviour may occur		
15202	*Thesium australe*	Austral Toadflax, Toadflax	Plant	Species or species habitat may occur	V	In feature area
67062	*Climacteris picumnus victoriae*	Brown Treecreeper (south-eastern)	Bird	Species or species habitat known to occur	V	In feature area
529	*Aphelocephala leucopsis*	Southern Whiteface	Bird	Species or species habitat likely to occur	V	In feature area
738	*Polytelis swainsonii*	Superb Parrot	Bird	Species or species habitat known to occur	V	In feature area
470	*Grantiella picta*	Painted Honeyeater	Bird	Species or species habitat likely to occur	V	In feature area
1665	*Aprasia parapulchella*	Pink-tailed Worm-lizard, Pink-tailed Legless Lizard	Reptile	Species or species habitat may occur	V	In feature area
682	*Hirundapus caudacutus*	White-throated Needletail	Bird	Species or species habitat known to occur	V	In feature area

Listed Migratory Species

Species ID	Scientific Name	Common Name	Simple Presence	Threatened Category
847	*Numenius madagascariensis*	Eastern Curlew, Far Eastern Curlew	May	CE
863	*Gallinago hardwickii*	Latham's Snipe, Japanese Snipe	May	
678	*Apus pacificus*	Fork-tailed Swift	Likely	
612	*Myiagra cyanoleuca*	Satin Flycatcher	Likely	
592	*Rhipidura rufifrons*	Rufous Fantail	Likely	
858	*Calidris melanotos*	Pectoral Sandpiper	May	
874	*Calidris acuminata*	Sharp-tailed Sandpiper	May	
59309	*Actitis hypoleucos*	Common Sandpiper	May	
644	*Motacilla flava*	Yellow Wagtail	May	
856	*Calidris ferruginea*	Curlew Sandpiper	May	CE
682	*Hirundapus caudacutus*	White-throated Needletail	Known	V

Appendix 5: Biodiversity Credit Reports

NSW GOVERNMENT

BAM Credit Summary Report

Proposal Details

Assessment Id 00040422/BAAS23003/23/00040430	Proposal Name Henry Bayly Subdivision	BAM data last updated * 14/04/2023
Assessor Name Renae L Hill	Report Created 13/06/2023	BAM Data version * 58
Assessor Number BAAS23003	BAM Case Status Open	Date Finalised To be finalised
Assessment Revision 1	Assessment Type Part 4 Developments (Small Area)	BOS entry trigger BOS Threshold: Biodiversity Values Map and 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.

Ecosystem credits for plant communities types (PCT), ecological communities & threatened species habitat

Zone	Vegetation zone name	TEC name	Current Vegetation integrity score	Change in Vegetation integrity (loss / gain)	Area (ha)	Sensitivity to loss (Justification)	Species sensitivity to gain class	BC Act Listing status	EPBC Act listing status	Biodiversity risk weighting	Potential SAII	Ecosystem credits
White Box shrubby open forest on fine grained sediments on steep slopes in the Mudgee region of the of central western slopes of NSW												
1	273_Modifiededspp	Not a TEC	60.8	28.8	1.1	PCT Cleared - 60%	High Sensitivity to Gain			1.75		14

NSW GOVERNMENT

BAM Credit Summary Report

2	273_Immature	Not a TEC	33.3	0.0	1.4	PCT Cleared - 60%	High Sensitivity to Gain			1.75	1
										Subtotal	**15**
										Total	**15**

Species credits for threatened species

Vegetation zone name	Habitat condition (Vegetation Integrity)	Change in habitat condition	Area (ha)/Count (no. individuals)	Sensitivity to loss (Justification)	Sensitivity to gain (Justification)	BC Act Listing status	EPBC Act listing status	Potential SAII	Species credits
Anthochaera phrygia / Regent Honeyeater (Fauna)									
273_Immature	0.0	0.0	0.06	Biodiversity Conservation Act listing status	Effectiveness of management in controlling threats	Critically Endangered	Critically Endangered	True	0
								Subtotal	**0**

NSW GOVERNMENT

BAM Biodiversity Credit Report (Like for like)

Proposal Details

Assessment Id
00040422/BAAS23003/23/00040430

Proposal Name
Henry Bayly Subdivision

BAM data last updated *
14/04/2023

Assessor Name
Renae L Hill

Assessor Number
BAAS23003

BAM Data version *
58

Proponent Names

Report Created
13/06/2023

BAM Case Status
Open

Assessment Revision
1

Assessment Type
Part 4 Developments (Small Area)

Date Finalised
To be finalised

BOS entry trigger
BOS Threshold: Biodiversity Values Map and 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
Nil		

Species
Anthochaera phrygia / Regent Honeyeater

Additional Information for Approval

NSW GOVERNMENT

BAM Biodiversity Credit Report (Like for like)

PCT Outside Ibra Added

None added

PCTs With Customized Benchmarks

PCT
No Changes

Predicted Threatened Species Not On Site

Name
Grantiella picta / Painted Honeyeater

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

Name of Plant Community Type/ID	Name of threatened ecological community	Area of impact	HBT Cr	No HBT Cr	Total credits to be retired
273-White Box shrubby open forest on fine grained sediments on steep slopes in the Mudgee region of the of central western slopes of NSW	Not a TEC	2.5	0	15	15

NSW GOVERNMENT

BAM Biodiversity Credit Report (Like for like)

273-White Box shrubby open forest on fine grained sediments on steep slopes in the Mudgee region of the of central western slopes of NSW	Like-for-like credit retirement options					
	Class	Trading group	Zone	HBT	Credits	IBRA region
	Western Slopes Dry Sclerophyll Forests This includes PCT's: 54, 110, 217, 255, 273, 287, 330, 333, 341, 343, 346, 348, 358, 403, 455, 456, 472, 577, 581, 592, 617, 673, 676, 713, 940, 956, 1277, 1279, 1313, 1316, 1381, 1610, 1661, 1668, 1709, 3753, 3754, 3756, 3768, 3769, 4153	Western Slopes Dry Sclerophyll Forests >=50% and <70%	273_Modifiededspp	No	14	Inland Slopes, Bogan-Macquarie, Bondo, Capertee Uplands, Capertee Valley, Crookwell, Hill End, Kerrabee, Lower Slopes, Murray Fans, Murrumbateman, Orange, Pilliga, Talbragar Valley and Wollemi. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
	Western Slopes Dry Sclerophyll Forests This includes PCT's: 54, 110, 217, 255, 273, 287, 330, 333, 341, 343, 346, 348, 358, 403, 455, 456, 472, 577, 581, 592, 617, 673, 676, 713, 940, 956, 1277, 1279, 1313, 1316, 1381, 1610, 1661, 1668, 1709, 3753, 3754, 3756, 3768, 3769, 4153	Western Slopes Dry Sclerophyll Forests >=50% and <70%	273_Immature	No	1	Inland Slopes, Bogan-Macquarie, Bondo, Capertee Uplands, Capertee Valley, Crookwell, Hill End, Kerrabee, Lower Slopes, Murray Fans, Murrumbateman, Orange, Pilliga, Talbragar Valley and Wollemi. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

Assessment Id: 00040422/BAAS23003/23/00040430

Proposal Name: Henry Bayly Subdivision

NSW GOVERNMENT

BAM Biodiversity Credit Report (Like for like)

273-White Box shrubby open forest on fine grained sediments on steep slopes in the Mudgee region of the of central western slopes of NSW	

Species Credit Summary

Species	Vegetation Zone/s	Area / Count	Credits
Anthochaera phrygia / Regent Honeyeater	**273_Immature**	0.1	0.00

Credit Retirement Options

Like-for-like credit retirement options

	Spp	IBRA subregion
Anthochaera phrygia / Regent Honeyeater	**Anthochaera phrygia** / Regent Honeyeater	Any in NSW

NSW GOVERNMENT

BAM Predicted Species Report

Proposal Details

Assessment Id	Proposal Name	BAM data last updated *
00040422/BAAS23003/23/00040430	Henry Bayly Subdivision	14/04/2023
Assessor Name	**Report Created**	**BAM Data version ***
Renae L Hill	23/06/2023	58
Assessor Number	**Assessment Type**	**BAM Case Status**
BAAS23003	Part 4 Developments (Small Area)	Open
Assessment Revision	**BOS entry trigger**	**Date Finalised**
1	BOS Threshold: Biodiversity Values Map and area clearing threshold	To be finalised

* Disclaimer: BAM data last updated may indicate either complete or partial update of the BAM calculator database. BAM calculator database may not be completely aligned with Bionet.

Threatened species reliably predicted to utilise the site. No surveys are required for these species. Ecosystem credits apply to these species.

Common Name	Scientific Name	Vegetation Types(s)
Barking Owl	Ninox connivens	273-White Box shrubby open forest on fine grained sediments on steep slopes in the Mudgee region of the of central western slopes of NSW
Black-chinned Honeyeater (eastern subspecies)	Melithreptus gularis gularis	273-White Box shrubby open forest on fine grained sediments on steep slopes in the Mudgee region of the of central western slopes of NSW
Brown Treecreeper (eastern subspecies)	Climacteris picumnus victoriae	273-White Box shrubby open forest on fine grained sediments on steep slopes in the Mudgee region of the of central western slopes of NSW
Corben's Long-eared Bat	Nyctophilus corbeni	273-White Box shrubby open forest on fine grained sediments on steep slopes in the Mudgee region of the of central western slopes of NSW
Diamond Firetail	Stagonopleura guttata	273-White Box shrubby open forest on fine grained sediments on steep slopes in the Mudgee region of the of central western slopes of NSW
Dusky Woodswallow	Artamus cyanopterus cyanopterus	273-White Box shrubby open forest on fine grained sediments on steep slopes in the Mudgee region of the of central western slopes of NSW
Grey-crowned Babbler (eastern subspecies)	Pomatostomus temporalis temporalis	273-White Box shrubby open forest on fine grained sediments on steep slopes in the Mudgee region of the of central western slopes of NSW

NSW GOVERNMENT

BAM Predicted Species Report

Grey-headed Flying-fox	Pteropus poliocephalus	273-White Box shrubby open forest on fine grained sediments on steep slopes in the Mudgee region of the of central western slopes of NSW
Hooded Robin (south-eastern form)	Melanodryas cucullata cucullata	273-White Box shrubby open forest on fine grained sediments on steep slopes in the Mudgee region of the of central western slopes of NSW
Large Bent-winged Bat	Miniopterus orianae oceanensis	273-White Box shrubby open forest on fine grained sediments on steep slopes in the Mudgee region of the of central western slopes of NSW
Little Eagle	Hieraaetus morphnoides	273-White Box shrubby open forest on fine grained sediments on steep slopes in the Mudgee region of the of central western slopes of NSW
Little Lorikeet	Glossopsitta pusilla	273-White Box shrubby open forest on fine grained sediments on steep slopes in the Mudgee region of the of central western slopes of NSW
Little Pied Bat	Chalinolobus picatus	273-White Box shrubby open forest on fine grained sediments on steep slopes in the Mudgee region of the of central western slopes of NSW
Masked Owl	Tyto novaehollandiae	273-White Box shrubby open forest on fine grained sediments on steep slopes in the Mudgee region of the of central western slopes of NSW
Regent Honeyeater	Anthochaera phrygia	273-White Box shrubby open forest on fine grained sediments on steep slopes in the Mudgee region of the of central western slopes of NSW
Scarlet Robin	Petroica boodang	273-White Box shrubby open forest on fine grained sediments on steep slopes in the Mudgee region of the of central western slopes of NSW
Speckled Warbler	Chthonicola sagittata	273-White Box shrubby open forest on fine grained sediments on steep slopes in the Mudgee region of the of central western slopes of NSW
Spotted-tailed Quoll	Dasyurus maculatus	273-White Box shrubby open forest on fine grained sediments on steep slopes in the Mudgee region of the of central western slopes of NSW
Square-tailed Kite	Lophoictinia isura	273-White Box shrubby open forest on fine grained sediments on steep slopes in the Mudgee region of the of central western slopes of NSW
Swift Parrot	Lathamus discolor	273-White Box shrubby open forest on fine grained sediments on steep slopes in the Mudgee region of the of central western slopes of NSW

BAM Predicted Species Report

Turquoise Parrot	Neophema pulchella	273-White Box shrubby open forest on fine grained sediments on steep slopes in the Mudgee region of the of central western slopes of NSW
Varied Sittella	Daphoenositta chrysoptera	273-White Box shrubby open forest on fine grained sediments on steep slopes in the Mudgee region of the of central western slopes of NSW
White-throated Needletail	Hirundapus caudacutus	273-White Box shrubby open forest on fine grained sediments on steep slopes in the Mudgee region of the of central western slopes of NSW
Yellow-bellied Sheathtail-bat	Saccolaimus flaviventris	273-White Box shrubby open forest on fine grained sediments on steep slopes in the Mudgee region of the of central western slopes of NSW

Threatened species Manually Added

None added

Threatened species assessed as not within the vegetation zone(s) for the PCT(s)

Common Name	Scientific Name	Plant Community Type(s)
Painted Honeyeater	Grantiella picta	273-White Box shrubby open forest on fine grained sediments on steep slopes in the Mudgee region of the of central western slopes of NSW

Threatened species assessed as not within the vegetation zone(s) for the PCT(s)

Refer to BAR for detailed justification

Common Name	Scientific Name	Justification in the BAM-C
Painted Honeyeater	Grantiella picta	Habitat constraints

NSW GOVERNMENT

BAM Candidate Species Report

Proposal Details

Assessment Id 00040422/BAAS23003/23/00040430	Proposal Name Henry Bayly Subdivision	BAM data last updated * 14/04/2023
Assessor Name Renae L Hill	Report Created 23/06/2023	BAM Data version * 58
Assessor Number BAAS23003	Assessment Type Part 4 Developments (Small Area)	BAM Case Status Open
Assessment Revision 1	Date Finalised To be finalised	BOS entry trigger BOS Threshold: Biodiversity Values Map and 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.

List of Species Requiring Survey

Name	Presence	Survey Months
Anthochaera phrygia Regent Honeyeater	Yes (assumed present)	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?
Euphrasia arguta Euphrasia arguta	No (surveyed)	☐ Jan ☐ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?

Threatened species Manually Added

None added

NSW GOVERNMENT

BAM Candidate Species Report

Threatened species assessed as not on site

Refer to BAR for detailed justification

Common name	Scientific name	Justification in the BAM-C
Brush-tailed Rock-wallaby	Petrogale penicillata	Habitat constraints
Large Bent-winged Bat	Miniopterus orianae oceanensis	Habitat constraints
Large-eared Pied Bat	Chalinolobus dwyeri	Habitat constraints
Swift Parrot	Lathamus discolor	Habitat constraints

Appendix 6: Staff Contributions

The following staff were involved in the compilation of this report:

Name	Qualifications	Title/Experience	Contribution
Christopher Botfield	*B Env Management CSU 1999*	Principal Ecologist	Flora surveys Fauna surveys BAM Calculator Report review
Renae Hill	*Grad. Dip. Env Management CSU 2022* *BAgr UNE 2006* *BSc(Hons) UoN 1994*	Project Manager	Flora surveys Fauna surveys PCT allocation BAM Calculator Report writing
Aaron Anane	*Grad. Dip. M Public Service Admin*	Project Officer	Field assistance
Kim Bennett	*B Env Sc (Hons)* *B A Computer Sc Legal Studies*	GIS Specialist	GIS data management
Tony Moody	*B App Sci, CSU, 1996*	Project Officer	Report review
Liz Mansfield			Report review