



AEP

BIODIVERSITY | BUSHFIRE | ARBORICULTURE

NEWCASTLE SYDNEY

Ecological Assessment Report

Proposed Caravan Park Development

Lot 1 DP 174385, 313 Magpie Lane, Galambine NSW



Prepared for: **CAM Engineering & Construction Pty Ltd**
c/- Michael Elliott ADW Johnson

October 2023

AEP Ref: 3282.01

Revision: 00

Newcastle | Sydney

10 Darvall St Carrington NSW 2294 | 275 Stanmore Rd Petersham NSW 2049

ABN: 57 659 651 537 | +61 420 624 707 | info@andersonep.com.au | www.andersonep.com.au

Document Control

Document Name	Ecological Assessment Report for Proposed Caravan Development for Lot 1 DP 174385, 313 Magpie Lane, Galambine NSW
Project Number	3282.01
Client Name	Craig Bateman
AEP Project Team	Frances O'Brien Alessandro Roncolato Simon Purcell

Revision

Revision	Date	Author (s)	Reviewed	Approved
00	12 December 2023	Alessandro Roncolato	Simon Purcell	Frances O'Brien

Distribution

Revision	Date	Name	Organisation
00	12 December 2023	Craig Bateman Michael Elliott	CAM Engineering & Construction Pty Ltd ADW Johnson

EXECUTIVE SUMMARY

Anderson Environment & Planning was commissioned by ADW Johnson on behalf of CAM Engineering & Construction Pty Ltd (the client) to undertake an Ecological Assessment Report (EAR) for the Proposed Caravan Development at Lot 1 DP 174385, 313 Magpie Lane, Galambine NSW (the Study Area). The site is located within the Mid-Western Regional Local Government Area (LGA) and is zoned RU4 – Primary Production Small Lots. The proposed development is for the construction of a caravan park and associated landscaping and managed vegetated riparian zones.

The report is specifically intended to indicate the likelihood of the proposed development and future development of the land a significant impact on potentially occurring threatened species or ecological communities. In this regard, the report aims to recognise the relevant requirements of the *Environmental Planning & Assessment Act 1979*, the *Biodiversity Conservation Act 2016* (NSW) (BC Act) and the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

The Study Area totals approximately 73.58ha, of which 55.23ha of land (Subject Site) is proposed to be developed as part of the proposal. The site contains some highly disturbed remnant native vegetation, and planted native and non-native vegetation, with mixed native and non-native paddock comprising the majority of the lot. Three mapped hydrolines cross the lot, two (2) 1st Order and one (1) 2nd Order, although ground-truthing has determined that only the 2nd order stream is present (see AEP (2023) *Riparian Assessment Report for 313 Magpie Lane, Galambine NSW*). The site is located in a rural area, surrounded by sites of similar condition and usage.

Ground-truthing of the vegetation present within the Subject Site confirmed that is most likely associated with;

- *PCT 281 - Rough-Barked Apple - red gum - Yellow Box woodland on alluvial clay to loam soils on valley flats in the northern NSW South Western Slopes Bioregion and Brigalow Belt South Bioregion;*
 - This community is associated with State Listed Threatened Ecological Community (TEC) - Critically Endangered Ecological Community (CEEC) *White Box - Yellow Box – Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions;*
 - This community is associated with Commonwealth Listed TEC - CEEC *White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland.*

This PCT was confirmed in areas where canopy was present within the Study Area and comprises approx. 3.19ha, of which approx. 0.10ha of this vegetation is proposed for removal within the Subject Site.

The remainder of the Study Area is comprised of:

- Non-native vegetation (approx. 69.58ha);
- Dams (approx. 0.31ha); and
- Infrastructure (buildings/roads) (0.5ha).

Fauna and Flora species recorded were typical of those expected in this locality and in this type of degraded remnant habitat with minimal existing connection to larger patches of habitat offsite. No threatened fauna or flora species were recorded within the Study Area

The site does not contain areas of Biodiversity Values Land (BV Mapped) and proposed removal of native vegetation does not exceed the area clearing threshold for the site. Assessment under the five-

part test of significance of impacts determined that no significant impacts upon threatened entities listed under the BC Act are likely to occur and consideration of the EPBC Act revealed that impacts on Matters of National Environmental Significance are unlikely occur, nor is a referral to the Commonwealth. As such entry into the Biodiversity Offset Scheme is not required for this proposal.

Assessments under the *Biodiversity Conservation Act 2016* (BC Act), *Environmental Protection Biodiversity Conservation Act 1999* (EPBC Act), *State Environmental Planning Policy (Biodiversity and Conservation) 2021* (BC SEPP) and *State Environmental Planning Policy (Resilience and Hazards) 2021* (R&H SEPP) revealed that impacts on Threatened Species and Matters of National Environmental Significance are considered unlikely to occur from the proposed developments, associated infrastructure.

General recommendations and mitigation measures have been included in the report to minimise environmental impacts of the proposal. These measures should provide adequate protection during the construction phase for native flora and fauna in the locality, and ongoing, following potential future construction.

Study Certification and Licensing

Fieldwork was undertaken by Frances O'Brien BEnv LLB GDLP MEL (BAAS: 20013) and the report was written by Alessandro Roncolato BSc&Ints (Environmental), and reviewed and certified by Frances O'Brien BEnv LLB GDLP MEL (BAAS: 20013) of Anderson Environment & Planning.

Research was conducted under the following licences:

- NSW National Parks and Wildlife Service Scientific Investigation Licence SL101313;
- Animal Research Authority (Trim File No: 14/600(2)) issued by NSW Agriculture; and
- Animal Research Establishment Accreditation Number 53724.

Certification:

As the principal certifier, I, Frances O'Brien make the following certification:

The results presented in the report are, in the opinion of the principal author and certifier, a true and accurate account of the species recorded, or considered likely to occur within the Survey Area.

Commonwealth, state and local government policies and guidelines formed the basis of project surveying methodology, unless specified departures from industry standard guidelines are justified for scientific and/or animal ethics reasons; and

All research workers have complied with relevant laws and codes relating to the conduct of flora and fauna research, including the Animal Research Act 1995, National Parks and Wildlife Act 1974 and the Australian Code of Practice for the Care and Use of Animals for Scientific Purposes.

Principal Author and Certifier:



Frances O'Brien

Senior Ecologist (Lead Botanist)

Anderson Environment & Planning

BAAS no. 20013

12 December 2023

Contents

1.0	Introduction	1
2.0	Site Particulars	1
3.0	Proposed Development.....	2
4.0	Scope and Purpose.....	5
5.0	Methodology.....	5
5.1	Information Sources	5
5.2	Considerations of Biodiversity Offsets Scheme	6
5.2.1	Biodiversity Values Map	8
5.2.2	Area Clearing Threshold	9
5.2.3	Test of Significance	9
5.3	Field Survey Methods	9
5.3.1	Vegetation Communities	9
5.3.2	Flora	10
5.3.3	Habitat	10
5.3.4	Fauna	10
5.3.5	Details of Field Surveys	11
6.0	Results	12
6.1	State Vegetation Type Mapping.....	12
6.2	Vegetation Communities	14
6.2.1	White Box – Yellow Box – Blakely’s Red Gum Grassy Woodland and Derived Native Grassland	16
6.2.2	Non-native Species	17
6.3	Threatened Species	17
6.4	Habitat Assessment	17
6.5	Fauna	17
6.6	Database Searches.....	22
7.0	Key Species Considerations	25
8.0	Five-part Test Assessment	26
9.0	EPBC Act Assessment.....	28
10.0	State Environmental Planning Policy (Biodiversity and Conservation) 2021	30
11.0	State Environmental Planning Policy (Resilience and Hazards) 2021	32
12.0	Water Management Act 2000	33
13.0	Important Area Map Assessment.....	34
14.0	Recommendations	35
15.0	References.....	36

Tables

Table 1 – Site Particulars	1
Table 2 – Area Clearing Thresholds (BC Act).....	9
Table 3 – Field Survey Periods	11
Table 4 - State Vegetation Mapping Results	12
Table 5 – Habitat Assessment	17
Table 6 – Threatened Species Appraisal.....	23
Table 7 – Subject Species	25
Table 8 – Key Species Analysis.....	25
Table 9 – Key Species Analysis.....	26
Table 10 - Ecological Community White Box – Yellow Box – Blakely’s Red Gum Grassy Woodland and Derived Native Grassland	28

Figures

Figure 1 - Site Location	3
Figure 2 - Proposed Development Plan	4
Figure 3 – NSW State Vegetation Type Map (DPE 2022).....	13
Figure 4 – Ground-truthed Vegetation	19
Figure 5 – Survey Effort	20
Figure 6 – Impact Area.....	21

Appendices

Appendix A – Flora Species List
Appendix B – Expected Fauna Species List
Appendix C – BOSET Report
Appendix D – Site Photographs
Appendix E – Author CVs

1.0 Introduction

Anderson Environment & Planning was commissioned by ADW Johnson on behalf of CAM Engineering & Construction Pty Ltd (the client) to undertake an Ecological Assessment Report (EAR) for the Proposed Caravan Development at Lot 1 DP 174385, 313 Magpie Lane, Galambine NSW (the Study Area). The site is located within the Mid-Western Regional Local Government Area (LGA) and is zoned RU4 – Primary Production Small Lots. The proposed development is for the construction of a caravan park.

This report is specifically intended to indicate the likelihood of the proposed development and future development of the land to have a significant impact on potentially occurring threatened species or ecological communities. In this regard, the report aims to recognise the relevant requirements of the *Environmental Planning & Assessment Act 1979*, the *Biodiversity Conservation Act, 2016* (NSW) (BC Act) and the Commonwealth *Environment Protection and Biodiversity Conservation Act, 1999* (EPBC Act).

- Describe the ecological values of the Subject Site;
- Explore the potential for threatened species to utilise the area; and
- Assess ecological impacts associated with the proposal against relevant legislation.

Potential ecological impacts on native species in general are also considered, as are recommendations for minimising any impacts within the scope of the development.

For the purposes of referencing, this document should be referred to as:

Anderson Environment & Planning (2023). *Ecological Assessment Report for Proposed Caravan Development for Lot 1 DP 174385, 313 Magpie Lane, Galambine NSW*. Unpublished report for CAM Engineering & Construction Pty Ltd. December 2023.

2.0 Site Particulars

Table 1 – Site Particulars

Detail	Comments
Client	Craig Bateman / CAM Engineering & Construction Pty Ltd
Address	313 Magpie Lane, Galambine NSW
Title(s)	Lot 1 DP 174385
Study Area	The Study Area encompasses the entirety of Lot 1 DP 174385 (approx. 73.58ha), and associated road frontages along the west and north boundaries of the lot (refer Figure 1).
Subject Site	The Subject Site comprises the proposed development footprint and associated infrastructure (approx. 55.23ha) (refer Figure 2).

Detail	Comments
Ground-truthed Vegetation	<p>Initial site inspections involved ground-truthing of state vegetation communities mapped on site. Four (4) BAM plots were undertaken within the mapped vegetation within the Study Area (refer Figure 5). The Plant Community Type (PCT) found on site comprised:</p> <ul style="list-style-type: none"> • PCT 281 - Rough-Barked Apple - red gum - Yellow Box woodland on alluvial clay to loam soils on valley flats in the northern NSW South Western Slopes Bioregion and Brigalow Belt South Bioregion (approx. 3.19ha, of which approx. 0.10ha is within the development footprint). <p>This PCT was confirmed in areas where canopy species were present.</p> <p>The remainder of the Study Area is comprised of:</p> <ul style="list-style-type: none"> • Non-native vegetation (approx. 69.58ha); • Dams (approx. 0.31ha); and • Infrastructure (buildings/roads) (0.5ha).
LGA	Mid-Western Regional
Zoning	RU4 – Primary Production Small Lots.
Current Land Use	<p>The site is currently used as grazing land for cattle and horses. There is a single building, fences and several dams on site.</p> <p>The site contains some highly disturbed remnant native vegetation, and planted native and non-native vegetation, with mixed native and non-native paddock comprising the majority of the lot.</p> <p>Three hydrolines cross the lot, two (2) 1st Order and one (1) 2nd Order. The site is located in a rural area, surrounded by sites of similar condition and usage.</p>
Surrounding Land Use	The Study Area is bounded by Guntawang Road to the west and Magpie Lane in the north. Surrounding lands comprise rural zoned land which are predominantly utilised for agricultural / farming practices.

Figure 1 depicts the extent of the site overlaid on an aerial photograph of the locality.






3.0 Proposed Development

The proposed development is for a Caravan Park and associated infrastructure at 313 Magpie Lane, Galambine NSW.

Figure 2 depicts the proposed development plan within the Study Area.

Disclaimer: While all reasonable care has been taken to ensure the information shown on this map is up to date and accurate, no guarantee is given that the information portrayed is free from error or omission. Please verify the accuracy of all information prior to use.

Legend

-  Study Area
-  Subject Site
-  Mapped Hydroarea
-  Mapped Hydroline
-  Cadastre



Note:
1. Boundaries are not survey accurate
2. Do not scale off the plan



AEP

Figure 1 - Site Location

Date: December 2023

Location: 313 Magpie Lane, Galambine, NSW

Client: ADW Johnson

AEP ref: 3282



Screen buffer planting
Refer to dwg 240401- DA -LA102

Fire fighting water storage treatment supply

Screen buffer planting
Refer to dwg 240401- DA -LA102

Existing mechanical shed

Existing dam to be retained

Existing stream

Reduced VRZ / Revised IPZ

VRZ

Top of bank

VRZ Proposed revegetation zone (VMP) development and management of zone to VMP

Signage

Turfed lined storm water basin
Refer to engineers details

Existing dam to be retained

Turfed lined storm water basin
Refer to engineers details

Waste water pump station

Signage

Screen buffer planting
Refer to dwg 240401- DA -LA102

Screen buffer planting within APZ
Refer to dwg 240401 DA -LA102

Signage

- 1 Main entrance from Magpie Lane. Comprising of signage entrance and specimen trees with understory planting. Species and spacing to suit BPB 2019 guidance.
- 2 Roundabout feature to be tree planting with shrub understory providing a visual aid to enhance sense of arrival.
- 3 Touring Park office and amenities with layby providing arrival node for users of touring park.
- 4 Touring Park streets lined with turfed verges and small canopy native trees
- 5 Recreation space including seating areas, shade structure, amenities building wash facilities and BBQ.
- 6 Grassy recreational informal space including seat furniture and shade trees
- 7 Tree lined road with shrub understory planting provided strong visual emphasis on approaching the residential development.
- 8 Tree lined residential streets with shrub understory. Trees species will define main collector road and secondary collector roads
- 9 Community Centre 1 and external space to architects' detail
- 10 Community Centre 2 and external space to architects' detail
- 11 Office & Activities and external space to architects' detail
- 12 Grassy recreational informal space including seat furniture and shade trees
- 13 Existing trees to be retained
- 14 Proposed buffer screen planting - Tree quantities shown indicatively

4.0 Scope and Purpose

Investigations were carried out at the site and via literature / database searches to gather information required to adequately address the requirements of the Environmental Planning & Assessment Act 1979, the Biodiversity Conservation Regulation 2017 (BCR), as well as Section 7.3 of the BC Act (known as the “5-part test”).

Also afforded consideration were the Commonwealth EPBC Act, relevant *State Environmental Planning Policies* (SEPPs) and local provision such as Local Environmental Plan and Development Control Plan.

The assessment approach was tailored to undertake sufficient works to ensure that legislative requirements were met relating to threatened species and native species in general for the proposed specific development. This was achieved by background research and literature review, database searches, consultation, targeted ecological fieldwork and mapping, detailed habitat assessment, and ultimately impact assessment consideration against the type and form of development proposed.

Impact assessment was undertaken with due reference to the “*Threatened Species Test of Significance Guidelines*” (OEH 2018).

Specifically, the scope of this study is to:

- Identify vascular plant species occurring within the site, including any threatened species listed under the BC Act or EPBC Act;
- Identify and map the extent of vegetation communities within the site, including any TECs listed under the BC Act or EPBC Act;
- Identify any fauna species, including threatened and migratory species, and populations or their habitats, which occur within the site and are known to occur in the wider locality;
- Assess the potential of the proposed development to have a significant impact on any threatened species, populations or ecological communities (or their habitats) identified from the site; and
- Describe measures to be implemented to avoid, minimise, manage or monitor potential impacts of the proposal.

In addition to the survey work conducted within the Study Area and its immediate surrounds, consideration has been afforded to the wider locality, via database searches within 10km of the site and via consideration of habitat areas that may be linked ecologically to the site.

5.0 Methodology

The field surveys for the site have been prepared and performed with due recognition of the State Survey Guidelines (DEC 2004; DECC 2009; DPIE 2020, OEH 2018).

The size of the site, the type of native vegetation and habitats remaining, the status of existing and proposed surrounding land use, and the level and type of habitat linkages to proximate bushland areas were considered in formulating the methodology employed and described below.

The assessment approach was tailored to undertake sufficient works to ensure that legislative requirements were met relating to threatened species and native species in general for the proposed specific development.

5.1 Information Sources

Information and spatial data provided within this EAR has been compiled from various sources including:

- Aerial Photograph Interpretation (API) of the site and surrounding locality (Google 2023, Spatial Services 2023, NearMap 2023);
- *NSW Biodiversity Values Map* (accessed October 2023);
- NSW State Vegetation Type Map (STVM) regional vegetation mapping prepared by Department of Planning and Environment (DPE) 2022.
- State survey guidelines (DEC 2004; DECC 2009; OEH 2018; DPIE 2020a; DPIE 2020b; DPE 2022a);
- DPE Threatened Species, Populations and Ecological Communities website (https://www.environment.nsw.gov.au/AtlasApp/UI_Modules/TSM_Default.aspx?a=1) (accessed October 2023); and
- Collective knowledge gained from previous ecological survey and assessment in the greater NSW region over the past 25 years;

In addition, database searches were carried out, namely:

- Review of flora and fauna records held by the BioNet Atlas of NSW Wildlife within a 10km radius of the site (October 2023); and
- Review of flora and fauna records held by the Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW) Protected Matters Search within a 5km radius of the Subject Site (October 2023).

5.2 Land Categorisation

If proposed clearing is located in a rural land zone (excluding R5 and RU5), the Local Lands Services Act may apply. Proposed clearing is managed based on the land categorisation of the site:

- Category 1 – Exempt Land: Clearing is not regulated and approval not required under LLS Act; and
- Category 2 – Regulated Land:
 - Vulnerable Regulated Land: The clearing is an allowable activity under other legislation, or is authorised under the *Land Management (Native Vegetation Code) 2018*: Clearing may be authorised.
 - Sensitive Regulated Land: The clearing is not an allowable activity under other legislation: a Biodiversity Development Assessment Report (BDAR) must accompany a Development Application.

The site is not currently mapped under the Transitional Native Vegetation Regulatory Map. Examination of historical imagery from 3 June 1964 (Spatial Imagery 2023) demonstrates that the site was already cleared with only patches of native vegetation, and subject to agricultural use (see **Plate 1** below).

Plate 1 – Aerial imagery of the Galambine region dated 3 June 1964. Study Area circled in red.



Category 1 Land is characterised as:

1. Land cleared of native vegetation as at 1 January 1990 or lawfully cleared after 1 January 1990 and before 25 August 2017
2. Land containing low conservation value grasslands or groundcover
3. Native vegetation identified as regrowth in a Property Vegetation Plan (PVP) under the repealed *Native Vegetation Act 2003* only where the PVP specifies a regrowth date
4. Land bio-certified under the *Biodiversity Conservation Act 2016*

Land on the Subject Site satisfies characteristics 1 and 2, and therefore does not require approval under the LLS Act. Consideration of the Biodiversity Offsets Scheme was made based on the presence of potential Box Gum Woodland in the Study Area.

5.3 Considerations of Biodiversity Offsets Scheme

There are three criteria that require assessment under the Biodiversity Offsets Scheme (BOS) to determine whether or not entry into the BOS is required. The three criteria include;

- Whether or not the site contains Biodiversity Values Mapped land;
- Whether or not it exceeds the Area Clearing Threshold applicable to the minimum lot size; and / or
- Whether or not a 5-part Test of Significance determines that a significant impact on threatened biodiversity is likely to occur.

5.3.1 Biodiversity Values Map

The Biodiversity Values Map (BV Map) identifies land with high biodiversity value, as defined by the Biodiversity Conservation Regulation 2017. The Biodiversity Offsets Scheme (BOS) applies to all local developments, major projects or the clearing of native vegetation where the SEPP (Vegetation in Non-Rural Areas) 2017 applies. Any of these will require entry into the BOS if they occur on land mapped on the BV Map. Exempt and complying development or private native forestry are not subject to the Biodiversity Offsets Scheme.

The BV Map does not intersect with the Study Area / Subject Site; therefore, the proposal does not trigger the BOS and the requirement for a Biodiversity Development Assessment Report (BDAR) under this criterion (refer **Appendix D**).

5.3.2 Area Clearing Threshold

“The area threshold varies depending on the minimum lot size (shown in the Lot Size Maps made under the relevant Local Environmental Plan (LEP)), or actual lot size (where there is no minimum lot size provided for the relevant land under the LEP). The area threshold applies to all proposed native vegetation clearing associated with a development proposal”.

Table 2 – Area Clearing Thresholds (BC Act)

Minimum lot size	Threshold for clearing, above which the BOS applies
< 1ha	>0.25ha
1ha to <40ha	>0.5ha
40ha to <1000ha	>1.0ha
>1000ha	>2ha

In this case, as per the Biodiversity Values Map, the minimum lot size is 20ha. Therefore, the applicable area clearing threshold is 0.5ha. Approx. 0.10ha of native vegetation is likely to be impacted as part of the proposal. As such the area clearing threshold is not expected to be exceeded and the BOS is not triggered and the preparation of a BDAR is not required based on the clearing threshold.

5.3.3 Test of Significance

Following the above assessments, it is a requirement to determine whether or not the development is likely to significantly affect threatened species, ecological communities or their habitats using a Test of Significance. The Test of Significance is used to undertake qualitative analysis of the likely impacts and determine whether further assessment is required in association with the development. As part of this Ecological Assessment Report, a Five-part Test of Significance has been undertaken in **Section 8.0**.

5.4 Field Survey Methods

All fieldwork was conducted within the Study Area as shown in **Figure 5**

5.4.1 Vegetation Communities

Vegetation was surveyed utilising a variety of methods, as outlined:

- Consideration of State Vegetation Type Map 2022 (SVTM) for the site by DPE;
- Aerial Photo interpretation (API) to identify any notable variations within the site (Google 2023, NearMap 2023);
- Consultation of 1:25,000 topographic map series for the area;
- Inspection of the site to ground-truth the unit(s) identified by DPE within the SVTM; and
- Identification of the vegetation map unit occurred via identification of required dominant species in community structural layers.

The final derived vegetation map was based on dominant species present in the canopy, shrub and ground layers. The dominant species composition, structural and physical attributes were all considered when assigning the best fit ecological communities.

Consideration was given to the potential for the derived vegetation communities to constitute EECs as listed under the BC Act and/or EPBC Act. The floristic composition, geomorphological characteristics and geographical extent were important considerations in this process. The type and location of the relevant vegetation communities can be seen in **Figures 3 and 4**.

5.4.2 Flora

A flora survey was undertaken to produce a flora species list for the Subject Site, to search specifically for threatened flora species known from the wider locality, and to gather data necessary to both derive vegetation community type(s) and to meet relevant survey guidelines. Such works included:

- Identification of all vascular plant species encountered during fieldwork;
- Four BAM plots were undertaken within the Study Area to determine coverage of native ground covers;
- Survey involved systematic coverage of the Subject Site. The Random Meander Technique (Cropper 1993) was utilised to maximise species encountered. All vascular plant species encountered during fieldwork were recorded; and
- A systematic approach to target threatened plant species at the site as per DPIE guidelines (2020a and 2020b).

5.4.3 Habitat

An assessment of the relative habitat values present within the Subject Site was carried out. This assessment focused primarily on the identification of specific habitat types and resources within the site favoured by known threatened species from the region. The assessment also considered the potential value of the Subject Site (and surrounding areas) for all major guilds of native flora and fauna.

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

In particular, focus was put on documenting the presence of key habitat features such as tree hollows. Hollows are an important resource utilised by a variety of forest fauna, and are particularly relevant for several of the likely key threatened species in this locality. Vertebrate and invertebrate species use hollows as diurnal or nocturnal shelter sites, for rearing young, feeding, thermoregulation, and to facilitate ranging behaviour and dispersal.

Tree hollows were surveyed within the Detailed Study Area utilising the methodology of tree hollow identification set by OEH in the BioBanking field plot methodology (2009), namely:

“A hollow is only recorded if: (a) the entrance can be seen; (b) the minimum entrance width is at least 5 cm across; (c) the hollow appears to have depth (i.e., you cannot see solid wood beyond the entrance); and (d) the hollow is at least 1 m above the ground (this omits hollows in cut stumps or at the base of trees)”.

5.4.4 Fauna

Fauna survey was carried out utilising techniques as outlined below. Fauna survey work was undertaken with reference to relevant guidelines and to add additional information to the generated Expected Fauna Species List (A

Avifauna Surveys

The presence of avifauna within the site was assessed via targeted diurnal incidental observations during fieldwork.

For diurnal surveys, birds were identified by direct observation or by recognition of calls or distinctive features such as nests, feathers etc.

Mammals

The occurrence of mammals within the site was assessed by utilising habitat assessment as an analogue for presence in combination with diurnal survey. Habitat assessment included survey for foraging resources (blossom, herbaceous, prey etc), hollows and roosting opportunity, connectivity and water.

Incidental Observations & Secondary Indications

Incidental records of any fauna species observed during fieldwork were noted. This included opportunistic sightings of secondary indications (scratches, scats, diggings, tracks etc.) of any resident or migratory species. Searches were also conducted for whitewash, regurgitation pellets and prey remains from Owls, chewed (*Allo*) *Casuarina* cones from Black-Cockatoos, chewed fruit remains from frugivorous birds etc.

The occurrence of mammals within the site was assessed by utilising habitat assessment as an analogue for presence. Habitat assessment included survey for foraging resources (blossom, herbaceous, prey etc), hollows and roosting opportunity, connectivity and water as outlined in **Section 5.3.3** above. Modified searches for Koala scats using the *Spot Assessment Technique* (SAT) (Phillips & Callaghan 2011) were undertaken under suitable koala feed trees within the Study Site. No remote monitoring was deemed necessary via Anabats or baited wildlife cameras for this Study Area due to the habitat assessment.

5.4.5 Details of Field Surveys

A summary of the survey effort is below in **Table 3** and **Figure 8**.

Table 3 – Field Survey Periods

Date	Time	Field Activity	No. of Persons on Site
13/07 /2023	13:15 – 16:10	Site meander Habitat assessment Riparian assessment	1
14/07/2023	9:20 – 12:45	Incidental flora & fauna BAM Plots	1

The above survey methodology is considered to provide sufficient understanding of the biodiversity of the Study Area.

In addition, by applying rigorous habitat assessment to more mobile species identified in BioNet Atlas records within the locality, it was ensured that all possible use of the Study Area by notable species was considered, and accommodated within subsequent ecological assessment and management recommendations.

AEP has deemed the survey effort undertaken for the Study Area sufficient given the disturbed and managed nature of the site, the limited amount of habitat features and resources therein, the very small area of low-quality vegetation proposed for removal.

6.0 Results

6.1 State Vegetation Type Mapping

The DPE's SVTM mapping conducted in 2022 reveals that the Study Area lacks significant native vegetation and is categorised as 'Not Classified' due to historical clearing for agricultural / farming practices (refer **Figure 3**).

Regional Vegetation within the Study Area comprises;

- PCT 277 - Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion; and
- PCT 281 - Rough-Barked Apple - red gum - Yellow Box woodland on alluvial clay to loam soils on valley flats in the northern NSW South Western Slopes Bioregion and Brigalow Belt South Bioregion.

Mapped regional vegetation is predominantly located on the northern and western site boundary and small portions of PCT 281 is mapped within the proposed development footprint along Magpie Lane.

In the surrounding locality to the eastern side of the Study Area, the SVTM mapping shows fragments of PCT 81 – Western Grey Box – cypress pine shrub grass shrub tall woodland in the Brigalow Belt South Bioregion.

The communities mapped within the site for the dataset is provided in **Table 4** below and are shown in **Figure 3**.





Table 4 - State Vegetation Mapping Results

Vegetation Community	Area (ha) (SVTM 2022)
Exotic – non native	69.58ha
PCT 281	3.19ha
Infrastructure – buildings / roads	0.50ha
Dam	0.31ha
Total	23.77

State vegetation models and community profiles identified within the SVTM inform our survey design and Plant Community Type determination, as well as subsequent Threatened Ecological Community (TEC) designations.





Disclaimer: While all reasonable care has been taken to ensure the information shown on this map is up to date and accurate, no guarantee is given that the information portrayed is free from error or omission. Please verify the accuracy of all information prior to use.

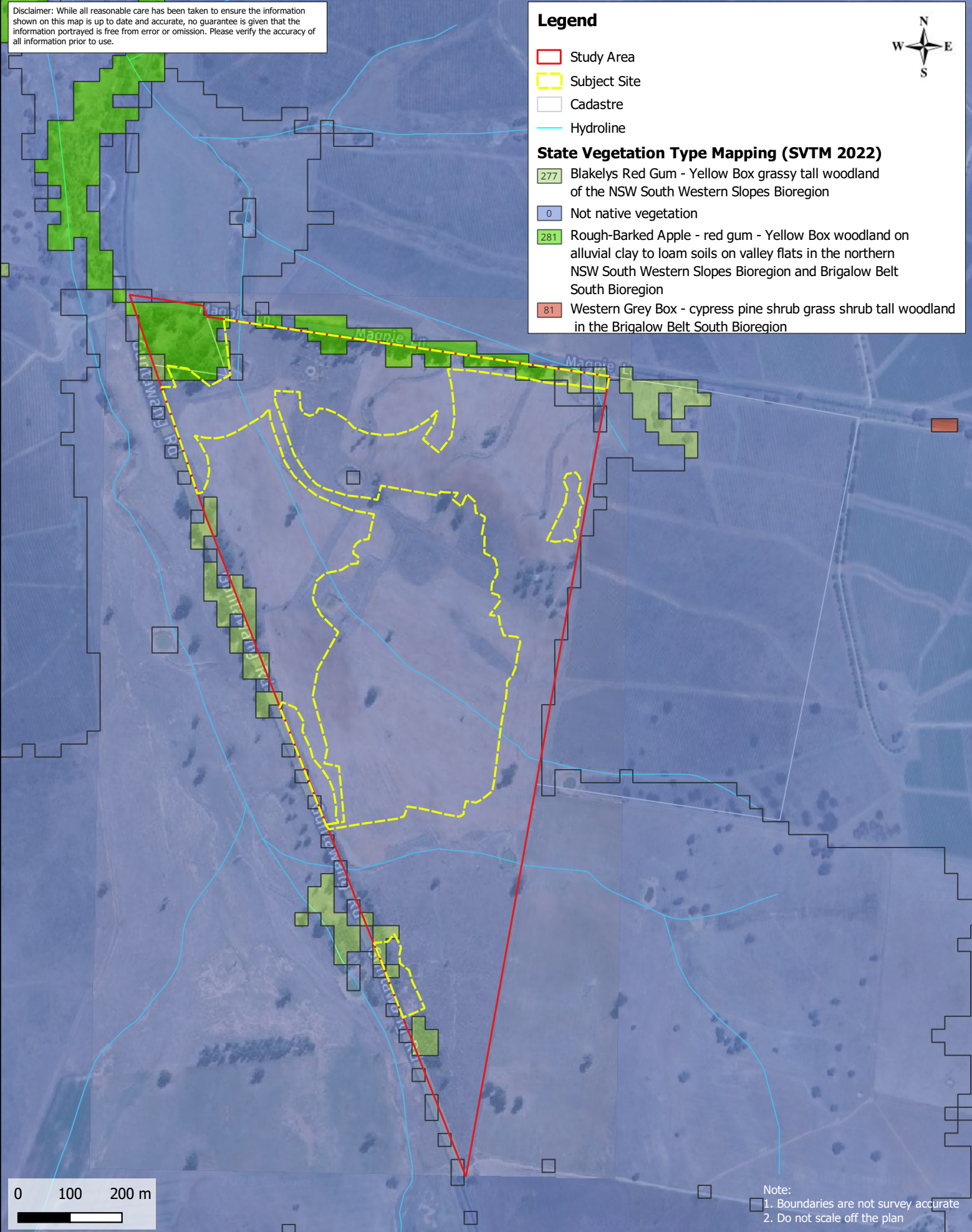
Legend

-  Study Area
-  Subject Site
-  Cadastre
-  Hydroline



State Vegetation Type Mapping (SVTM 2022)

-  277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
-  0 Not native vegetation
-  281 Rough-Barked Apple - red gum - Yellow Box woodland on alluvial clay to loam soils on valley flats in the northern NSW South Western Slopes Bioregion and Brigalow Belt South Bioregion
-  81 Western Grey Box - cypress pine shrub grass shrub tall woodland in the Brigalow Belt South Bioregion



Note:
1. Boundaries are not survey accurate
2. Do not scale off the plan



AEP

Figure 3 - State Vegetation Type Mapping (DPE 2022) Date: December 2023
Location: 313 Magpie Lane, Galambine, NSW
Client: ADW Johnson
AEP ref: 3282

6.2 Vegetation Communities

The Subject Site comprises approx. 55.23ha of which approx. 0.10ha comprises sparse patches of remnant native vegetation and individual trees.

Regionally mapped vegetation occurring in the Study Area comprises;

- PCT 281 - Rough-Barked Apple - red gum - Yellow Box woodland; and
- Non-native vegetation

The current community within the Subject Site is best described as being cleared with patches of open forest and scattered paddock trees, dominated by *Eucalyptus blakelyi*, with an absent shrub layer and highly disturbed ground layer. Although grasses on site could not be identified to species level due to the lack of seeding material, sufficient features were available, and the history of the site suggests, that the grassland in the Subject Site is predominantly non-native.

The remnant native vegetation within the Subject Site consists of:

- Upper Stratum: patches or paddock trees of predominately *Eucalyptus albens*, *E. blakelyi*, *E. melliodora* and *Angophora floribunda*.
- There was little to no shrub layer present on site.
- Weeds dominated the ground layer but some native species were noted. Ground stratum species included native grasses: *Rytidosperma spp.*, *Themeda triandra*, *Sporobolus creber*, and *Aristida spp.*

The results of the BAM plots undertaken on site indicated that the Subject Site is highly degraded with a low Vegetation Integrity Score (VIS).

The field surveys carried out by AEP in July 2023 identified one (1) best fit Plant Community Type (PCT) within the Subject Site, being:

- **PCT 281** – Rough-Barked Apple - red gum - Yellow Box woodland
 - Canopy: *Eucalyptus blakelyi*, *Eucalyptus melliodora*, *Angophora floribunda*, *Eucalyptus albens*
 - Mid-storey: None.
 - Ground Stratum: *Aristida spp.*, *Themeda triandra*, *Juncus usitatus*, *Rytidosperma spp.*, *Vittadinia spp.*

PCT 281 is associated with Critically Endangered Ecological Community (CEEC) *White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions.*

BAM plot photos from each of the different vegetation types in the Study Area are shown below.
Further site photos are located in **Appendix D**



Plate 2 – BAM plot 1 in the Subject Site (PCT 281 - planted)



Plate 3 – BAM plot 2 (grassland)



Plate 4 – BAM plot 3 (grassland)



Plate 4 – BAM plot 4 (PCT 281 - remnant)

6.2.1 White Box – Yellow Box – Blakely’s Red Gum Grassy Woodland and Derived Native Grassland

The associated CEEC is known to occur within the tablelands and western slopes of NSW, including the South Western Slopes bioregion where the Subject Site is located.

Box Gum woodland canopy is characterised by *Eucalyptus albens*, *Eucalyptus melliodora* and *Eucalyptus blakelyi*, which are all found across the Study Area. Vegetation in the parent lot is grassy, and there is evidence of regenerating eucalypts near patches of remnant vegetation.

Within the Study Area, it is possible to identify vegetation patches that would be commensurate with the CEEC. However, native vegetation in the Subject Site itself is limited to individual paddock trees, most of which are proposed for retention, and highly scattered, non-dominant groundcover species. In these areas, there is no evidence of regenerating stems. For this reason, areas of native vegetation within the Subject Site are not considered to reach the condition requirements for Box Gum Woodland CEEC.

6.2.2 Non-native Species

Under the *Biosecurity Act 2015*, all plants in NSW are regulated with a general biosecurity duty to prevent, eliminate or minimise any biosecurity risk they may pose. Twenty-five (25) non-native species of plants have been identified within the Subject Site.

6.3 Threatened Species

No threatened flora or fauna species were recorded within the Subject Site.

Surveys identified that the Subject Site would offer limited foraging habitat for more mobile species, such as birds and bats as the site is highly managed and with minimal hollow bearing trees and has minimal to none understorey habitat.

6.4 Habitat Assessment

Table 5 provides the results from the detailed habitat assessment within the Subject Site.

Table 5 – Habitat Assessment

Habitat Features	Assessment
Native vegetation	The Subject Site of 55.23ha comprises approx. 0.10ha of native vegetation, which consists of scattered paddock trees, disturbed remnant patches, and non-native dominated grasslands. The wider Study Area also contains planted native areas.
Hollow-bearing trees	No Hollow-Bearing Trees (HBTs) were identified within the Subject Site. Despite thorough surveying, very small hollows may also have gone unnoticed that would be suitable for small species such as microbats. Others may have gone unobserved due to the height and orientation of potential hollows but is unlikely.
Water features	Several dams and hydrolines are mapped on site. Ground-truthing was undertaken to determine presence of hydrolines, as detailed in <i>Riparian Assessment Report for Magpie Lane, Galambine</i> (AEP 2023).
Patch size / connectivity	The Subject Site has little to no connectivity in the fragmented landscape of highly disturbed farmland in all cardinal directions.
Other habitat features	There are no caves, crevices or rocky outcrops present within the Subject Site. There is a small amount of debris and old structures, including the foundations of a roundabout and a building in the Study Area. Very little habitat was observed within the Subject Site.

6.5 Fauna




During incidental surveys nine (9) species within the Subject Site, one (1) amphibian species, four (4) birds and four (4) mammals (refer to **Appendix C**). The lack of large hollows, abundance of exotic species and fragmented nature of the Subject Site suggests it is not an area of high value habitat value. It is not expected that the Subject Site would be utilised by threatened fauna species to any significant degree. The species recorded are commensurate with a rural site dominated by grassland with scattered native canopy.

The site may contain marginal foraging opportunities for other species, including mobile (flying) threatened species. They are considered to potentially utilise the site on an intermittent basis as part of a larger home range.






A list of fauna species present onsite has been generated for the site and is included within the Expected Fauna List in **Appendix C**.

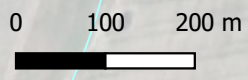
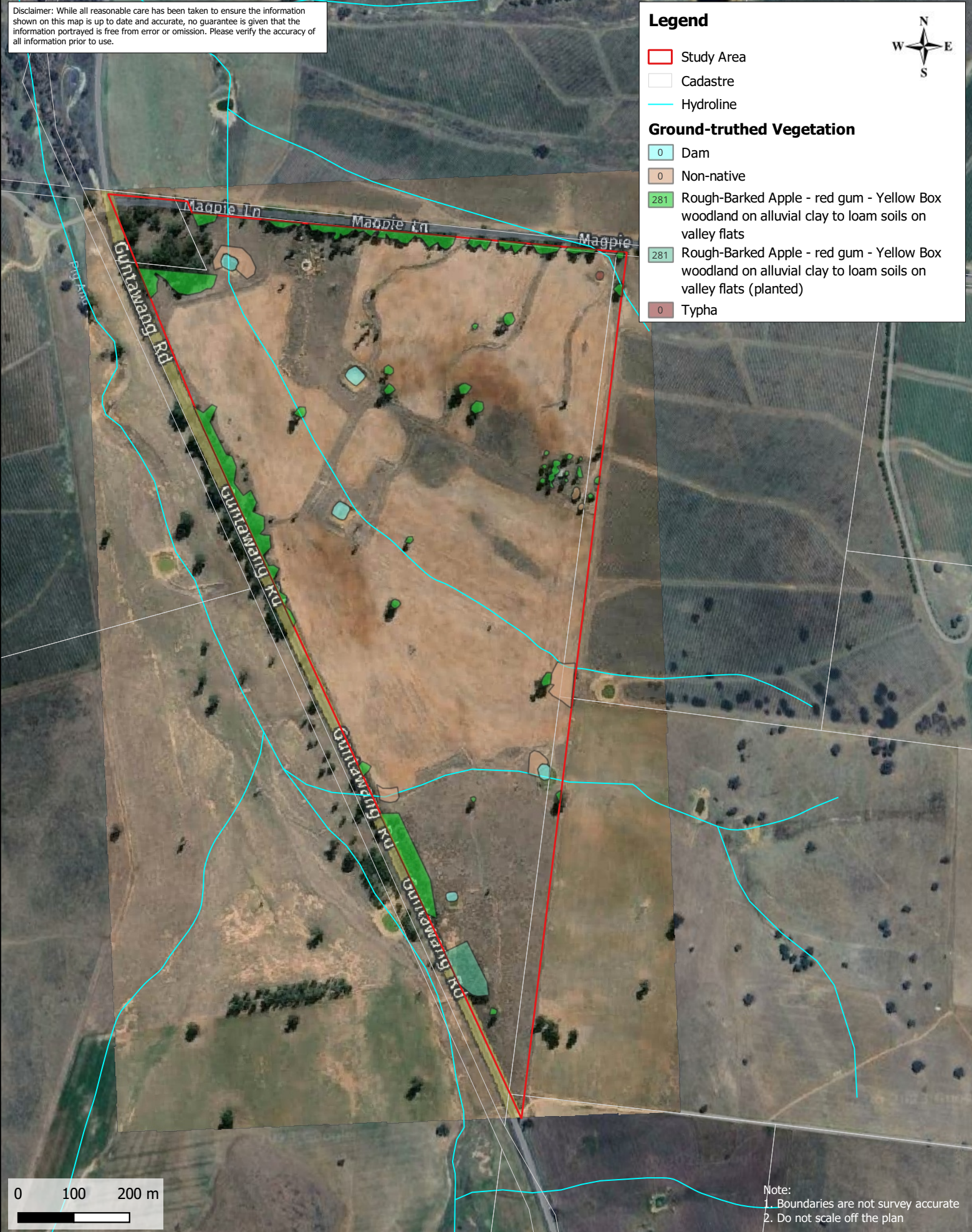
Disclaimer: While all reasonable care has been taken to ensure the information shown on this map is up to date and accurate, no guarantee is given that the information portrayed is free from error or omission. Please verify the accuracy of all information prior to use.

Legend

-  Study Area
-  Cadastre
-  Hydroline

Ground-truthed Vegetation

-  0 Dam
-  0 Non-native
-  281 Rough-Barked Apple - red gum - Yellow Box woodland on alluvial clay to loam soils on valley flats
-  281 Rough-Barked Apple - red gum - Yellow Box woodland on alluvial clay to loam soils on valley flats (planted)
-  0 Typha



Note:
1. Boundaries are not survey accurate
2. Do not scale off the plan



AEP

Figure 4 - Ground-truthed Vegetation

Date: December 2023

Location: 313 Magpie Lane, Galambine, NSW

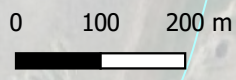
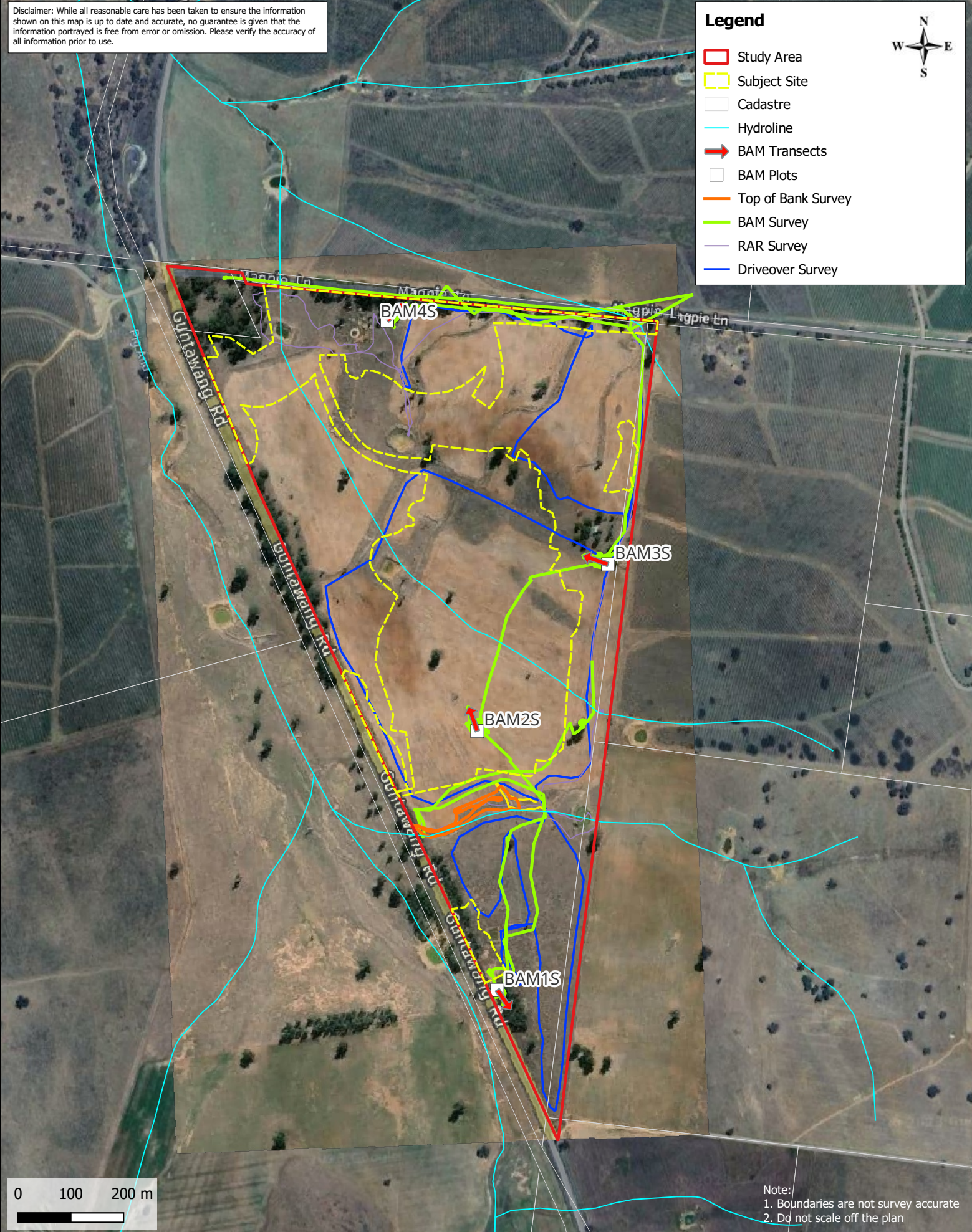
Client: ADW Johnson

AEP ref: 3282

Disclaimer: While all reasonable care has been taken to ensure the information shown on this map is up to date and accurate, no guarantee is given that the information portrayed is free from error or omission. Please verify the accuracy of all information prior to use.

Legend

- Study Area
- Subject Site
- Cadastre
- Hydroline
- BAM Transects
- BAM Plots
- Top of Bank Survey
- BAM Survey
- RAR Survey
- Driveover Survey



Note:
1. Boundaries are not survey accurate
2. Do not scale off the plan



AEP

Figure 5 - Survey Effort

Date: December 2023

Location: 313 Magpie Lane, Galambine, NSW

Client: ADW Johnson

AEP ref: 3282

Disclaimer: While all reasonable care has been taken to ensure the information shown on this map is up to date and accurate, no guarantee is given that the information portrayed is free from error or omission. Please verify the accuracy of all information prior to use.

Legend

- Study Area
- Subject Site
- Hydroline
- Cadastre
- Proposed Native Plantings
- VRZ



Ground-truthed Vegetation

- 0 Dam
- 0 Non-native
- 281 Rough-Barked Apple - red gum - Yellow Box woodland on alluvial clay to loam soils on valley flats
- 281 Rough-Barked Apple - red gum - Yellow Box woodland on alluvial clay to loam soils on valley flats (planted)
- 0 Typha



Note:
 1. Boundaries are not survey accurate
 2. Do not scale off the plan



Figure 6 - Impacted Area

Date: December 2023

Location: 313 Magpie Lane, Galambine, NSW

Client: ADW Johnson

AEP ref: 3282

Disclaimer: While all reasonable care has been taken to ensure the information shown on this map is up to date and accurate, no guarantee is given that the information portrayed is free from error or omission. Please verify the accuracy of all information prior to use.

Legend

- Study Area
- Subject Site
- Hydroline
- Cadastre
- 3282 Planted Trees
- VRZ



Ground-truthed Vegetation

- 0 Dam
- 0 Non-native
- 281 Rough-Barked Apple - red gum - Yellow Box woodland on alluvial clay to loam soils on valley flats
- 281 Rough-Barked Apple - red gum - Yellow Box woodland on alluvial clay to loam soils on valley flats (planted)
- 0 Typha



Note:
 1. Boundaries are not survey accurate
 2. Do not scale off the plan



6.6 Database Searches

Searches were undertaken of databases within a 10km radius of the Subject Site for BC Act listings and EPBC Act listings. Note that any records considered erroneous, historic only, or obviously of no relevance to the site in regards to habitat (e.g., seabirds, marine species etc.) were omitted.

The potential for listed threatened species to occur within the site is considered in **Table 6** and selection for Subject Species in **Table 7** below. Detailed ecological profiles of threatened species can be found at: <https://www.environment.nsw.gov.au/threatenedspeciesapp/>

Table 6 – Threatened Species Appraisal

Scientific Name	Common Name	NSW status	Comm. status	Records	Likelihood of Occurrence
Flora					
<i>Acacia ausfeldii</i>	Ausfeld's Wattle	V		4	The closest individual is located over 5km northeast of the Subject Site. It is associated with <i>Eucalyptus albens</i> , <i>E. blakelyi</i> and <i>Callitris</i> spp, with an understorey of <i>Cassinia</i> spp. and grasses. Germination seems to be stimulated by fire, and the species is under threat from stock grazing and vegetation clearing for agricultural purposes. Given the nature of the Study Area as a location for cattle and horse grazing, and its management as grassland, it is considered unlikely that the species is present on site.
<i>Swainsona sericea</i>	Silky Swainson-pea	V		19	The nearest BioNET record for this species almost 10km from the Subject Site. It is unknown which vegetation types this species is associated within the Central Tablelands and Slopes, although it is associated with Box-Gum Woodland in the Southern Tablelands and South West Slopes, and Natural Temperate Grassland in the Monaro.
SUBJECT SPECIES					
Fauna					
<i>Chalinolobus dwyeri</i>	Large-eared Pied Bat	V	V	1	Limited foraging habitat is present on the Subject Site. Breeding and roosting habitat was not observed on the Subject Site or surrounding Study Area. Species is unlikely to be utilising site beyond marginal foraging habitat. Development is unlikely to significantly impact species.
<i>Falco subniger</i>	Black Falcon	V	-	2	No evidence of breeding behaviour was observed on the Subject Site. Trees on site generally lack the height of trees preferred by this species for nesting. Given the size of the site and its condition, it provides at best marginal foraging habitat. It is unlikely that the proposed development will have a significant impact on this species.
<i>Miniopterus orianae oceanensis</i>	Large Bent-winged Bat	V	-	1	Limited foraging habitat is present on the Subject Site. Breeding and roosting habitat was not observed on the Subject Site or surrounding Study Area. Species is unlikely to be utilising site beyond marginal foraging habitat. Development is unlikely to significantly impact species.
<i>Phascolarctos cinereus</i>	Koala	E	E	4	Limited foraging habitat is present on the Subject Site. Tree species on site are recognised koala use trees under the BC SEPP, however the

Scientific Name	Common Name	NSW status	Comm. status	Records	Likelihood of Occurrence
					trees are highly spaced paddock trees. The closest BioNET record is located over 7km away from the Subject Site. SUBJECT SPECIES
<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	V	V	1	Limited foraging habitat is present on the Subject Site. Breeding and roosting habitat was not observed on the Subject Site or surrounding Study Area. Species is unlikely to be utilising site beyond marginal foraging habitat. Development is unlikely to significantly impact species.
<i>Saccolaimus flaviventris</i>	Yellow-bellied Sheath-tail-bat	V	-	2	Limited foraging habitat is present on the Subject Site. Breeding and roosting habitat was not observed on the Subject Site or surrounding Study Area. Species is unlikely to be utilising site beyond marginal foraging habitat. Development is unlikely to significantly impact species.

Table Key - Status (BC Act & EPBC Act): CE: Critically Endangered, E: Endangered, V: Vulnerable (#) – Indicates number of Atlas Records within 10km of the Subject Site

From **Table 4** above, the species listed in **Table 5** are considered key subject or indicator species for the Subject Site due to being recorded on site, potentially likely to forage and roost or nest on the site, the site potentially forms an important part of a local home range for resident specimens and some potential habitat will be removed by the proposal.

Table 7 – Subject Species

Scientific Name	Common Name	BC Act	EPBC Act
Flora			
<i>Swainsona sericea</i>	Silky Swainson-pea	V	-
<i>Phascolarctos cinereus</i>	Koala	E	E

Table Key - Status (BC Act & EPBC Act):

CE: Critically Endangered, E: Endangered, V: Vulnerable

7.0 Key Species Considerations

The species identified for further consideration have been analysed in **Table 6**. By considering these species and their lifecycle needs, many other species are also inadvertently considered. The analysis below considers key lifecycle features for each guild of species in more detail, and assists in informing the subsequent 5-part test assessment.

Table 8 – Key Species Analysis

Guild / Species	Reason for Inclusion	Comment
Flora <i>Swainsona sericea</i>	Proximity of records and presence of potential habitat	This species was not detected during field surveys within the Study Area. There are no records within 5km of the Subject Site.
Fauna Koala	Proximity of records and presence of koala use trees	This species was not detected during field surveys within the Study Area. There are no records within 5km of the Subject Site.

8.0 Five-part Test Assessment

Section 7.3 of the BC Act lists five factors that must be taken into account in determining the significance of potential impacts of proposed activities on threatened species, populations, ecological communities and/or their habitats as listed within the BC Act.

The 5-part test is used to determine whether there is likely to be a significant impact, and thus whether the Biodiversity Offsets Scheme (BOS) is triggered.

Table 9 – Key Species Analysis

No.	Clause	Assessment
a)	<p>In the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction.</p>	<p><i>Swainsonia sericea</i> was not observed in the Study Area nor are there records within 5km of the Subject Site. It is highly unlikely that the species is present on site or will be impacted by the proposed development.</p> <p>Koalas were not observed in the Study Area nor are there records within 5km of the Subject Site. It is highly unlikely that the species is present on site or will be impacted by the proposed development. See Section 10.0 for further assessment.</p>
b)	<p>In the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:</p> <ul style="list-style-type: none"> • is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or • is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction. 	<p>The CEEC White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland is present on the Subject Site in the form of scattered remnant vegetation. Only a few scattered paddock trees are proposed to be impacted (totally approx. 0.10ha), and that planting of species associated with this CEEC are proposed in areas contiguous to existing patches of vegetation, including as part of a 20m VRZ in the south of the Study Area, totalling approx. 1.58ha. It is considered unlikely that the proposed development will adversely affect the extent or modify the composition of the CEEC and thereby place the local occurrence at risk of extinction.</p>
c)	<p>In relation to the habitat of a threatened species or ecological community:</p> <ul style="list-style-type: none"> • the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and • whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and 	<p>Individual paddock trees are proposed for removal. Vegetation on site is already highly fragmented, and more suitable vegetation for habitat is present within retained lands and the nearby vicinity. It is unlikely that the proposed development will cause extensive removal, fragmentation or isolation of habitat.</p>

No.	Clause	Assessment
	<ul style="list-style-type: none"> the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality. 	
d)	Whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly)	There are no Areas of Outstanding Biodiversity Value on or near site.
e)	Whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process (KTP)	<p><i>Invasion and establishment of exotic vines and scramblers</i></p> <p><i>Invasion of native plant communities by exotic perennial grasses</i></p> <p><i>Loss and degradation of native plant and animal habitat by invasion of escaped garden plants, including aquatic plants</i></p> <p>Multiple weed species were recorded at the Subject Site. This site is already highly degraded and a location for non-native species, and the development is unlikely to create further degradation.</p> <p><i>Clearing of native vegetation</i></p> <p>The proposed development could result in the clearing of 0.1ha native paddock trees, although micro-siting of caravan parking lots will seek to avoid these impacts where practicable. The development is unlikely to contribute to this KTP.</p> <p><i>Infection of native plants by <i>Phytophthora cinnamomic</i></i></p> <p>There is potential for proposed construction works to inadvertently introduce <i>Phytophthora cinnamomic</i> into the site, which may lead to infection and degradation of retained and adjacent vegetation areas. Appropriate controls and measures can be implemented during construction related activity to limit potential risk.</p>

9.0 EPBC Act Assessment

A search was conducted in October 2023 for Matters of National Environmental Significance (MNES) as relevant to the *Environment Protection & Biodiversity Conservation Act 1999* (EPBC Act). The following MNES are considered in this assessment.

World Heritage Properties:

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

National Heritage Places:

The site is not a National Heritage Place and does not contain any matters of national heritage.

Wetlands of International Significance (declared Ramsar wetlands):

The site is approximately 800 – 900km upstream from four (4) wetlands of International Importance. Considering the distance to the wetlands no impacts are expected to occur as part of this proposal.

Great Barrier Reef Marine Park:

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

Commonwealth Marine Areas:

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

Threatened Ecological Communities (TECs):

There are three (3) listed TECs within a 5km radius of the Study Area:

One (1) Endangered Ecological Community:

- *Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia;*

Two (2) Critically Endangered Ecological Communities:

- *Natural Temperate Grassland of the South Eastern Highlands;* and
- *White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland*

PCT 281 is associated with *White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland*. As such an assessment against the Key Diagnostics associated with this Commonwealth community has been undertaken to determine whether the vegetation on site is commensurate with the Commonwealth community.

Table 10 - Ecological Community White Box – Yellow Box – Blakely's Red Gum Grassy Woodland and Derived Native Grassland

Key Diagnostic Features	Subject Site
<p>The ecological community occurs in the following bioregions:</p> <ul style="list-style-type: none"> • Brigalow Belt South • Murray Darling Depression • Nandewar • New England Tableland • NSW North Coast • NSW South Western Slopes • Riverina 	<p>The site is located in the South Western Slopes Bioregion.</p>

<ul style="list-style-type: none"> • South Eastern Queensland • South East Corner • South East Coastal Plain • South Eastern Highlands • Southern Volcanic Plain • Sydney Basin • Victorian Midlands 	
<p>It has, or previously had, an overstorey dominated or co-dominated by:</p> <ul style="list-style-type: none"> • Eucalyptus albens and/or E. melliodora and/or E. blakleyi 	All three species present on Subject Site.
It has a predominantly native ground layer	Under paddock trees in Subject Site, groundcover is predominantly non-native.
Tussock grasses are conspicuous in the ground layer	Present on Subject Site, but dominated by non-native grasses.
Amongst the grass tussocks and sometimes in swathes, a range of broad-leaved forbs and petaloid monocots may be a major component of the plant diversity.	Very few native forbs and monocots were observed even within the Study Area. There were few to none on the Subject Site.
While shrubs may be dominant locally within areas of the ecological community, areas of native vegetation with a more continuous shrub layer, in which the average shrub cover of the whole patch is greater than 30%, is considered to be a shrubby woodland and so is not part of the listed ecological community. In assessing this, the effects of disturbance need to be considered, for example where heavy grazing may result in high densities of shrubs during a recovery phase.	Within the Subject Site, little to no shrubs were observed.
Result	Not a Listed Community Under the EPBC Act

Threatened Species:

No threatened flora or fauna species listed under the EPBC Act were recorded within the Study Area. Given that approx. 0.10ha of native vegetation is being impacted by this development it is unlikely to significantly impact any EPBC listed flora and fauna species. Please note recommendations are made in **Section 12.0** of this report to address concerns regarding indirect impacts to native vegetation and surrounding sensitive biodiversity values.

Migratory Species:

A total of 10 migratory species may occur in, or may relate to areas within 5km of the Subject Site. It is not considered that the development of this land is likely to significantly affect the availability of potential habitat for such mobile species, or disrupt migratory patterns.

EPBC Act Assessment Conclusion:

Consideration of the EPBC Act revealed that it is unlikely that significant impacts on Matters of National Environmental Significance will occur as a result of the proposal. As such a referral is not considered likely to be necessary.

10.0 State Environmental Planning Policy (Biodiversity and Conservation) 2021

The Biodiversity and Conservation SEPP commenced on 1 March 2022. This SEPP consolidated 11 other SEPPs within this SEPP on the 1 March 2022. The State Environment Planning Policy (Koala Habitat Protection) 2021 (BC SEPP) was one SEPP that was consolidated within the Biodiversity and Conservation SEPP 2021 under Chapter 4 – Koala Habitat Protection 2021. No policy changes were made as part of the consolidation nor did the legal effect of the existing SEPPs, with section 30A of the *Interpretation Act 1987* applying to the transferred provisions. The consolidation was undertaken in accordance with section 3.22 of the *Environmental Planning and Assessment Act 1979*.

The Biodiversity and Conservation SEPP 2021, aims to encourage the conservation and management of areas of natural vegetation that provide habitat for Koalas to support a permanent free-living population over their present range and reverse the current trend of Koala population decline.

The land which comprises the Subject Site is has no approved koala plan of management. According to the BC SEPP 2021, the policy applies if:

4.9 Development assessment process—no approved Koala plan of management for land

(1) This clause applies to land to which this Policy applies if the land—

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

(b) does not have an approved Koala plan of management applying to the land.

The entirety of Lot 1 DP 174385, 313 Magpie Lane, Galambine NSW, is greater than 1ha and does not have an approved Koala plan of management. Therefore, the SEPP does apply.

(5) However, despite subclauses (3) and (4), the council may grant development consent if the applicant provides to the council –

a. information, prepared by a suitably qualified and experienced person, the council is satisfied demonstrates that the land subject of the development application –

i. does not include any trees belonging to the koala use tree species listed in Schedule 2 for the relevant koala management area, or

ii. is not core koala habitat,

Site inspections identified that trees belonging to the koala use tree species listed in Schedule 2 for the relevant koala management area were located on site.

In regards to identifying the site as core koala habitat, core koala habitat is defined as;

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

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

Highly Suitable Koala Habitat is defined as – Where trees within any PCT are the regionally relevant species of those listed in Schedule 3 for the relevant koala management area.

Koala Investigation Results

The following koala use trees were identified on site:

- *Eucalyptus blakelyi*
- *Eucalyptus melliodora*

Desktop assessment of local records in BioNet Atlas showed no koala records were identified within the 10 km BioNet search.

Based on paucity of recent local records, the highly disturbed and scattered canopy, as well as incidental survey work, it is considered unlikely that koala are present within the Subject Site. Therefore, the Subject Site does not constitute Core Koala Habitat and no further assessment is required.

11.0 State Environmental Planning Policy (Resilience and Hazards) 2021

Investigations in accordance with the State Environmental Planning Policy (Resilience and Hazards) 2021 (R&H SEPP) found that the Subject Site is not mapped under Coastal Management Areas. As such, there is no need for an assessment to determine if the proposed development is likely to impact the Coastal Environment Area Map.

12.0 Water Management Act 2000

Desktop surveys indicated the presence of two (2) 1st order and one (1) 2nd order hydrolines across the Study Area. However, field surveys identified a lack of watercourse features associated with the first order streams on site. The areas where first order streams were mapped comprised areas of overland flow from surrounding flat paddocks and pastoral land. As a result, the mapped streams in these locations were not present on site (see AEP (2023) *Riparian Assessment Report for 313 Magpie Lane, Galambine*).

Upon desktop investigation, the 2nd order stream in the southern portion of the site was assumed present and was not assessed using the waterfront land tool, as this stream is located south of the proposed development area. A 20m VRZ (totalling approx. 1.58ha) is therefore required for this stream.

To ensure a thorough assessment, the Top of Bank was ground-truthed during field investigations and assessed using LiDAR imagery in order to determine accurate Vegetated Riparian Zones (VRZ) area for this stream, thus ensuring the proposed development does not pose an impact on this watercourse (refer **Figure 6**).

The DPE (Water) administers the WM Act and is required to assess activities carried out on waterfront land. Waterfront land includes the bed and bank of any river, lake or estuary and all land within 40 meters of the highest bank of the river, lake or estuary. Certain activities within this land are defined as a 'controlled activity' and requires approval from the Office of Water.

A Controlled Activity Approval (CAA) will need to be lodged with DPE Water in accordance with the requirements under the WM Act as part of the Construction Works application, and a Vegetation Management Plan will be designed to manage vegetation within the 20m VRZ.

13.0 Important Area Map Assessment

No sections of the Study Area have been mapped as “Swift Parrot Important Areas”, “Regent Honey Eater Important Areas, or “Migratory Species Important Areas” as defined by the Biodiversity Assessment Method Calculator Important Area Map (DPE 2023).

As such it is not considered that the development would have any major adverse impacts upon these species or species groups.

14.0 Recommendations

The following general recommendations are made for consideration to minimise localised impacts on biodiversity in general as a result of the proposed development:

- Best practice erosion and sedimentation controls should be put in place prior to development to limit offsite movement of materials into the surrounding areas.
- Prior to construction commencing, exclusion flagging tape and signage will be installed to delineate construction zone from retained vegetation;
- Soft engineering techniques are to be utilised along the perimeter of the Subject Site where retained vegetation adjoins earthworks to ensure protection of native individuals;
- Prior to construction commencing, the Project Ecologist will inspect the exclusion flagging tape alignment to ensure it is adequate for protection of retained trees and vegetation;
- No machinery or material should be stored within retained vegetation or within the dripline of retained trees;
- Although no hollow-bearing trees were observed during surveys, pre-clearance surveys should be undertaken to identify and clearly mark all habitat features including hollow-bearing trees, and observe any occupied hollows prior to felling. Appropriate measures should be devised prior to vegetation removal works to minimise impacts on resident fauna during the felling process
- Required clearing of any vegetation on site should be undertaken in the presence of a suitably experienced Ecologist to ensure any displaced native fauna can be taken into care and dealt with appropriately.
- Any felled trees should remain in situ a minimum of 48 hours to allow any fauna to disperse.
- If required, to mitigate the loss of tree hollows it is proposed that hollows are replaced at a ratio of 1:1 within retained lands on site;
- Impacts of Chytrid and Phytophthora will be managed through the adoption of site hygiene protocols. Equipment should be cleaned thoroughly and disinfected before entering site to prevent weed and disease introduction. The presence of sensitive species and communities increases the importance of hygiene controls. Machinery and equipment (including workers' boots) are to be cleaned of mud and soil, and sterilised (this can be achieved with a 70% solution of methylated spirits or 5% sodium hypochlorate solution) before introduction to the site. Workers, equipment and vehicles are to remain within the construction zone as far as practicable and avoid entering surrounding vegetated areas. Site induction procedures will include explanation of Phytophthora and its impacts. Further, fauna handling, including of amphibians, is to be undertaken only by a qualified ecologist or wildlife carer.
- No barbed wire is to be used within the Subject Site.
- Any landscaping is to utilise regionally endemic species to the locality and incorporate landscape design techniques that promote ecological connectivity and reduce edge effects; and
- A Vegetation Management Plan (VMP), should be prepared to manage retained vegetation on site associated with the management of the Vegetated Riparian Zone (VRZ) (see AEP (2023) *Riparian Assessment Report for 313 Magpie Lane, Galambine*).

By implementing these recommendations, the potential for edge effects can be minimised, thereby reducing the adverse impact of the proposed development on the integrity and resilience of the rural environment.

15.0 References

- Australian Department of Climate Change, Energy, the Environment and Water (n.d.). Protected Matters Search. Accessed June 2023. DCCEEW, Canberra, ACT.
- Australian Museum (1983). The Complete Book of Australian Mammals. Strahan, R., (ed.), Angus & Robertson, London.
- Churchill, S (2008). Australian Bats. Second Edition. Allen & Unwin Publishers.
- Cogger, H (2014). Reptiles and Amphibians of Australia. CSIRO Publishing, Melbourne.
- Harden, G. (ed) (2000). Flora of New South Wales, Volume 1. Revised edition. UNSW, Kensington, NSW.
- Harden, G. (ed) (2002). Flora of New South Wales, Volume 2. Revised edition. UNSW, Kensington, NSW.
- Harden, G. (ed) (1992). Flora of New South Wales, Volume 3. UNSW, Kensington, NSW.
- Harden, G. (ed) (1993). Flora of New South Wales, Volume 4. UNSW, Kensington, NSW.
- HSC (2006) Flora and Fauna Assessment Guidelines for Development Applications, NSW
- Jacobs, S.W.L., Whalley, R.D.B. and Wheeler, D.J.B., Grasses of New South Wales, 4th Edition. The University of New England, Armidale NSW.
- Keith, D. 2004, Ocean Shores to Desert Dunes: The native vegetation of New South Wales and the ACT, Department of Environment and Conservation, NSW.
- Landcom (2004). Managing Urban Stormwater: Soils and Construction 4th edition. New South Wales Government, Parramatta, NSW.
- NSW Department of Environment and Climate Change (2018). Threatened Species Test of Significance Guidelines. OEH, Sydney.
- NSW Department of Environment and Conservation (2004). Threatened Biodiversity Survey and Assessment: Guidelines for Developments and Activities. Working Draft. NSW Department of Environment and Conservation 2004.
- NSW Department of Planning and Environment (2022a) State Vegetation Type Map. Version C1.1.M1.1. <https://datasets.seed.nsw.gov.au/dataset/nsw-state-vegetation-type-map>
- NSW Department of Planning and Environment (2023). NSW BioNet Atlas. Accessed June 2023. Sydney NSW.
- NSW Department of Planning and Environment (2021). Threatened Species, Populations and Ecological Communities website. https://www.environment.nsw.gov.au/atlaspublicapp/UI_Modules/ATLAS_/AtlasSearch.aspx.
- NSW Department of Planning, Industry and the Environment (2020). The Biodiversity Assessment Method. Sydney. NSW.
- NSW Department of Planning, Industry and the Environment (2020b). Surveying threatened plants and their habitats NSW survey guide for the Biodiversity Assessment Method. DPIE, Sydney, NSW.

NSW Government (2023) *Transitional native vegetation regulatory map viewer*. Available from: <https://www.lmbc.nsw.gov.au/Maps/index.html?viewer=NVRMap>.

Pizzey, G (2012). *The Field Guide to the Birds of Australia* (9th ed.). Harper Collins Publishers, Sydney NSW.

Robinson, L (1991). *Field Guide to the Native Plants of Sydney*. Revised Second Edition. Kangaroo Press.

Spatial Services (2023) *Historical Imagery*. Available from: <https://portal.spatial.nsw.gov.au/portal/apps/webappviewer/index.html?id=f7c215b873864d44bccdda8075238cb>.

Strahan, R (2004). *The Mammals of Australia*. New Holland Publishers.

Swan, G., Shea, G., and Sadler, R. (2004). *A Field Guide to the Reptiles of New South Wales*. 2nd Edition. New Holland Publishing, Sydney.

Appendix A – Flora Species List

FLORA SPECIES LIST

The following list includes all species of vascular plants observed on site during fieldwork. It should be noted that such a list cannot be considered comprehensive, but rather indicative of the flora present on the site. It can take many years of flora surveys to record all of the plant species occurring within any area, especially plant species that are only apparent in some seasons such as Orchids.

A number of species cannot always be accurately identified during a brief survey, generally due to a lack of suitable flowering and/or fruiting material. Any such species are identified as accurately as possible, and are indicated in the list as thus:

- specimens that could only be identified to genus level are indicated by the generic name followed by the abbreviation “sp.”, indicating an unidentified species of that genus;
- specimens for which identification of the genus was uncertain are indicated by a question mark (“?”) placed in front of the generic, which is followed by the abbreviation “sp.” and;
- specimens that could be accurately identified to genus level, but could be identified to species level with only a degree of certainty are indicated by a (“?”) placed in front of the epithet.

Authorities for the scientific names are not provided in the list. These follow the references outlined below.

Harden, G. (ed) (2000). *Flora of New South Wales, Volume 1*. Revised edition. UNSW, Kensington, NSW.

Harden, G. (ed) (2002). *Flora of New South Wales, Volume 2*. Revised edition. UNSW, Kensington, NSW.

Harden, G. (ed) (1992). *Flora of New South Wales, Volume 3*. UNSW, Kensington, NSW.

Harden, G. (ed) (1993). *Flora of New South Wales, Volume 4*. UNSW, Kensington, NSW.

Names of families and higher taxa follow a modified Cronquist System (1981).

Introduced species are indicated by an asterisk “**”.

Threatened species listed under the *Biodiversity Conservation Act 2016* (BC Act) or the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) are indicated in **bold font**.

Family	Scientific Name	Common Name
Aizoaceae	<i>Galenia pubescens</i> *	Galenia
Asteraceae	<i>Cirsium spp.</i> *	-
Asteraceae	<i>Cirsium vulgare</i> *	Spear Thistle
Asteraceae	<i>Gamochaeta americana</i> *	Cudweed
Asteraceae	<i>Hypochaeris radicata</i> *	Flatweed
Asteraceae	<i>Onopordum acanthium subsp. acanthium</i> *	Scotch Thistle
Asteraceae	<i>Sonchus oleraceus</i> *	Common Sow-thistle
Asteraceae	<i>Vittadinia spp.</i>	Fuzzweed
Asteraceae	<i>Cassinia sifton</i>	Sifton Bush
Cactaceae	<i>Opuntia spp.</i> *	-
Carophyllaceae	<i>Cerastium vulgare</i> *	Mouse-ear Chickweed
Clusiaceae	<i>Hypericum perforatum</i> *	St John's Wort
Cyperaceae	<i>Schoenus spp.</i>	-
Fabaceae	<i>Trifolium repens</i> *	White Clover
Juncaceae	<i>Juncus acutus</i> *	Sharp Rush
Juncaceae	<i>Juncus spp.</i>	-
Juncaceae	<i>Juncus australis</i>	Rush
Juncaceae	<i>Juncus usitatus</i>	Common Rush
Lamiaceae	<i>Ajuga reptans</i> *	-
Malvaceae	<i>Modiola caroliniana</i> *	Red-flowered Mallow
Myrtaceae	<i>Angophora floribunda</i>	Rough-barked Apple
Myrtaceae	<i>Eucalyptus albens</i>	White Box
Myrtaceae	<i>Eucalyptus blakelyi</i>	Blakeleys Red Gum
Myrtaceae	<i>Eucalyptus melliodora</i>	Yellow Box
Plantaginaceae	<i>Plantago lanceolata</i> *	Ribwort
Poaceae	<i>Aristida spp.</i>	A Wiregrass
Poaceae	<i>Avena byzantina</i> *	Red Oat
Poaceae	<i>Briza maxima</i> *	Quaking Grass
Poaceae	<i>Cenchrus ciliaris</i> *	Buffel Grass
Poaceae	<i>Cenchrus clandestinum</i> *	Kikuyu
Poaceae	<i>Digitaria spp.</i> *	A Finger Grass

Family	Scientific Name	Common Name
Poaceae	<i>Lolium perenne</i> *	Perennial Ryegrass
Poaceae	<i>Poa labillardierei</i> var. <i>labillardierei</i>	Tussock Grass
Poaceae	<i>Poa</i> spp.*	
Poaceae	<i>Setaria pumila</i> *	Pale Pigeon Grass
Poaceae	<i>Cynodon dactylon</i>	Common Couch
Poaceae	<i>Enneapogon nigricans</i>	Nine-awn Grass
Poaceae	<i>Rytidosperma</i> sp.	A Wallaby Grass
Poaceae	<i>Sporobolus creber</i>	Slender Rat's Tail Grass
Poaceae	<i>Themeda triandra</i>	Kangaroo Grass
Pteridaceae	<i>Cheilanthes sieberi</i>	Rock Fern
Rosaceae	<i>Acaena ovina</i>	Acaena
Scrophulariaceae	<i>Veronica persica</i> *	Creeping Speedwell
Typhaceae	<i>Typha orientalis</i>	Broadleaf Cumbungi
Verbenaceae	<i>Verbena x brasiliensis</i> *	Gin Case

Appendix B – Expected Fauna Species List

OBSERVED FAUNA SPECIES LIST

The following list includes fauna species that could be reasonably expected to occur on the Subject Site at some point, given site attributes and location.

“Threatened species listed under the BC Act or the EPBC Act are indicated in bold font.

Observations: Observed (O), Heard (W), Scat (P), Misc. (M), Track/scratching (F), Nest (E), Burrow (FB),

Bolded Species: Listed threatened species in bold

*: Introduced species

Family Name	Scientific Name	Common Name	Surveyed Observations	Survey Equipment
Amphibians				
Myobatrachidae	<i>Crinia signifera</i>	Common Eastern Froglet	W	
Aves				
Cacatuidae	<i>Eolophus roseicapilla</i>	Galah	O	
Artamidae	<i>Gymnorhina tibicen</i>	Australian Magpie	O	
Rhipiduridae	<i>Rhipidura leucophrys</i>	Willie Wagtail	O,W	
Corvidae	<i>Corvus coronoides</i>	Australian Raven	O,W	
Mammals				
Macropodidae	<i>Macropus giganteus</i>	Eastern Grey Kangaroo	O	
Canidae	<i>Vulpes vulpes</i>	Fox*	F	
Equidae	<i>Equus caballus</i>	Horse*	O	
Bovidae	<i>Bos taurus</i>	Cattle*	O	

Appendix C – BVMAT Report



Biodiversity Values Map and Threshold Report

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

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

There are two pathways for determining whether or not a BDAR is required for the proposed development:

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

Biodiversity Values Map and Threshold Report	
Date of Report Generation	
23/10/2023 2:25 PM	
Biodiversity Values (BV) Map Threshold - Results Summary	
1	Does the development Footprint intersect with BV mapping?
	yes
2	Was ALL of the BV Mapping within the development footprinted added in the last 90 days? (dark purple mapping only, no light purple mapping present)
	no
3	Date of expiry of dark purple 90 day mapping*
	N/A
4	Is the Biodiversity Values Map threshold exceeded?
	yes
Area Clearing Threshold - Results Summary	
5	Size of the development or clearing footprint
	735,781.9 sqm
6	Native Vegetation Area Clearing Estimate (NVACE)
	65,355.0 sqm
7	Method for determining Minimum Lot Size
	LEP
8	Minimum Lot Size (10,000sqm = 1ha)
	200,000 sqm
9	Area Clearing Threshold (10,000sqm = 1ha)
	5,000 sqm
10	Is the Area Clearing Threshold exceeded?
	yes
Is the proposed development assessed above the Biodiversity Offsets Schema (BOS) threshold?	
Exceeding the BOS threshold will require completion of a Biodiversity Development Assessment Report (BDAR). More details provided on page 2.	
yes	



What do I do with this report?

- If the result above indicates a BDAR is required, a Biodiversity Development Assessment Report may be required with your development application. Go to <https://customer.lmbc.nsw.gov.au/assessment/AccreditedAssessor> to access a list of accredited assessors. An accredited assessor can apply the Biodiversity Assessment Method and prepare a BDAR.
- If the result above indicates a BDAR is not required, you have not exceeded the BOS threshold. This report can be provided to Council to support your development application. You may still require a permit from your local council. Review the development control plan and consult with council. You may still be required to assess whether the development is “likely to significantly affect threatened species” as determined under the test in Section 7.3 of the Biodiversity Conservation Act 2016. You may also be required to review the area where no vegetation mapping is available.
- If all Biodiversity Values mapping within your development footprint are less than 90 days old, i.e. mapping is displayed as dark purple on the map, a BDAR may not be required if your Development Application is submitted within that 90 day period. *Any BV mapping less than 90 days old on this report will expire on the date provided in Line item 3 above.

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

Review Options:

- If you believe the Biodiversity Values mapping is incorrect please refer to our [BV Map Review webpage](#) for further information.
- If you disagree with the NVACE result for Line Item 6 above (i.e. area of Native Vegetation within the Development footprint proposed to be cleared) you can undertake a self-assessment. For more information about this refer to the Guide for reviewing BMAT Tool area clearing threshold results.

Acknowledgement

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

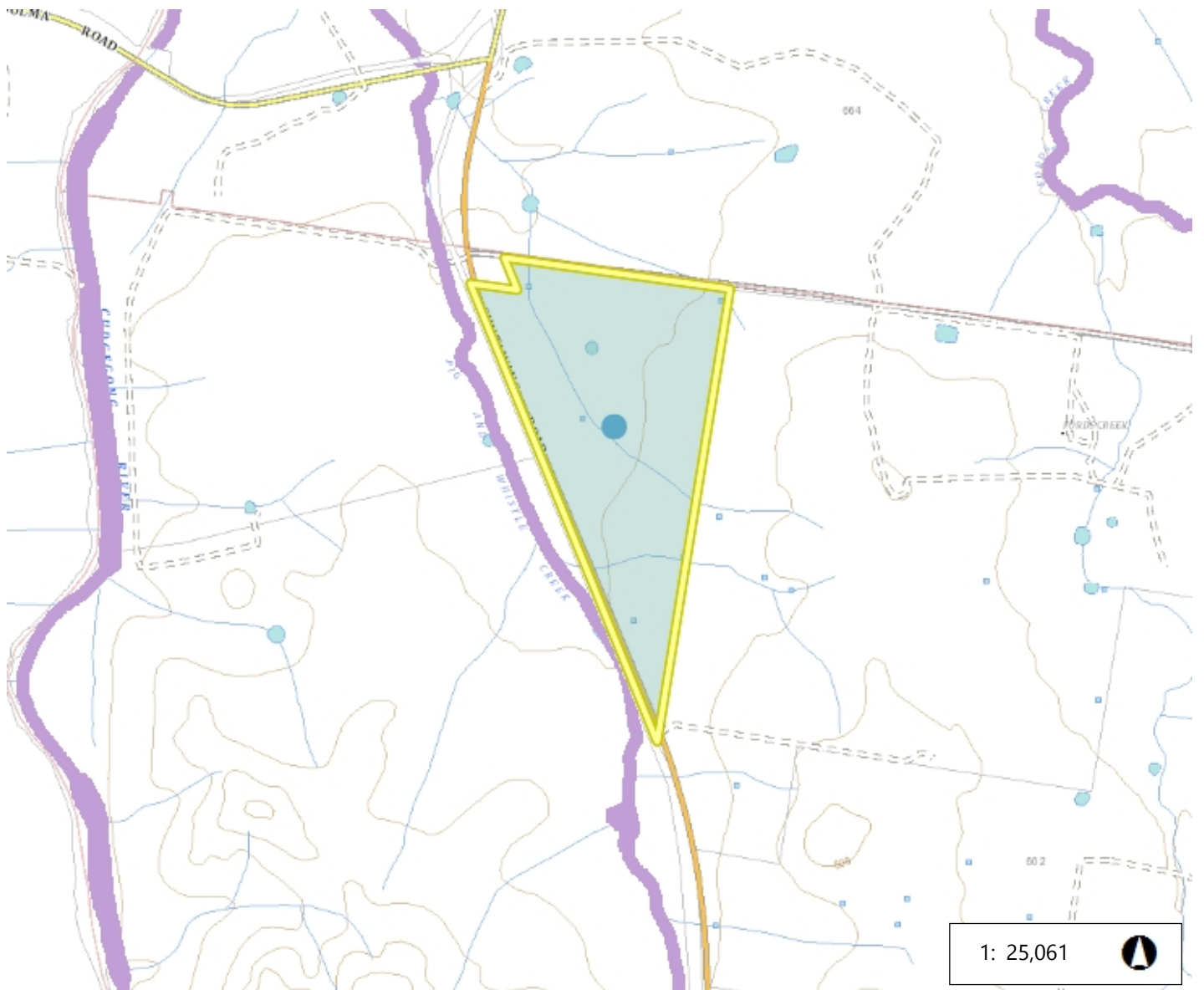
Signature: _____

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

Date: _____

23/10/2023 02:25 PM

Biodiversity Values Map



1,273.1 0 636.56 1,273.1 Metres

WGS_1984_Web_Mercator_Auxiliary_Sphere

Legend

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

23/10/2023 02:25 PM

1: 25,061



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

Imagery © Airbus DS/Spot Image 2016

© NSW Department of Customer Service, Basemaps 2019

© NSW Department of Planning and Environment

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

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

Appendix D – Site Photographs



Above: One of the dams on site

Below: Current entryway into site.





Above and below: General condition of site with grazing animals present





Above: Remnant vegetation in Study Area outside of development footprint

Appendix E – Author CVs

Frances O'Brien

Curriculum Vitae

Frances is a Senior Ecologist and Lead Botanist with Anderson Environment and Planning, being an Accredited Assessor with over 12 years-experience in environmental impact assessment, environmental education, conservation land management, bush regeneration, wildlife rescue and rehabilitation, environmental sustainability, and environmental law.

Qualifications

- Biodiversity Accredited Assessor Scheme no. 20013
- Master of Environmental Law (University of Sydney NSW)
- Graduate Diploma of Legal Practice (Australian National University ACT)
- Bachelor of Environment (Climate Science) with Bachelor of Laws (Macquarie University NSW)

Further Education & Training

- NSW Driver's Licence
- First Aid in Remote Situations (HLTAID005)
- General Construction Induction Card (White Card)
- Advanced Plant Identification (University of New South Wales NSW)

Fields of Competence

- Biodiversity Assessment Method application
- Plant identification
- PCT determination
- Environmental legislation interpretation
- GIS

Relevant Employment History

2021 – Present	Senior Ecologist (Lead Botanist) Anderson Environment & Planning, Newcastle
2021	Senior Scientist – Ecology Ecology Team, Sustainability, Ecology and Climate Change Division, SMEC, Newcastle
2018 - 2021	Ecologist/Senior Ecologist Anderson Environment & Planning, Newcastle
2014 - 2017	Environmental Officer Projects Team, Seventh-day Adventist Aged Care, Greater Sydney, Wahroonga

Professional Affiliations / Memberships

- Ecological Consultants Association of NSW member
- Australian Plants Society NSW member
- Australian Association of Bush Regenerators NSW member
- Hunter Intrepid Landcare – Group Coordinator (past)
- Wahroonga Waterways Landcare - Group Coordinator (past)
- Lane Cove National Park Bushcare volunteer (past)
- Ku-ring-gai Municipal Council Bushcare volunteer (past)

Alessandro Roncolato

Curriculum Vitae

Qualifications

- Bachelor Of Arts in International Studies and Bachelor of Science (Environmental Biology) – University of Technology Sydney (2019-2023)

Further Education & Training

- Class C NSW Driver's Licence
- Boat License
- SSI Open Water Divers License
- White Card

Fields of Competence

- Assisting with field surveys
- Assisting with biodiversity surveys
- Collecting and recording data
- Report Writing

Relevant Employment History

2023 – Present

Ecologist

Anderson Environment & Planning, Newcastle

2023 – 2017

Construction Labourer

Bedrock

SIMON PURCELL

Curriculum Vitae

Simon works with AEP in the role of Senior Ecologist. Simon has over 7 years of professional experience managing projects in the fields of terrestrial ecology, mining and mine rehabilitation and environmental management.

Qualifications

- Bachelor of Applied Science, Major Wildlife Science, University of Queensland Gatton 2013
- Certificate III in Animal Care and Management, Companion Animal Services (2008)

Further Education & Training

- NSW Class C Driver's Licence

Fields of Competence

- Terrestrial Ecology field survey, covering terrestrial flora and fauna
- Project Management

Relevant Employment History

2020 (November) -present Senior Ecologist

Anderson Environment & Planning, Newcastle

- Currently employed by Anderson Environment & Planning to assist in the provision of consulting services to land, property, mining industry, legal and government sectors. Covering ecological, project management, environmental, planning services, advices, strategy and representation.

2018-2019

Team Leader / Ecologist

Ecotone Flora Fauna Consultants, Weipa, QLD

- Conducted client liaison meetings, providing ecological advice and recommendations for flora, fauna and land management, complying with Queensland state and Commonwealth environmental legislation.
- Wrote proposal and executed surveys for Prefeasibility studies and EIS on Western Cape York for multi-national mining company complying with Commonwealth environmental legislation.
- Negotiated increases to budget and survey requirements with the client in relation to ongoing changes and project requirements
- Led high level discussions with the client to provide new services.
- Developed wide scale camera monitoring program to assess presence /absence of EVNT fauna within the survey site.
- Complex logistical planning for remote work
- Co-developed and implemented new safety system within the business

- Mentored project managers through training, and leadership guidance to ensure quality and standards of business were met
- Managed human relation matters within the business
- Digitally transformed infield data collection through roll out of ArcGIS Collector, leading to the reduction in the use of paper in the field.

2014-2018

Team Leader / Ecologist

Ecotone Flora Fauna Consultants, Weipa, QLD

- Lead project manager (6 years) for all aspects of mine / drill preclearing environmental surveys across three different mine sites and exploratory sites, including during the construction phase of a new mine in the Weipa region.
- Project managed and participated in numerous annual EVNT projects that led to cultural and process practices changing within a multinational mining company.
- Played a critical role in maintaining client and stakeholder relationships and built stability with onsite leadership to further grow business opportunities.
- Maintained client confidentiality on sensitive and impactful projects.
- Ensured all projects complied with Queensland state and Commonwealth environmental legislation and clients Environmental Authority.
- Assisted in the development of growth and innovation projects such as cloud-based document storage solution to support multi-site users.

2013-2014

Field Technician / Ecologist

Ecotone Flora Fauna Consultants, Weipa, QLD

- Pre-clear flora and fauna mining and drilling programs
- Baseline fauna surveys of future mining areas
- Sensitive vegetation ground truthing
- EVNT flora and fauna surveys
- Seed Processing (storing, drying management of inventory)
- Mixing of seed in preparation for annual rehabilitation season

2010-2012

Mine Operator and Trainer

Rio Tinto, Weipa, QLD

- Acted as Crew Leader to manage 30 mine operators, production targets and minimising environmental impacts
- Skilled Caterpillar 992G, 993K & Komatsu WA900 Loader and 776D, 777F and 785C Caterpillar haul truck operator
- Crew Trainer/Assessor - completed five certificate IV modules to Training and Assessing.

2009 - 2010

Parks and Garden Maintainer

Spotless Group, Weipa, QLD

- Attained six competencies towards Certificate III Forest Growing and Management.
- Maintained local green spaces and houses.

2009-2009

Vet Nurse

Tableland Veterinary Service, Weipa, QLD

- Prepared surgery for surgeries including use of autoclave to sterilise implements
- Administered sedation via injections in the muscle and intravenously
- Prepared and monitored animals before, during and after surgeries
- Monitored animal and anaesthetic during surgery focussing on breath rate, colour of gum and pupil movements
- Took blood samples from veins and prepared samples of foreign bodies for analysis
- Successfully directed and carried out on-call emergency cases with vet assistance over the phone

2003 – 2009

Manager

The Pet Centre, Sydney, NSW

2001 – 2003

Sales Assistant

The Pet Centre, Sydney, NSW

- Implemented standard procedures for staff to follow
- Focussed on achieving a high level of OHS standards within the store
- Responsible for daily takings up to five thousand dollars per day
- Accountable for people management including rosters, recruitment and managing employee issues
- Responsible for management of store inventory
- Developed skills in handling a range of domestic animals
- Maintained animal's health and welfare in store and complied with state laws and regulations
- Analysed store's and customer's aquarium water quality
- Developed sound knowledge of animals including their origin, identification and general requirements

Relevant Volunteer Experience

2012

Fauna Spotter / Field Assistant

Humble Bee Films

- Volunteered as a fauna spotter/field assistant with Dr Brad Purcell and Humble Bee Films in a ten day research camp, during the production of the natural history documentary "Dingo".

2012

Volunteer Ecological Field Assistant

Rio Tinto, Weipa, QLD

- Participated in an ethno-botanical workshop with Rio Tinto Alcan Land and Rehabilitation team.
- Participated as a field technician during pre-mining survey work. The work included assessing flora and the land formations to identify buffer zones for natural drainage systems and sensitive areas in the Andoom mine site Weipa.

2012

Fauna Technician

Brad Purcell PhD,

Greater Blue Mountains World Heritage Area

- Field technician for Brad Purcell during his doctoral research project on dingoes in the Greater Blue Mountains World Heritage Area. Developed skills in use of VHF radio tracking to retrieve collars, triangulation method to determine positioning of dingoes or deployed collars and traversing bushland.