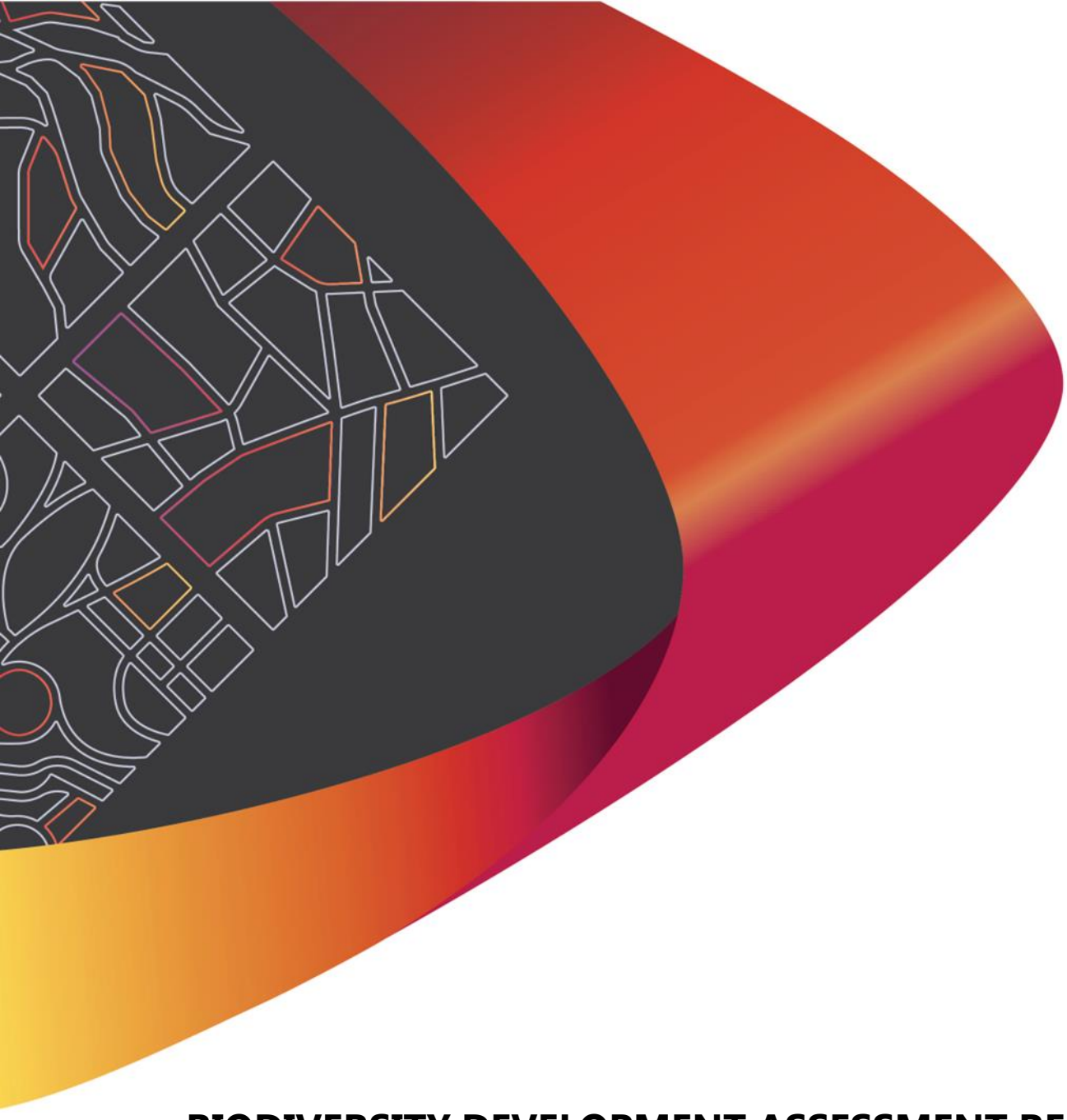


BIODIVERSITY DEVELOPMENT ASSESSMENT REPORT

Finley Battery Energy Storage System

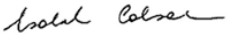
BESS Pacific Pty Ltd

Report No: P001993/R01

Rev: B

22 April 2025

Premise

DOCUMENT AUTHORISATION					
Revision	**Revision Date**	**Proposal Details**			
A	04/04/25	Draft			
B	22/04/25	Final			
Prepared By			**Reviewed By**		**Authorised By**
Lily Ross		BAAS22028	Isobel Colson BAM Accredited Assessor number BAAS22028		Sally Kirby BAM Accredited Assessor number BAAS21027 

EXECUTIVE SUMMARY

BESS Pacific Pty Ltd seeks to develop a 100 Megawatt AC (MWAC)/ 200 Megawatt Hour (MWh) Battery Energy Storage System (BESS) (the Project) impacting land within Lot 3 DP740920 (private land under agreement by the proponent), Lot B DP961693 (land hosting the Transgrid Finley substation) and the road reserves of Canalla Road and Broockmanns Road, Finley.

The Project will be assessed under Part 4 of the NSW Environmental Planning and Assessment Act, 1979 (EP&A Act). As a State Significant Development (SSD), the Project triggers the NSW Biodiversity Offset Scheme and this Biodiversity Development Assessment Report (BDAR) has been prepared to support an Environmental Impact Assessment for the Project.

The Project is proposed in an area generally lacking biodiversity values with poor-condition native vegetation and limited threatened species habitat due to the site's long history of agricultural land use. The site is a strategic location within proximity of the existing Finley Substation and Finley Solar Farm.

The Project has been designed to minimise impacts to native vegetation, including avoiding direct impacts to remnant native trees, and derived native grassland, minimising the area of Inland Grey Box Woodland TEC to be cleared.

Native Vegetation on the site was identified as Plant Community Type (PCT) 76: Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western slopes and Riverina bioregions in three (3) condition zones:

- VZ1: PCT 76 DNG Roadside
- VZ2: PCT 76 DNG Poor
- VZ3: PCT 76 DNG Wet

PCT 76 on the subject land is associated with *Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions Endangered Ecological Community* (EEC) listed under the NSW Biodiversity Conservation Act, 2016 (BC Act), but does not conform to the criteria for the *Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia EEC* listed under the Commonwealth Environmental Protection and Biodiversity Conservation Act, 1999 (EPBC Act).

A comprehensive desktop review was conducted to identify threatened flora and fauna species and ecological communities which have, or may have, suitable habitat on the subject land. The searches returned a total of 46 threatened species with potential to occur on the subject land, including 10 flora species and 36 fauna species. Most threatened species were eliminated from further consideration based on geographic limitations and habitat constraints. Two (2) flora species and two fauna species were retained for assessment and subject to targeted searches:

Flora species:

- *Austrostipa wakoolica* (A spear-grass)
- *Swainsona sericea* (Silky Swainson-pea)

Fauna species:

- *Crinia sloanei* (Sloane's Froglet)
- *Myotis Macropus* (Southern Myotis)

All targeted surveys were considered sufficient, and no threatened species were detected during searches on the subject land.

Thirty five (35) threatened flora and fauna species and eight (8) migratory species recognised as Matters of National Environmental Significance (MNES) under the EPBC Act were identified during database searches as potentially occurring on the subject land. Species considered likely to utilise the habitat features present on or near the subject land were considered further, including *Falco hypoleucos* (Grey Falcon), *Hirundapus caudacutus* (White-throated Needletail), *Melanodryas cucullata cucullata* (South-eastern Hooded Robin) and *Stagonopleura guttata* (Diamond Firetail). An MNES assessment concluded that no significant impact on any MNES is likely to result from the Project and referral to the Commonwealth is not required.

Mitigation measures to be implemented for the Project include:

- Timing of works;
- Pre-clearing surveys;
- Clearing protocols;
- Pre-clearing protocols;
- Temporary fencing and signage;
- Adjust construction hours;
- Hygiene protocols;
- Prevent chemical drift;
- Sediment barriers and erosion control measures.

Indirect impacts have been assessed for the Project and mitigation measures will be implemented such that there will be no residual indirect impacts of the Project.

Direct impacts have been assessed for the Project and mitigation measures will be implemented. Residual impacts that cannot be avoided are the permanent removal of 7.96 ha of vegetation comprising:

- Exotic vegetation (2.78 ha)
- PCT 76 DNG Roadside (0.14 ha)
- PCT 76 DNG Poor (4.74 ha)
- PCT 76 DNG Wet (0.30 ha).

Biodiversity offsets in the form of ecosystem credits will be generated for direct impacts of the Project on native vegetation (Table E1).

Table E1 - Impacts that require an offset – ecosystem credits

Vegetation zone	PCT	TEC/EC	Impact area (ha)
VZ1	76	Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions EEC	0.14
VZ2	76	Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions EEC	4.74

ABBREVIATIONS

Abbreviation	Abbreviated term
APZ	Asset Protection Zone
BAM	Biodiversity Assessment Method
BAM-C	Biodiversity Assessment Method Calculator
BC Act	Biodiversity Conservation Act 2016 (NSW)
BC Regulation	Biodiversity Conservation Regulation 2017 (NSW)
BDAR	Biodiversity Development Assessment Report
BESS	Battery Energy Storage System
BOAMS	Biodiversity Offsets and Agreement Management System
BOS	Biodiversity Offsets Scheme
CEEC	Critically Endangered Ecological Community
DBH	Diameter at Breast Height over Bark
EC	Ecological Community listed under the EPBC Act
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999 (Cwlth)
EP&A Act	Environmental Planning and Assessment Act 1979 (NSW)
EEC	Endangered Ecological Community
HTW	High Threat Weed
IBRA	Interim Biogeographic Regionalisation for Australia
LLS Act	Local Land Services Act 2013 (NSW)
MNES	Matters of National Environmental Significance
NPW Act	National Parks and Wildlife Act 1974 (NSW)
NSW	New South Wales
PCT	Plant Community Type
SAII	Serious and Irreversible Impact
SEARs	Secretary's Environmental Assessment Requirements
TBDC	Threatened Biodiversity Data Collection
TEC	Threatened Ecological Community

Abbreviation	Abbreviated term
VEC	Vulnerable Ecological Community
Vegetation SEPP	State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017 (NSW)

CONTENTS

TABLES

FIGURES

PLATES

APPENDICES

DECLARATIONS

i. Certification under clause 6.15 Biodiversity Conservation Act 2016

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

Signature:  _____

Date: _22/04/2025_____

BAM Assessor Accreditation No: _BAAS21027_____

This BDAR has been prepared to meet the requirements of BAM 2020. **Appendix A** provides an assessment of compliance with the minimum information requirements outlined in BAM Appendix K.

ii. Details and experience of author/s and contributors

Authors and contributors responsible for preparing this BDAR have been detailed below.

AUTHORS AND CONTRIBUTORS

Name	BAM Assessor Accreditation no.	Position/Role	Tasks performed	Relevant qualifications
Sally Kirby	BAAS21027	Senior Ecologist	BAM Vegetation Integrity Plots BAM-C data analysis, BDAR preparation and review.	BSc, M.Env. Studies, Accredited BAM assessor
Isobel Colson	BAAS22028	Senior Ecologist	BDAR review.	BSc, MSc, Accredited BAM assessor
Renee Dyke	N/A	Ecologist	Targeted fauna surveys.	BSc, M.Env. Studies
Lily Ross	N/A	Ecologist	BAM Vegetation Integrity Plots BAM-C data collation, database searches, targeted flora and fauna species searches, BDAR preparation.	BEnv. Sc. Env Mgt
Michelle Lindsay	N/A	Ecologist	BAM Vegetation Integrity Plots, targeted flora species searches.	BBioCons, AUSRIVAS accredited
Adam Davis	N/A	Spatial analyst	GIS data collation, analysis and preparation of figures for BDAR.	Diploma Civil Construction

STAGE 1: BIODIVERSITY ASSESSMENT

1. INTRODUCTION

1.1 Proposed Development

1.1.1 DEVELOPMENT OVERVIEW

Premise Australia Pty Ltd (Premise) were engaged by BESS Pacific c/o Gransolar Development Australia to prepare a Biodiversity Development Assessment Report (BDAR) for the proposed 100-megawatt (MW), 200 megawatt hour (MWh) Battery Energy Storage System (BESS) and associated works (the Project) on Canalla Road approximately 5 km west of Finley, NSW. This BDAR has been prepared in accordance with the Biodiversity Assessment Method (BAM) (NSW Department of Planning, Industry and Environment [DPIE] 2020a) to describe and assess direct, indirect and prescribed impacts to ecological values, including threatened biodiversity listed under the NSW *Biodiversity Conservation Act 2016* (BC Act) and Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

The Project will be assessed under Part 4 of the NSW *Environmental Planning and Assessment Act, 1979* (EP&A Act). As a State Significant Development (SSD), the Project triggers the NSW Biodiversity Offset Scheme, and this Biodiversity Development Assessment Report (BDAR) has been prepared to support an Environmental Impact Assessment for the Project.

1.1.2 LOCATION

The Project is located within the Berrigan Shire Local Government Area (LGA). The BESS would be located within Lot 3 DP740920, with associated substation upgrade works occurring within Lot B DP961693 and a connecting underground transmission cable crossing Broockmanns/Canalla Road, and Mulwala No. 19 canal. The areas directly impacted by the Project, including the access driveway, BESS area, substation and the connecting electricity transmission cables will be collectively referred to as the 'subject land' as shown in **Figure 1.** The subject land has been refined from a larger study area initially assessed, referred to as the 'study area'.

The subject land is located in a highly cleared agricultural landscape with irrigation channels, cropped paddocks and areas with modified pastures for grazing domestic livestock. Other land uses in the vicinity of the subject land include the Finley Solar Farm to the south and the township of Finley to the east as shown in **Figure 2**.

1.1.3 PROPOSED DEVELOPMENT AND THE SUBJECT LAND

The proposed development (the Project) includes the following key elements:

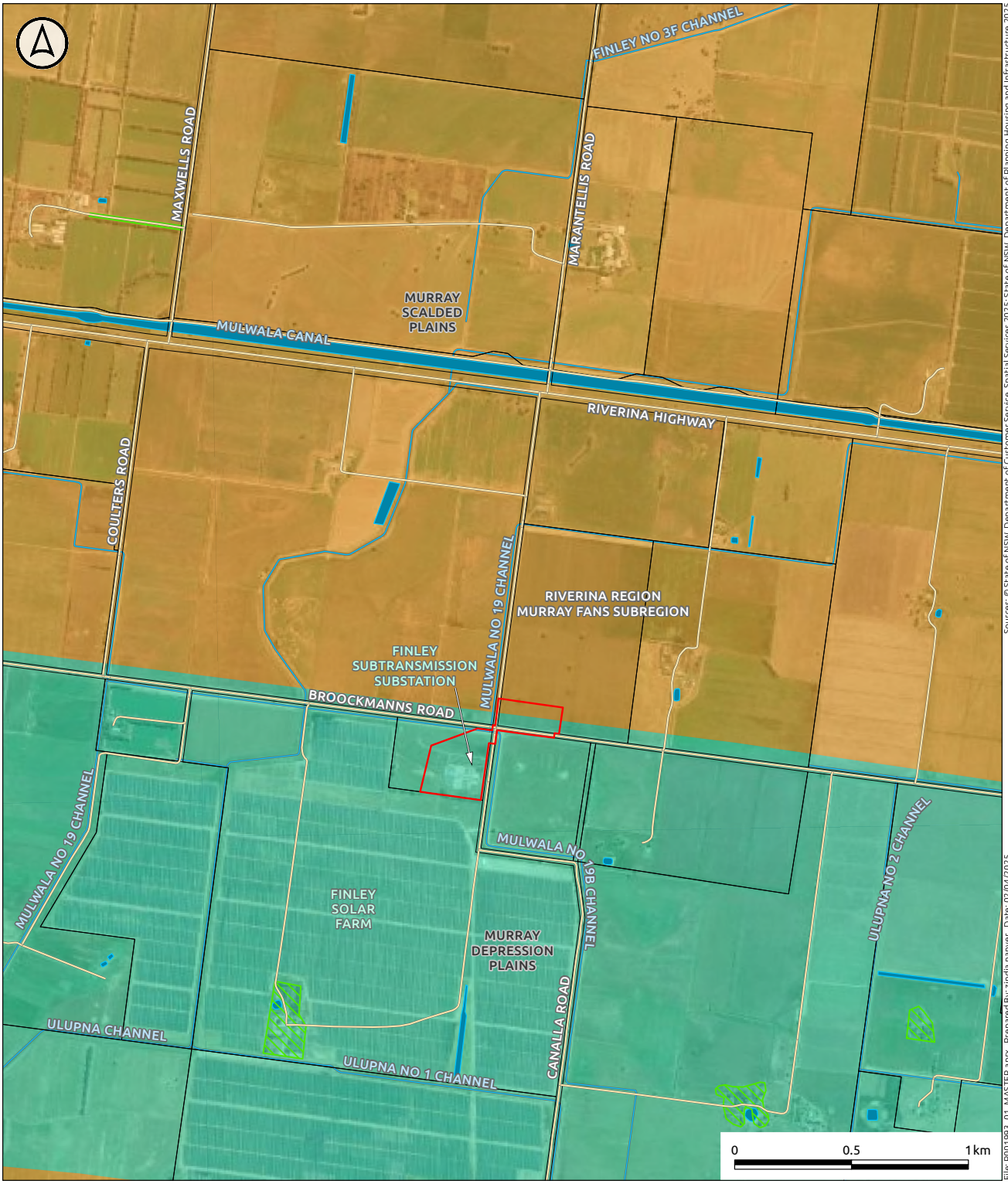
- The construction of a BESS with an estimated capacity of approximately 100 (M), 200 MWh and;
- associated substation upgrade works on the existing Finley Substation and;
- the construction of connecting underground transmission cable crossing Broockmanns/Canalla Road, and Mulwala No. 19 canal.

The subject land is 10.45 ha with 5.18 ha of native vegetation comprised of derived native grassland (DNG). The remaining 4.97 ha includes infrastructure (1.38 ha), cropping (2.78 ha) and disturbed ground including roads (1.12 ha). The Project will require all vegetation to be cleared for the construction of the BESS.

The Project is in proximity to the Finley Substation and the Finley Solar Farm and on land zoned as RU1: Primary Production (NSW DPE, 2020).

Australian Soil Classification system soil type mapping of NSW (DPE, 2023b) maps the soils across the BESS site as Chromosols. However, site investigation and subsequent laboratory analysis found that the subsoil B horizon was sodic, and therefore the soils must be classified as Brown Sodosols (Premise, 2025). Brown Sodosols are described as soils with a strong texture contrast between the A and B horizons, where the B horizon is sodic.

Surrounding land uses comprise agriculture and infrastructure (including the Finley Sub-station and Solar farm) both of which have resulted in most of the native vegetation being cleared. Elevation on the subject land is relatively consistent ranging from 108-112 metres (m) above sea level (ASL). There are no mapped Biodiversity Values on the subject land with the closest map 9 km to the south (NSW Government, 2022). The hydrological setting of the subject land is assessed in **Section 3.2.2.** The Project is shown in **Figure 3.**



Legend

- Subject Land
- Lot
- Road

Landscape Features

- Terrestrial Biodiversity
- Waterbody
- Watercourse

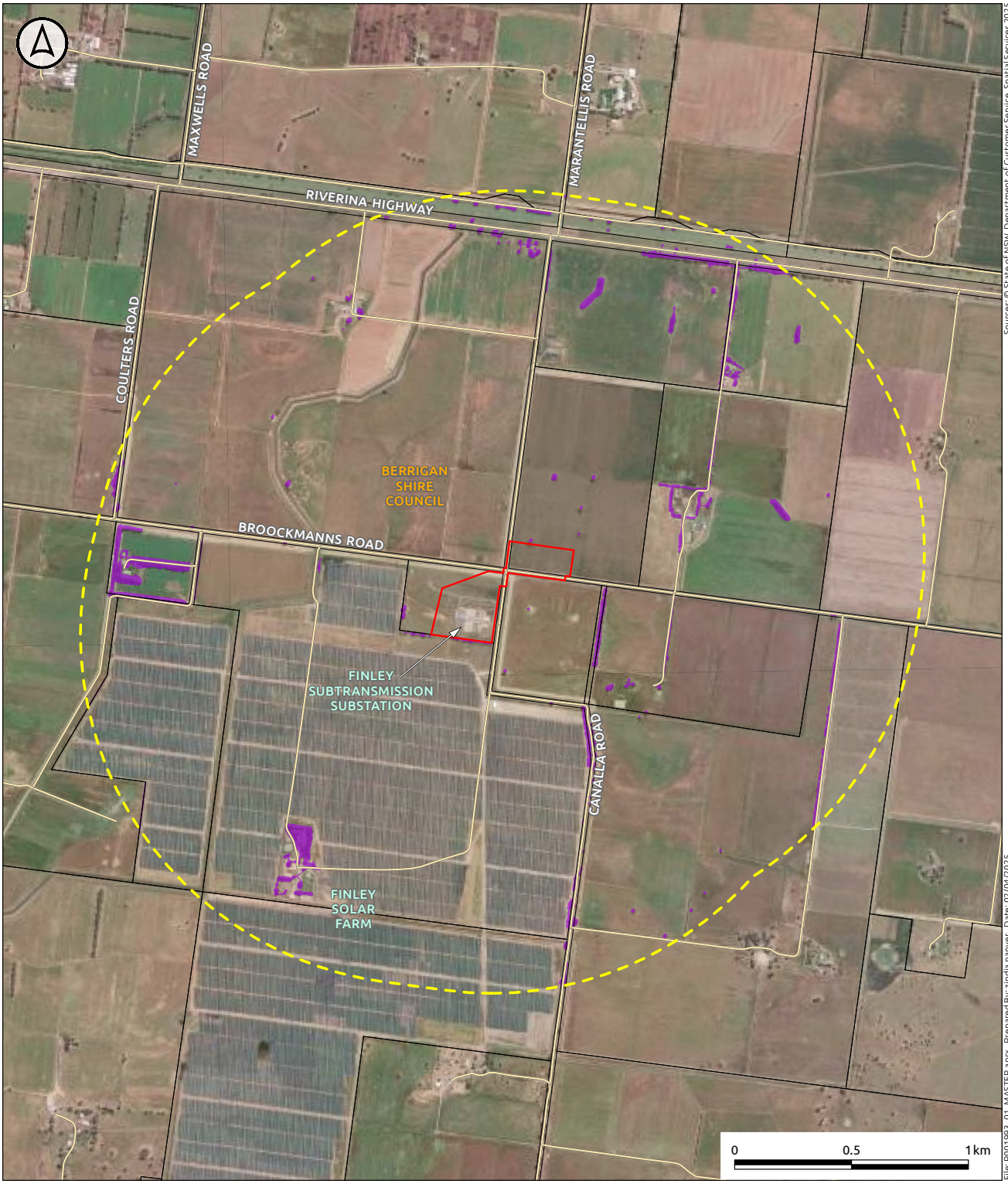
Mitchell Landscapes v3.1

- Murray Depression Plains
- Murray Scalded Plains

Premise

Finley BESS

Figure 1
Site Map



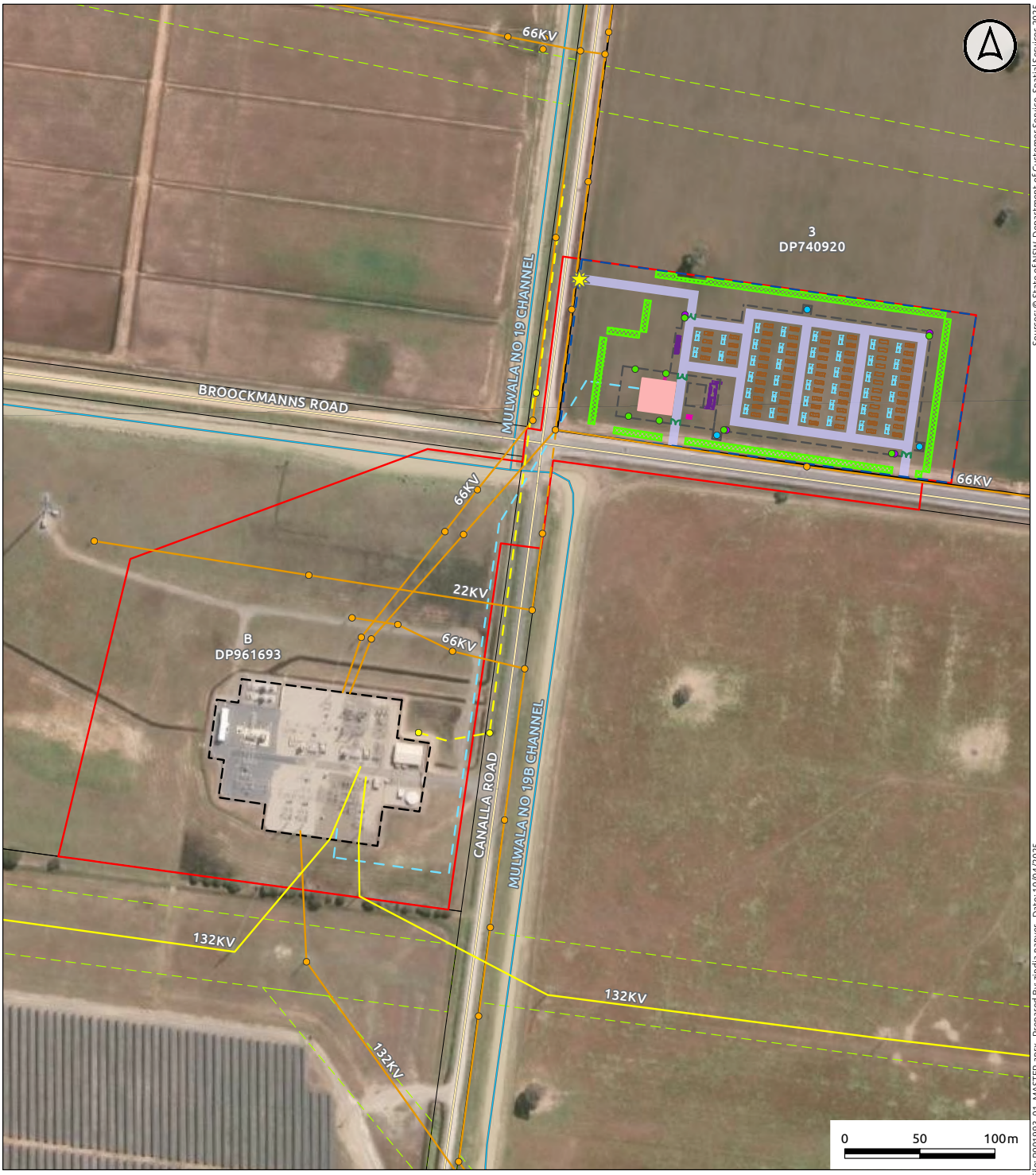
Legend

- Subject Land
- Assessment Area
- Lot
- Road
- Native Vegetation Cover

Premise

Finley BESS

Figure 2
Location Map



Legend

- Subject Land
- BESS Lease Area
- Substation
- Primary Site Access (Heavy Vehicle)
- Subject Site
- Substation Site
- Lot
- Road
- Watercourse
- Easement
- Essential Energy Pole
- Transgrid Pit
- Essential Energy OH
- Essential Energy UG
- Transgrid OH
- Transgrid Optic Fibre

Proposed Layout

- Substation Switch Area
- Internal Road
- BESS Battery
- BESS Inverter Line
- BESS Buildings
- Fence
- Gate
- BESS Substation
- Proposed BESS underground line
- Vegetation
- Watertank
- CCTV Mast
- BESS Lighting Mast

Premise

Finley BESS

Figure 3
Development Site

1.1.4 OTHER DOCUMENTATION

The Secretary's Environmental Assessment Requirements (SEARs) for the Project state the following requirements for biodiversity:

> *an assessment of the biodiversity values, and the likely biodiversity impacts of the project, in accordance with Section 7.9 of the Biodiversity Conservation Act 2016 (NSW) (BC Act), having regard to the Biodiversity Assessment Method (BAM) 2020 and documented in a Biodiversity Development Assessment Report (BDAR), unless a BDAR Waiver is issued for the development. The BDAR must:*
  - be prepared using the approved BDAR template;
  - document the application of the avoid, minimise and offset framework including assessing all direct, indirect and prescribed impacts in accordance with the BAM;
  - assess the impacts associated with all ancillary infrastructure, including the transport route road upgrades;
  - include an assessment for serious and irreversible impacts (SAII) in accordance with Section 9.1 of the BAM;
  - include a strategy to offset any residual impacts of the development in accordance with the BC Act; and
  - be finalised by an accredited assessor as BAM-compliant within 14 days of submission.

unless BCS and DPHI determine the proposed development is not likely to have any significant impacts on biodiversity values;

> *an assessment of the likely impacts on listed aquatic threatened species, populations or ecological communities, scheduled under the Fisheries Management Act 1994, and a description of the measures to minimise and rehabilitate impacts;*
> *a cumulative impact assessment of biodiversity values in the region from nearby developments; and*
> *if an offset is required, details of the measures proposed to address the offset obligations.*

There are no additional landscape features identified by the SEARs for the Project.

1.2 Biodiversity Offsets Scheme entry

Development consent for the Project is sought under State Significant Development provisions (Division 4.7) under Part 4 Section 4.55(2) of the Environmental Planning and Assessment Act 1979 (NSW) (EP&A Act). The Biodiversity Offset Scheme (BOS) applies to State Significant Development proposals therefore a BDAR is required to be prepared by an accredited assessor.

Premise have prepared this BDAR to assess the potential impact of the Project on biodiversity values, threatened species, threatened ecological communities and their habitats under the Biodiversity Conservation Act 2016 (NSW) (BC Act) and the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) in accordance with the Biodiversity Assessment Method (BAM) (NSW DPIE, 2020a). The BDAR must also document measures taken to avoid, minimise or mitigate potential impacts to threatened entities and calculate the number and class of any biodiversity credits that need to be offset to achieve a 'no net loss' of biodiversity using the BAM Credit Calculator (BAM-C) (DCCEEW, 2024a).

Accredited assessor Sally Kirby supervised the preparation of this BDAR using version 80 of the BAM-C.

1.3 Excluded impacts

Areas that did not contain vegetation at the time of assessment, for example roads, and other infrastructure, are excluded from the assessment. Given the historical land use and the condition of some areas of vegetation on the subject land, exotic vegetation and revegetation were assessed in accordance with the Local Land Services Act (LLS Act) to determine whether it met the definition of Category 1 – Exempt Land. The LLS Act applies to land zoned as RU1: primary production. Three categories of land are recognised under the Land Management Framework:

- Category 1 (exempt land) – vegetation can be cleared without approval.
- Category 2 (regulated/vulnerable/sensitive) – vegetation is protected and needs a permit to clear.
- Excluded land – urban areas, National Parks, State Forestry, Crown Reserves etc where the LLS Act does not apply.

Clause 6.8(3) of the BC Act specifies that the BAM excludes the assessment of the impacts of any clearing of native vegetation and loss of habitat on Category 1-Exempt Land (as defined in Part 5A of the LLS Act), other than prescribed impacts (as defined in clause 6.1 of the Biodiversity Conservation Regulation 2017 (BC Reg). A Land Category Report was prepared for endorsement by the Biodiversity, Conservation and Science Directorate (BCS) of the NSW DCCEEW (**Appendix C**).

Premise identified 2.8 ha of the subject land to be consistent with Category 1 – Exempt Land based on the following:

Vegetation is not identified:

- on the Transitional Native Vegetation Regulatory Map (NSW DPE, 2022)
- as part of a conservation agreement, set aside or offset.
- as core koala habitat or threatened species habitat.
- on historical aerial imagery (i.e., it was lawfully cleared prior to 1990 and can be considered as regrowth) (NSW Spatial Services, 2024)
- on the Native Vegetation Extent Layer (NSW DCCEEW, 2019)
- on the Australian Land Use Mapping (ALUM) Land Use layer as a land use consistent with Category 2 (e.g., 1.2.0 Managed resource protection, 1.2.1. Biodiversity, 1.3.0. Other minimal use, 2.1.0 grazing native vegetation, 5.7.0 transport and communication) (NSW DPE, 2020).

The full Land Category Report is included as **Appendix C** and excluded impacts are shown on **Figure 4.** Category 1 Land is excluded from the subject land for the remainder of this BDAR, except for the prescribed impacts assessment in **Section 7.2.**

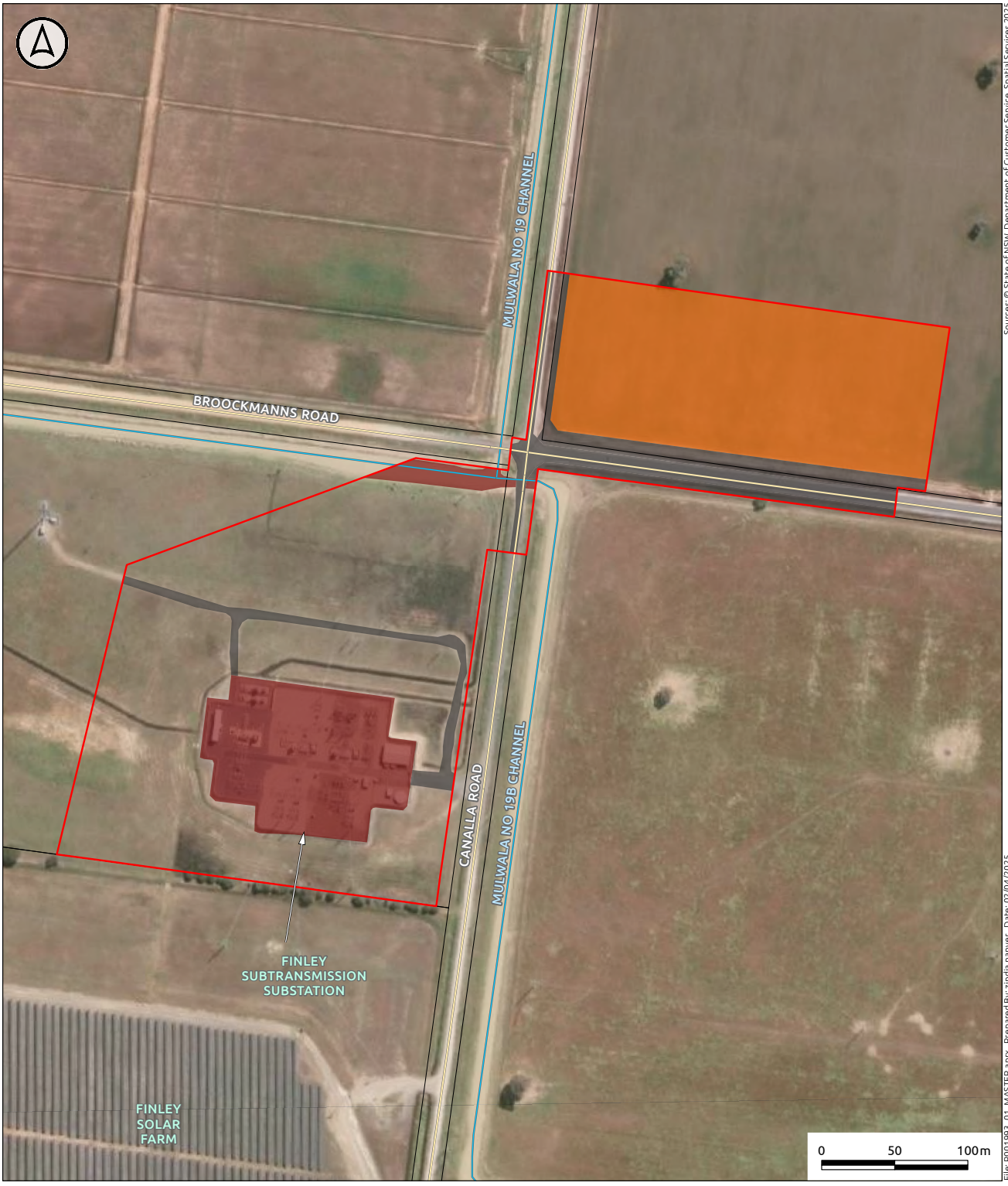


Figure 4
Excluded Impacts

1.4 Matters of National Environmental Significance

This BDAR assesses impacts to Matters of National Environmental Significance listed under the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act).

A total of 46 threatened flora and fauna species were identified during database searches as potentially occurring on the subject land, 35 of which are recognised as MNES under the EPBC Act, and are outlined further in **Appendix B**. An assessment of habitat suitability was carried out for the subject land for each species, that considered geographic limitations, habitat constraints and microhabitat. Only those species considered likely to occur on or utilise the subject land for foraging or breeding are considered further, including *Austrostipa wakoolica* (A spear-grass), *Crinia sloanei* (Sloane's Froglet), *Falco hypoleucos* (Grey Falcon), *Hirundapus caudacutus* (White-throated Needletail), *Melanodryas cucullata cucullata* (South-eastern Hooded Robin) and *Stagonopleura guttata* (Diamond Firetail). An assessment of whether the proposed development will have a significant impact on these MNES is provided in **Appendix E.**

1.5 Information sources

The following key information sources were used in the BDAR:

- Biodiversity Assessment Method (BAM) 2020 (NSW DPIE, 2020a)
- BioNet Threatened Biodiversity Data Collection (TBDC) (NSW DCCEEW, 2025b)
- BioNet Atlas (NSW DCCEEW, 2025b)
- BioNet Vegetation Classification Database (NSW DCCEEW, 2025c)
- BioNet NSW (Mitchell) Landscapes – Version 3.1 (NSW DPIE, 2016)
- Protected Matters Search Tool (Cth DCCEEW, 2025a)
- BAM Calculator (BAM-C) (NSW DCCEEW, 2024a)
- Biodiversity Assessment Method Calculator User Guide (NSW DCCEEW, 2024e)
- Biodiversity Assessment Method 2020 Operational Manual – Stage 1 (NSW DPIE, 2020b)
- Biodiversity Assessment Method 2020 Operational Manual – Stage 2 (NSW DPE, 2023a)
- Matters of National Environmental Significance – Significant impact guidelines 1.1 (Cth DoE, 2013b)
- Surveying Threatened Plants and their Habitats: NSW survey guide for the BAM (NSW DPIE, 2020d)
- Directory of Important Wetlands in Australia (Cth DCCEEW, 2017)
- NSW Interim Biogeographic Regions of Australia (IBRA region and subregion) – Version 7 (NSW DCCEEW, 2024)
- Sharing and Enabling Environmental Data in NSW (SEED) (NSW DCCEEW, 2025d)
- PlantNet (RGB, 2025)

2. METHODS

2.1 Site context methods

2.1.1 LANDSCAPE FEATURES

Landscape features were identified according to Section 3.1 of the BAM (NSW DPIE, 2020a) using a combination of desktop review and field survey methods.

Desktop review included:

- International Biographic Regionalisation for Australia (IBRA) bioregions and subregions: SEED Map (Layer: Interim biogeographic regionalisation for Australia regions) (NSW DCCEEW, 2024).
- Habitat connectivity: NPWS Reserve (NSW DCCEEW, 2024c), State Forest (Forestry Corporation of NSW, 2024) and Water Feature Corridor layers (NSW Spatial Services, 2016).
- Rivers, streams, estuaries and wetlands: SEED Map (Layers: Estuaries, NSW Wetlands, Ramsar Wetlands, Hydrography) (NSW DPIE, 2010a; 2010b; 2012) and (NSW Spatial Services, 2016).
- Karst, caves, crevices, cliffs, rocks and other geological features of significance (NSW OEH, 2011).
- Areas of outstanding biodiversity value (DPE, 2022d).
- Areas of high biodiversity value: Biodiversity Values Map (NSW DCCEEW, 2024d).
- NSW (Mitchell) landscape: SEED Map (Layer: NSW Mitchell Landscapes v3.1 Ecosystem Meso Grouping) (NSW DPIE, 2016).
- BioNet Vegetation Classification (NSW DCCEEW, 2025c).

Field surveys were conducted in June and October 2024 to map vegetation in the study area and identify and confirm landscape features. The survey included:

- Identifying vegetation types, dominant canopy, mid-storey and groundcover species
- Vegetation formation and class in accordance with Keith (2004)
- Landform and landscape type
- Weed species and high threat weeds or priority weeds
- Soil characteristics
- Evidence of previous disturbance
- Photographic evidence
- Opportunistic observations of fauna species and fauna habitat

2.1.2 NATIVE VEGETATION COVER

The percentage of native vegetation cover estimated to remain in the landscape was assessed according to Section 3.2 of the BAM (NSW DPIE, 2020a). A 1500 m buffer was applied to the boundary of the subject land and all native vegetation within this larger 'Assessment Area' was digitised using Geographic Information Systems (GIS) editing tools.

Native vegetation extent on the subject land was mapped using the latest available aerial imagery and digitised using GIS. Preliminary vegetation maps were ground-truthed in the field in June and October 2024.

Native vegetation within the broader 1500 m buffer assessment area was identified using Google Satellite imagery and State Vegetation Type Mapping (NSW DCCEEW, 2024b) (

Figure 7). GIS was used to calculate the total area of native vegetation on the subject land and Assessment Area. **Table 2** summarises the extent of native vegetation cover within the Assessment Area.

2.2 Native vegetation, threatened ecological communities and vegetation integrity methods

2.2.1 EXISTING INFORMATION

Plant Community Types (PCTs) on the subject land were determined according to BAM Section 4.2 (NSW DPIE, 2020a). Prior to conducting fieldwork, desktop reviews of State Vegetation Type Mapping (Riverina Region) (NSW DCCEEW, 2024b) and the BioNet Vegetation Classification system (NSW DCCEEW, 2025c) were undertaken to identify potentially occurring PCTs within the Assessment Area. This preliminary mapping was reviewed after fieldwork in June 2024. Filters such as IBRA region, IBRA sub-region, vegetation formation, vegetation class and dominant species were applied to the BioNet Vegetation Classification system. Landscape position, geomorphology and vegetation structure was also taken into consideration when determining PCTs according to BAM Section 4.2 (NSW DPIE, 2020a).

Threatened Ecological Communities (TECs) on the subject land were identified in accordance with the relevant listing under the BC Act and EPBC Act. TECs associated with PCTs on the subject land were compared with the descriptions in the BioNet Vegetation Classification System (NSW DCCEEW, 2025c) and assessed against the following literature and publications to determine TEC extent:

- *Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions* Final Determination (NSW DPE, 2021), hereafter referred to as the Grey Box Woodland Final Determination
- Conservation Advice for *Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia* (Cth DEWHA, 2010).
- Commonwealth Listing Advice on *Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia* (Cth TSSC, 2010), hereafter referred to as the Grey Box Woodland Listing Advice

Further assessments of PCTs and TECs on the subject land are provided in **Section 4.2** and **Section 4.3.**

2.2.2 MAPPING NATIVE VEGETATION EXTENT

Aerial photography, site walkover, VI plots, numerous Rapid Assessment Spot Samples (RASS) and habitat assessment were used to confirm the extent of native vegetation on the subject land and broader study area. Aerial photography was used to develop the initial map, and an iPad was used during field surveys to collect spatially referenced data to confirm vegetation zones and their boundaries.

2.2.3 PLOT-BASED VEGETATION SURVEY

Vegetation Integrity Plots (VI) comprise a 20 x 20 m full floristic sub-plot at one end of a 50 x 20 m quadrat to gain data on vegetation structure and composition in native vegetation (**Figure 5**). A list of vascular plant species was made within each plot with estimates of abundance and groundcover for input into BAM-C. The flora species were categorised as trees, shrubs, grasses and grass-like, forbs, ferns and others. Leaf litter cover in five (5) $1m^2$ sub-plots and tree classes were assessed in the 50 x 20 m quadrat, along with presence or absence of hollows in trees. In linear areas where there was no room to fit a 20 x 50 m transect, 5 x 200

m VI Plots were used as 1000 m2 equivalent plots in accordance with Box 1 of BAM Subsection 4.2.1 (NSW DPIE, 2020a).

Four (4) VI Plots were undertaken on the subject land in accordance with BAM Subsection 4.2.1. VI Plots were located in vegetation considered to be representative of each vegetation condition zone (VZ), targeted to assess any environmental variation within vegetation communities. VI Plots were located to avoid ecotones, edges or disturbed areas where possible.

Legend

- Subject Land
- Lot
- Road
- Watercourse
- Hollow Bearing Trees
- VI Plots

Plant Community Types

- PCT 76 DNG (Roadside)
- PCT 76 DNG (Poor)
- PCT 76 DNG (Wet)

Non Native Vegetation

- Cropping
- Disturbed ground
- Infrastructure

- Targeted Flora Surveys

Premise

Finley BESS

Figure 5
Flora Field Survey Locations

2.2.4 VEGETATION INTEGRITY SURVEY

The subject land was mapped according to vegetation condition as Vegetation Zones (VZ) and the total area of each VZ was calculated using GIS to determine the minimum number of VI plots required in line with Table 3 of BAM Subsection 4.3.4 (NSW DPIE, 2020a). VI Plot locations were assigned randomly via GIS to avoid field bias and ensure they captured the attributes relevant to that VZ. All VI Plots were 20 x 50 m except Q1 which was 5 x 200 m due to the linear nature of the vegetation to be assessed within the road reserve.

2.3 Threatened flora survey methods

2.3.1 REVIEW OF EXISTING INFORMATION

A comprehensive review of databases and literature was undertaken to compile a list of species to be targeted during the threatened flora species surveys and identify habitat constraints and microhabitats for threatened species:

- NSW BioNet Threatened Biodiversity Profiles Database Collection (TBDC) (NSW DCCEEW, 2025b).
- Commonwealth Species Profile and Threats Database (SPRAT) (Cth DCCEEW, 2025b).
- The BAM-C (NSW DCCEEW, 2024a).
- NSW BioNet Atlas (NSW DCCEEW, 2025b) search within a 10 km buffer of the subject land.
- Protected Matters Search Tool (PMST) (Cth DCCEEW, 2024a) within the same 10 km buffer.

BioNet Atlas and PMST searches were undertaken throughout the duration of survey planning and implementation to ensure the candidate species list was as temporally accurate as possible, with the most recent search undertaken in October 2024.

Each flora species identified in the literature or database search was assessed in the context of the subject land to determine whether it would potentially occur. Species information on the TBDC (NSW DCCEEW, 2025b) and BAM-C (NSW DCCEEW, 2024a) were used to identify habitat requirements, or habitat constraints for each species.

2.3.2 HABITAT CONSTRAINTS ASSESSMENT

The BAM Credit Calculator allows the assessor to include or exclude candidate threatened species if the species:

1. has habitat constraints listed in the TBDC and none of these constraints are present on the subject land;
2. is vagrant in the area (taken as the record being well outside the species range or natural distribution); or
3. is unable to use the habitat constraints listed in the TBDC or known microhabitats that the species requires to persist on or use because the habitat constraints are degraded to the point where the species will no longer be present.

The likelihood of occurrence of each candidate flora species was assessed based on distribution records in the NSW BioNet Atlas of Wildlife (NSW DCCEEW, 2025b), and information in both the TBDC (NSW DCCEEW, 2025b) and referenced scientific publications. Out of a total of 10 flora species identified by database and

literature searches as potentially occurring on the subject land, two species *Austrostipa wakoolica* (A spear-grass and *Swainsona sericea* (Silky Swainson-pea) were retained for targeted searches.

2.3.3 FIELD SURVEYS

Vegetation surveys were conducted in June and October 2024 by Premise Ecologists. Threatened flora species surveys were undertaken on the 30th and 31st of October in accordance with the BAM (DPIE 2020a) and the methods described in the NSW publication *Surveying Threatened Plants and Their Habitats: NSW Survey Guide for the Biodiversity Assessment Method* (Threatened Flora Survey Guideline) (NSW DPIE, 2020d). Threatened flora surveys were conducted over the subject land within suitable habitat.

Incidental observations of non-target threatened flora as well as threatened fauna species and habitat features were recorded simultaneously while undertaking targeted surveys.

Parallel field traverses were undertaken in native grassland on the subject land. Targeted surveys within potentially suitable habitat included 10 m parallel transects covering a total of 45.9 km.

All threatened flora species searches were conducted by Premise Ecologists experienced in threatened plant detection and identification. Tracks were recorded using a GPS and survey effort is displayed on **Figure 5.**

2.4 Threatened fauna survey methods

2.4.1 REVIEW OF EXISTING INFORMATION

Threatened fauna species were identified via literature review described in **Section 2.4**. Information sources included:

- PCTs on the subject land identified in this BDAR
- NSW BioNet Atlas (NSW DCCEEW, 2025b)
- PMST (Cth DCCEEW, 2025a)
- BAM-C (NSW DCCEEW, 2024a)
- TBDC (NSW DCCEEW, 2025b).

2.4.2 HABITAT CONSTRAINTS ASSESSMENT

Habitat assessment conducted by Premise in June, July and October 2024 involved detailed recording and analysis of fauna habitat features over the study area including:

- Waterbodies;
- Koala feed species including *Eucalyptus macrocarpa* (Inland Grey Box);
- Derived Native Grassland;
- Cracking clay soils;
- Trees with hollows ranging from 5–10 cm in diameter, greater than 6 m above the ground.

Out of a total of 36 fauna species identified by database and literature searches as potentially occurring in the subject land, two species *Crinia sloanei* (Sloane's Froglet and *Myotis Macropus* (Southern Myotis) were retained for targeted searches. The other threatened fauna species were eliminated from consideration on the basis of geographic limitations or habitat constraints (Table 10**,** Table 11 and **Appendix B**).

2.4.3 FIELD SURVEYS

2.4.3.1 Sloanes Froglet (*Crinia sloanei*)

Field surveys for the Sloanes Froglet were conducted within suitable habitat including the irrigation channel and PCT 76 DNG wet (VZ3) on the 3rd, 5th, 17th and 18th of July 2024 by Premise Ecologists. Surveys were undertaken in accordance with the BAM (NSW DPIE, 2020a) and the methods described in the *NSW Survey Guide for Threatened Frogs A guide for the survey of threatened frogs and their habitats for the Biodiversity Assessment Method* (Threatened Frog Survey Guidelines) (NSW DPIE, 2020c).

Survey methods are described below:

- **Aural-visual Surveys:** Aural surveys consisted of listening for calls in silence and darkness for a minimum of five minutes. This process was completed every 50 metres in suitable habitat. Visual surveys involved detecting frogs via eyeshine by scanning habitat with a torch, this process was completed for a minimum of five minutes at intervals of 50 metres.
- **Call playback:** A call-playback technique was also used where advertisement calls of the Sloanes Froglet were broadcast over a loudspeaker continuously for a minimum of two minutes, followed by a listening period of two minutes to detect a response. Call-playbacks were completed at the same location as the aural-visual surveys.

All threatened fauna species searches were conducted by Premise Ecologists experienced in threatened fauna habitat assessment and identification. Incidental observations of non-target fauna species were also recorded simultaneously while undertaking targeted survey. Tracks were recorded using a GPS and survey effort is displayed on **Figure 6.**

To assess the likelihood of detecting the threatened Sloane's Froglet, reference sites were selected based on publicly accessible locations with relatively recent sightings (within the last 10 years) and proximity to the subject land to ensure similar climatic conditions. A reference site was visited on the 6th of July 2024 at Thurgoona, NSW, approximately 150 km east of the subject land. This site was chosen due to its high concentration of recent BioNet records and its status as a stronghold for Sloane's Froglet (DCCEEW, 2025b). The climatic conditions at Thurgoona differ slightly from those at Finley. Thurgoona experiences slightly higher annual rainfall, with 59.1 mm compared to Finley's 53.7 mm. Additionally, Thurgoona is slightly cooler, with an average annual high of 22.5°C and a low of 9.2°C, whereas Finley has an average high of 23.6°C and a low of 9.5°C (BOM, 2025). Its selection was justified by the significant number of recent records in the area, and its accessibility compared with other locations on private land. Many BioNet records are either from private land or historical, with no recent sightings. Recent surveys have identified Sloane's Froglet primarily in a few key locations, with substantial populations in ponds and low-lying areas within rural residential and peri-urban regions around Albury – Thurgoona, Howlong, and Corowa – Wahgunyah and Rutherglen (Cth TSSC, 2019a). Notably, 95% of Sloane's Froglet sightings since 2000 have been concentrated in these stronghold areas (Cth TSSC, 2019a). The visit aimed to evaluate the activity of the target species and to ensure that conditions were appropriate for a reliable survey at the subject land, while also demonstrating the surveyors' skill in accurately detecting the species.

The species was identified at the reference site and a recording of the call was sent to FrogID for verification. FrogID confirmed the presence of Sloanes Froglet at the reference site based on the call data (Capture ID: #703414 and Capture ID: #703415) (Australian Museum, 2024).

2.4.3.2 Southern myotis (*Myotis macropus*)

Field surveys for the Southern Myotis were conducted within suitable habitat on the 28th of January – 1st of February and 29th March – 1st of April by Lachlan McRae Fauna Services, survey methods are described below (**Appendix F**):

Survey 1 - 28th of January – 1st of February

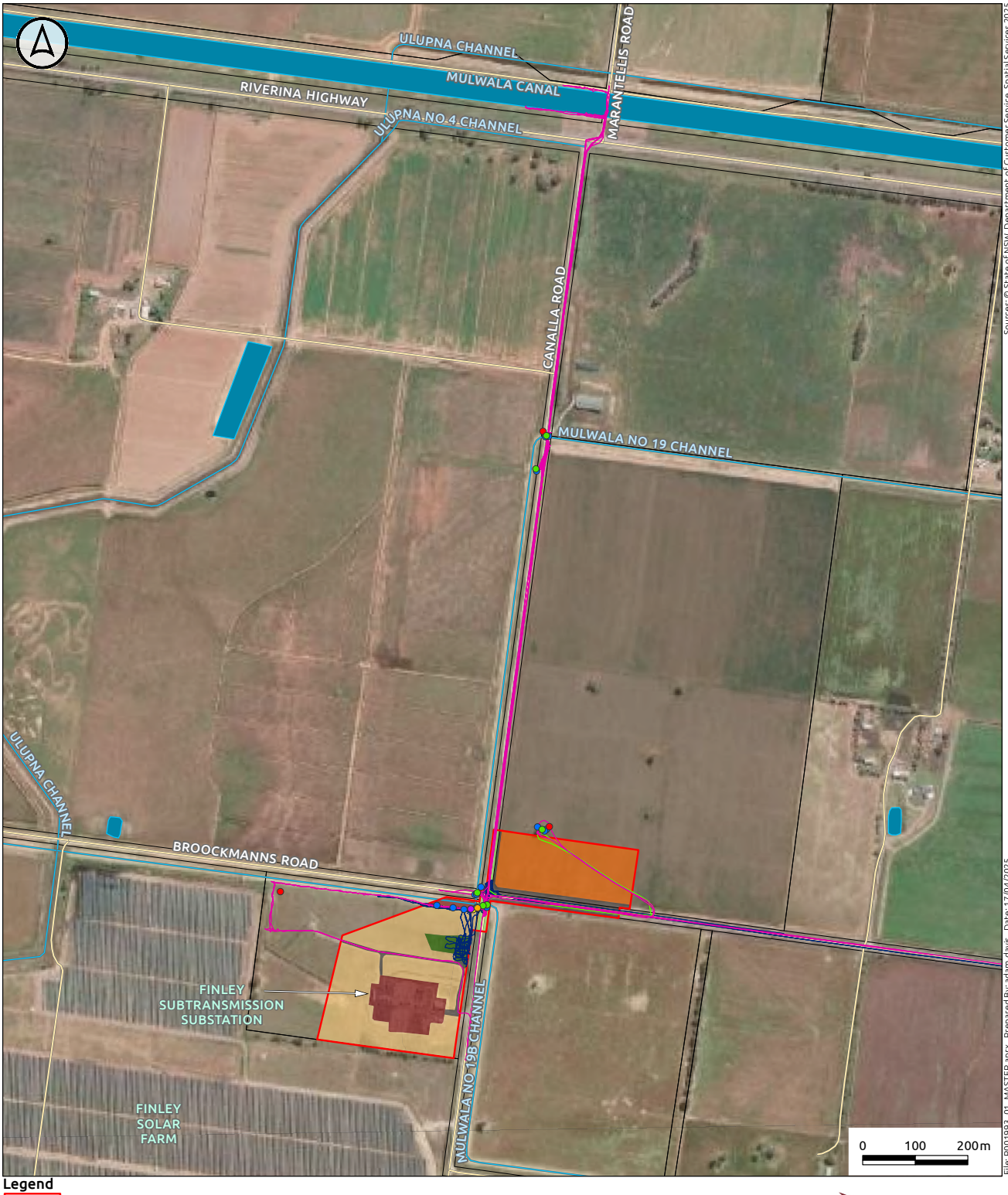
Harp traps:
Six (6) harp traps were set each night for 4 nights before sunset and left open overnight from 28 Jan to 1 Feb 2025. Two Austbat Mini Harp Traps and four Austbat Full-sized (4.2 square metre) harp traps were placed within 200m of waterbodies >3m wide in areas most likely to capture the target species. Two traps were typically placed side by side to maximise the chances of capturing the species and left in place for two consecutive nights. This survey resulted in a total of four trap nights (traps <20m apart are counted as a single trap, mini traps are not counted).

Acoustic detection: Active bat call monitoring with an Anabat Walkabout was conducted each night for approximately one hour from 9-10pm. Additionally, a single Anabat Ranger was deployed overnight each night in various locations.

Survey 2 - 29th March– 1st of April

Harp traps:
Five (5) full size (4.2 square metre) harp traps were set each night for 3 nights before sunset and left open overnight from the 29th of March to 1st of April 2025. Harp Traps were placed within 200m of waterbodies >3m wide in areas most likely to capture the target species. Traps were placed at least 20 m apart and the location of each trap was changed every night. This survey resulted in a total of 15 trap nights.

All threatened fauna species searches were conducted by ecologists experienced in threatened fauna habitat assessment and identification. Incidental observations of non-target threatened fauna species were also recorded simultaneously while undertaking targeted survey. Tracks were recorded using a GPS and survey effort is displayed on **Figure 6.**



Legend

- Subject Land
- Lot
- Road
- Waterbody
- Watercourse

Plant Community Types

- PCT 76 DNG (Roadside)
- PCT 76 DNG (Poor)
- PCT 76 DNG (Wet)

Non Native Vegetation

- Cropping
- Disturbed ground
- Infrastructure

Sloanes Froglet

- Night 1
- Night 2
- Night 3
- Night 4
- Aural-visual surveys

Southern Myotis

- Anabat Ranger Survey 1 (28 Jan – 1 Feb)
- Harp Trap Survey 1 (28 Jan – 1 Feb)
- Harp Trap Survey 2 (29 – 31 Mar)
- Anabat Walkabout Survey 1 (28 Jan – 1 Feb)
- Survey 2 (29 – 31 Mar)

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Figure 6
Fauna Field Survey Locations

2.5 Weather conditions

The weather conditions experienced at the time of survey are outlined below in **Table 1**. Rainfall data was gathered from the nearest meteorological station - Finley Post Office (074042) (BOM, 2025). Weather and temperature data was gathered from the nearest meteorological station – Deniliquin NSW (074258) as this data was not available from the Finley Post Office meteorological station. Rainfall, weather and temperature data for the Sloane's froglet reference site survey was gathered from Albury Airport (072160) (BOM, 2025).

Table 1 – Environmental Conditions During Surveys

Survey undertaken (e.g. method / targeted species)	Date	Time	Temperature (min. & max.)	Wind	Rainfall (mm)[1]	Other conditions relevant to the species	
Preliminary assessment and VI plots	18/06/24	1430 - 1745	Min: -1.7 Max: 12.6	6km/h	0.0	N/A	
Preliminary assessment and VI plots	19/06/24	0730-0930	Min: -2.9 Max: 12.9	6km/h	0.0	N/A	
Sloane's froglet surveys	03/07/24	2100-2145	Min: 0.1 Max: 15.2	17km/h	0.0	**Rainfall previous 24 hours (mm)**	0.0
						Rainfall previous seven days (mm)	9.8
						Rainfall previous month (mm)	8.6
						Relative Humidity (%)	47
						Barometric pressure (hPa)	1034.3

[1] Rainfall data for the 29th- 31st of March obtained from Deniliquin NSW (074258) due to lack of data at Finley Post Office meteorological station.

Survey undertaken (e.g. method / targeted species)	Date	Time	Temperature (min. & max.)	Wind	Rainfall (mm)[1]	Other conditions relevant to the species	
						Cloud cover	Clear
						Moon phase	3rd Quarter
Sloane's froglet surveys	06/07/24	1800-1845	Min: 0.6 Max: 15.6	20km/h	0.0	**Rainfall previous 24 hours (mm)**	0.0
						Rainfall previous seven days (mm)	9.8
						Rainfall previous month (mm)	8.6
						Relative Humidity (%)	48
						Barometric pressure (hPa)	1035.3
						Cloud cover	Clear
						Moon phase	New Moon
Sloane's froglet reference site survey	06/07/24	2000-2100	Min: -1.1 Max: 14.1	7km/h	0.0	**Rainfall previous 24 hours (mm)**	0.2
						Rainfall previous seven days (mm)	19.2
						Rainfall previous month (mm)	39.2
						Relative Humidity (%)	58
						Barometric pressure (hPa)	1036.8

Survey undertaken (e.g. method / targeted species)	Date	Time	Temperature (min. & max.)	Wind	Rainfall (mm)[1]	Other conditions relevant to the species	
						Cloud cover	Clear
						Moon phase	New Moon
Sloane's froglet surveys	16/07/24	1800-1845	Min: 4.3 Max: 15.8	26km/h	0.0	**Rainfall previous 24 hours (mm)**	0.0
						Rainfall previous seven days (mm)	2.4
						Rainfall previous month (mm)	8.6
						Relative Humidity (%)	56
						Barometric pressure (hPa)	1011.2
						Cloud cover	Overcast
						Moon phase	First Quarter
Sloane's froglet surveys	17/07/24	1800-1845	Min: 2.1 Max: 13.3	26km/h	0.0	**Rainfall previous 24 hours (mm)**	0.0
						Rainfall previous seven days (mm)	2.0
						Rainfall previous month (mm)	8.6
						Relative Humidity (%)	59
						Barometric pressure (hPa)	1016.8

Survey undertaken (e.g. method / targeted species)	Date	Time	Temperature (min. & max.)	Wind	Rainfall (mm)[1]	Other conditions relevant to the species	
						Cloud cover	Partly Cloudy
						Moon phase	First Quarter
Threatened flora surveys	30/10/24	1500-1730	Min: 7.6 Max: 28.7	20km/h	0.0	N/A	
Threatened flora surveys	31/10/24	0800-1030	Min: 11.0 Max: 25.3	28km/h	0.0	N/A	
Southern Myotis surveys	28/01/25	-	Min: 19.3 Max: 32.3	33km/h	0.0	N/A	
Southern Myotis surveys	29/01/25	-	Min: 12.5 Max: 32.0	20km/h	0.0	N/A	
Southern Myotis surveys	30/01/25	-	Min: 9.9 Max: 31.3	28km/h	0.0	N/A	
Southern Myotis surveys	31/01/25	-	Min: 11.4 Max: 35.0	15km/h	0.0	N/A	
Southern Myotis surveys	29/03/25	-	Min: 17.8 Max: 26.1	22km/h	5.2	N/A	
Southern Myotis surveys	30/03/25	-	Min: 15.1 Max: 27.6	20km/h	2.0	N/A	
Southern Myotis surveys	31/03/25	-	Min: 13.8 Max: 26.4	13km/h	0.0	N/A	

2.6 Limitations

No limitations were recognised for targeted threatened flora or fauna species on the subject land.

Threatened flora species assessment were undertaken under scientific license SL1023430. Surveys for the Sloanes Froglet involved passive techniques; therefore, no licences were required. Surveys for the Southern Myotis were conducted in accordance with Animal Ethics & Scientific Licence approval: Secretary's ACEC Project No. RVF24/364 and Scientific Licence No. SL102943.

3. SITE CONTEXT

3.1 Assessment Area

The assessment area for the Project includes the subject land and the land within a 1500 m buffer surrounding the subject land. The assessment area (969. 01 ha) includes approximately:

- 17.34 ha native woody vegetation
- 19.27 ha native grassland
- 932.40 ha cleared agricultural, residential and industrial land.

The assessment area showing the extent of woody and non-woody native vegetation is shown in **Figure 2.**

3.2 Landscape features

Landscape features on the subject land and assessment area are described below in accordance with Section 3.1 of the BAM (NSW DPIE, 2020a) and shown on **Figure 1** and **Figure 2**.

3.2.1 IBRA BIOREGIONS AND IBRA SUBREGIONS

The subject land is located wholly within the Riverina Biogeographic Region of Australia (IBRA) Bioregion, in the Murray Fans IBRA subregion of NSW according to the Biogeographic Regionalisation for Australia (IBRA) (Thackway and Cresswell, 1995) (**Figure 1**).

3.2.2 RIVERS, STREAMS, ESTUARIES AND WETLANDS

The subject land occurs approximately 20 km north of the Murray River. Waterbodies within the assessment area include a number of irrigation channels including the Mulwala and Ulupna channels with the Mulwala No. 19 Channel directly on the subject land (**Figure 1**).

No wetlands or estuaries occur on the subject land or assessment area. The nearest mapped wetland is the Ramsar listed NSW Central Murray wetlands approximately 20 km southwest of the subject land.

3.2.3 HABITAT CONNECTIVITY

The subject land is located in a highly fragmented landscape predominantly used for agricultural production. The land to the south of the of the subject land is a solar farm with a substation immediately to the west. Native vegetation around the subject land includes derived native grassland, small, isolated patches of remnant vegetation and planted trees and shrubs. The remnant woodland in the assessment

area is degraded and fragmented and is unlikely to serve as movement corridors or quality habitat for threatened species.

3.2.4 KARST, CAVES, CREVICES, CLIFFS, ROCKS OR OTHER GEOLOGICAL FEATURES OF SIGNIFICANCE

There are no karst, caves, crevices, cliffs, rocks or other geological features of significance on the subject land or within the assessment area.

3.2.5 AREAS OF OUTSTANDING BIODIVERSITY VALUE.

There are no areas of outstanding biodiversity value, as declared by the Minister for Energy and Environment within the subject land and assessment area (NSW Government, 2022).

3.2.6 NSW (MITCHELL) LANDSCAPE

The subject land is located within the Murray Depression Plains Mitchell Landscapes (93% cleared) (NSW DPIE, 2016).

3.2.7 ADDITIONAL LANDSCAPE FEATURES IDENTIFIED IN SEARS

Planning Secretary's Environmental Assessment Requirements (SEARs) were issued on 18/07/2024 for SSD-72430958. No additional landscape features were identified in the SEARs for the Project.

3.3 Native vegetation cover

Native vegetation cover in the assessment area is estimated to be 36.61 ha based on aerial photography, satellite imagery and State Vegetation Type Mapping as per BAM Subsection 2.1.2. **Table 2** summarises the extent of native vegetation cover within the assessment area. **Figure 2** above shows native vegetation cover within the assessment area.

Table 2 – Native vegetation cover in the Assessment Area

Assessment Area (ha)	Total area of native vegetation cover (ha)	Percentage of native vegetation cover (%)	Class (0-10, >10-30, >30-70 or >70%)
969. 01	36.61	4	0-10

4. NATIVE VEGETATION, THREATENED ECOLOGICAL COMMUNITIES AND VEGETATION INTEGRITY

4.1 Native vegetation extent

The subject land is 10.45 ha with 5.18 ha of native vegetation comprised of derived native grassland (DNG). The remaining 5.27 ha includes infrastructure (1.38 ha), cropping (2.78 ha) and distributed ground including roads (1.12 ha) (**Figure 7**).

4.1.1 CHANGES TO THE MAPPED NATIVE VEGETATION EXTENT

State Vegetation Type Mapping identified the subject land and the majority of the assessment area to be non-native vegetation. Vegetation surveys conducted in June and October 2024 confirmed the presence of native vegetation in the form of DNG on the subject land (**Figure 7**). Native vegetation was mapped and described as outlined in BDAR **Section 2.2.**

4.1.2 AREAS THAT ARE NOT NATIVE VEGETATION

Areas on the subject land that are not native vegetation include infrastructure (including the Finley substation and the irrigation channel) (1.38 ha), cropping (2.78 ha) and distributed ground including roads (1.12 ha) (**Figure 7** and **Plates 1-3**). The cropped paddock on the northern extent of the subject land is highly disturbed and has been assessed as category 1- exempt land (**Appendix C).**

Plate 1 – Cropped Paddock

Plate 2 – Disturbed Ground

Plate 3 – Irrigation Channel

Legend

- Subject Land
- Lot
- Road
- Watercourse

Native Vegetation Extent

- Native Vegetation
- Non-Native Vegetation
- Cleared Land

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Figure 7
Native Vegetation Extent on the Subject Land

Legend

- Subject Land
- BESS Lease Area
- Substation
- Lot
- Road
- Watercourse

Plant Community Types

- PCT 76 DNG (Roadside)
- PCT 76 DNG (Poor)
- PCT 76 DNG (Wet)

Non Native Vegetation

- Cropping
- Disturbed ground
- Infrastructure

Premise

Finley BESS

Figure 8
Plant Community Types

4.2 Plant community types

4.2.1 OVERVIEW

Native vegetation on the subject land was assessed via the methods outlined in **Section 2.2**. Data from the four VI plots is provided in **Appendix G**. PCTs were identified in accordance with the NSW PCT classification as described in the BioNet Vegetation Classification Database (NSW DCCEEW, 2025b). Filters such as IBRA region, subregion, vegetation formation and dominant overstorey species were applied to refine the list of potential PCTs. Justification of PCT selection on the subject land is provided in Section **4.2.2.3.**

PCTs identified on the subject land are listed in **Table 3** and shown on **Figure 8**. Detailed descriptions and justifications of each PCT are provided in the following subsections.

Table 3 – PCTs identified within the Subject land

PCT ID	PCT name	Subject land area (ha)
76	Western grey box tall grassy woodland on alluvial loam and clay soils in the NSW south western slopes and Riverina bioregions	5.18
Total Native Vegetation Area		**5.18**

4.2.2 PCT 76 WESTERN GREY BOX TALL GRASSY WOODLAND ON ALLUVIAL LOAM AND CLAY SOILS IN THE NSW SOUTH WESTERN SLOPES AND RIVERINA BIOREGIONS

4.2.2.1 PCT overview

The vegetation on the subject land attributed to PCT 76 includes DNG (**Table 4; Plate 4**). Scattered remnant trees surrounding the subject land were identified as *Eucalyptus microcarpa* (Inland Grey Box) which is consistent with the dominant canopy species of PCT 76. Due to past clearing on the subject land the shrub layer is almost completely removed with only a small amount of *Sclerolaena birchii* (Galvinized Burr) and *Sclerolaena muricata* (Black Rolypoly) remaining. The DNG on the subject land is likely to be derived from the original PCT 76 on the site and is considered to be degraded due to past and continuing disturbance (i.e., grazing, mowing, rubbish and vehicle access). The groundcover on the Subject land is dominated by exotic species including *Lolium rigidum* (Wimmera Ryegrass), *Crepis foetida* (Stinking Hawksbeard), *Phalaris aquatic* (Phalaris) and *Cenchrus clandestinus* (Kikuyu). Dominant native grasses include *Enteropogon acicularis* (Curly Windmill Grass), *Juncus subsecundus* (Finger Rush), *Carex inversa* (Knob Sedge) and *Rytidosperma setaceum* (Small-flowered Wallaby-grass).

PCT 76 occurs on the subject land in three conditions, derived native grassland in the roadside, poor quality derived native grassland and derived native grassland wet (**Plates 4-6**).

Table 4 – PCT 76 on the Subject land

PCT ID	PCT name	Vegetation formation	Vegetation class	Per cent cleared value (%)	Extent within Subject land (ha)
76	Western grey box tall grassy woodland on alluvial loam and clay soils in the NSW south western slopes and Riverina bioregions	Grassy Woodlands	Floodplain Transition Woodlands	92	5.18

Plate 4 – DNG (Roadside)

Plate 5 – DNG (Very Poor)

Plate 6 – DNG (Wet Area)

4.2.2.2 Condition Zones

All native vegetation on the subject land was identified as PCT 76, which was divided into three vegetation condition zones:

- PCT 76 DNG Roadside occurs exclusively in the road corridors within the subject land. The ground cover in this zone is dominated by exotic grasses including *Phalaris aquatica* (Phalaris), *Bromus diandrus* (Great Brome) and *Paspalum dilatatum* (Paspalum). Native groundcover species are consistent with the description for PCT 76 and include, *Austrostipa aristiglumis* (Plains Grass), *Rytidosperma caespitosum* (Ringed Wallaby Grass), *Carex inversa* (Knob Sedge) and *Rytidosperma setaceum* (Small-flowered Wallaby-grass).
- PCT 76 DNG Poor occurs as the dominant condition zone on the subject land. The ground cover in this zone is dominated by exotic grasses including *Lolium rigidum* (Wimmera Ryegrass), *Bromus diandrus* (Great Brome) and *Paspalum dilatatum* (Paspalum). Shrub and forb cover in this zone low with *sclerolaena muricata* (Black Rolypoly) and *Oxalis perennans* present.
- PCT 76 DNG Wet occurs as a small patch in the southern half of the subject land. This zone is dominated by *Juncus subsecundus* (Finger Rush) a native grass species that grows in wet area and on the fringes of waterbodies. Other native species include, *Cynodon dactylon* (Common Couch) and *Enteropogon acicularis* (Curly Windmill Grass).

4.2.2.3 Justification of PCT selection

BioNet Vegetation Classification was used identify the most likely PCT for this vegetation community using the following filters *Eucalyptus microcarpa,* Riverina IBRA Bioregion, Murray Fans IBRA subregion. PCT 26, 70, 74, 75, 76, 77, 80, 86, 173, 185, 237, and 250 were identified as potential matches (NSW DCCEEW, 2025c).

The State Vegetation Type Map identified the surrounding landscape as predominantly non-native with isolated patches of remnant patches of PCT 76 and PCT 237 around the Assessment Area.

Six PCTs identified by the BioNet Vegetation Classification System were discounted due to the absence of dominant species from the subject land and surrounding area. This included the absence of *Acacia pendular* (Weeping Myall) and *Casuaria cristata* (Belah), (PCT 26 - *Weeping Myall open woodland of the Riverina Bioregion and NSW South Western Slopes Bioregion*), *Callitris glaucophylla* (White Cypress Pine) and *Eucalyptus populnea subsp. bimbil* (Bimble Box) – (PCT 70 - *White Cypress Pine woodland on sandy loams in central NSW wheatbelt*), *Eucalyptus melliodora* (Yellow Box) and *Eucalyptus camaldulensis* (River Red Gum), (PCT 74- *Yellow Box - River Red Gum tall grassy riverine woodland of NSW South Western Slopes Bioregion and Riverina Bioregion*), Yellow Box and White Cypress Pine (PCT 75 - *Yellow Box - White Cypress Pine grassy woodland on deep sandy-loam alluvial soils of the eastern Riverina Bioregion and western NSW South Western Slopes Bioregion*), *Eucalyptus leucoxylon subsp. pruinose* (Yellow Gum) – (PCT 86- *Yellow Gum tall woodland of the Murray River floodplain, Riverina Bioregion*) and *Acacia homalophylla/A. mellvillei complex* (Yarren), (PCT 77 - *Yarran shrubland of the NSW central to northern slopes and plains*).

Three PCTS were discounted due to inconsistent vegetation formation, these PCTs are not suitable to describe the vegetation on the subject land or in the surrounding Assessment Area, inconsistent vegetation formations include, very tall open mallee shrubland (PCT 173 - *Sandplain mallee of central NSW*), tall mallee open woodland (PCT 185 - *Dwyer's Red Gum - White Cypress Pine - Currawang shrubby woodland mainly in the NSW South Western Slopes Bioregion*) and derived tussock grassland (PCT 250 - *Derived tussock grassland of the central western plains and lower slopes of NSW*).

PCT 80 (*Western Grey Box - White Cypress Pine tall woodland on loam soil on alluvial plains of NSW South Western Slopes Bioregion and Riverina Bioregion*) is co-dominated by Western Grey Box and White Cypress however it is not suitable to describe the vegetation on the subject land as White Cypress Pine is absent from the subject land and the surrounding area.

PCT 237 (*Riverine Western Grey Box grassy woodland of the semi-arid (warm) climate zone*) is a tall woodland dominated by Western Grey Box often with River Red Gum however this PCT is unsuitable to describe the subject land due to inconsistent landscape position as this community occurs on the rises of floodplains.

PCT 76 *Western grey box tall grassy woodland on alluvial loam and clay soils in the NSW south western slopes and Riverina bioregions* was considered the best fit for vegetation on the subject land due to the species composition and position in the landscape. The other PCTs considered (PCT 26, 70, 74, 75, 77, 80, 86, 173, 185, 237, and 250) did not conform to the descriptions in the Vegetation Classification System.

4.2.2.4 Alignment with TECs listed under the BC Act

PCT 76 is aligned with *Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions Endangered Ecological Community* (EEC) (Inland Grey Box TEC) listed under the BC Act (NSW DCCEEW, 2025c).

4.2.2.5 Alignment with EPBC Act listed ECs

PCT 76 is aligned with Grey Box (*Eucalyptus microcarpa*) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia EEC (Grey Box EEC) listed on the EPBC Act (Cth TSSC, 2010).

4.2.3 SCATTERED TREES

No scattered trees are present on the subject land.

4.3 Threatened Ecological Communities

Threatened Ecological Communities (TEC) associated with PCT 76 were identified in the BioNet Vegetation Classification System and are identified in **Sections 4.2.2.4 and 4.2.2.5**. Conformance of the vegetation on the subject land with a TEC identified through BioNet was verified by reference to the relevant Final Determinations of the NSW Scientific Committee or the Approved Conservation Advice of the Department of Climate Change, Energy, the Environment and Water.

Six potential TECs were identified by database searches of the BioNet Classification System (NSW DCCEEW, 2025c) and PMST (Cth DCCEEW, 2025a):

EPBC Act Listed Communities:

- *Buloke Woodlands of the Riverina and Murray-Darling Depression Bioregions Endangered Ecological Community (EEC) (Buloke Woodlands EEC)*
- *Natural Grasslands of the Murray Valley Plains Critically Endangered Ecological Community (CEEC) (Natural Grassland CEEC)*
- *Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia EEC (Grey Box Woodland EEC)*
- *Weeping Myall Woodlands EEC*
- *White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland CEEC (Box-Gum Woodland CEEC)*

BC Act Listed Communities:

- *Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions (Inland Grey Box Woodland TEC).*

The Buloke Woodlands EEC is typically dominated or co-dominated by *Allocasuarina luehmannii* (Buloke) (Cth DCCEEW, 2023a). As this species is absent from the subject land and immediate surrounds, this TEC does not occur on the subject land.

The Natural Grasslands CEEC is dominated by tussock grasses including *Rytidosperma, Austrostipa, Chloris*, or *Enteropogon* (Cth TSSC, 2012). Most of these species are present on the subject land in low abundances. However, grassland areas on the subject land are considered more likely to be derived from Grey Box remnant woodland which is present as scattered trees around the subject land. If present, canopy and mid layer species include *Eucalyptus spp., Acacia oswaldii* (Umbrella wattle) and larger chenopods, such *Nitraria billardierei* (Nitre-bush) (Cth TSSC, 2012). Umbrella wattle and Nitre-bush are absent from the subject land and surrounding areas. Therefore, Natural Grasslands CEEC is considered absent from the subject land.

The Box-Gum Woodland CEEC is typically dominated or co dominated by the following species: *Eucalyptus albens* (White Box), *Eucalyptus melliodora* (Yellow Box) and *Eucalyptus blakelyi* (Blakely's Red Gum) (Cth DCCEEW, 2023b). As these species are absent from the subject land and immediate surrounds, this TEC is considered absent from the subject land.

The Weeping Myall Woodlands EEC is dominated by *Acacia pendula* (Weeping Myall) (Cth TSSC, 2009b). As this species is absent from the subject land and immediate surrounds, this TEC is considered absent from the subject land.

The criteria for Grey Box Woodland EEC listed under the Commonwealth EPBC Act are divided into key diagnostic characteristics (**Table 5**) and condition thresholds (**Table 6**) (Cth TSSC, 2010). The condition thresholds for Grey Box Woodland EEC provide guidance for when a patch of a threatened ecological community retains sufficient conservation values to be considered an MNES under the EPBC Act. Nevertheless, patches that do not meet the condition thresholds may still retain important natural values and suitable management actions must be considered. PCT 76 on the subject land meets the key diagnostic characteristics of the EEC (**Table 5**) outlined in the Commonwealth listing advice (Cth TSSC, 2010) for a derived grassland form of the community, but does not meet the minimum threshold criteria for the EEC under the EPBC Act (**Table 6**) and is therefore not the Grey Box Woodland EEC.

According to the NSW Scientific Committee Final Determination, criteria for classification of the Inland Grey Box Woodland TEC under the BC Act is based on characteristic assemblage of species (NSW DPE, 2021). All PCT 76 vegetation zones are associated with Inland Grey Box Woodland TEC under the BC Act due to the presence of characteristic species including *Chloris truncata* (Windmill Grass), *Enteropogon acicularis* (Curly Windmill Grass), *Oxalis perennans, Sclerolaena birchii* (Galvinized Burr) and *Sclerolaena muricata* (Black Rolypoly).

Table 5 – Key Diagnostic Characteristics for Grey Box Woodland EEC

Key Diagnostic Characteristics	Present on Subject land (Y/N)	Comments
The ecological community occurs on low slopes and plains from central NSW, through northern and central Victoria into South Australia. Disjunct occurrences are known from near Melbourne and in the Flinders-Lofty Block Bioregion of South Australia	Y	The subject land occurs on the southern extent of NSW.
The vegetation structure of the ecological community is typically a woodland to open forest	N	Almost all woody vegetation has been cleared from the subject land.
The tree canopy is dominated (≥ 50% canopy crown cover) by *Eucalyptus microcarpa* (Grey Box). Other tree species may be present in the canopy and, in certain circumstances, may be co-dominant with Grey Box but are never dominant on their own.	N	Almost all woody vegetation has been cleared from the subject land.
The mid layer comprises shrubs of variable composition and cover, from absent to moderately dense. The mid layer usually has a crown cover of less than 30% with local patches up to 40% crown cover.	Y	Shrubs occur in low densities on the subject land including Galvinized Burr and Black Rolypoly.
The ground layer also is highly variable in development and composition, ranging from almost absent to mostly grassy to forb-rich. Ground layer flora commonly present include one or more of the graminoid genera: *Rytidosperma, Austrostipa, Elymus, Enteropogon, Dianella* and *Lomandra*; and one or more of the chenopod genera: *Atriplex, Chenopodium, Einadia, Enchylaena, Maireana, Salsola* and *Sclerolaena*	Y	*Enteropogon acicularis* (Curly Windmill Grass) occurs in all condition states of PCT 76. Listed chenopod genera are absent from PCT 76 (Roadside) which is dominated by exotic species. *Sclerolaena spp.* are present in all other condition states.
Derived grasslands are a special state of the ecological community, whereby the canopy and mid layers have been mostly removed to <10% crown cover but the native ground layer remains largely intact, with 50% or more of the total vegetation cover being native	Y	Any canopy is absent from the subject land however, native cover in the ground layer is >50% in PCT 76 DNG (Wet area), PCT 76 (Roadside) and PCT 76 (very poor).

Table 6 – Minimum Condition Thresholds for the Grey Box Woodlands EEC

Category	Thresholds	Present on Subject land	Comments (DNG)	Comments (DNG Very Poor)	Comments (DNG Wet)
Criteria that are broadly applicable	**1a.** The minimum patch size is 0.5 hectare; **AND** 1b. The canopy layer contains Grey Box (*E. microcarpa*) as the dominant or co-dominant tree species; **AND** **1c.** The vegetative cover of non-grass weed species in the ground layer is less than 30% at any time of the year.	No	**1a.** The minimum patch size is 0.5 hectare; **AND** **1b.** There is no canopy layer present on the subject land **AND** **1c.** The average vegetation cover of non-grass weed species in the PCT 76 DNG is >30% (49.9%)	**1a.** The minimum patch size is 0.5 hectare; **AND** **1b.** There is no canopy layer present on the subject land **AND** **1c.** The average vegetation cover of non-grass weed species in the PCT 76 DNG patch is <30% (19.9%)	**1a.** The minimum patch size is 0.5 hectare; AND **1b.** There is no canopy layer present on the subject land AND **1c.** The average vegetation cover of non-grass weed species in the PCT 76 DNG patch is <30% (7%)
<u>Additional criteria</u> that apply to smaller woodland patches (0.5 to <2 ha in area) with tree crown cover >10%	**2a.** At least 50% of the vegetative cover in the ground layer comprises perennial native species at any time of the year; **AND** **2b**. 8 or more perennial native species (6 or more in the Flinders Lofty Block Bioregion of South Australia) are present in the	N/A	This category is not applicable as there are no woodland patches on the subject land.		

Category	Thresholds	Present on Subject land	Comments (DNG)	Comments (DNG Very Poor)	Comments (DNG Wet)
	mid and ground layers at any time of the year.				
Additional criteria that apply to larger woodland patches with a well developed canopy (2 ha or more in area)	**3a.** At least 8 trees/ha are hollow bearing or have a diameter at breast height of 60 cm or more; AND **3b.** at least 10% of the vegetative ground cover comprises perennial native grasses at any time of the year; OR **4a.** At least 20 trees/ha have a diameter at breast height of 12 cm or more; AND **4b.** at least 50% of the vegetative cover in the ground layer comprises perennial native species	N/A	This category is not applicable as there are no woodland patches on the subject land.		
Additional criteria that apply to patches where the canopy is less	**5a.** Woodland density does not meet criteria 3a or 4a, or is a derived grassland with clear evidence that the site formerly was a woodland with a tree	No	**5a.** There are remnant *E. microcarpa* as scattered trees near the subject land. AND	**5a.** There are remnant *E. microcarpa* as scattered trees near the subject land. AND	**5a.** There are remnant *E. microcarpa* as scattered trees near the subject land. AND

Category	Thresholds	Present on Subject land	Comments (DNG)	Comments (DNG Very Poor)	Comments (DNG Wet)
developed or absent (derived grassland) (≥0.5 ha in area)	canopy dominated or co-dominated by *E. microcarpa;* AND **5b.** At least 50% of the vegetative cover in the ground layer is made up of perennial native species at any time of the year; AND **5c.** 12 or more native species are present in the ground layer at any time of the year.		**5b.** PCT 76 DNG contains a perennial native groundcover of <50% (average 30.4%). AND **5c.** PCT 76 DNG contains <12 native groundcover species.	**5b.** PCT 76 DNG contains a perennial native groundcover of <50% (average 17.2%). AND **5c.** PCT 76 DNG contains <12 native groundcover species.	**5b.** PCT 76 DNG contains a perennial native groundcover of >50% (average 65.6%). AND **5c.** PCT 76 DNG contains <12 native groundcover species.
Conclusion			As PCT 76 DNG did not meet criteria **1, 2, 3, 4 or 5** this vegetation zone is not considered to be Grey Box Woodland EEC under the EPBC Act.	As PCT 76 DNG Very Poor did not meet criteria **1, 2, 3, 4** or **5** this vegetation zone is not considered to be Grey Box Woodland EEC under the EPBC Act.	As PCT 76 DNG Wet did not meet criteria **1, 2, 3, 4,** or **5,** this vegetation zone is not considered to be Grey Box Woodland EEC under the EPBC Act.

TECs and where relevant, ECs identified within the subject land are listed in **Table 7** and their extent is shown on **Figure 9.**

Table 7 – TECs within the Subject land

TEC name	Profile ID(from TBDC)	BC Act status	EPBC Act status	Associated vegetation zones within the Subject land	Area within Subject land (ha)
Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions	20072	Endangered	N/A	PCT 76 Roadside PCT 76 DNG Very Poor PCT 76 DNG Wet	5.18

4.4 Vegetation zones

Vegetation was classified into three zones within the subject land, as per Subsection 4.3.2 of the BAM (NSW DPIE, 2020a) (**Figure 10, Table 9**). Vegetation zones are based on PCT and the presence or absence of canopy species in the vegetation community.

Patch size classes are identified in accordance with BAM Subsection 4.3.2 which states 'A patch is an area of native vegetation that occurs on the subject land and includes native vegetation that has a gap of less than 100 m from the next area of native vegetation (or ≤ 30 m for non-woody ecosystems)'. A patch may extend into adjoining land. Patch sizes were assigned to one of the following classes <5 ha, 5-<25 ha, 25-100 ha and ≥ 100 ha (**Table 8**).

Legend

- Subject Land
- Lot
- Road
- Watercourse

Threatened ecological communities

- Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions (BC Act)

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Figure 9
Threatened Ecological Communities and Ecological Communities

Legend

- Subject Land
- Lot
- Road
- Watercourse

Vegetation Zones Within the Subject Land

- VZ1 (<5ha)
- VZ2 (<5ha)
- VZ3 (<5ha)

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Figure 10
Vegetation Zones

Table 8 – Vegetation zones and patch size

Vegetation zone ID	PCT ID number and name	Condition / other defining feature	Area (ha)	Patch size class (select multiple if areas of native vegetation are discontinuous)	No. vegetation integrity plots required	No. vegetation integrity plots completed	No. vegetation integrity plots used in assessment	Plot IDs of vegetation integrity plots used in assessment
VZ1	PCT 76 Derived Native Grassland	Roadside	0.14	☐ <5 ha ☒ 5–24 ha ☐ 25–100 ha ☐ >100 ha	2	2	2	Q1
VZ2	PCT 76 Derived Native Grassland	Poor	4.74	☐ <5 ha ☒ 5–24 ha ☐ 25–100 ha ☐ >100 ha	2	2	2	Q2 and Q6
VZ3	PCT 76 Derived Native Grassland	Wet	0.30	☒ <5 ha ☐ 5–24 ha ☐ 25–100 ha ☐ >100 ha	1	1	1	Q3

4.5 Vegetation integrity (vegetation condition)

4.5.1 VEGETATION INTEGRITY SURVEY PLOTS

The minimum number of VI Plots required for each vegetation zone area was sampled in accordance with the BAM (NSW DPIE, 2020a). Vegetation data was input into BAM-C case number 00049169/BAAS21027/24/00049170/ Revision: 1.

4.5.2 SCORES

The composition, structure, function and vegetation integrity score for each vegetation zone is provided in **Table 9.**

Table 9 – Vegetation integrity scores

Vegetation zone ID	Composition condition score	Structure condition score	Function condition score (where relevant)	Vegetation integrity score	Hollow bearing trees present? Y or N
VZ1 – PCT 76 DNG Roadside	37.7	57.2	1.6	15	N
VZ2 – PCT 76 DNG Poor	44.0	46.4	3.1	18.4	N
VZ3 – PCT 76 DNG Wet	31.0	57.2	1.3	13.2	N

4.5.3 USE OF BENCHMARK DATA

Benchmark data was sourced from the NSW BioNet Vegetation Classification system for each PCT in the relevant IBRA Bioregion (NSW DCCEEW, 2025c).

5. HABITAT SUITABILITY FOR THREATENED SPECIES

5.1 Identification of threatened species for assessment

As detailed in **Sections 2.3** and **2.4** a comprehensive desktop review was conducted to identify threatened flora and fauna species and ecological communities which have, or may have, suitable habitat on the subject land.

5.1.1 ECOSYSTEM CREDIT SPECIES

A total of 15 predicted ecosystem or dual credit species were identified by BAM-C as requiring consideration (**Table 10**). Premise also undertook database searches as detailed in Section 2.3.1 and Section 2.4.1 to ensure all required threatened species were considered and no additional species requiring consideration were identified. Details regarding the listing status, associated PCTs, sensitivity to gain and statement regarding the need for further assessment are provided in **Table 10** and **Appendix B**.

Table 10 – Predicted ecosystem credit species

Common name	Scientific name	Listing status		Dual credit species	Sources	Species retained for further assessment?	Reason for exclusion from further assessment	Vegetation zone ID species retained within, including PCT ID	Sensitivity to gain class
		BC Act	EPBC Act	Y or N					
Dusky Woodswallow	*Artamus cyanopterus cyanopterus*	V	Not Listed	N	☒ BAM-C ☐ TBDC ☐ Previous survey ☐ Current survey	No	Absent microhabitat: woodland	N/A	Moderate
Speckled Warbler	*Chthonicola sagittata*	V	Not Listed	N	☒ BAM-C ☐ TBDC ☐ Previous survey ☐ Current survey	No	Absent microhabitat: woodland	N/A	High
Brown Treecreeper (south-eastern)	*Climacteris picumnus victoriae*	V	V	N	☒ BAM-C ☐ TBDC ☐ Previous survey ☐ Current survey	No	Absent microhabitat: woodland	N/A	High
Grey Falcon	*Falco hypoleucos*	V	V	N	☒ BAM-C ☐ TBDC ☐ Previous survey ☐ Current survey	Yes	N/A	PCT 76 DNG PCT 76 DNG Very Poor PCT 76 DNG Wet	Moderate
Black Falcon	*Falco subniger*	V	Not Listed	N	☒ BAM-C ☐ TBDC ☐ Previous survey ☐ Current survey	Yes	N/A	PCT 76 DNG PCT 76 DNG Very Poor PCT 76 DNG Wet	Moderate

Common name	Scientific name	Listing status		Dual credit species	Sources	Species retained for further assessment?	Reason for exclusion from further assessment	Vegetation zone ID species retained within, including PCT ID	Sensitivity to gain class
		BC Act	EPBC Act	Y or N					
White-bellied Sea-Eagle	*Haliaeetus leucogaster*	V	Not Listed	Y	☒ BAM-C ☐ TBDC ☐ Previous survey ☐ Current survey	Yes	N/A	PCT 76 DNG PCT 76 DNG Very Poor PCT 76 DNG Wet	High
White-throated Needletail	*Hirundapus caudacutus*	V	V	N	☒ BAM-C ☐ TBDC ☐ Previous survey ☐ Current survey	Yes	N/A	PCT 76 DNG PCT 76 DNG Very Poor PCT 76 DNG Wet	High
Swift Parrot	*Lathamus discolor*	E	CE	Dual	☒ BAM-C ☐ TBDC ☐ Previous survey ☐ Current survey	No	Absent microhabitat: winter-flowering eucalypts	N/A	Moderate
Pink Cockatoo (eastern)	*Lophochroa leadbeateri leadbeateri*	V	Not Listed	Dual	☒ BAM-C ☐ TBDC ☐ Previous survey ☐ Current survey	Yes	N/A	PCT 76 DNG PCT 76 DNG Very Poor PCT 76 DNG Wet	Moderate
South-eastern Hooded Robin	*Melanodryas cucullata cucullata*	E	E	N	☒ BAM-C ☐ TBDC ☐ Previous survey ☐ Current survey	Yes	N/A	PCT 76 DNG PCT 76 DNG Very Poor PCT 76 DNG Wet	Moderate

Common name	Scientific name	Listing status		Dual credit species	Sources	Species retained for further assessment?	Reason for exclusion from further assessment	Vegetation zone ID species retained within, including PCT ID	Sensitivity to gain class
		BC Act	EPBC Act	Y or N					
Scarlet Robin	*Petroica boodang*	V	Not Listed	N	☒ BAM-C ☐ TBDC ☐ Previous survey ☐ Current survey	No	Absent microhabitat: forest and/or woodland	N/A	Moderate
Flame Robin	*Petroica phoenicea*	V	Not Listed	N	☒ BAM-C ☐ TBDC ☐ Previous survey ☐ Current survey	No	Absent microhabitat: complex habitat e.g. logs, stags, woody debris	N/A	Moderate
Superb Parrot	*Polytelis swainsonii*	V	V	Y	☒ BAM-C ☐ TBDC ☐ Previous survey ☐ Current survey	No	Absent microhabitat: woodland	N/A	Moderate
Grey-crowned Babbler (eastern subspecies)	*Pomatostomus temporalis temporalis*	V	Not Listed	N	☒ BAM-C ☐ TBDC ☐ Previous survey ☐ Current survey	No	Absent microhabitat: woodland	N/A	Moderate
Diamond Firetail	*Stagonopleura guttata*	V	V	N	☒ BAM-C ☐ TBDC ☐ Previous survey ☐ Current survey	Yes	N/A	PCT 76 DNG PCT 76 DNG Very Poor PCT 76 DNG Wet	Moderate

5.1.2 SPECIES CREDIT SPECIES

A total of three flora species credit species and nine (9) fauna species credit species were returned by the BAM-C. Premise also undertook database searches as detailed in **Section 2.3.1** and **Section 2.4.1** to ensure all threatened species with potential to occur on the subject land were considered and no additional species requiring consideration were identified.

Details regarding the listing status, associated PCTs, sensitivity to gain and statement regarding the need for further assessment are provided in **Table 11** and **Table 12**. Two flora species and two fauna species were retained for targeted survey. Exclusions were made based on habitat constraints, vagrant status, geographic limitations or microhabitat requirements.

Table 11 – Predicted flora species credit species

Common name	Scientific name	Listing status		Sources	Species retained for further assessment?	Reason for exclusion from further assessment	Vegetation zone ID species retained within, including PCT ID
		BC Act	EPBC Act				
A spear-grass	*Austrostipa wakoolica*	E	E	☒ BAM-C ☐ TBDC ☐ Previous survey ☐ Current survey	Yes	N/A	PCT 76 DNG PCT 76 DNG Very Poor PCT 76 DNG Wet
Slender Darling Pea	*Swainsona murrayana*	V	V	☒ BAM-C ☐ TBDC ☐ Previous survey ☐ Current survey	No	Geographic limitations – the subject land is not on the Hay Plains	N/A
Silky Swainson-pea	*Swainsona sericea*	V	Not Listed	☒ BAM-C ☐ TBDC	Yes	N/A	PCT 76 DNG PCT 76 DNG Very Poor

Common name	Scientific name	Listing status BC Act	Listing status EPBC Act	Sources	Species retained for further assessment?	Reason for exclusion from further assessment	Vegetation zone ID species retained within, including PCT ID
				☐ Previous survey ☐ Current survey			PCT 76 DNG Wet

Table 12 – Predicted fauna species credit species

Common name	Scientific name	Listing status BC Act	Listing status EPBC Act	Sources	Species retained for further assessment?	Reason for exclusion from further assessment	Vegetation zone ID species retained within, including PCT ID
Sloane's Froglet	*Crinia sloanei*	E	E	☒ BAM-C ☐ TBDC ☐ Previous survey ☐ Current survey	Yes	N/A	PCT 76 DNG Wet
White-bellied Sea-Eagle	*Haliaeetus leucogaster*	V	Not Listed	☒ BAM-C ☐ TBDC ☐ Previous survey ☐ Current survey	No	Absent habitat constraints: living or dead mature trees	N/A
Swift Parrot	*Lathamus discolor*	E	CE	☒ BAM-C ☐ TBDC	No	Absent habitat constraints: not on important habitat map	N/A

Common name	Scientific name	Listing status		Sources	Species retained for further assessment?	Reason for exclusion from further assessment	Vegetation zone ID species retained within, including PCT ID
		BC Act	EPBC Act				
				☐ Previous survey ☐ Current survey			
Pink Cockatoo	*Lophochroa leadbeateri*	V	Not Listed	☒ BAM-C ☐ TBDC ☐ Previous survey ☐ Current survey	No	Absent habitat constraints: living or dead trees with hollows	N/A
Southern Myotis	*Myotis macropus*	V	Not Listed	☒ BAM-C ☐ TBDC ☐ Previous survey ☐ Current survey	Yes	N/A	PCT 76 DNG PCT 76 DNG Very Poor PCT 76 DNG Wet
Squirrel Glider	*Petaurus norfolcensis*	V	Not Listed	☒ BAM-C ☐ TBDC ☐ Previous survey ☐ Current survey	No	Absent microhabitat: forests with abundant tree hollows	N/A

Common name	Scientific name	Listing status		Sources	Species retained for further assessment?	Reason for exclusion from further assessment	Vegetation zone ID species retained within, including PCT ID
		BC Act	EPBC Act				
Brush-tailed Phascogale	*Phascogale tapoatafa*	V	Not Listed	☒ BAM-C ☐ TBDC ☐ Previous survey ☐ Current survey	No	Absent microhabitat: open forests	N/A
Koala	*Phascolarctos cinereus*	E	E	☒ BAM-C ☐ TBDC ☐ Previous survey ☐ Current survey	No	Absent habitat constraints: Presence of koala use trees	N/A
Superb Parrot	*Polytelis swainsonii*	V	V	☒ BAM-C ☐ TBDC ☐ Previous survey ☐ Current survey	No	Absent habitat constraints: living or dead Eucalyptus trees with hollows	N/A

5.2 Presence of candidate species credit species

From the remaining list of candidate species credit species, survey was required for two flora species (**Table 13**) and two fauna species (**Table 14**) but none of these were determined to be present within the subject land based on targeted threatened species surveys in accordance with BAM Subsection 5.2.4 (NSW DPIE, 2020a).

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

Common name	Scientific name	Listing status		Method used to determine presence	Present?	Further assessment required? (BAM Subsections 5.2.5 and 5.2.6) Y or N
		BC Act	EPBC Act			
A spear-grass	*Austrostipa wakoolica*	E	E	Targeted threatened species survey	No	No
Silky Swainson-pea	*Swainsona sericea*	V	Not Listed	Targeted threatened species survey	No	No

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

Common name	Scientific name	Listing status		Method used to determine presence	Present?	Further assessment required? (BAM Subsections 5.2.5 and 5.2.6) Y or N
		BC Act	EPBC Act			
Sloane's Froglet	*Crinia sloanei*	E	E	Targeted threatened species survey	No	No
Southern Myotis	*Myotis macropus*	v	Not Listed	Targeted threatened species survey	No	No

5.3 Threatened species surveys

5.3.1 THREATENED FLORA SURVEYS

Targeted threatened species surveys were conducted in October 2024, during which no threatened flora species were found to be present within the subject land (**Table 15**). Targeted searches were undertaken in accordance with Threatened Flora Survey Guideline (NSW DPIE, 2020d). Targeted search tracks are shown on **Figure 5**.

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

Common name	Scientific name	Threatened flora species surveys			Present	Further assessment required (BAM Subsections 5.2.5 and 5.2.6) Y or N
		Survey method (transects or grids)	Timing of survey – within recommended period? (BAM-C / TBDC)	Effort (hours & no. people)		
A spear-grass	*Austrostipa wakoolica*	Transects	☒ Yes	2 people, 2.5 hours each	No	No
Silky Swainson-pea	*Swainsona sericea*	Transects	☒ Yes	2 people, 2.5 hours each	No	No

5.3.1.1 Justification for Survey Methods

Additional details on the survey requirements for each species are provided below:

Austrostipa wakoolica

Austrostipa wakoolica is a species of Speargrass which is found on the floodplains of the Murray River tributaries on grey silty clay or sandy loam soils in open woodlands (NSW DCCEEW, 2025b). The recommended survey period is October to December (NSW DCCEEW, 2025b) with the flowering period typically in response to rain between October and December (NSW DCCEEW, 2025b). Targeted searches were completed in October 2024, two weeks after rainfall. The vegetation zones PCT 76 DNG Roadside, PCT 76 DNG Poor and PCT 76 DNG Wet were comprehensively traversed, and the survey effort is considered sufficient to have detected the species if it were present.

Austrostipa spp. were opportunistically recorded on the subject land and within the road corridor during the June and July 2024 fieldwork. Samples were taken to the office for analysis using a microscope and PlantNET identification keys. The specimens were confirmed to be a non-threatened species *Austrostipa aristiglumis*. Based on the results of targeted searches, *Austrostipa wakoolica* is absent from the subject land.

Swainsona sericea

Swainsona sericea occurs in the Southern Tablelands and South West Slopes this species occurs in Box-Gum Woodland however, habitat on the plains is unknown (NSW DCCEEW, 2025b). The recommended survey period is September to November (NSW DCCEEW, 2025b). Targeted searches were completed in October 2024 2 weeks after rainfall. PCT 76 DNG Roadside, PCT 76 DNG Poor and PCT 76 DNG Wet were comprehensively traversed, and the survey effort is considered sufficient to have detected the species if it were present. No *Swainsona spp.* were recorded during the October 2024 surveys or opportunistically during the June and July 2024 fieldwork. Based on the results of targeted searches, *Swainsona sericea* is absent from the subject land.

5.3.2 THREATENED FAUNA SURVEYS

Targeted threatened fauna species surveys were conducted in July 2024, January 2025 and March 2025, during which no threatened fauna were found to be present within the subject land (**Table 16**).

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

Common name	Scientific name	Threatened fauna species surveys			Present	Further assessment required (BAM Subsections 5.2.5 and 5.2.6) Y or N
		Survey method (e.g. harp trap, Elliott trap, bioacoustics, etc.)	Timing of survey – within recommended period? (BAM-C / TBDC)	Effort (hours & no. people)		
Sloane's Froglet	*Crinia sloanei*	Aural-visual Surveys and call playbacks	☒ Yes	2 people, 3.5 hours each	No	No
Southern Myotis	*Myotis macropus*	Harp trapping and acoustic detection	☒ Yes	2 people over 7 nights	No	No

5.3.2.1 Justification for Survey Methods

Additional details on the survey requirements for each species are provided below:

Crinia sloanei:

Crinia sloanei, was once widely distributed across the Murray-Darling Basin, however, it has largely disappeared from its former range and is now mainly found in small, isolated populations near Albury, Corowa, and parts of Victoria. Since 2000, 95% of records have been in peri-urban areas around Albury-Thurgoona, Howlong, Corowa-Wahgunyah, and Rutherglen (Cth TSSC, 2019a). This species typically occurs in *"grassland, woodland and disturbed areas with periodical inundation"* (NSW DCCEEW, 2025b). The recommended survey period is July to August (NSW DCCEEW, 2025b). Targeted searches were completed in July 2024 after rainfall. Aural-visual surveys and call-playbacks were completed in suitable habitat in

accordance with the BAM (NSW DPIE, 2020a) and the methods described in the *NSW Survey Guide for Threatened Frogs A guide for the survey of threatened frogs and their habitats for the Biodiversity Assessment Method* (Threatened Frog Survey Guidelines) (NSW DPIE 2020c).

One (1) frog species was recorded on the subject land by Premise ecologist this species was identified aurally as *Crinia signifera* (Common Eastern Froglet).

Based on the results of targeted searches, *Crinia sloanei* is absent from the subject land.

Myotis macropus:

Myotis Macropus has a wide distribution across Australia and occurs in coastal areas across the coastal band. This species roosts close to water in caves, hollow bearing trees and man-made structures and forages over waterbodies (NSW DCCEEW, 2025b). The recommended survey period is between October and March (NSW DCCEEW, 2025b). Targeted searches including harp trapping and acoustic detection were completed in January and March 2025 **Appendix F** in accordance with the BAM (NSW DPIE, 2020a) and the methods described in *'Species credit' threatened bats and their habitats NSW survey guide for the Biodiversity Assessment Method* (Threatened Bat Survey Guidelines) (DPIE, 2021).

Based on the results of targeted searches, *Myotis Macropus* is absent from the subject land.

5.4 Expert reports

No expert reports have been used in place of threatened species survey.

5.5 More appropriate local data (where relevant)

No local data has been used to assess habitat suitability.

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

No threatened flora or fauna species credits will be generated by the Project.

5.7 Matters of National Environmental Significance

A PMST search (Cth DCCEEW, 2025a) was conducted on the 23rd October 2024 (10 km buffer of the subject land) to identify Matters of National Environmental Significance (MNES) that have the potential to occur within the subject land including:

- Wetlands of International Importance.
- Threatened Ecological Communities.
- Threatened Species.
- Migratory Species.

The potential for these MNES to occur at the site are outlined below and discussed in **Appendix E.**

5.7.1 WETLANDS OF INTERNATIONAL SIGNIFICANCE

There were five Ramsar Wetlands returned from by the PMST search (Cth DCCEEW, 2025a). The closest wetland is the NSW Central Murray State Forests 10 - 20 km upstream of the subject land. All other wetlands are between 200 – 600 km from the subject land. The Project is unlikely to impact any wetland of international significance.

5.7.2 THREATENED ECOLOGICAL COMMUNITIES EPBC ACT

No areas of PCT 76 on the subject land meet the minimum condition thresholds for classification as Grey Box Woodland EEC under the EPBC Act. Therefore, an EEC MNES assessment and Commonwealth referral are not required. No other TECs are considered to occur due to the lack of diagnostic species present.

5.7.3 THREATENED SPECIES EPBC ACT

Thirty-five (35) flora and fauna species recognised as MNES under the EPBC Act were identified during database searches as potentially occurring on the subject land and are outlined further in **Appendix B**. Only those species considered likely to occur on or utilise the subject land for foraging or breeding were considered further, including, Grey Falcon, White-throated Needletail, South-eastern Hooded Robin and Diamond Firetail. An assessment of whether the Project will have a significant impact on these MNES is provided in **Appendix E.** No MNES species are considered likely to be significantly impacted by the Project and therefore referral to the Commonwealth is not required.

5.7.4 MIGRATORY SPECIES

Eight listed migratory species were returned from the PMST. Based on habitat assessment (**Appendix D**). It was determined one species may utilise the site for foraging, the White-throated Needletail. A full assessment of impacts of the Project on the White-throated Needletail is provided in **Appendix E.** The Project is not likely to significantly impact any MNES migratory species.

6. IDENTIFYING PRESCRIBED IMPACTS

Prescribed additional biodiversity impacts (prescribed impacts) are additional impacts on threatened species that have not been accounted for by the generation of ecosystem or species credits. Prescribed impacts must be assessed as part of the BOS as per clause 6.1 of the Biodiversity Conservation Regulation (NSW) 2017. Each prescribed impact and its relevance to the subject land is assessed below (**Table 17**).

Table 17 – Prescribed impacts identified

Feature	Present	Description of feature characteristics and location	Threatened entities that use, are likely to use, or are part of the habitat feature.
Karst, caves, crevices, cliffs, rocks or other geological features of significance	☐Yes / ☒No	Caves/adits, rocky outcrops and other geological features of significance are absent from the subject land and do not occur within 2 km of the site.	N/A
Human-made structures	☒Yes / ☐No	Human-made structures include infrastructure associated with the Finley sub-station in the western extent of the subject land.	The Finley sub-station is not to be impacted or removed as part the project.
Non-native vegetation	☒Yes / ☐No	The subject land contains non-native vegetation in the form of a large, cropped paddock in the northern extent of the subject land.	Non-native vegetation represents suitable foraging habitat for a range of threatened bird species (e.g, Grey Falcon, Black Falcon, White-bellied Sea-Eagle and White-throated Needletail) (NSW DCCEEW, 2025b). The removal of non-native vegetation on the subject land is unlikely to impact the foraging capacity of these species due to the abundance of similar habitat in the surrounding area. These species are also only considered likely to utilise the subject land as a minor component of their broader foraging range.
Habitat connectivity	☐Yes / ☒No	Native vegetation on the subject land is isolated and disconnected from remnant native vegetation in the assessment area due to intensive agricultural land uses and vegetation clearing. Remaining vegetation occurs as disjunct derived native grassland.	Threatened entities that use habitat connectivity for dispersal throughout their home range include (e.g., Grey Falcon, Black Falcon, White-bellied Sea-Eagle and White-throated Needletail). The loss of 5.18 ha of native vegetation in the form of DNG is considered unlikely to impair movements critical to any of the listed species' life cycles due to the highly mobile nature of these species and the presence of more suitable habitat in the surrounding area. Therefore, there are no prescribed impacts associated with the removal

Feature	Present	Description of feature characteristics and location	Threatened entities that use, are likely to use, or are part of the habitat feature.
			of native vegetation which is disconnected from the surrounding area.
Waterbodies, water quality and hydrological processes	☒Yes / ☐No	No underground courses of water or aquifers feeding streams or wetlands occur on the subject land. Above ground waterbodies on the subject land include a small section of the Mulwala Channel No 19.	Threatened bird species (Grey Falcon, Black Falcon, White-bellied Sea-Eagle and White-throated Needletail) utilise water bodies for drinking and foraging. The channel is to be under-bored to minimise impact and there are numerous larger waterbodies around the subject land that are more suitable for these species.
Vehicle strikes	☒Yes / ☐No	There will be an increase in traffic along the roads surrounding the subject land during the construction phase of the project. It is likely that this increase in traffic will be temporary and will return to normal levels after construction.	Vehicle strikes are very unlikely to affect any of the threatened species identified as potentially occurring on the subject land. Vehicle movements are likely to increase during the construction phase. However, truck movements would be minimal and slow due to the small nature of the site, and work will only be undertaken during daylight hours. Threatened birds with potential to utilise the site (Grey Falcon, Black Falcon, White-bellied Sea-Eagle and White-throated Needletail) are highly mobile and it is highly unlikely that these species would forage on the site when there was human activity present.

STAGE 2: IMPACT ASSESSMENT (BIODIVERSITY VALUES AND PRESCRIBED IMPACTS)

7. AVOID AND MINIMISE IMPACTS

7.1 Avoid and minimise direct and indirect impacts

This section outlines strategies and actions that have been taken to avoid or minimise impacts on biodiversity values during the proposal planning process.

7.1.1 PROJECT LOCATION

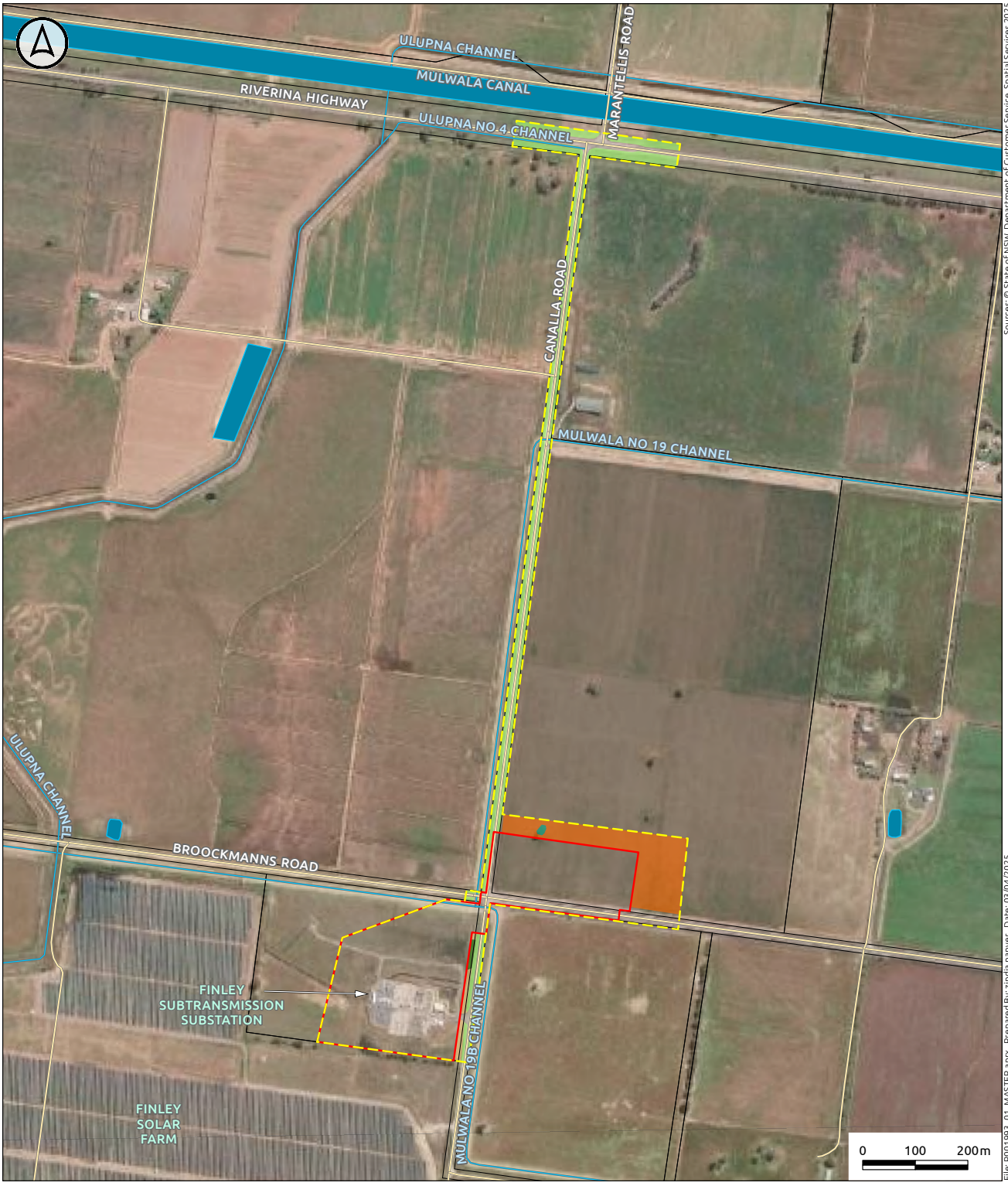
The Project is proposed on land zoned as RU1: Primary Production, to the west of Finley. The location of the proposed BESS is in proximity to the Finley Substation and the Finley Solar Farm. Surrounding land uses include agriculture and infrastructure (i.e. the Finley Sub-station and Solar farm) both of which have resulted in most of the native vegetation being cleared over the years.

The Project is proposed in an area generally lacking biodiversity values with poor condition native vegetation and limited threatened species habitat due to the sites' long history of agricultural land use and the lack of any intact remnant woodland on the subject land. There is very little opportunity to avoid direct impact to native vegetation as the Project will require clearing the whole site. Mitigation measures are outlined in **Table 23**.

7.1.2 PROJECT DESIGN

The subject land has been refined from a broader study area to minimise impacts to native vegetation, including avoiding direct impacts to remnant scattered trees and reducing the area of DNG impacted, minimising the area of *Inland Grey Box Woodland TEC* to be cleared (**Figure 11**). The project layout could not avoid the Mulwala Channel No 19. however, this channel will be under-bored to reduce impacts.

The subject land has been refined to the minimum area necessary to provide space for the construction and operation phases of the project. To minimize the project's direct impact, 3.52 ha of DNG were removed from the study area, to form the final subject land.



Legend

- Subject Land
- Study Area
- Road
- Waterbody
- Watercourse
- Lot

Vegetation To Be Avoided

- PCT 76 DNG (Roadside)
- PCT 76 DNG (Poor)
- PCT 76 DNG (Wet)
- PCT 76 Scattered Tree
- Native Plantings
- Cropping

Premise

Finley BESS

Figure 11
Areas of Vegetation avoided through project design

7.2 Avoid and minimise prescribed impacts

This section outlines strategies and actions that have been taken to avoid or minimise prescribed impacts on biodiversity values during the proposal planning process. One prescribed impact (non-native vegetation) relevant to the Project was identified in **Section 6.**

7.2.1 PROJECT LOCATION AND DESIGN

Non-native vegetation represents suitable foraging habitat for a range of bird species. During the project design phase, the development layout was re-designed to avoid 2.28 ha of cropped paddock. Impacts to the cropped paddock (2.78 ha) on the final ubject land cannot be avoided as all vegetation is to be cleared.

7.3 Other measures considered

Not applicable.

7.4 Summary of measures to avoid and minimise impacts

Table 18 documents the measures to be employed avoid and minimise direct, indirect and prescribed impacts on threatened species and native vegetation.

Table 18 – Avoidance and minimisation measures for direct, indirect and prescribed impacts

Action	Outcome (Describe the outcome of implementing the measure, with reference to specific entities identified in Sections 4 and 5)	Timing	Responsibility
Project location	Outcome: Complete The subject land is located in agricultural area predominantly lacking biodiversity values. The site also contains poor condition native vegetation and threatened species habitat due to the sites' long history of agricultural land use.	Planning Phase	BESS Pacific Pty Ltd
Project design	Minimal operational footprint chosen and infrastructure placed to avoid native vegetation on the site where possible.	Planning	BESS Pacific Pty Ltd
Minimise impacts on Inland Grey Box Woodland TEC (BC Act)	Native vegetation on the subject land is considered *Inland Grey Box Woodland TEC.* The project design has reduced the impact to the community by prioritising areas free of vegetation or within the cropped paddock and minimising the area of PCT 76 impacted.	Planning	BESS Pacific Pty Ltd

8. IMPACT ASSESSMENT

Stage 2 of the BAM (NSW DPIE, 2020a) provides the requirements for the impact assessment of the BDAR. The impact assessment assesses the potential direct, indirect and prescribed impacts of the Project in line with Chapter 8 of the BAM (NSW DPIE, 2020a). Direct impacts of the Project on native vegetation, TECs, and threatened species and their habitat have been assessed according to Section 8.1 of the BAM and are identified on **Figure 12** and documented in **Table 19**. (NSW DPIE, 2020a).

8.1 Direct impacts

8.1.1 RESIDUAL DIRECT IMPACTS

Residual direct impacts are those impacts remaining following the implementation of measures to avoid and minimise impacts discussed in **Section 7** and mitigation measures discussed in **Section 7.4.** Final impacts likely to occur on the subject land are shown in **Figure 12** and documented in **Table 19**.

Table 19 – Summary of residual direct impacts

Direct impact (Describe the impact on PCT/TEC/EC or threatened species and their habitat)	BC Act status	EPBC Act status	SAII entity Y or N	Biodiversity Credit Class	Project phase/timing of impact (e.g. construction, operation, rehabilitation)	Extent (ha, number of individuals)	NSW % Cleared for PCT (NSW DCCEEW, 2025c)
PCT Vegetation Clearance							
VZ1 PCT 76 DNG (Roadside)			N/A		Construction	4.74	92
VZ2 PCT 76 DNG (Poor)			N/A		Construction	0.14	92
VZ3 PCT 76 DNG (Wet)			N/A		Construction	0.30	92
TEC Vegetation Clearance							
Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and	E	-	No	N/A	Construction	5.18	N/A

Direct impact (Describe the impact on PCT/TEC/EC or threatened species and their habitat)	BC Act status	EPBC Act status	SAII entity Y or N	Biodiversity Credit Class	Project phase/timing of impact (e.g. construction, operation, rehabilitation)	Extent (ha, number of individuals)	NSW % Cleared for PCT (NSW DCCEEW, 2025c)
Brigalow Belt South Bioregions							
Threatened Fauna Species Habitat Clearance							
Falco hypoleucos (Grey Falcon)	V	V	N	Ec	Construction	4.88	N/A
Falco subniger (Black Falcon)	V	Not Listed	N	Ec	Construction	4.88	N/A
Haliaeetus leucogaster (White-bellied Sea-Eagle)	V	Not Listed	N	Ec	Construction	4.88	N/A
Hirundapus caudacutus (White-throated Needletail)	V	V	N	Ec	Construction	4.88	N/A

8.1.2 CHANGE IN VEGETATION INTEGRITY SCORE

Residual impacts on vegetation condition after avoidance and minimisation measures have been carried out are documented in **Table 20.** PCT 76 (DNG Wet) has a VI score of <15 which is the benchmark VI score for PCTs representative of an EEC or a CEEC. Therefore, PCT 76 (DNG Wet) does not generate any credits.

Table 20 – Impacts to vegetation integrity

Vegetation zone	PCT ID	Condition	Area (ha)	Before development				After development				Change
				Composition	Structure	Function	VI score	Composition	Structure	Function	VI score	Change in VI score
VZ1	76	DNG Roadside	0.14	37.7	57.2	1.6	15	0	0	0	0	-15

Vegetation zone	PCT ID	Condition	Area (ha)	Before development				After development				Change
				Composition	Structure	Function	VI score	Composition	Structure	Function	VI score	Change in VI score
VZ2	76	DNG Poor	4.74	44.0	46.4	3.1	18.4	0	0	0	0	-18.4

8.2 Indirect impacts

Indirect impacts of the Project on native vegetation, threatened entities and their habitat have been assessed according to Section 8.28.2 of the BAM (NSW DPIE, 2020a) and include the nature, extent, frequency, duration and timing of the indirect impacts during construction, operation and in the long term (**Table 21**).

Table 21 – Summary of indirect impacts

Indirect impact (Describe impact, e.g. transport of weeds and pathogens form the site to adjacent vegetation)	Impacted entities (PCT/threatened entity and their habitats and where relevant, EPBC Act listing)	Extent (ha or zone reference)	Frequency	Duration (long-term/ short-term/ medium-term)	Project phase/ timing of impact (e.g. construction, operation, rehabilitation)	Likelihood and consequences
Inadvertent impacts on adjacent habitat or vegetation	PCT 76 TEC: Inland Grey Box Woodland EEC	Subject land boundary	Infrequent	Short-term	Construction	Low Likelihood: Indirect clearing would be mitigated through a vegetation clearance protocol and it is recommended that the subject land boundary is clearly marked to prevent accidental damage to adjacent vegetation. Consequences:

Indirect impact (Describe impact, e.g. transport of weeds and pathogens form the site to adjacent vegetation)	Impacted entities (PCT/threatened entity and their habitats and where relevant, EPBC Act listing)	Extent (ha or zone reference)	Frequency	Duration (long-term/ short-term/ medium-term)	Project phase/ timing of impact (e.g. construction, operation, rehabilitation)	Likelihood and consequences
						Localised changes to soil stability.
Reduced viability of adjacent habitat due to edge effects	N/A					Nil Likelihood: The subject land occurs in a highly cleared agricultural landscape. The removal of vegetation associated with the project will not contribute to edge effects, therefore, will not impact the viability of adjacent habitat.
Reduced viability of adjacent habitat due to dust, noise or light spill	PCT 76 TEC: Inland Grey Box Woodland EEC Threatened Species: Grey Falcon, Black Falcon, White-bellied Sea-Eagle and White-throated Needletail.	Subject land boundary	Infrequent (dust/noise) and frequent (noise/light spill)	Short-term (dust and noise) and long-term (light)	Construction and operation	Low Likelihood: Dust suppression measures will be undertaken during construction. Any dust generated through construction is considered likely to dissipate prior to reaching adjacent native vegetation outside the subject land. The impacts of noise and light spill will be reduced by completing construction during day light hours. Long-term noise and light spill impacts are not considered to be exacerbated by the Project due to its isolated location and design. Consequence: Increased noise, dust and light spill may impact the foraging behaviour of

Indirect impact (Describe impact, e.g. transport of weeds and pathogens form the site to adjacent vegetation)	Impacted entities (PCT/threatened entity and their habitats and where relevant, EPBC Act listing)	Extent (ha or zone reference)	Frequency	Duration (long-term/ short-term/ medium-term)	Project phase/ timing of impact (e.g. construction, operation, rehabilitation)	Likelihood and consequences
						threatened species during construction. However, these impacts are not anticipated to influence breeding behaviour due to the absence of suitable habitat from the subject land and immediate surrounds.
Transport of weeds and pathogens from the site to adjacent vegetation	PCT 76 TEC: Inland Grey Box Woodland EEC	Subject land boundary	Frequent	Short-term	Construction	Low Likelihood: Vegetation adjacent to the subject land is already highly disturbed and weeds present on the subject land are likely already present in surrounding vegetation. The risk of this is heightened during the construction phase when vegetation clearing is occurring. However, this risk can be reduced by regularly washing vehicles and machinery and applying weed control measures. Consequence: Spread of weeds and pathogens into adjacent habitat at a higher frequency than currently present.
Increased risk of starvation or exposure, and	N/A					Nil Likelihood: The subject land occurs in a predominantly cleared landscape with more suitable

Indirect impact (Describe impact, e.g. transport of weeds and pathogens form the site to adjacent vegetation)	Impacted entities (PCT/threatened entity and their habitats and where relevant, EPBC Act listing)	Extent (ha or zone reference)	Frequency	Duration (long-term/ short-term/ medium-term)	Project phase/ timing of impact (e.g. construction, operation, rehabilitation)	Likelihood and consequences
loss of shade or shelter						habitat in the surrounding area. No trees or breeding habitat will be removed as part of the project and there is an abundance of similar foraging habitat in the surrounding area.
Loss of breeding habitat	N/A					<u>Nil Likelihood:</u> Suitable breeding habitat for threatened species is absent from the subject land.
Rubbish dumping	PCT 76 TEC: Inland Grey Box Woodland EEC	Subject land boundary	Infrequent	Short-term	Construction and Operation	<u>Low Likelihood:</u> Access to the Project will be restricted to parties involved in planning and construction, and ongoing operation. <u>Consequences:</u> Increased presence of rubbish in adjacent vegetation
Wood collection	N/A					<u>Nil Likelihood:</u> There is no living, dead standing or fallen timber on the subject land.
Increase in predators and	N/A					<u>Nil Likelihood:</u>

Indirect impact (Describe impact, e.g. transport of weeds and pathogens form the site to adjacent vegetation)	Impacted entities (PCT/threatened entity and their habitats and where relevant, EPBC Act listing)	Extent (ha or zone reference)	Frequency	Duration (long-term/ short-term/ medium-term)	Project phase/ timing of impact (e.g. construction, operation, rehabilitation)	Likelihood and consequences
pest animal populations						The subject land occurs within a degraded, agriculturally dominated landscape. Feral animals present on the subject land are already likely to utilise adjacent habitat within their wider foraging range.
Changed fire regimes	PCT 76 TEC: Inland Grey Box Woodland EEC	Subject land boundary	Infrequent	Long-term	Construction and Operation	<u>Low Likelihood:</u> During the construction phase, the Project will replace 4.1 ha of vegetation with infrastructure and bare ground. The loss of litter loads is likely to slightly reduce the risk of fires. <u>Consequences:</u> Altered fire regimes on the subject land.

Legend

- Subject Land
- BESS Lease Area
- Substation
- Lot
- Road
- Watercourse

Non Native Vegetation

- Cropping
- Disturbed ground
- Infrastructure

Plant Community Types

- PCT 76 DNG (Roadside)
- PCT 76 DNG (Poor)
- PCT 76 DNG (Wet)

Threatened ecological communities

- Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions (BC Act)

Premise

Finley BESS

Figure 12
Final impacts likely to occur on the subject land

8.3 Prescribed impacts

Measures to avoid and minimise prescribed impacts have been identified in Section 7.2.1 and discussed in Section 6.2. in accordance with the BAM (NSW DPIE, 2020a). Prescribed impacts relevant to the Project have been identified as non-native vegetation, which is assessed in Section **8.3.1**.

8.3.1 NON-NATIVE VEGETATION

8.3.1.1 Nature

Non-native vegetation is considered potential foraging habitat for three threatened bird species (White-throated Needletail, Grey falcon and Black falcon) (NSW DCCEEW, 2025b).

8.3.1.2 Extent

2.78 ha of cropped vegetation will be removed as part of the project.

8.3.1.3 Duration

Short term – during construction.

8.3.1.4 Consequence

The removal of 2.78 ha of cropped vegetation (**Figure 8**) is unlikely to impact the foraging capacity of these species, or reduce the viability or survival of local populations, due to the abundance of similar habitat in the surrounding area. These species are also only considered likely to utilise the subject land as a minor component of their broader foraging range. Measures to avoid and minimise impacts to non-native vegetation have been identified in **Section 7.2.1.**

8.4 Measures to mitigate impacts – proposed management measures and implementation

Section 8.4 of the BAM (NSW DPIE, 2020a) requires a BDAR to describe measures to mitigate and manage impacts following impact avoidance and minimisation measures. Proposed mitigation and measurement measures for direct, indirect and prescribed impacts are presented in **Table 22.**

Table 22 – Summary of proposed mitigation and management measures for residual impacts (direct, indirect and prescribed)

Impact	Mitigation measure	Method/technique	Timing	Frequency	Responsibility	Likely efficacy	Risk of Failure	Consequence of Failed Measure
Direct Impacts								
Displacement of resident fauna.	Timing of works	Planning the timing of vegetation removal to avoid the breeding seasons of threatened migratory and resident species and minimise time of exposure to dust, noise and light spill.	Planning and Construction	Regular	Project management and Environmental specialists	High	Low	Fauna dispersal distress, injury or death
	Pre-clearing surveys	Undertake pre-clearing surveys to determine the presence of resident fauna in vegetation.	Pre-construction	Regular	Environmental specialists and licensed wildlife handler	High	Low	Fauna dispersal distress, injury or death
	Clearing protocols	Implementation of best practice clearing protocols.	Construction	Ongoing	Project management, Site manager and Contractors	High	Low	Inadvertent damage or distress to adjacent habitat and threatened species
Indirect Impacts								
Inadvertent impacts on adjacent habitat or vegetation	Pre-clearing protocols	Prior to commencing vegetation clearing, daily site briefings are to occur to identify the subject land boundary, the presence of any adjacent remnant vegetation to be retained and methods to relocate habitat features into adjacent habitat.	Construction	Regular	Project management and Contractors	High	Low	Adjacent vegetation or habitat inadvertently damaged
	Temporary fencing and signage	Clearly demarcate any vegetation to be retained.	Construction	Ongoing	Project management	High	Low	Adjacent vegetation or habitat

Impact	Mitigation measure	Method/technique	Timing	Frequency	Responsibility	Likely efficacy	Risk of Failure	Consequence of Failed Measure
					and site manager			inadvertently damaged
Reduced viability of adjacent habitat due to noise, dust and light spill	Adjust construction hours	Construction activities are to occur generally during daylight hours minimising light spill and noise disturbance.	Construction	Regular	Project management and site manager	High	Low	Allow fauna species the opportunity to disperse.
Transport of weeds and pathogens from the site to adjacent vegetation	Hygiene protocols	Implementation of hygiene protocols. Vehicles, machinery and equipment to be clean prior to mobilisation to site.	Construction and Operation	Ongoing	Project management and contractors	High	Low	Spread of pathogens or weeds, including HTW, between subject land and adjacent habitat
	Reduce chemical drift	Application of herbicides to HTW is to occur as per the NSW Department of Primary Industries guidelines (NSW DPE, 2024.). Spraying is to occur during suitable weather conditions.	Construction and Operation	Ongoing	Project management and contractors	High	Low	Spread of herbicides to non-targeted flora species in adjacent habitat
Prescribed Impacts								
Increased erosion	Sediment barriers and erosion control measures	Implementation of best practice erosion management and monitoring	Construction and Operation	Ongoing	Project management and contractors	High	Low	Increased sedimentation in adjacent habitat and western dam to be retained

Further details on the implementation of measures outlined in **Table 22** are provided in **Table 23** in accordance with Section 8.4 of the BAM (NSW DPIE, 2020a).

Table 23 – Mitigation measures implementation

Measure/action	Monitoring and evaluation strategy (Data, frequency, timing and reporting)	Timing	Frequency
Timing of works	The timing of works is considered prior to action undertaking to prioritise favourable conditions and to minimise the potential impacts.	Prior to clearing	As required

Measure/action	Monitoring and evaluation strategy (Data, frequency, timing and reporting)	Timing	Frequency
	Particular areas to consider timing of works include: • Duration and intensity: coordinating high intensity works with short duration. • Pollution: consideration of timing of works relevant to noise, light and dust pollution		
Pre-clearing surveys	A pre-clearance survey is developed and undertaken where practical to reduce impacts on threatened species. The purpose of pre-clearance inspections are: • identify management strategies to minimise the impact of clearing activities on resident fauna.	Prior to clearing	As required
Clearing protocols	A vegetation clearance protocol is developed to minimise the impact of vegetation clearance on flora and fauna. Key components of the protocol may include: • identification of areas requiring clearing; • identification of areas to be retained; • pre-clearance surveys; and • fauna management strategies (i.e., relocation) Prior to clearing, the veterinary practice will be alerted to the clearing event a week from operation and must be willing to accept wildlife. Any animals injured will be assessed by a suitably licenced and experienced supervising ecologist.	Prior to clearing	As required
Temporary fencing and signage	Temporary fencing and signage may be erected to: • demarcate clearing areas • alert motorists to potential increases in fauna movement and relocation as a result of clearing; and to control vertebrate pests.	Prior to clearing	As required
Sediment barriers and erosion control measures	The following broad measures would be implemented to prevent, reduce and manage soil erosion at the Project: • minimise disturbance during all phases of the Project and restrict access to undisturbed areas; • sequence construction activities such that sediment control works are completed early in the construction phase; • divert clean water around disturbance areas; • minimise compaction during soil excavation and movement;	During operations	As required

Measure/action	Monitoring and evaluation strategy (Data, frequency, timing and reporting)	Timing	Frequency
	• use erosion control features (e.g. silt fences and temporary sediment traps, diversion banks) to minimise sediment migration, divert surface water around disturbed areas and control runoff velocity; and • construct collection drains, diversion drains and culverts to control surface runoff from the subject land.		
Road signage	Road signage will be implemented to minimise vehicular impacts on resident fauna, such as: • signage erected during clearing periods to warn motorists of potential increases in fauna relocation movement.	During operations	As required

8.5 Adaptive management strategy for uncertain impacts (where relevant)

An adaptive management strategy is not required for the Project as mitigation measures have been considered for all indirect and prescribed impacts in Section 8.4 of the BDAR. The size and nature of impacts have been considered and associated risk of failure and consequences in **Table 22.**

9. SERIOUS AND IRREVERSIBLE IMPACTS

9.1 Assessment for serious and irreversible impacts on biodiversity values

No biodiversity values at risk of an SAII are considered likely to occur on the subject land and therefore will not be impacted by the project.

10. IMPACT SUMMARY

10.1 Determine an offset requirement for impacts

10.1.1 IMPACTS ON NATIVE VEGETATION AND TECS OR ECS (ECOSYSTEM CREDITS)

PCT 76 (DNG Wet) has a VI score <15 and does not require offsetting, as per BAM Subsection 9.2.1(3) (**Table 24** and **Figure 13**).

Table 24 – Impacts that do not require offset – ecosystem credits

Vegetation zone	PCT name	TEC	Impact area (ha)	TEC association	Entity at risk of an SAII?	Current VI score
VZ3	PCT 76 (DNG Wet)	Inland Grey Box Woodland TEC (BC Act)	0.3	Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions.	No	13.2

Table 25 identifies impacts that require an offset, as per BAM Subsection 9.2.1(1) (NSW DPIE, 2020a) (**Figure 13**).

Table 25 – Impacts that require an offset – ecosystem credits

Vegetation zone	PCT name	TEC	Impact area (ha)	Current VI score	Future VI score	Change in VI score	Biodiversity risk weighting	Number of ecosystem credits required
VZ1	PCT 76 (DNG Roadside)	Inland Grey Box Woodland TEC (BC Act)	0.14	15	0	-15	2	1
VZ2	PCT 76 (DNG Poor)	Inland Grey Box Woodland TEC (BC Act)	4.74	18.4	0	-18.4	2	44
Total Credits								**45**

10.1.2 IMPACTS ON THREATENED SPECIES AND THEIR HABITAT (SPECIES CREDITS)

No threatened flora or fauna species credits require an offset as per BAM Subsection 9.2.2(2).

Legend

- Subject Land
- Lot
- Road
- Watercourse

Areas Requiring An Offset

- PCT 76 DNG (Roadside)
- PCT 76 DNG (Poor)

Areas Not Requiring An Offset

- PCT 76 DNG (Wet)

Areas Not Requiring Further Assessment

- Cropping
- Disturbed ground
- Infrastructure

Premise

Finley BESS

Figure 13
Thresholds for assessing and offsetting impacts

10.1.3 INDIRECT AND PRESCRIBED IMPACTS

There are no remaining indirect or prescribed impacts after measures to avoid, minimise and mitigate have been applied. Therefore, offsetting using additional biodiversity credits (above the credit requirement generated by the BAM-C for direct impacts) and/or other conservation measures are not required.

10.2 Impacts that do not need further assessment

Areas that will be impacted by the Project but do not need further assessment as per BAM Section 9.3(1–2.) are identified in **Table 26.**

Table 26 – Impacts that do not need further assessment for ecosystem credits

Impact	Location within Subject land	Justification why no further assessment is required
Clearing of non-native vegetation	Cropping (2.78 ha)	Grassland consisting of non-native groundcover species. Assessment for threatened species habitat was conducted.
	Disturbed ground (1.12 ha)	Areas are void of vegetation. Assessment for threatened species habitat was conducted.

11. BIODIVERSITY CREDIT REPORT

The BAM-C credit report must identify the numbers and classes of biodiversity credits required to be retired in accordance with the like-for-like requirements of the offset rules and those that could be retired in accordance with the variation rules. Credit reports for ecosystem credits are provided in are provided in **Appendix H** and are summarised in **Table 27.**

11.1 Ecosystem credits

Table 27 – Ecosystem credit class and matching credit profile

Ecosystem credit	Attributes shared with matching credits						
	PCT name	PCT vegetation class	PCT vegetation formation	Associated TEC or EC	Offset trading group (BAM Section 10.2, Tables 4 & 5)	Hollow bearing trees present?	IBRA subregion (in which proposal is located)
PCT 76 DNG	76-Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions	Floodplain Transition Woodlands	Grassy Woodland	Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions EEC	Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions EEC	No	Murray Fans

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APPENDIX A

BDAR Requirements Compliance

Table 28 – Assessment of compliance with BDAR minimum information requirements

BDAR section	BAM ref.	BAM requirement	Page reference(s) in the BDAR
Introduction	**Chapters 2 and 3**	**Information**	
		Introduction to the biodiversity assessment including:	
1.1.1		☒ brief description of the proposal	Page 1
1.1.3		☒ identification of Subject land boundary, including: ☒ operational footprint ☒ construction footprint indicating clearing associated with temporary/ancillary construction facilities and infrastructure	Pages 1-2 and Figure 3 – page 5
		☒ general description of the Subject land	Pages 1-2
1.5		☒ sources of information used in the assessment, including reports and spatial data	Section 1.5 – page 10, 2.1.1, 2.12 – page 11 to 13.
1.2		☒ identification and justification for entering the BOS	Page 6
		Maps and tables	
1.1.3		Figure 3: Development Layout ☒ Map of the Subject land boundary showing the final proposal footprint, including the construction footprint for any clearing associated with temporary/ancillary construction facilities and infrastructure	Figure 3 – page 5
Landscape	**Sections 3.1, 3.2, 3.3 and Appendix E**	**Information**	
		Identification of site context components and landscape features, including:	-
1.1.3		☒ general description of Subject land topographic and hydrological setting, geology and soils	Page 1-2
3.3		☒ per cent native vegetation cover in the Assessment Area (as described in BAM Section 3.2)	Page 26
3.2.1		☒ IBRA bioregions and subregions (as described in BAM Subsection 3.1.3(2.))	Page 25
3.2.2		☒ rivers and streams classified according to stream order (as described in BAM Subsection 3.1.3(3.) and Appendix E)	Page 25
3.2.2		☒ wetlands within, adjacent to and downstream of the site (as described in BAM Subsection 3.1.3(3.))	Page 25
3.2.3		☒ connectivity of different areas of habitat (as described in BAM Subsection 3.1.3(5–6.))	Page 25
3.2.4		☒ karst, caves, crevices, cliffs, rocks and other geological features of significance and for vegetation clearing proposals, soil hazard features (as described in BAM Subsections 3.1.3(7.) and 3.1.3(12.))	Page 26
3.2.5		☒ areas of outstanding biodiversity value occurring on the Subject land and Assessment Area (as described in BAM Subsection 3.1.3(8–9.))	Page 26
3.2.6		☒ NSW (Mitchell) landscape on which the Subject land occurs	Page 26
3.2.7		☒ any additional landscape features identified in any SEARs for the proposal	Page 26
2.2		☒ details of field reconnaissance undertaken to confirm the extent and condition of landscape features and native vegetation cover (as described in Operational Manual Stage 1 Section 2.4)	Section 2.2.1 – page 13; 2.2.3 – page 17.
		Maps and tables	

BDAR section	BAM ref.	BAM requirement	Page reference(s) in the BDAR
1.1.3		Figure 1: Site Map ☒ Property boundary ☒ Boundary of Subject land ☒ Cadastre of Subject land (including labelling of Lot and DP or section plan if relevant) ☒ Landscape features identified in BAM Subsection 3.1.3	Figure 1 -page 3
1.1.3		Figure 2: Location Map ☒ Digital aerial photography at 1:1,000 scale or finer ☒ Boundary of Subject land ☒ Assessment Area (i.e. the Subject land and either 1500 m buffer area or 500 m buffer for linear development) ☒ Landscape features identified in BAM Subsection 3.1.3 ☒ Additional detail (e.g. local government area boundaries) relevant at this scale	Figure 2 – page 4
1.1.2		Landscape features identified in BAM Subsection 3.1.3 and to be shown on the Site Map and/or Location Map include:	-
		☒ IBRA bioregions and subregions ☒ rivers, streams and estuaries ☒ wetlands and important wetlands ☒ connectivity of different areas of habitat ☒ karst, caves, crevices, cliffs, rocks and other geological features of significance and if required, soil hazard features ☐ N/A: areas of outstanding biodiversity value occurring on the Subject land and Assessment Area ☒ any additional landscape features identified in any SEARs for the proposal ☒ NSW (Mitchell) landscape on which the Subject land occurs	Figure 1 -page 3 and Figure 2 – page 4
		Data	
		☒ All report maps as separate jpeg files	–
		Individual digital shape files of:	–
		☒ Subject land boundary	–
		☒ Assessment Area (i.e. Subject land and 1500 m buffer area) boundary	–
		☒ cadastral boundary of Subject land	–
		☒ areas of native vegetation cover	–
		☒ landscape features	–
Native vegetation	**Chapter 4, Appendix A and Appendix H**	**Information**	
4.1-4.1.1		☒ Identify native vegetation extent within the Subject land, including cleared areas and evidence to support differences between mapped vegetation extent and aerial imagery (as described in BAM Section 4.1(1–3.) and Subsection 4.1.1)	Page 27

BDAR section	BAM ref.	BAM requirement	Page reference(s) in the BDAR
4.1.1-4.1.2		☒ Provide justification for all parts of the Subject land that do not contain native vegetation (as described in BAM Subsection 4.1.2)	Page 27
2.3.1		☒ Review of existing information on native vegetation including references to previous vegetation maps of the Subject land and Assessment Area (described in BAM Section 4.1(3.) and Subsection 4.1.1)	Page 16
2.2.2 - 2.2.3		☒ Describe the systematic field-based floristic vegetation survey undertaken in accordance with BAM Section 4.2	Pages 13 and 14
N/A		☐ N/A: Where relevant, describe the use of more appropriate local data, provide reasons that support the use of more appropriate local data and include the written confirmation from the decision-maker that they support the use of more appropriate local data (as described in BAM Subsection 1.4.2 and Appendix A)	N/A
4.2		For each PCT within the Subject land, describe:	-
4.2.1		☒ PCT name and ID	Page 31
4.2.1		☒ vegetation class	Pages 32
4.2.1		☒ extent (ha) within Subject land	Pages 32
4.2.2.3		☒ evidence used to identify a PCT including any analyses undertaken, references/sources, existing vegetation maps (BAM Section 4.2(1–3.))	Page 34
4.2.2.3		☒ plant species relied upon for identification of the PCT and relative abundance of each species	Page 34
4.3		☒ if relevant, TEC status including evidence used to determine vegetation is the TEC (BAM Subsection 4.2.2(1–2.))	Page 35
4.2.2-4.2.3		☒ estimate of per cent cleared value of PCT (BAM Subsection 4.2.1(5.))	Table 4 – page 32
		Describe the vegetation integrity assessment of the Subject land, including:	-
2.2.2 and 2.2.3		☒ identification and mapping of vegetation zones (as described in BAM Subsection 4.3.1)	Pages 13-14
4.4		☒ description of vegetation zones within the Subject land (as described in Operational Manual Stage 1 Table 2 and Subsection 3.3.2)	Table 9 – page 45
		☒ area (ha) of each vegetation zone	
		☒ assessment of patch size (as described in BAM Subsection 4.3.2)	
2.2.3		☒ survey effort (i.e. number of vegetation integrity survey plots) as described in BAM Subsection 4.3.4(1–2.)	Page 14
2.2.1		☒ use of relevant benchmark data from BioNet Vegetation Classification (as described in BAM Subsection 4.3.3(5.))	Page 13
N/A		Where use of more appropriate local benchmark data is proposed (as described in BAM Subsection 1.4.2, BAM Subsection 4.3.3(5.) and BAM Appendix A):	N/A
		☐ identify the PCT or vegetation class for which local benchmark data will be applied ☐ identify published sources of local benchmark data (if benchmarks obtained from published sources) ☐ describe methods of local benchmark data collection (if reference plots used to determine local benchmark data)	
		☐ provide justification for use of local data rather than BioNet Vegetation Classification benchmark values	
		☐ provide written confirmation from the decision-maker that they support the use of local benchmark data	
		Maps and tables	
4.1		☒ Map of native vegetation extent within the Subject land at scale not greater than 1:10,000 including identification of all areas of native vegetation including areas that are ground cover only, cleared areas (as described in BAM Section 4.1(1–3.)) and all parts of the Subject land that do not contain native vegetation (BAM Subsection 4.1.2)	Figure 7 – page 29

BDAR section	BAM ref.	BAM requirement	Page reference(s) in the BDAR
2.2.3		☒ Map of PCTs within the Subject land (as described in BAM Section 4.2(1.))	Figure 8 – page 30
4.4		☒ Map of vegetation zones within the Subject land (as described in BAM Subsection 4.3.1)	Figure 9- page 43
2.2.3		☒ Map the location of floristic vegetation survey plots and vegetation integrity survey plots relative to PCT boundaries	Figure 5 - page 15
4.3		☒ Map of TEC distribution on the Subject land and table of TEC listing, status and area (ha)	Figure 9 – page 43
4.4		☒ Map of patch size locations for each native vegetation zone and table of patch size areas (as described in BAM Subsection 4.3.2)	Figure 10- page 44 and Table 8 – page 45
4.5.2		Table of current vegetation integrity scores for each vegetation zone within the site and including:	-
		☒ composition condition score ☒ structure condition score ☒ function condition score ☒ presence of hollow bearing trees	Table 9 – page 46
		Data	
		☒ All report maps as separate jpeg files	–
		☒ Plot field data (MS Excel format)	–
		☒ Plot field datasheets	–
		Digital shape files of:	–
		☒ PCT boundaries within Subject land	–
		☒ TEC boundaries within Subject land	–
		☒ vegetation zone boundaries within Subject land	–
		☒ floristic vegetation survey and vegetation integrity plot locations	–
Threatened species	**Chapter 5**	**Information**	
		Identify ecosystem credit species likely to occur on the Subject land, including:	-
5.1.1		☒ list of ecosystem credit species derived from the BAM-C (as described in BAM Subsection 5.1.1 and Section 5.2(1.))	Page 47 Table 10 – page 47
		☒ justification and supporting evidence for exclusion of any ecosystem credit species based on geographic limitations, habitat constraints or vagrancy (as described in BAM Subsections 5.2.1 and 5.2.2)	
N/A		☐ justification for addition of any ecosystem credit species to the list	N/A
		Identify species credit species likely to occur on the Subject land, including:	-
5.1.2		☒ list of species credit species derived from the BAM-C (as described in BAM Subsection 5.1.1)	Page 50-53 Table 11– page 50 - 53
		☒ justification and supporting evidence for exclusions based on geographic limitations, habitat constraints or vagrancy (as described in BAM Subsections 5.2.1 and 5.2.2)	
		☒ justification and supporting evidence for exclusions based on degraded habitat constraints and/or microhabitats on which the species depends (as described in BAM Subsection 5.2.2)	
N/A		☐ justification for addition of any species credit species to the list	N/A
		From the list of candidate species credit species, identify:	-

BDAR section	BAM ref.	BAM requirement	Page reference(s) in the BDAR
5.3		☒ species assumed present within the Subject land (if relevant) (as described in BAM Subsection 5.2.4(2.a.)) ☒ species present within the Subject land on the basis of being identified on an important habitat map for a species (as described in BAM Subsection 5.2.4(2.d.)) ☒ species for which targeted surveys are to be completed to determine species presence (BAM Subsection 5.2.4(2.b.))	page 54
5.4		☒ species for which an expert report is to be used to determine species presence (BAM Subsection 5.2.4(2.c.))	Page 58
		Present the outcomes of species credit species assessments from:	-
5.3		☒ threatened species survey (as described in BAM Section 5.2.4)	Page 54 to 57
5.4		☒ expert reports (if relevant) including justification for presence of the species and information used to make this determination (as described in BAM Subsection 5.2.4, Section 5.3, Box 3)	Page 58
		Where survey has been undertaken include detailed information on:	-
2.3-2.4		☒ survey method and effort (as described in BAM Section 5.3)	Page 16 – 19
		☒ justification of survey method and effort (e.g. citation of peer-reviewed literature) if approach differs from the department's taxa-specific survey guides or where no relevant guideline has been published	
5.3		☒ timing of survey in relation to requirements in the TBDC or the department's taxa-specific survey guides. Where survey was undertaken outside these guides include justification for the timing of surveys	Page 54 to 57
Declarations (ii)		☒ survey personnel and relevant experience	Page xiii
2.6		☒ describe any limitations to surveys and how these were addressed/overcome	Page 25
N/A		Where an expert report has been used in place of survey (as described in BAM Section 5.3, Box 3), include:	N/A
		☐ justification of the use of an expert report ☐ identify the expert, provide evidence of their expert credentials and departmental approval of expert status ☐ all requirements of Box 3 have been addressed in the expert report	
N/A		Where use of local data is proposed (BAM Subsection 1.4.2):	N/A
		☐ identify relevant species ☐ identify data to be amended ☐ identify source of information for local data, e.g. published literature, additional survey data, etc. ☐ justify use of local data in preference to VIS Classification or TBDC data	
		☐ provide written confirmation from the decision-maker that they support the use of local data	
		Species polygon completed for species credit species present within the Subject land (assumed present or determined on the basis of survey, expert report or important habitat map) ensuring that:	-
N/A		☐ the unit of measure for each species is documented	No species polygon required- see Section 5.2 – page 54- 56
		for species assessed by area:	
		☐ the polygon includes the extent of suitable habitat for the target species within the Subject land (as described in BAM Subsection 5.2.5)	
		☐ a description of, and evidence-based justification for, the habitat constraints, features or microhabitats used to map the species polygon including reference to information in the TBDC for that species and any buffers applied	
N/A		for species assessed by counts of individuals:	No threatened plant species detected– see
		☐ the number of individual plants present on the Subject land (as described in BAM Subsection 5.2.5(3.))	

BDAR section	BAM ref.	BAM requirement	Page reference(s) in the BDAR
		☐ the method used to derive this number (i.e. threatened species survey or expert report) and evidence-based justification for the approach taken	Section 5.2 - page 54-56
		☐ the polygon includes all individuals located on the Subject land with a buffer of 30 m around the individuals or groups of individuals on the Subject land	
		☐ Identify the biodiversity risk weighting for each species credit species identified as present within the Subject land (as described in BAM Section 5.4)	
		Maps and tables	
5.1.1		Table 11. Predicted ecosystem credit species Table showing ecosystem credit species in accordance with BAM Subsection 5.1.1, and identifying:	Table 10 – page 51 to 52
		☒ the ecosystem credit species removed from the list	
		☒ the sensitivity to gain class of each species	
5.1.2		Table 12. Predicted flora species credit species Table detailing species credit species in accordance with BAM Section 5.2 and identifying:	Table 11 – page 52-54
		☒ the species credit species removed from the list of species because the species is considered vagrant, out of geographic range or the habitat or microhabitat features are not present	
		☒ the candidate species credit species not recorded on the Subject land as determined by targeted survey, expert report or important habitat map	
5.2		Table 16 and 17. Threatened species surveys for candidate flora and fauna species credit species on the Subject land ☒ Table detailing species credit species recorded or assumed as present within the Subject land, habitat constraints or microhabitats associated with the species, counts of individuals (flora)/extent of suitable habitat (flora and fauna) (as described in BAM Subsection 5.2.6) and biodiversity risk weighting (BAM Section 5.4)	Page 56 to 59
7.1.1		☐ Map indicating the GPS coordinates of all individuals of each species recorded within the Subject land and the species polygon for each species (as described in BAM Subsection 5.2.5)	Not required – see Section 5.2 - page 55
		Data	
		☒ Digital shape files of suitable habitat identified for survey for each candidate species credit species	
		☒ Survey locations including GPS coordinates of any plots, transects, grids	
		☒ Digital shape files of each species polygon including GPS coordinates of located individuals	–
		☒ Species polygon map in jpeg format	–
		☒ Expert reports and any supporting data used to support conclusions of the expert report	
		☒ Field datasheets detailing survey information including prevailing conditions, date, time, equipment used, etc.	
Prescribed impacts	**Chapter 6**	**Information**	
Section 6		Identify potential prescribed biodiversity impacts on threatened entities, including:	Table 17 – page 60 to 61
		☒ karst, caves, crevices, cliffs, rocks and other geological features of significance (as described in BAM Subsection 6.1.1)	
		☒ occurrences of human-made structures and non-native vegetation (as described in BAM Subsection 6.1.2)	
		☒ corridors or other areas of connectivity linking habitat for threatened entities (as described in BAM Subsection 6.1.3)	
		☒ waterbodies or any hydrological processes that sustain threatened entities (as described in BAM Subsection 6.1.4)	

BDAR section	BAM ref.	BAM requirement	Page reference(s) in the BDAR
		☐ N/A: protected animals that may use the proposed wind farm development site as a flyway or migration route (as described in BAM Subsection 6.1.5)	
		☒ where the proposed development may result in vehicle strike on threatened fauna or on animals that are part of a threatened ecological community (as described in BAM Subsection 6.1.6)	
		☒ Identify a list of threatened entities that may be dependent upon or may use habitat features associated with any of the prescribed impacts	
		☒ Describe the importance of habitat features to the species including, where relevant, impacts on life cycle or movement patterns (e.g. Subsection 6.1.3)	
		Where the proposed development is for a wind farm: N/A	
		☐ N/A: identify a candidate list of protected animals that may use the development site as a flyway or migration route, including resident threatened aerial species, resident raptor species and nomadic and migratory species that are likely to fly over the proposal area (as described in BAM Subsection 6.1.5)	
		☐ N/A: provide details of targeted survey for candidate species of wind farm developments undertaken in accordance with BAM Subsection 6.1.5(2–3.)	
		☐ N/A: predict the habitual flight paths for nomadic and migratory species likely to fly over the Subject land and map the likely habitat for resident threatened aerial and raptor species (BAM Subsection 6.1.5(4.))	
		Where the proposal may result in vehicle strike:	
		☒ identify a list of threatened fauna or protected fauna species that are part of a TEC and at risk of vehicle strike due to the proposal	
		Maps and tables	
		☒ Map showing location of any prescribed impact features (i.e. karst, caves, crevices, cliffs, rocks, human-made structures, etc.)	Figure 8-page 30
		☐ N/A: Map showing location of potential vehicle strike locations	
		☐ N/A: Maps of habitual flight paths for nomadic and migratory species likely to fly over the site and maps of likely habitat for threatened aerial species resident on the site (for wind farm developments only)	
		Data	
		☐ Digital shape files of prescribed impact feature locations	
		☐ Prescribed impact features map in jpeg format	
Avoid and minimise impacts	**Chapter 7**	**Information**	
		Demonstration of efforts to avoid and minimise impacts on biodiversity values (including prescribed impacts) associated with the proposal location in accordance with Chapter 7, including an analysis of alternative:	
7		☒ modes or technologies that would avoid or minimise impacts on biodiversity values and justification for selecting the proposed mode or technology	Page 62
7.1.1-7.1.2		☒ routes that would avoid or minimise impacts on biodiversity values and justification for selecting the proposed route	Page 62
		☒ alternative locations that would avoid or minimise impacts on biodiversity values and justification for selecting the proposed location	

BDAR section	BAM ref.	BAM requirement	Page reference(s) in the BDAR
		☒ alternative sites within a property on which the proposal is located that would avoid or minimise impacts on biodiversity values and justification for selecting the proposed site	
7.2		☒ Describe efforts to avoid and minimise impacts (including prescribed impacts) to biodiversity values through proposal design (as described in BAM Sections 7.1 and 7.2)	Page 64
7.1.1-7.1.2		☒ Identification of any other site constraints that the proponent has considered in determining the location and design of the proposal (as described in BAM Subsection 7.2.1(3.))	Page 62
N/A		☐ Detail measures or options considered but not implemented because they are not feasible and/or practical (e.g. due to site constraints)	N/A
		Maps and tables	
8.4		Table 22. Avoidance and minimisation measures for direct and indirect impacts ☒ Table of measures to be implemented to avoid and minimise the impacts of the proposal, including action, outcome, timing and responsibility	Page 74
7.1.1		Figure 11. Alternative footprints ☒ Map of alternative footprints considered to avoid or minimise impacts on biodiversity values; and of the final proposal footprint, including construction and operation	Page 63
N/A		☐ Maps demonstrating indirect impact zones where applicable	N/A
		Data	
		Digital shape files of:	
		☒ alternative and final proposal footprint	
		☒ direct and indirect impact zones	
		☒ Maps in jpeg format	
Assessment of impacts	**Chapter 8, Sections 8.1 and 8.2**	**Information**	
8.1		☒ Determine the impacts on native vegetation and threatened species habitat, including a description of direct impacts of clearing of native vegetation, threatened ecological communities and threatened species habitat (as described in BAM Section 8.1)	Page 65 to 67
		Assessment of indirect impacts on vegetation and threatened species and their habitat including (as described in BAM Section 8.2):	-
8.2		☒ description of the nature, extent, frequency, duration and timing of indirect impacts of the proposal	Page 67 – 71
		☒ documenting the consequences to vegetation and threatened species and their habitat including evidence-based justifications	
2.6		☒ reporting any limitations or assumptions, etc. made during the assessment	Page 25
8.1.1		☒ identification of the threatened entities and their habitat likely to be affected	Page 65 to 67
8.3		Assessment of prescribed biodiversity impacts (as described in BAM Section 8.3) including:	Page 73
		assessment of the nature, extent frequency, duration and timing of impacts on the habitat of threatened species or ecological communities associated with:	

BDAR section	BAM ref.	BAM requirement	Page reference(s) in the BDAR
		☐ N/A: karst, caves, crevices, cliffs, rocks and other features of geological significance	
		☐ N/A: human-made structures	
		☒ non-native vegetation	
		☐ N/A: connectivity of different areas of habitat of threatened species that facilitates the movement of those species across their range	
		☐ N/A: movement of threatened species that maintains their life cycle	
		☐ N/A: water quality, waterbodies and hydrological processes that sustain threatened species and threatened ecological communities	
		☐ N/A: assessment of the impacts of wind turbine strikes on protected animals	
		☐ N/A: assessment of the impacts of vehicle strikes on threatened species of animals or on animals that are part of a TEC	
		☒ evaluate the consequences of prescribed impacts	
		☐ N/A: describe impacts that are uncertain	
		☐ document limitations to data, assumptions and predictions	
		Maps and tables	
8.1.2		Table 20. Impacts to vegetation integrity ☒ Table showing change in vegetation integrity score for each vegetation zone as a result of identified impacts	Page 67
Mitigation and management of impacts	**Chapter 8, Sections 8.4 and 8.5**	**Information**	
8.4		Identification of measures to mitigate or manage impacts in accordance with the recommendations in BAM Sections 8.4 and 8.5 including:	
		☒ techniques, timing, frequency and responsibility ☒ identify measures for which there is risk of failure ☒ evaluate the risk and consequence of any residual impacts	
			Page 74 to 77
8.5		☒ document any adaptive management strategy proposed	Page 78
		Identification of measures for mitigating impacts related to:	-
8.4		☒ displacement of resident fauna (as described in BAM Subsection 8.4.1(2.))	Page 74 to 77
8.4		☒ indirect impacts on native vegetation and habitat (as described in BAM Subsection 8.4.1(3.))	
8.4		☒ mitigating prescribed biodiversity impacts (as described in BAM Subsection 8.4.2)	
8.5		☒ Details of the adaptive management strategy proposed to monitor and respond to impacts on biodiversity values that are uncertain (BAM Section 8.5)	Page 78
		Maps and tables	
8.3		Table 22 and 23. Summary of proposed mitigation measures for residual impacts (direct and indirect) ☒ Table of measures to be implemented before, during and after construction to mitigate and manage impacts of the proposal, including action, outcome, timing and responsibility	Page 74 to 77

BDAR section	BAM ref.	BAM requirement	Page reference(s) in the BDAR
Impact summary	**Chapter 9**	**Information**	
		Identification and assessment of impacts on TECs and threatened species that are at risk of a serious and irreversible impacts (SAII, in accordance with BAM Section 9.1) including:	-
N/A		☒ addressing all criteria in Subsection 9.1.1 for each TEC listed as at risk of an SAII present on the Subject land	Page 79
N/A		☒ for each TEC, report the extent of the TEC in NSW	N/A
N/A		☐ addressing all criteria in Subsection 9.1.2 for each threatened species at risk of an SAII present on the Subject land	N/A
		☐ for each threatened species, report the population size in NSW	
N/A		☒ documenting assumptions made and/or limitations to information ☒ documenting all sources of data, information, references used or consulted ☒ clearly justifying why any criteria could not be addressed	N/A
10.1.1		☒ Identification of impacts requiring offset in accordance with BAM Section 9.2	Page 79
10.1.1		☒ Identification of impacts not requiring offset in accordance with BAM Subsection 9.2.1(3.)	Page 79
10.2		☒ Identification of areas not requiring assessment in accordance with BAM Section 9.3	Page 82
		Maps and tables	
N/A		☒ Map showing the extent of TECs at risk of an SAII within the Subject land	N/A
N/A		☐ Map showing location of threatened species at risk of an SAII within the Subject land	N/A
10.1.1		Figure 13. Thresholds for Assessing and Offsetting Impacts Map showing location of:	Page 81
		☒ impacts requiring offset	
		☒ impacts not requiring offset	
		☒ areas not requiring assessment	
		Data	
		Digital shape files of:	
		☒ extent of TECs at risk of an SAII within the Subject land	
		☒ location of threatened species at risk of an SAII within the Subject land	
		☒ boundary of impacts requiring offset	
		☒ boundary of impacts not requiring offset	
		☒ boundary of areas not requiring assessment	
		☒ Maps in jpeg format	
Impact summary	**Chapter 10**	**Information**	
10.1.1		Ecosystem credits and species credits that measure the impact of the development on biodiversity values, including:	Page 79
		☒ future vegetation integrity score for each vegetation zone within the Subject land (Equation 25 and Equation 26 in BAM Appendix H) ☒ change in vegetation integrity score (BAM Subsection 8.1.1) ☒ number of required ecosystem credits for the direct impacts of the proposal on each vegetation zone within the Subject land (BAM Subsection 10.1.2)	
		☒ biodiversity risk weighting for each	

BDAR section	BAM ref.	BAM requirement	Page reference(s) in the BDAR
N/A		☐ number of required species credits for each candidate threatened species that is directly impacted on by the proposal (BAM Subsection 10.1.3)	N/A
		Maps and tables	
11.1		Table 28. Ecosystem credit class and matching credit profile ☒ Table of PCTs requiring offset and the number of ecosystem credits required	Page 83
N/A		☐ Table of threatened species requiring offset and the number of species credits required	N/A
		Data	
		☒ Submitted proposal in the BAM Calculator	
Biodiversity credit report	**Chapter 10**	**Information**	
11		☒ Description of credit classes for ecosystem credits and species credits at the development or clearing site or land to be biodiversity certified (BAM Section 10.2)	Page 83
-		☒ BAM credit report in pdf format	Appendix H
		Maps and tables	
11.1		Table 28. Ecosystem credit class and matching credit profile ☒ Table of credit class and matching credit profile	Page 83
		Data	
		☒ BAM credit report in pdf format	Appendix H

APPENDIX B

Threatened Species Assessment

Table 29 – Threatened Species Assessment

Scientific Name	Common Name	Threatened Status		Database Source	SAII	Credit Class	Associated PCTs in the Subject land	Survey Period	IBRA Sub-region	Species Assessment			Vagrancy	Survey Required
		BC Act	EPBC Act							Geographic Limitations	Habitat Constraint	Microhabitat (NSW DCCEEW, 2025b)		
Amphibromus fluitans	River Swamp Wallaby-grass	V	V	PMST	No	Sp	Not associated with PCT 76	Dec-Mar	Murray Fans	None	Semi-permanent/ephemeral wet areas. Periodically inundated sites (including table drains and farm dams), notably wetlands on riverine floodplain.	*Amphibromus fluitans* predominantly grows in permanent swamps. The species needs moderately fertile wetlands with some bare ground.	N/A	No survey required. Species is not associated with PCT 76
Anthochaera phrygia	Regent Honeyeater	CE	CE	PMST	Yes	Dual	Not associated with PCT 76	N/A	Murray Fans	None	Important Habitat Map	Regent Honeyeaters occur within temperate woodlands and open forests containing high bird species richness on the inland slopes of south-eastern Australia. Suitable habitat also contains a significant number of	N/A	No survey required. The Subject land is not on the Important Habitat Map and species is not associated with PCT 76

Scientific Name	Common Name	Threatened Status		Database Source	SAII	Credit Class	Associated PCTs in the Subject land	Survey Period	IBRA Sub-region	Species Assessment			Vagrancy	Survey Required
		BC Act	EPBC Act							Geographic Limitations	Habitat Constraint	Microhabitat (NSW DCCEEW, 2025b)		
												large trees, high canopy cover and an abundance of mistletoe.		
Apheloceph ala leucopsis	Southern Whiteface	V	V	PMST	-	Ec	Not associated with PCT 76	-	No Data	-	-	The Southern Whiteface occurs over most of inland NSW east to the Great Dividing Range. Suitable habitat is open dry woodland and shrublands with an understorey of grasses or shrubs with ample leaf litter and logs. Breeding takes place in nests in hollows and crevices, and sometimes low bushes.	N/A	No survey required. Species is not associated with PCT 76

Scientific Name	Common Name	Threatened Status		Database Source	SAII	Credit Class	Associated PCTs in the Subject land	Survey Period	IBRA Sub-region	Species Assessment			Vagrancy	Survey Required
		BC Act	EPBC Act							Geographic Limitations	Habitat Constraint	Microhabitat (NSW DCCEEW, 2025b)		
Aprasia parapulchella	Pink-tailed Legless Lizard	V	V	PMST	No	Sp	Not associated with PCT 76	Sep-Nov	Does not occur in the Murray Fans sub region	N/A	Within 50m of rocky areas	The Pink-tailed Legless Lizard occurs on the Central and Southern Tablelands and the South Western Slopes. It is found on rocky outcrops or within 50 m of rocky areas in sloping, open grassy woodland areas and is often associated with Kangaroo Grass.	N/A	No survey required. Species is not associated with PCT 76
Austrostipa wakoolica	A spear-grass	E	E	Bionet, PMST and BAM-C	No	Sp	76	Oct-Dec	Murray Fans	None	Alluvial plains and plains	Austrostipa wakoolica is found on the floddplains of the Murray River tributaries, in open woodland on grey silty clay or sandy loam soils. Associated	N/A	Survey required suitable microhabitat may be present on the Subject land.

Scientific Name	Common Name	Threatened Status		Database Source	SAII	Credit Class	Associated PCTs in the Subject land	Survey Period	IBRA Sub-region	Species Assessment			Vagrancy	Survey Required
		BC Act	EPBC Act							Geographic Limitations	Habitat Constraint	Microhabitat (NSW DCCEEW, 2025b)		
												species include Callitris glaucophylla, Eucalyptus microcarpa, E. populnea, Austrostipa eremophila, A. drummondii, Austrodanthonia eriantha and Einadia nutans.		
Artamus cyanopterus cyanopterus	Dusky Woodswallow	V	Not Listed	BAM-C	-	Ec	76	N/A	Murray Fans	None	N/A	Primarily inhabit dry, open eucalypt forests and woodlands, including mallee associations, with an open or sparse understorey of eucalypt saplings, acacias and other shrubs, and ground-cover of grasses or sedges and fallen woody debris. It has also been	N/A	Not retained as ecosystem credit - absent mircohabitat (woodland)

Scientific Name	Common Name	Threatened Status		Database Source	SAII	Credit Class	Associated PCTs in the Subject land	Survey Period	IBRA Sub-region	Species Assessment			Vagrancy	Survey Required
		BC Act	EPBC Act							Geographic Limitations	Habitat Constraint	Microhabitat (NSW DCCEEW, 2025b)		
												recorded in shrublands, heathlands and very occasionally in moist forest or rainforest. Also found in farmland, usually at the edges of forest or woodland.		
Brachyscome muelleroides	Claypan Daisy	V	V	PMST	Yes	Sp	Not associated with PCT 76	Sep-Nov	Murray Fans	East of the Cobb Highway	Floodplains on grey-brown or red-brown clays and claypans and Semi-permanent/ephemeral wet areas - Wetland-grassland communities on grey-brown or red-brown clays and claypans	This species occurs in damp areas on the margins of claypans in moist grassland with Pycnosorus globosus, Agrostis avenacea and *Austrodanthonia duttoniana*. Also occurs on the margins of lagoons in mud or water, and in association with *Calotis anthemoides*.	N/A	No survey required. Species is not associated with PCT 76

Scientific Name	Common Name	Threatened Status		Database Source	SAII	Credit Class	Associated PCTs in the Subject land	Survey Period	IBRA Sub-region	Species Assessment			Vagrancy	Survey Required
		BC Act	EPBC Act							Geographic Limitations	Habitat Constraint	Microhabitat (NSW DCCEEW, 2025b)		
Botaurus poiciloptilus	Australasian Bittern	E	E	PMST	-	Ec	Not associated with PCT 76	N/A	Murray Fans	None	Waterbodies - Brackish or freshwater wetlands	Favours permanent freshwater wetlands with tall, dense vegetation, particularly bullrushes (Typha spp.) and spikerushes (Eleocharis spp.).	N/A	No survey required. Species is not associated with PCT 76
Calidris acuminata	Sharp-tailed Sandpiper	-	V	PMST	-	-	Not associated with PCT 76	-	No Data	-	-	This species is a non-breeding visitor to south-eastern Australia, occurring in freshwater and saline habitats along the coast and inland.	N/A	No survey required. Species is not associated with PCT 76
Calidris ferruginea	Curlew Sandpiper	CE	CE	PMST	Yes	Dual	Not associated with PCT 76	N/A	Murray Fans	None	Important Habitat Map	This species generally occupies littoral and estuarine habitats, and in New South Wales is mainly found	N/A	No survey required the Subject land is on the Important Habitat Map and species is not associated with PCT 76

Scientific Name	Common Name	Threatened Status		Database Source	SAII	Credit Class	Associated PCTs in the Subject land	Survey Period	IBRA Sub-region	Species Assessment			Vagrancy	Survey Required
		BC Act	EPBC Act							Geographic Limitations	Habitat Constraint	Microhabitat (NSW DCCEEW, 2025b)		
												in intertidal mudflats of sheltered coasts. It also occurs in non-tidal swamps, lakes and lagoons on the coast and sometimes inland.		
Chthonicola sagittata	Speckled Warbler	V	Not Listed	BAM-C	-	Ec	76	N/A	Murray Fans	None	N/A	The Speckled Warbler occurs in a wide range of Eucalyptus dominated communities that have a grassy understorey, often on rocky ridges or in gullies. This species inhabits areas with scattered native tussock grasses, a sparse shrub layer and some eucalypt regrowth and an open	N/A	Not retained as ecosystem credit - absent mircohabitat (woodland)

Scientific Name	Common Name	Threatened Status		Database Source	SAII	Credit Class	Associated PCTs in the Subject land	Survey Period	IBRA Sub-region	Species Assessment			Vagrancy	Survey Required
		BC Act	EPBC Act							Geographic Limitations	Habitat Constraint	Microhabitat (NSW DCCEEW, 2025b)		
												canopy. Relatively undisturbed larger remnant areas are required for the species to persist in the area		
Crinia sloanei	Sloane's Froglet	E	E	PMST and BAM-C	No	Sp	76	Jul-Aug	Murray Fans	None	Semi-permanent/ephemeral wet areas containing relatively shallow sections with submergent and emergent vegetation, or within 500 m of wet area, and within 500 m of swamps, and within 500 m of waterbody.	Sloane's Froglet inhabits wetlands and swamps and areas with periodic inundation. Occurs in grassland, woodland and disturbed areas with periodical inundation.	N/A	Survey required as suitable habitat constraints may be present on the Subject land.
Climacteris picumnus victoriae	Brown Treecreeper (south-eastern)	V	V	PMST and BAM-C	-	Ec	76	N/A	Murray Fans	None	N/A	Brown Treecreepers inhabit grassy eucalypt forests and woodlands (including Box Gum	N/A	Not retained as ecosystem credit - absent mircohabitat (woodland)

Scientific Name	Common Name	Threatened Status		Database Source	SAII	Credit Class	Associated PCTs in the Subject land	Survey Period	IBRA Sub-region	Species Assessment			Vagrancy	Survey Required
		BC Act	EPBC Act							Geographic Limitations	Habitat Constraint	Microhabitat (NSW DCCEEW, 2025b)		
												Woodland) on the inland slopes and plains of the Great Dividing Range. This species is found in woodland with a sparse shrub layer, foraging on the ground and among fallen timber.		
Falco hypoleucos	Grey Falcon	V	V	PMST and BAM-C	-	Ec	76	N/A	Murray Fans	None	N/A	Grey Falcons are sparsely distributed in NSW throughout the Murray Darling Basin in areas receiving <500 mm rainfall annually. This species is restricted to shrubland, grassland and wooded watercourses in arid and semi-arid regions.	N/A	No Survey Required- Retained as ecosystem credit

Scientific Name	Common Name	Threatened Status		Database Source	SAII	Credit Class	Associated PCTs in the Subject land	Survey Period	IBRA Sub-region	Species Assessment			Vagrancy	Survey Required
		BC Act	EPBC Act							Geographic Limitations	Habitat Constraint	Microhabitat (NSW DCCEEW, 2025b)		
												Foraging occurs in open areas for birds, reptiles and mammals.		
Galaxias rostratus	Flathead Galaxias	Not listed	CE	PMST	-	-	No Data	-	No Data	-	-	The flathead galaxias is only known from the southern half of the Murray-Darling Basin system. The flathead galaxias inhabits a variety of habitats including billabongs, lakes, swamps and rivers, with a preference for still or slow flowing waters	N/A	No - absent microhabitat (permanent watercourses).

Scientific Name	Common Name	Threatened Status		Database Source	SAII	Credit Class	Associated PCTs in the Subject land	Survey Period	IBRA Sub-region	Species Assessment			Vagrancy	Survey Required
		BC Act	EPBC Act							Geographic Limitations	Habitat Constraint	Microhabitat (NSW DCCEEW, 2025b)		
Gallinago hardwickii	Latham's Snipe	V	V	PMST	-	-	Not associated with PCT 76	-	No Data	-	-	Latham's Snipe is a non-breeding visitor to south-eastern Australia, inhabiting permanent and ephemeral wetlands.	N/A	No survey required. Species is not associated with PCT 76
Falco subniger	Black Falcon	V	Not Listed	BAM-C	-	Ec	76	N/A	Murray Fans	None	N/A	The Black Falcon has a wide distribution across NSW occurring mostly inland.	N/A	No Survey Required- Retained as ecosystem credit
Grantiella picta	Painted Honeyeater	V	V	PMST	-	Ec	76	N/A	Murray Fans	None	Mistletoes present at a density of greater than five mistletoes per hectare	This nomadic species occurs at low densities throughout the inland slopes of the Great Dividing Range in NSW. Painted Honeyeaters inhabit Box Gum Woodlands, foraging on insects,	N/A	Not retained as ecosystem credit - Absent Habitat Constraints

Scientific Name	Common Name	Threatened Status		Database Source	SAII	Credit Class	Associated PCTs in the Subject land	Survey Period	IBRA Sub-region	Species Assessment			Vagrancy	Survey Required
		BC Act	EPBC Act							Geographic Limitations	Habitat Constraint	Microhabitat (NSW DCCEEW, 2025b)		
												eucalypts and mistletoes.		
Haliaeetus leucogaster	White-bellied Sea-Eagle	V	Not Listed	BAM-C	No	Dual	76	Jul-Dec	Murray Fans	-	Living or dead mature trees within suitable vegetation <1 km of a rivers, lakes, large dams or creeks, wetlands and coastlines (breeding) and <1 km of a river, lakes, large dams or creeks, wetlands and coastlines (foraging)	The White-bellied Sea-Eagle has a wide distribution across NSW along the coast and major inland waterways. This species inhabits areas with large open bodies of water, coastal dunes, tidal flats, grassland, heathland and woodlands and forests.	N/A	No Survey Required-absent habitat constraints (living or dead mature trees) Retained as ecosystem credit
Hirundapus caudacutus	White-throated Needletail	V	V	PMST and BAM-C	-	Ec	76	N/A	Murray Fans	None	N/A	Migratory species found in Australian from October to April. This species has been recorded in a wide variety of	N/A	No Survey Required-Retained as ecosystem credit

Scientific Name	Common Name	Threatened Status		Database Source	SAII	Credit Class	Associated PCTs in the Subject land	Survey Period	IBRA Sub-region	Species Assessment			Vagrancy	Survey Required
		BC Act	EPBC Act							Geographic Limitations	Habitat Constraint	Microhabitat (NSW DCCEEW, 2025b)		
												habitats including flying above farmland and wooded areas.		
Lepidium aschersonii	Spiny Peppercress	V	V	PMST	No	Sp	76	Nov-April	Does not occur in the Riverina region	-	N/A	Found in gilgai clays (grey loamy clays) within open to dense woodland with sparse grassy understorey.	N/A	No survey required - Absent from the Riverina IBRA Sub-region
Lepidium monoplocoides	Winged Pepper-cress	E	E	PMST	No	Sp	Not associated with PCT 76	Sep-Dec	Murray Fans	None	N/A	Winged Pepper-cress occurs in areas that are seasonally moist to waterlogged with fertile soils and a mean annual rainfall around 300-500 mm. Predominantly occurs in open woodlands dominated by Allocasuarina luehmannii (Bulloak) and/or eucalypts,	N/A	No survey required. Species is not associated with PCT 76

Scientific Name	Common Name	Threatened Status		Database Source	SAII	Credit Class	Associated PCTs in the Subject land	Survey Period	IBRA Sub-region	Species Assessment			Vagrancy	Survey Required
		BC Act	EPBC Act							Geographic Limitations	Habitat Constraint	Microhabitat (NSW DCCEEW, 2025b)		
												particularly Eucalyptus largiflorens (Black Box) or Eucalyptus populnea (Poplar Box).		
Litoria raniformis	Southern Bell Frog	E	V	PMST	No	Sp	Not associated with PCT 76	Oct-Jan	Murray Fans	None	N/A	The Southern Bell Frog is found around permanent or ephemeral Black Box/Lignum/Nitre Goosefoot swamps, Lignum/Typha swamps and River Red Gum swamps or billabongs along floodplains and river valleys. This species has also been recorded in irrigated rice crops.	N/A	No survey required. Species is not associated with PCT 76

Scientific Name	Common Name	Threatened Status		Database Source	SAII	Credit Class	Associated PCTs in the Subject land	Survey Period	IBRA Sub-region	Species Assessment			Vagrancy	Survey Required
		BC Act	EPBC Act							Geographic Limitations	Habitat Constraint	Microhabitat (NSW DCCEEW, 2025b)		
Lathamus discolor	Swift Parrot	E	CE	PMST and BAM-C	Yes	Dual	76	N/A	Murray Fans	None	Important Habitat Map	This migratory species breeds in Tasmania during spring/summer, migrating to south-eastern Australia for autumn/winter. In NSW, this species mostly occurs on the coast and south west slopes in areas where winter-flowering eucalypts are flowering profusely.	N/A	No survey required the Subject land is on the Important Habitat Map. Not retained as ecosystem credit due to absent microhabitat
Macquaria australasica	Macquarie Perch	-	E	PMST	-	-	No data	-	No Data	-	-	Species is distributed in upstream reaches of Murray-Darling Basin of the Lachlan, Murray and Murrumbidgee rivers. Commonly occurs in shaded, cool rivers with	N/A	No survey required as permanent watercourses are absent from the Subject land.

Scientific Name	Common Name	Threatened Status		Database Source	SAII	Credit Class	Associated PCTs in the Subject land	Survey Period	IBRA Sub-region	Species Assessment			Vagrancy	Survey Required
		BC Act	EPBC Act							Geographic Limitations	Habitat Constraint	Microhabitat (NSW DCCEEW, 2025b)		
												abundant aquatic vegetation, boulders, snags and overhanging vegetation (Cth DoE, 2013a). This species is listed as endangered under the Fisheries Management Act 1994		
Myotis macropus	Southern Myotis	V	Not Listed	BAM-C	No	Sp	76	Oct-Mar	Murray Fans	None	Waterbodies with permanent pools/stretches 3m or wider, including rivers, large creeks, billabongs, lagoons, estuaries, dams and other waterbodies, on or within 200m of the site.	The Southern Myotis has a wide distribution across Australia and occurs in coastal areas across the coastal band. This species roosts close to water in caves, hollow bearing trees and man-made structures and	N/A	Survey required as suitable habitat constraints may be present on the Subject land.

Scientific Name	Common Name	Threatened Status		Database Source	SAII	Credit Class	Associated PCTs in the Subject land	Survey Period	IBRA Sub-region	Species Assessment			Vagrancy	Survey Required
		BC Act	EPBC Act							Geographic Limitations	Habitat Constraint	Microhabitat (NSW DCCEEW, 2025b)		
												forages over waterbodies.		
Lophochroa leadbeateri leadbeateri	Pink Cockatoo (eastern)	V	E	PMST and BAM-C	No	Dual	76	Sep - Dec	Murray Fans	None	Living or dead tree with hollows greater than 10cm diameter	The Pink Cockatoo inhabits a wide range of habitats within reach of water.	N/A	No survey required due to absent habitat constraints (trees with hollows greater than 10cm diameter). Retained as ecosystem credit
Melanodryas cucullata cucullata	South-eastern Hooded Robin	E	E	PMST and BAM-C	-	Ec	76	N/A	Murray Fans	None	N/A	Found predominantly in lightly wooded areas, usually open eucalypt woodland, acacia scrub and mallee, often in or	N/A	No Survey Required-Retained as ecosystem credit

Scientific Name	Common Name	Threatened Status		Database Source	SAII	Credit Class	Associated PCTs in the Subject land	Survey Period	IBRA Sub-region	Species Assessment			Vagrancy	Survey Required
		BC Act	EPBC Act							Geographic Limitations	Habitat Constraint	Microhabitat (NSW DCCEEW, 2025b)		
												near clearings or open areas.		
Neophema chrysostoma	Blue-winged Parrot	V	V	PMST	-	Ec	76	N/A	No Data	-	-	Mainly found in Tasmania and Victoria, sparse populations in western NSW in a range of habitats from coastal, sub-coastal and inland areas, right through to semi-arid zones. Found in grassland and grassy woodlands near wetlands.	N/A	No survey required due to absent microhabitat (closest wetland greater than 20 km away)
Nyctophilus corbeni	Corben's Long-eared Bat	V	V	PMST	-	Ec	Not associated with PCT 76	N/A	Murray Fans	None	N/A	Corben's Long-eared Bat is found throughout south-eastern Australia with a stronghold in the Murray Darling Basin and the Pilliga scrub. This species occurs	N/A	Not retained as ecosystem credit - Species is not associated with PCT 76

Scientific Name	Common Name	Threatened Status		Database Source	SAII	Credit Class	Associated PCTs in the Subject land	Survey Period	IBRA Sub-region	Species Assessment			Vagrancy	Survey Required
		BC Act	EPBC Act							Geographic Limitations	Habitat Constraint	Microhabitat (NSW DCCEEW, 2025b)		
												in a range of habitats including box eucalypt dominated communities with foraging occurring within the understorey and on the ground for insects.		
Petaurus norfolcensis	Squirrel Glider	V	Not Listed	BAM-C	No	Sp	76	Jan-Dec	Murray Fans	None	N/A	The Squirrel Glider has a wide and sparse distribution across eastern Australia inhabiting Blackbutt-Bloodwood Forest with heath understorey in coastal areas. This species requires abundant tree hollows and prefers shrub or acacia midstory.	N/A	No survey required suitable microhabitat is absent from the Subject land; forests with abundant tree hollows

Scientific Name	Common Name	Threatened Status		Database Source	SAII	Credit Class	Associated PCTs in the Subject land	Survey Period	IBRA Sub-region	Species Assessment			Vagrancy	Survey Required
		BC Act	EPBC Act							Geographic Limitations	Habitat Constraint	Microhabitat (NSW DCCEEW, 2025b)		
Pedionomus torquatus	Plains-wanderer	E	CE	PMST	Yes	Dual	Not associated with PCT 76	N/A	Murray Fans	None	Important Habitat Map	The Plains-wanderer occur in semi-arid, lowland native grasslands typically on hard red-brown soils. Typical habitat structure occupied by this species comprises of 50% bare ground, 10% fallen litter, and 40% herbs, forbs and grasses.	N/A	No survey required the Subject land is on the Important Habitat Map and species is not associated with PCT 76
Petroica boodang	Scarlet Robin	V	Not Listed	BAM-C	-	Ec	76	N/A	Murray Fans	None	N/A	The Scarlet Robin occurs on the coast and inland slopes of NSW, after breeding the species move to the lower valleys and plains of the tablelands and slopes. This species is found in dry	N/A	Not retained as ecosystem credit - absent mircohabitat (forest/woodland)

Scientific Name	Common Name	Threatened Status		Database Source	SAII	Credit Class	Associated PCTs in the Subject land	Survey Period	IBRA Sub-region	Species Assessment			Vagrancy	Survey Required
		BC Act	EPBC Act							Geographic Limitations	Habitat Constraint	Microhabitat (NSW DCCEEW, 2025b)		
												eucalypt forests and woodlands with a grassy understory with scattered shrubs. Often found in habitats with abundant logs and fallen timber.		
Phascogale tapoatafa	Brush-tailed Phascogale	V	Not Listed	BAM-C	No	Sp	76	Dec-Jun	Murray Fans	None	N/A	The Brush-tailed Phascogale occurs in a wide range of habitats predominantly found in dry sclerophyll open forest with sparse groundcover of herbs, grasses, shrubs or leaf litter. Also inhabits heath, swamps, rainforest and wet sclerophyll forest.	N/A	No survey required suitable microhabitat is absent from the Subject land (open forests)

Scientific Name	Common Name	Threatened Status		Database Source	SAII	Credit Class	Associated PCTs in the Subject land	Survey Period	IBRA Sub-region	Species Assessment			Vagrancy	Survey Required
		BC Act	EPBC Act							Geographic Limitations	Habitat Constraint	Microhabitat (NSW DCCEEW, 2025b)		
Phascolarctos cinereus	Koala	E	E	PMST and BAM-C	No	Sp	76	Jan-Dec	Murray Fans	None	Presence of koala use trees	Koalas have a fragmented distribution throughout eastern Australia from north-east QLD to the Eyre Peninsula in South Australia within eucalypt woodland and forests.	N/A	No survey required due to absent habitat constraints.
Petroica phoenicea	Flame Robin	V	Not Listed	BAM-C	-	Ec	76	N/A	Murray Fans	None	N/A	Within NSW, the Flame Robin breeds in upland areas before migrating to the inland slopes and plains in winter. On the slopes and plains, this species favours clearings or areas with habitat complexity including open understoreys,	N/A	Not retained as ecosystem credit - absent mircohabitat (Complex habitat)

Scientific Name	Common Name	Threatened Status		Database Source	SAII	Credit Class	Associated PCTs in the Subject land	Survey Period	IBRA Sub-region	Species Assessment			Vagrancy	Survey Required
		BC Act	EPBC Act							Geographic Limitations	Habitat Constraint	Microhabitat (NSW DCCEEW, 2025b)		
												native grasses, shrub mid-storeys, low perches, logs, stag and woody debris.		
Polytelis swainsonii	Superb Parrot	V	V	PMST and BAM-C	No	Dual	76	Sep-Nov	Murray Fans	None	Living or dead E. blakelyi, E. melliodora, E. albens, E. camaldulensis, E. microcarpa, E. polyanthemos, E. mannifera, E. intertexta, E. bridgesiana with hollows greater than 5 cm diameter that are greater than 4 m above ground or trees with a DBH of greater than 30 cm.	Superb Parrots are found throughout eastern inland NSW with their core breeding habitat occurring on the South West slopes between Cowra, Yass, Grenfell, Cootamundra and Coolac. Suitable habitat includes Box Gum Woodland, where foraging occurs in trees, understorey	N/A	No survey required due to absent habitat constraints. Not retained as ecosystem credit due to absent microhabitat

Scientific Name	Common Name	Threatened Status		Database Source	SAII	Credit Class	Associated PCTs in the Subject land	Survey Period	IBRA Sub-region	Species Assessment			Vagrancy	Survey Required
		BC Act	EPBC Act							Geographic Limitations	Habitat Constraint	Microhabitat (NSW DCCEEW, 2025b)		
												shrubs and on the ground for grass seeds and herbaceous plants, fruits, berries, nectar, buds and insects. Superb Parrots breed within eucalypts (i.e., Blakely's Red Gum, Yellow Box, White Box) with a DBH of >30 cm and hollows >5 cm diameter, >4 m above the ground.		
Pomatostomus temporalis temporalis	Grey-crowned Babbler (eastern subspecies)	V	Not Listed	BAM-C	-	Ec	76	N/A	Murray Fans	None	N/A	This species inhabits open Box-Gum Woodlands on the slopes, and Box-Cypress-pine and open Box Woodlands on alluvial plains. Woodlands on fertile soils in	N/A	Not retained as ecosystem credit - absent mircohabitat (woodland)

Scientific Name	Common Name	Threatened Status		Database Source	SAII	Credit Class	Associated PCTs in the Subject land	Survey Period	IBRA Sub-region	Species Assessment			Vagrancy	Survey Required
		BC Act	EPBC Act							Geographic Limitations	Habitat Constraint	Microhabitat (NSW DCCEEW, 2025b)		
												coastal regions.		
Pteropus poliocephalus	Grey-headed Flying-fox	V	V	PMST	No	Dual	76	Oct-Dec	Does not occur in the Riverina region	-	Breeding camps	The Grey-headed Flying-fox is generally found within 200 km of the eastern coast of Australia in a variety of habitats including woodland, urban gardens and fruit crops (DCCEEW 2024c). Roosting camps are generally located within 20 km of a regular food source.	N/A	No survey required - Absent from the Riverina IBRA Sub-region
Sclerolaena napiformis	Turnip Copperburr	E	E	PMST	No	Sp	Not associated with PCT 76	Sep-Dec	Murray Fans	None	N/A	Confined to remnant grassland habitats on clay-loam soils. Grows on level plains in	N/A	No survey required. Species is not associated with PCT 76

Scientific Name	Common Name	Threatened Status		Database Source	SAII	Credit Class	Associated PCTs in the Subject land	Survey Period	IBRA Sub-region	Species Assessment			Vagrancy	Survey Required
		BC Act	EPBC Act							Geographic Limitations	Habitat Constraint	Microhabitat (NSW DCCEEW, 2025b)		
												tussock grassland of *Austrostipa nodosa* and *Chloris truncata*, in grey cracking clay to red-brown loamy clay. Grows in areas with intermittent light grazing.		
Senecio macrocarpus	Large-fruit Fireweed	Not listed	V	PMST	No	Sp	Not associated with PCT 76	Oct-Dec	No Data	-	N/A	*Senecio macrocarpus* occurs in a variety of habitats, including grasslands, sedgelands, shrublands and woodlands, predominantly on sites with sparse vegetation, and often in depressions that are waterlogged in winter.	N/A	No survey required. Species is not associated with PCT 76

Scientific Name	Common Name	Threatened Status		Database Source	SAII	Credit Class	Associated PCTs in the Subject land	Survey Period	IBRA Sub-region	Species Assessment			Vagrancy	Survey Required
		BC Act	EPBC Act							Geographic Limitations	Habitat Constraint	Microhabitat (NSW DCCEEW, 2025b)		
Rostratula australis	Australian Painted Snipe	E	E	PMST	-	Ec	Not associated with PCT 76	N/A	Murray Fans	None	N/A	Australian Painted Snipes occur within the Murray Darling Basin in wetland, inland lakes and swamps. This species prefers the fringes of swamps, dams and marshy areas containing tall vegetation and mud flats	N/A	Not retained as ecosystem credit - Species is not associated with PCT 76
Swainsona murrayana	Slender Darling-pea	V	V	PMST and BAM-C	No	Sp	76	Sep	Murray Fans	Hay Plain	N/A	*Swainsona murrayana* occurs in a wide variety of vegetation types including remnant native grasslands or grassy woodlands that have been intermittently grazed or cultivated. This species occurs on clay-based	N/A	No survey required due to geographic limitations

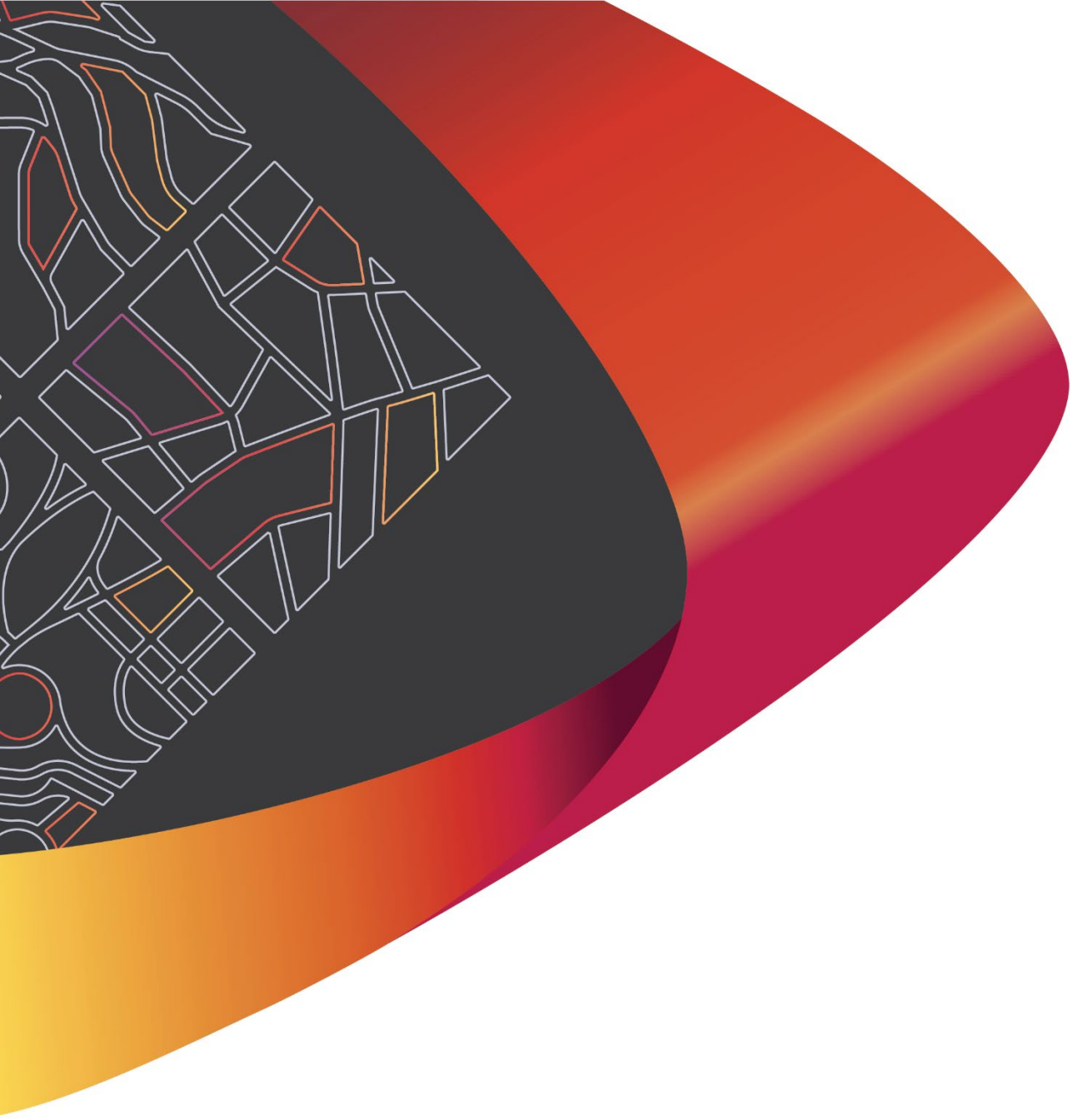
Scientific Name	Common Name	Threatened Status		Database Source	SAII	Credit Class	Associated PCTs in the Subject land	Survey Period	IBRA Sub-region	Species Assessment			Vagrancy	Survey Required
		BC Act	EPBC Act							Geographic Limitations	Habitat Constraint	Microhabitat (NSW DCCEEW, 2025b)		
												soils, ranging from grey, red and brown cracking clays to red-brown earths and loams often found with Maireana species		
Swainsona plagiotropis	Red Darling Pea	V	V	PMST	No	Sp	Not associated with PCT 76	Sep	Murray Fans	Hay Plain	N/A	Grows on flat grassland and in heavy red soil, often on roadsides and especially in table drains. Soils are derived from quaternary sediments and are usually red-brown clay-loams. The species is absent from black low-lying soils.	N/A	No survey required. Species is not associated with PCT 76

Scientific Name	Common Name	Threatened Status		Database Source	SAII	Credit Class	Associated PCTs in the Subject land	Survey Period	IBRA Sub-region	Species Assessment			Vagrancy	Survey Required
		BC Act	EPBC Act							Geographic Limitations	Habitat Constraint	Microhabitat (NSW DCCEEW, 2025b)		
Swainsona sericea	Silky Swainson-pea	V	Not Listed	BAM-C	No	Sp	76	Sep-Nov	Murray Fans	None	N/A	In the Southern Tablelands and South West Slopes this species occurs in Box-Gum Woodland. Found in Natural Temperate Grassland and Snow Gum Eucalyptus pauciflora Woodland on the Monaro. Occasionally associated with Callitris spp.	N/A	Survey required suitable microhabitat may be present on the Subject land.
Stagonopleura guttata	Diamond Firetail	V	V	PMST	-	Ec	76	N/A	Murray Fans	None	N/A	The Diamond Firetail occurs between central QLD to the Eyre Peninsula in South Australia within grassy eucalypt woodlands, including Box Gum	N/A	No Survey Required-Retained as ecosystem credit

Scientific Name	Common Name	Threatened Status		Database Source	SAII	Credit Class	Associated PCTs in the Subject land	Survey Period	IBRA Sub-region	Species Assessment			Vagrancy	Survey Required
		BC Act	EPBC Act							Geographic Limitations	Habitat Constraint	Microhabitat (NSW DCCEEW, 2025b)		
												Woodlands, native grasslands, riparian areas and lightly wooded farmland. Foraging occurs on the ground on grass and herb seeds/leaves and insects.		

APPENDIX C

Land Category Report



LAND CATEGORY REPORT

Finley Battery Energy Storage System

BESS Pacific Pty Ltd

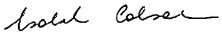
P001993 Land Category R01

Rev: B

17 April 2025

Premise

Document Reference: P001993 Land Category R01 REV B

Document Authorisation					
Revision	**Revision Date**	**Proposal Details**			
A	4/04/2025	Draft			
B	17/04/2025	Final			
Prepared by		**Reviewed by**		**Authorised by**	
Lily Ross		Isobel Colson		Sally Kirby	

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PLATES

APPENDICES

1. INTRODUCTION

Premise Australia Pty Ltd (Premise) were engaged by BESS Pacific Pty Ltd c/o Gransolar Development Australia to prepare a Biodiversity Development Assessment Report (BDAR) to assess the potential environmental impact associated with the development of an approximately 100 Megawatt AC (MWAC)/ 200 Megawatt Hour (MWh)

Battery Energy Storage System (BESS) at Lot 3 DP740920 at Riverina Highway, Finley, NSW (the Project). The BESS would be located within Lot 3, with associated substation upgrade works occurring within Lot B DP961693 and a connecting underground transmission cables crossing Broockmanns/Canalla Roads, and Mulwala No. 19 canal.

Premise have undertaken desktop and on-site investigations and identified areas of the subject land to be consistent with Category 1 – exempt land under section 60H of the Local Land Services Act 2013 (LLS Act). This report provides justification for the Category 1 land for review and endorsement by the Biodiversity, Conservation and Science Directorate (BCS) of the NSW Department of Climate Change, Energy, the Environment and Water (NSW DCCEEW) (previously the Department of Planning and Environment [DPE]).

Clearing vegetation on Category 1 land does not require assessment under the NSW Biodiversity Conservation Act 1999 (BC Act) as the land can lawfully be cleared under the LLS Act. Any part of the subject land that is not classified as Category 1 land will be the subject of the BDAR in preparation to support the Environmental Impact Statement.

The vegetation layer used for this assessment is titled: PCT_TEC_and_Vegetation_Zone_Boundaries_within_the_Subject_Land.

This Land Category assessment has been undertaken on the cropped paddock in the northern extent of Lot 3 DP740920. This is hereafter referred to as the "subject land".

2. PROJECT DETAILS

2.1 Project Overview

The Project will involve the construction, operation and decommissioning of a BESS with an estimated capacity of 100 megawatts alternating current (MWAC). The Project will include the following components, shown in Figure 2:

- The construction of a BESS with an estimated capacity of 100 MWac/200MWh;
- Associated substation upgrade works on the existing Transgrid Finley Substation and;
- Construction of connecting underground transmission cables crossing Broockmanns/Canalla Roads, and Mulwala No. 19 canal.

The Project is considered a State Significant Development under Section 4.55(2) of the Environmental Planning and Assessment Act 1979 (NSW) (EP&A Act). The Biodiversity Offset Scheme (BOS) applies to State Significant Development proposals. This Land Category assessment only applies to the cropped area where the BESS will be constructed (Figure 2).

2.2 Administration

The proponent for the proposal is Bess Pacific Pty Ltd c/o Gransolar Developments Australia Pty Ltd.

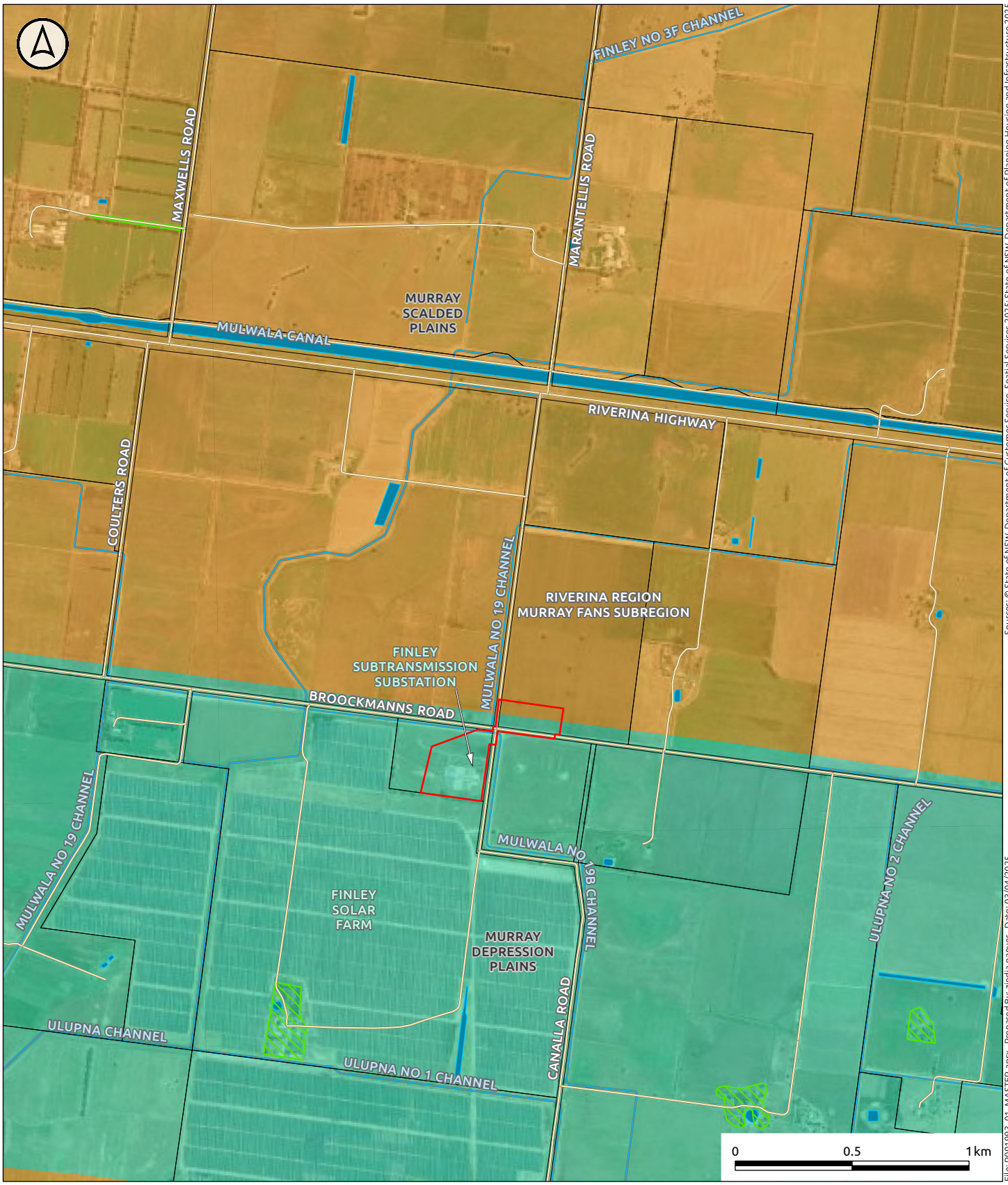
Premise Senior Ecologist, Sally Kirby, and Ecologists, Michelle Lindsay, Renee Dyke and Lily Ross undertook the site inspection and prepared the land category assessment. Curricula vitae are provided in Appendix A.

2.3 Site Details

The Development Site is located within Lot 3 DP740920, Lot B DP961693 and Broockmanns/Canalla Road reserves, Finley NSW approximately 5 km west of Finley within the Berrigan Shire Local Government Area (LGA) (Figure 1). Elevation on the site is relatively consistent ranging from 108-112 metres (m) above sea level (ASL). The subject land occurs in a landscape largely cleared for agriculture with scattered patches of remnant vegetation. Other land uses in the vicinity of the proposal include the Finley Solar Farm to the south and the township of Finley to the east (Figure 2).

The subject land is 2.78 hectares (ha) and zoned as Primary Production (RU1) land under the Berrigan Local Environmental Plan 2013, therefore the LLS Act applies. The Project is located wholly within the Riverina Biogeographic Region of Australia (IBRA) Bioregion, in the Murray Fans IBRA subregion of NSW according to the Biogeographic Regionalisation for Australia (IBRA) (Thackway and Cresswell, 1995).

The subject land is cleared agricultural land planted to a cereal crop at the time of assessment. There is one remnant Eucalyptus macrocarpa (Grey Box) tree in the north-west corner of the subject land which will be avoided (Figure 2).



Sources: © State of NSW, Department of Customer Service, Spatial Services 2025; State of NSW, Department of Planning Housing and Infrastructure 2025
State of NSW, Department of Climate Change Energy the Environment and Water 2025; Gransolar Development 2025; ESRI 2025

File: P0001993_01_MASTER.aprx Prepared By: zindia.nanver Date: 03/04/2025

Legend

- Subject Land
- Lot
- Road

Landscape Features

- Terrestrial Biodiversity
- Waterbody
- Watercourse

Mitchell Landscapes v3.1

- Murray Depression Plains
- Murray Scalded Plains

Premise

Finley BESS

Figure 1
Regional Location

Sources: © State of NSW, Department of Customer Service, Spatial Services 2025
Gransolar Development 2025; ESRI 2025

File: P0001993_01_MASTER.aprx Prepared By: zindia.nanver Date: 04/04/2025

Legend

- Development Footprint
- Subject Land
- Lot
- Road
- Watercourse

Premise

Finley BESS

Figure 2
Subject Land for
The Land Category Assessment

3. LAND CATEGORISATION

The subject land is 2.78 ha and zoned as Primary Production (RU1) land under the Berrigan Local Environmental Plan 2013, therefore the LLS Act applies. Native vegetation on rural land in NSW is managed under the Land Management Framework according to categories determined by section 60H of the LLS Act. Where the LLS Act applies, land can be classified as either:

- Category 1 – exempt land, land that is devoid of native vegetation, or is native vegetation that has regenerated on land that was lawfully cleared prior to 1990;
- Category 2 – regulated land, native vegetation that may be cleared with authorisation from Local Land Services;
- Category 2 – vulnerable regulated land, applies to steep or erodible land, riparian areas or special category land; and
- Category 2 – sensitive regulated land, for environmentally sensitive areas.

The decision matrix shown in Table 1 outlines the data sources and steps taken in assessing the subject land to determine whether it meets the Category 1 exempt land criteria within the meaning of the LLS Act. This decision matrix was developed in consultation with BCS in 2021. Vegetation clearing on Category 1 land is not required to be assessed under the BC Act, however other impacts, for example the loss of fauna habitat features such as rocks, human made structures, or non-native vegetation, listed in the Biodiversity Conservation Regulation 2017 (cl. 6.1) as prescribed impacts, are considered in the BDAR.

Table 1 - Land Categorisation Decision Matrix

Data Source	Land Use Category	Priority Given	Land Category	Justification
Transitional Native Vegetation Regulatory Map	Category 2 - vulnerable regulated or Category 2 - sensitive regulated land.	1	2	Cl 108(4) *Local Land Services Regulation 2014* (LLS Reg): An area of the State to which Part 5A of the Act applies is, during the period from the commencement of that Part until the area has been designated on a native vegetation regulatory map, taken to be Category 2 - sensitive regulated land if the land is so designated on a transitional native vegetation regulatory map published by the Environment Agency Head.
Local Land Services, Client, Biodiversity Conservation Trust, DPE, Local Council	Land part of a Travelling Stock Reserve (TSR), consent or conservation agreement, biodiversity certification, an offset under a Property Vegetation Plan (PVP), a 'set-aside', subject to a remedial action or publicly funded.	1	2	S60I(2) LLS Act: Land is to be designated as Category 2 - regulated land if the Environment Agency Head reasonably believes that the land contains native vegetation that was grown or preserved with the assistance of **public funds** (other than funds for forestry purposes), is subject to a private land **conservation agreement, a set aside or offset** under the Native Vegetation Act or biodiversity certified under the BC Act.
				Cl113(1) LLS Reg: (1) Land is also to be designated as Category 2 - regulated land if the Environment Agency Head reasonably believes that the land is (or was previously) subject to a **private native forestry plan, property vegetation plan** or an **incentive property vegetation plan** (being land that was required to be conserved or in respect of which public funding was provided to improve biodiversity), Nature Conservation Trust Act 2001, or proposed plantation under the Plantations and Reafforestation Act 1999, to be set aside for nature conservation, for re-vegetation of native vegetation or as a native vegetation offset, or the land is a **travelling stock reserve** (unless the land is located in the Western Division of the State).
Koala Plan of Management	Land is identified as core koala habitat under a Plan of	1	2	S601(2)(j) LLS Act and Cl111 LLS Reg: Land that in the opinion of the Environment Agency Head is **core koala habitat**. (Koala Habitat

Data Source	Land Use Category	Priority Given	Land Category	Justification
	Management approved under State Environmental Planning Policy (Koala Habitat Protection) 2020.			Protection SEPP 2020 which applies to RU1 Primary Production, RU2 Rural Landscape or RU3 Forestry zones) is to be designated as Category 2 - regulated land.
Existing approvals for lawful clearing e.g. development consents, consent authority approved operational plans etc	**Existing approval** for clearing of native vegetation can be unambiguously demonstrated AND is NOT overridden by any of the other specific agreements noted below (where there is no definitive evidence, a precautionary approach must be applied (i.e. Category 2 assumed)).	2	1	Existing clearing which was previously authorised under other legislation as set out in S60O LLS Act is to be designated as Category 1 – exempt land.
				S60H(1) LLS Act: Land is to be designated as Category 1 – exempt land if the Environment Agency head reasonably believes that (a) the land was cleared of native vegetation at 1 January 1990 or (b) lawfully cleared between that date and the commencement of Part 5A of the LLS Act (25 August 2017).
Best available aerial photography (including Six Viewer and Google Earth Pro)	Woody vegetation (native) present at or before 1 January 1990.	3	2	S60I(1) LLS Act: Land is to be designated as Category 2 – regulated land if the Environment Agency Head reasonably believes that the land was (a) **not cleared** of native vegetation at 1 January 1990 OR (b) the land was **unlawfully cleared** of native vegetation after 1 January 1990.
				Cl113(1)(g) LLS Reg: land is to be designated as Category 2 – regulated land if the Environment Agency Head reasonably believes that the land contains low conservation grasslands beneath the canopy or dripline of woody vegetation (being woody vegetation that satisfied the criteria for classification of the land as category 2) (**Paddock Trees**).
Premise ground-truthed vegetation mapping	Native vegetation, remnant woodlands, grasslands.	3	2	S60I(1)(a) LLS Act: Land is to be designated as Category 2 – regulated land if the Environment Agency Head reasonably believes that the land was not cleared of native vegetation at 1 January 1990 and is not 'low conservation value' grasslands or groundcover.

Data Source	Land Use Category	Priority Given	Land Category	Justification
Floristic data (Interim Grasslands and other Groundcover Assessment Method [IGGAM] Transects)	The land is classed as low conservation value (i.e., exotic perennial cover is greater than native cover).	4	1	S60H(2)(a) LLS Act: Land is to be designated as Category 1 – exempt land if the Environment Agency Head reasonably believes that the land contains low conservation value grasslands in accordance with the relevant requirements of the LLS Act and Regulations. See also Cl 109 LLS Reg (low conservation value ground cover) and S60F(3) LLS Act. The IGGAM is a DPE endorsed method for determining low conservation value grasslands/groundcover. IGGAM transects require an appropriate number of plots, qualified survey personnel, appropriate seasonal or species-specific survey timing for maximum native species representation.
Floristic data (IGGAM Transects)	Land contains grasslands that are not low conservation value (i.e., greater than (>) 50 per cent (%) native species, or are associated with a Threatened Ecological Community (TEC), or known to contain threatened species habitat).	4	2	S60I(2)(e) LLS Act requires land to be designated as Category 2 regulated land if the Environment Agency Head reasonably believes that the land contains grasslands that are not low conservation value grasslands). Under the 'Native Species Criteria', grasslands or groundcover cannot be designated as low conservation value under the native species assessment where threatened species have been mapped by the Office of Environment and Heritage as having been present on the land, or are known to be present by the assessor.
Best available aerial photography (including Six Viewer and Google Earth Pro, landholder records)	Spatial imagery indicates vegetation has been 'significantly disturbed' or 'modified' within the meaning of the LLS Act and in accordance with the LLS Regulations.	5	1	S60J(2) LLS Act allows native vegetation that comprises grasslands or other non-woody vegetation to be taken to have been cleared if the native vegetation was significantly disturbed or modified (see cl. 114(1) and(2) LLS Reg).
Best available aerial photography (including Six	Pre-1990 non-vegetated areas such as public roads, farm tracks and roads and other infrastructure.	5	1	S60H(1)(a) LLS Act: Land is to be designated as Category 1 - exempt land if the Environment Agency Head reasonably believes that the land was cleared of native vegetation at 1 January 1990.

Data Source	Land Use Category	Priority Given	Land Category	Justification
Viewer and Google Earth Pro, landholder records)				
NSW Land Use 2017 v1.2	**Conservation and Natural Environments**	5	2	As per Figure 7 of the Native Vegetation Regulation (NVR) map method statement - Australian Land Use Mapping (ALUM) classification assigned to the NVR map Category 2.
	1.2.0 Managed resource protection			
	1.2.1 Biodiversity			
	1.2.2 Surface water supply			
	1.2.3 Groundwater			
	1.2.4 Landscape			
	1.2.5 Traditional Indigenous use			
	1.3.0 Other minimal use			
	1.3.1 Defence land – natural areas			
	1.3.2 Stock route			
	1.3.3 Residual native cover			
	1.3.4 Rehabilitation			
	2. Production from Relatively Natural Environments			
	2.1.0 Grazing native vegetation			
	5. Intensive Uses			
	5.4.3 Rural residential without agriculture			

Data Source	Land Use Category	Priority Given	Land Category	Justification
	5.5.2 Public services – cemeteries			
	5.7.0 Transport and communication			
	5.7.1 Airport/aerodrome			
	5.7.2 Roads			
	5.7.3 Railways			
	5.7.4 Ports and water transport			
	5.7.5 Navigation and communication			
	6. Water			
	6.1.1 Lake – conservation			
	6.1.4 Lake – saline			
	6.3.0 River			
	6.3.1 River – conservation			
	6.5.0 Marsh/wetland			
	6.5.1 Marsh/wetland – conservation			
	6.5.4 Marsh/wetland – saline			
	6.6.0 Estuary/coastal waters			
	6.6.1 Estuary/Coastal water – conservation			
	NVR Map Special			

Data Source	Land Use Category	Priority Given	Land Category	Justification
	8.8.0 No defined land use			
	8.8.8 Cemeteries			
NSW Land Use 2017 v1.2	All other Land Use Categories (other than those specifically listed above).	6	1	As per Figure 7 of the NVR map method statement - ALUM classification assigned to the NVR map Category 1.

3.1 Datasets and Resources

The following datasets and resources were used to inform the process of identifying, mapping and justifying Category 1 on the subject land:

- Native Vegetation Regulatory (NVR) Map Viewer (NSW Government, 2025a) (https://www.lmbc.nsw.gov.au/Maps/index.html?viewer=NVRMap) Category 2 Regulated Land on the publicly available Transitional NVR Map (Figure 3).
- NSW Native Vegetation Extent 5m v1.4 (NSW Department of Climate Change, Energy, the Environment and Water (DCCEEW, 2019) https://datasets.seed.nsw.gov.au/dataset/nsw-native-vegetation-extent-5m-raster-v1-0. Woody extent mapping showing woody and non woody areas (Figure 4).
- NSW Land Use Mapping 2017 v1.5 (Department of Planning and Environment [NSW DPE], 2020) https://datasets.seed.nsw.gov.au/dataset/nsw-landuse-2017-v1p5-f0ed-clone-a95d. NSW Land Use Mapping to identify land classes consistent with Category 1 and Category 2 Land (Figure 5).
- Vegetation Mapping based on aerial photography and Premise Ecologist's vegetation survey results. Imagery includes NSW Six Maps Imagery 2014 https://maps.six.nsw.gov.au/ (NSW Government, 2025b); Satellite Imagery Google Earth Pro 2018 (Figure 6).
- Field surveys conducted by qualified and experienced ecologists on the Study Area on June and October 2024.

3.2 Methods and Results

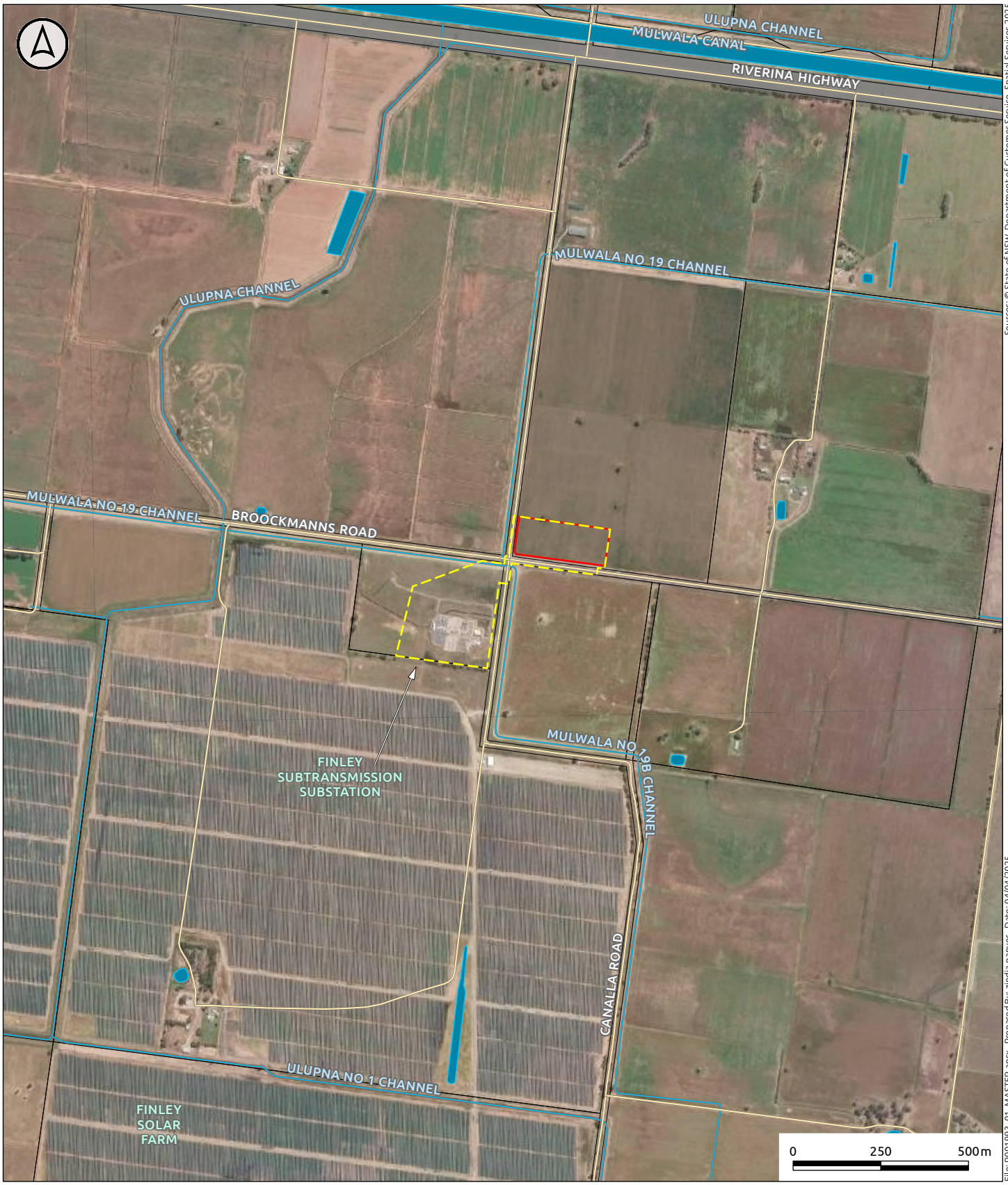
Aerial photography (ESRI World Imagery) and a site walkover were used to confirm the absence of native vegetation on the subject land.

Scattered Trees are defined in the BAM as remnant native trees that 'have a DBH of greater than or equal to 5 cm and are located more than 50 m away from any living tree that is greater than or equal to 5 cm DBH, and the land between the scattered trees is comprised of vegetation that are all ground cover species on the widely cultivated native species list, or exotic species or human-made surfaces or bare ground' (NSW DPIE, 2020a). There is one scattered tree on the subject land that will not be impacted by the development.

The subject land was assigned to Category 1 land according to a decision matrix developed in consultation with BCS (Table 1).

The decision matrix was applied as follows:

- The subject land is not mapped on the Transitional NVR Map (Figure 3).
- The subject land is identified as category 1 – exempt land on the draft NVR map.
- Chapter 3: Koala habitat protection 2020 of the NSW Biodiversity and Conservation State Environmental Planning Policy (SEPP) 2021 applies to RU1 Land in the Berrigan LGA. The subject land does not meet the definition of 'core habitat' as per the Chapter 3 definition: "…an area of land with a resident population of koalas, evidenced by attributes such as breeding females, being females with young, and recent sightings of and historical records of a population."
- There is one remnant tree identified on the NSW Native Vegetation Extent v1.4 map which will be avoided by the development.
- Premise undertook vegetation surveys to confirm the absence of native vegetation on the subject land. The subject land was cropped at the time of assessment (Plate 1).
- The subject land is mapped as 4.3.0 Irrigated Cropping on the ALUM classification which is assigned to category 1 – exempt land.



Sources: © State of NSW, Department of Customer Service, Spatial Services 2025
Gransolar Development 2025; ESRI 2025

File: P0001993_01_MASTER.aprx Prepared By: zindia.nanver Date: 04/04/2025

Legend

- Development Footprint
- Subject Land
- Lot
- Road
- Waterbody
- Watercourse

Transitional native vegetation regulatory (NVR) map

- category 2-sensitive regulated land
- Land excluded from the LLS Act

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Figure 3
Transitional Native Vegetation Regulatory Mapping

Sources: © State of NSW, Department of Customer Service, Spatial Services 2025
Gransolar Development 2025; ESRI 2025

File: P001993_01_MASTER.aprx Prepared By: zindia.nanver Date: 04/04/2025

Legend

- Subject Land
- Development Footprint
- Road
- Watercourse
- Lot

Draft native vegetation regulatory map

- Category 1-exempt land (draft)
- Category 2-regulated land (draft)
- Category 2-vulnerable regulated land (in-force)
- Category 2-sensitive regulated land (in-force)
- Category 2-sensitive and vulnerable regulated lands areas of overlap (in-force)

Premise

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Figure 4
Draft Native Vegetation Regulatory Mapping

Sources: © State of NSW, Department of Customer Service, Spatial Services 2025
Gransolar Development 2025; ESRI 2025

File: P0001993_01_MASTER.aprx Prepared By: zindia.nanver Date: 04/04/2025

Legend

- Development Footprint
- Subject Land
- Lot
- Road
- Watercourse

NSW Native Vegetation Extent

- Not Native
- Tree Cover

Premise

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Figure 5
Native Vegetation Extent Mapping

Sources: © State of NSW, Department of Customer Service, Spatial Services 2025
Gransolar Development 2025; ESRI 2025

File: P001993_01_MASTER.aprx Prepared By: zindia.nanver Date: 04/04/2025

Legend

- Development Footprint
- Subject Land
- Lot
- Road
- Watercourse

Land Use 2017

- 2.1.0 Grazing native vegetation
- 4.3.0 Irrigated cropping
- 5.4.0 Residential and farm infrastructure
- 5.7.0 Transport and communication

Premise

Finley BESS

Figure 6
NSW Land Use Mapping

File: P0001993_01_MASTER.aprx Prepared By: zindia.nanver Date: 04/04/2025

Legend

- Development Footprint
- Subject Land
- Lot
- Road
- Watercourse

Plant Community Types

- PCT 76 DNG (Roadside)
- PCT 76 DNG (Poor)
- PCT 76 DNG (Wet)

Non Native Vegetation

- Cropping
- Disturbed ground
- Infrastructure

Premise

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LCR Figure 7
Vegetation Mapping based on Aerial Photography and Premise Vegetation Survey

Plate 1 - Cropped Paddock

4. CONCLUSION

The subject land is considered to be Category 1 – exempt land within the meaning of the LLS Act as shown in **Figure 7.**

5. REFERENCES

Commonwealth Department of Climate Change, Energy, Environment and Water (Cth DCCEEW) (2024). Interim Biogeographic Regions of Australia (IBRA region and subregion) – Version 7. Commonwealth of Australia, Canberra, ACT. Available via URL: https://datasets.seed.nsw.gov.au/dataset/interim-biogeographic-regionalisation-for-australia-ibra-version-7-regions.

NSW Department of Climate Change, Energy, the Environment and Water (NSW DCCEEW) (2019). NSW Native Vegetation Extent Raster 5m v1.4. Available via URL: https://datasets.seed.nsw.gov.au/dataset/72d14092-9088-48a4-896b-3a95a7e566d1

NSW Department of Planning and Environment (NSW DPE) (2020). NSW Landuse 2017 v1.2. NSW Department of Climate Change, Energy, the Environment and Water, Sydney, NSW. Available via URL: https://datasets.seed.nsw.gov.au/dataset/nsw-landuse-2017-v1p2-f0ed.

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Office of Environment and Heritage (2017). Interim Grasslands and other Groundcover Assessment Method: Determining conservation value of grasslands and groundcover vegetation in NSW. NSW Department of Climate Change, Energy, the Environment and Water, Sydney. Available via URL: https://legislation.nsw.gov.au/view/pdf/asmade/sl-2018-35.

Thackway, R. and Cresswell, I.D. (eds) (1995). An Interim Biogeographic Regionalisation for Australia: a framework for establishing the national system of reserves. Version 4.0. Australian Nature Conservation Agency, Canberra. Available via URL: https://www.dcceew.gov.au/sites/default/files/documents/ibra-framework-setting-priorities-nrs-cooperative-program.pdf.

APPENDIX A
CURRICULUM VITAE

SALLY KIRBY

Senior Ecologist

Sally has specialist skills in terrestrial and aquatic ecological processes, habitat assessments, threatened flora surveys, project management and team co-ordination

QUALIFICATIONS + ACCREDITATIONS

- Bachelor of Science Marine Ecology / Psychology Sydney University (1994)
- Master of Environmental Studies Macquarie University (2000)
- Diploma community co-ordination and facilitation (2017)
- Certificate IV Training and Assessment (2013)
- Certificate of Attainment Management Systems Auditing; Environmental Management Systems (2009)
- BAM Accreditation (2021)

AWARDS

- Environmental Citizen of the Year Cabonne Shire 2019

WORK HISTORY

Premise | Senior Ecologist (2019 - present)

Central Tablelands Landcare | Co-ordinator (2009 - 2019)

TAFE Western | Teacher NRM (2006 - 2015)

Primary Industries & Natural Resources, NT | Water Advisory Officer (2002 - 2005)

SMEC | Environmental Scientist/Ecologist (1999 – 2002)

Dames and Moore | Environmental Scientist (1995 – 1997)

CAREER AND EXPERIENCE OVERVIEW

Sally is a Senior Ecologist with over 20 years' experience in natural resource management, environmental impact assessment and community engagement. Sally is passionate about the environment and dedicated to providing accurate and up to date advice in a professional and timely manner. She has worked in NSW, QLD and the NT in environmental impact assessment roles, and community organisations and TAFE NSW in facilitation, community engagement and capacity building. She also has experience in the agricultural sector.

RELEVANT EXPERIENCE

Biodiversity Development Assessment Reports | Development Applications, Subdivisions, Local Government Infrastructure Works

Large corporations, Local Government, private landholders and developers in Orange, Bathurst, Mudgee, Blayney, Walcha, Wagga Wagga, Ulan, Boggabri NSW

Project management, project inception, survey design, vegetation survey, habitat assessment, biodiversity values and impact assessment, targeted threatened flora searches, spatial data management, GIS, reporting and team facilitation.

Biodiversity Stewardship Site Assessment Reports

Large corporations and private landholders in Orange, Ulan, Boggabri, Mudgee

Vegetation surveys and preparation of BSSAR, Vegetation Management Plan and Total Fund Deposit, working with the NSW Taskforce to facilitate Biodiversity Conservation.

Baseline Flora Reports and threatened species searches

Large corporations in Ulan, Blayney, Orange, Boggabri NSW

Vegetation surveys, threatened flora searches, spatial data collection and management, reporting, project management and team facilitation.

Biodiversity Assessment Renewable Energy Projects (Solar farms and Battery Energy Storage System, Gas Energy Storage Sites

Large corporations and landholders in Condobolin, Mogriguy, Marulan, Gunnedah, Wellington, Dubbo, Orange, Gilgandra, Monaro

Terrestrial ecology surveys and assessment for proposed solar farms in NSW. Vegetation surveys using the BAM, habitat assessment, mapping, threatened species, documenting avoidance measures, MNES assessment, SAII Assessment, impact assessment and mitigation measures.

RELEVANT EXPERIENCE (CONT'D)

Community Engagement and Aquatic Assessments

Orange City Council

Co-ordinated community engagement process to inform design of an offstream wetland as part of Orange City Council's stormwater harvesting scheme. Conducted vegetation surveys and aquatic and terrestrial habitat assessments for the biodiversity impact assessment.

Co-ordinator | Grassy Whitebox Woodland Revegetation Projects

NSW Government Environmental Trust | NSW | 2012-2019

Co-ordinated revegetation projects with landholders in the Central Tablelands, funding applications, community engagement, site assessments, advice on species selection, site preparation and ongoing management including feral animal control and weed management. Project management, monitoring, and reporting.

Co-ordinator | Pest Animal Co-ordinator Central Tablelands Landcare

CT Local land Services | Orange | 2018

Co-ordinated educational workshops and assisted with the establishment and management of Pest Animal Management Groups in the Central Tablelands NSW.

Co-ordinator | Dung Beetle Monitoring Citizen Science Project

Dung Beetle Solutions Australia | Orange & Bathurst | 2016-2019

Co-ordinated educational workshops, dung beetle breeding and monitoring programs with schools and Landholders in Orange and Molong, NSW.

Co-ordinator | Whole Farm Planning & Aboriginal Reference Groups

TAFE Western | Orange | 2006-2015

Co-ordinated whole farm planning course, taught water quality, GPS, facilitated program including mapping, soil health, water quality, native vegetation, business, strategic planning. Taught Aboriginal Reference Groups how to use GPS, computer and administration skills to collect data for Aboriginal Heritage Information Management System (AHIMS).

Water Advisory Officer | Implementing Water Licences, Bore Inspections, Groundwater/Surface Water Interactions

Northern Territory Government | Katherine, NT | 2001-2004

Customer service, technical advice, planning approvals, implementing water licenses in the Northern Territory, consulting with landholders about installing water monitoring technology and reporting on water use, investigations into groundwater and surface water interactions, collated reports on Roper River, Daly River and Victoria River Health Projects, Streamwatch Activities with Aboriginal Groups and School Groups throughout NT.

ISOBEL COLSON

Senior Ecologist

Isobel takes pride in providing accurate assessments and thorough advice to clients to inform environmental management and protection.

QUALIFICATIONS + ACCREDITATIONS

- Bachelor of Environmental Science and Management, Charles Sturt University Thurgoona
- Masters Plant and Fungal Taxonomy, Diversity and Conservation, Queen Mary University London
- PhD Student, Western Sydney University, Hawkesbury Institute for the Environment
- Certificate IV Conservation and Land Management: National Environment Centre, Thurgoona NSW
- Certificate II Conservation and Land Management: 'Know and Grow Australian Native Plants': TAFE NSW, Orange Agricultural Campus
- BAM Accreditation BAAS22028
- BAM Species Expert: Hygrophoraceae

WORK HISTORY

Premise | Ecologist
(2019 - present)

Kew Gardens | Ecologist
(2018 – 2019)

Western Local Land Services | Monitoring and Evaluation
(2016 – 2018)

Western Local Land Services | Land Services Officer
(2014-2016)

CAREER AND EXPERIENCE OVERVIEW

Isobel is an ecologist with 10 years of experience working in the Central Tablelands, Central West and Western NSW. She has experience applying the Biodiversity Assessment Method and skills in plant identification, GIS, project management and evaluation. She currently undertaking studies toward her PhD on threatened waxcap fungi and is the Biodiversity Assessment Method expert for threatened waxcap fungi in the family *Hygrophoraceae*.

RELEVANT EXPERIENCE

Ecologist | Maules Creek Coal Mine | Whitehaven Coal Australia
BOGGABRI | NSW |2023-2024

Flora survey and threatened species searches, preparation of baseline flora report.

Ecologist | McPhillamys Water Pipeline | Regis Resources
BATHURST, BLAYNEY, LITHGOW | NSW | 2023-2024

Flora survey and threatened species searches, preparation of baseline flora report.

Ecologist | Ginkgo Biodiversity Stewardship Site | Tronox Mining Australia
POONCARIE | NSW | 2023-2024

Flora survey, Biodiversity Stewardship Site Assessment Report (BSSAR) and management plan.

Ecologist | Cadia Modification 14 Offset BSSAR | Newcrest Mining Limited
ORANGE | NSW | 2023

Flora survey, Biodiversity Stewardship Site Assessment Report (BSSAR) and management plan.

Ecologist | Marulan Solar Farm| Terrain Solar
MARULAN | NSW | 2022

Flora survey, Biodiversity Development Assessment Report (BDAR) and EPBC Referral.

RELEVANT EXPERIENCE (CONT'D)

Ecologist | Cadia Valley Operations Modifications | Newcrest Mining Limited
ORANGE | NSW | 2021-2023

Flora survey (BAM plots) and vegetation mapping, threatened species assessment.

Ecologist | Bathurst Stormwater Pipeline | Bathurst Regional Council
BATHURST | NSW | 2020

GIS mapping, flora survey and plant identification, threatened species assessment.

Ecologist | Dubbo non-potable pipeline network | Dubbo Regional Council
DUBBO | NSW | 2019

Vegetation assessment.

Ecologist | Kew Gardens | BoyacáBio Project
COLOMBIA AND KEW GARDENS | 2018-2019

International partnership program between Gov. of Colombia and Kew Gardens. Carried out an assessment of macrofungal diversity in high-altitude forests in Boyacá, Colombia. Involved DNA barcoding, species identification and analysis of species diversity using R statistical software.

Project Manager | Western Local Land Services
WESTERN NSW | 2014-2019

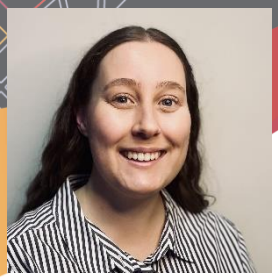
Project management for riparian restoration project. Involved working with graziers to develop project plans, contract management, GIS and environmental monitoring.

Groundcover management program 2014-2016. Planning and project management for 30 grazing management projects in Western NSW. Mapping, management of contract milestones, groundcover monitoring and project support to applicants.

National Landcare Program Bid 2018. Developed program logics and environmental monitoring guidelines for successful organisational funding bid for 4 years of National Landcare Program funding from 2019.

PUBLICATIONS/AWARDS

- Terry J Hillman Prize for Undergraduate Research in Freshwater Ecology
- Russell Harland Memorial Scholarship



MICHELLE LINDSAY

Ecologist

Michelle is an ecologist with 4 years of experience conducting biodiversity assessments and preparing reports consistent with the Biodiversity Assessment Method (2020).

QUALIFICATIONS + ACCREDITATIONS

- Bachelor of Biodiversity & Conservation
- AUSRIVAS Accreditation

WORK HISTORY

Premise Pty Ltd | Ecologist (January 2022 – present)

Premise Pty Ltd | Environmental Technician (6th October 2020 – January 2022)

CAREER AND EXPERIENCE OVERVIEW

Michelle is an ecologist with 4 years of experience in ecology and environmental monitoring projects. She has experience in plant identification, terrestrial and aquatic habitat assessment and monitoring, threatened flora species surveys, GIS mapping and reporting in accordance with the Biodiversity Assessment Method (2020). Michelle is particularly interested in working with clients to reduce their environmental impact and achieve positive biodiversity outcomes. Her special interests include plant identification, threatened species habitat assessments and freshwater aquatic ecology. Michelle has recently complete her AUSRIVAS accreditation.

RELEVANT EXPERIENCE

Ecologist | Biodiversity Assessment – McPhillamy's Gold Mine
Regis Resources Pty Ltd | July 2023-Current
Terrestrial vegetation surveys and habitat assessment using the Biodiversity Assessment Method (BAM), threatened flora species surveys and preparation of a Baseline Flora Report.

Ecologist | Biodiversity Assessment – Maules Creek Coal Mine
Whitehaven Coal | 2022-Current
Terrestrial vegetation surveys and habitat assessment using the BAM, threatened flora species surveys and preparation of a Baseline Flora Report and Biodiversity Development Assessment Report (BDAR).

Ecologist | Biodiversity Assessment – Cadia Valley Operations
Newcrest Mining Ltd | 2021-2024
Terrestrial ecology surveys and assessment for the modification of Cadia Valley Operations. Vegetation surveys using the BAM, threatened flora species surveys, mapping, BDAR preparation.

Ecologist | Biodiversity Assessment – Renewable Energy Projects
Goulburn, Marulan, Wellington, Dubbo & Dunedoo | 2020-2023
Terrestrial ecology surveys and assessment for proposed solar farms and battery energy storage systems in various locations around NSW. Vegetation surveys using the BAM, threatened flora species surveys, mapping, threatened species habitat and impact assessment and mitigation measures.

RELEVANT EXPERIENCE (CONT'D)

Ecologist | Orange Ultimate Flood Modification Scheme

Orange City Council | 2023

Assessment of ten tributaries within the Orange Local Government Area and the preparation of a Vegetation Management Plan. Vegetation surveys, identification of current vegetation management issues, recommendations to improve or maintain hydrological efficiency, biodiversity values and water quality, and management action recommendations for flood mitigation.

Ecologist | Pre-clearing Vegetation and Habitat Tree Assessments

Green Light Elecnor | 2023

Weekly pre-clearing vegetation assessments for the Flyer's Creek Windfarm involved documenting the current condition of vegetation, justification of any variations from initial mapping conducted ten years prior, threatened flora species surveys, habitat tree assessments (i.e., hollow bearing trees, mistletoe and nests), Box-Gum Woodland CEEC assessments, threatened species habitat and impact assessments (i.e., *Eucalyptus canobolensis)*, and mitigation measures.

Ecologist | Monthly Water Audits

Orange City Council | Orange, NSW | 2020-2023

Monthly audits of Orange City Council website and extraction data in accordance with Environmental Flow Rules and MOP Pump Operating Rules (non-compliances). Data compilation, analysis, and reporting for Annual Review 2020-2021 and associated documents (AEMP, GMAR, AHR).

Ecologist | Biodiversity Assessments – Development Approvals, Subdivisions, Local Government Infrastructure Works

Cabonne Council, Orange City Council, Bathurst Regional Council & Blayney Shire Council | 2020-2022

Terrestrial ecology surveys and assessments for proposed subdivision and bridge construction/replacement. Vegetation surveys using the BAM, threatened flora species surveys, mapping, threatened species habitat and impact assessment and mitigation measures.

Ecologist | Annual Flora Monitoring and Reporting

Orange City Council | Molong | 2021-Current

Annual vegetation surveys and habitat assessment of the ECA and the preparation of the Annual Flora and Aboriginal Heritage Monitoring Report and the Biodiversity Conservation Trust Annual Report and Review which assess the recovery of the conservation area in alignment with the Five-Year Works Action Plan, Revegetation Plan and Conservation Agreement.

Ecologist | Management Plans and Revegetation Plans

Orange City Council | Molong | 2021

Design and assessment of a Five-Year Works Action Plan and Revegetation Plan for the rehabilitation of the Euchareena Road Resource Recovery Centre Conservation Area (ECA) in accordance with Biodiversity Conservation Trust guidelines, targeting management issues, long term targets and objectives, timing and performance indicators.

Ecologist (Fieldhand) | Aquatic Assessment

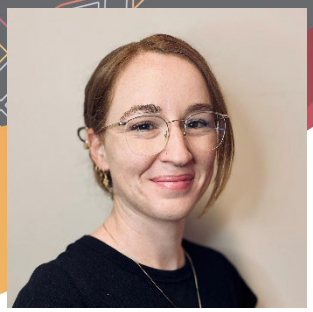
EMM Consulting Pty Ltd, Aquatic Ecology Services | Winburndale Rivulet | 2021

Assisted terrestrial and aquatic ecological surveys and assessment through eDNA sampling and macroinvertebrate identification in accordance with AUSRIVAS guidelines.

Environmental Technician | Annual Spring Aquatic Monitoring

Orange City Council | Summer Hill Creek | 2021

Terrestrial and aquatic ecological surveys and assessment involving water quality analysis, riparian habitat assessment and macroinvertebrate sampling and identification in accordance with AUSRIVAS guidelines.



RENÉE DYKE

Ecologist

Renée is a recently graduated ecologist with a high attention to detail, provides office and in field support on biodiversity assessments including surveys, GIS mapping, reporting and data management.

QUALIFICATIONS + ACCREDITATIONS

- Master of Environment, University of Melbourne.
- Bachelor of Business, James Cook University. Berlin School of Economics and Law, Berlin, Germany

WORK HISTORY

Premise | Ecologist (2023 - present)

Yinhawangka Aboriginal Corporation, Paraburdoo, Western Australia | Environmental Support Officer (2021-2022)

University of Melbourne, Victoria | Assistant Project Manager (2020 – 2020)

Conscious Impact, Nepal | Agriculture Project Assistant/Volunteer Coordinator (2016 – 2017)

SilverTop Taxis, Melbourne, Victoria | Telephone Operator/ Switchboard Operator (2014 – 2019)

Iformat, Melbourne, Victoria | Project Assistant (2016 – 2017)

CAREER AND EXPERIENCE OVERVIEW

Renée is a recently graduated ecologist with experience in field survey techniques and data management. She possesses a high attention to detail and has special interests in plant identification, unique plant survival traits and Australian birds. She aspires to increase client interactions and provide guidance on potential legislative pathways to achieve positive biodiversity outcomes.

RELEVANT EXPERIENCE

Ecologist | Maules Creek Baseline Flora Report and BDAR
Resource Strategies | NSW |2023-2024
Flora survey, plant identification, threatened species survey and identification, PCT identification, GIS mapping, Baseline Flora Report, Biodiversity Development Assessment Report (BDAR)

Ecologist | McPhillamys Water Pipeline
Resource Strategies | NSW |2023 - 2024
Flora survey, plant identification, threatened species survey and identification, PCT identification, GIS mapping, Baseline Flora Report

Ecologist | Subdivision Minore Road Dubbo
Ozilands Pty Ltd | NSW |2023 - 2024
Flora survey, plant identification, threatened species survey and identification, PCT identification, GIS mapping, Biodiversity Development Assessment Report (BDAR)

Ecologist | Mudgee Biodiversity Stewardship Site Assessment
Mudgee | NSW | 2023
Flora survey, PCT identification, GIS mapping, Biodiversity Stewardship Site Assessment Report (BSSAR).

Environmental Support Officer | Various Environmental Impact Assessment Surveys
Paraburdoo | Pilbara region | WA | 2022
Regularly accompanied Traditional Owners and environmental consultants on proponent environmental surveys and monitoring activities. Often assisted consultants with their tasks in surveys including vegetation assessments, riparian flora surveys and threatened species monitoring.

RELEVANT EXPERIENCE (CONT'D)

Environmental Support Officer | Proponent Environmental Survey Liaison

Paraburdoo | Pilbara region, WA | 2022

Proponent liaison and data management of incoming environmental surveys. Development and implementation of new survey logistics procedures and workflows implemented into internal information management systems.

Environmental Support Officer | Environmental Data Management | Yinhawangka Aboriginal Corporation

Paraburdoo | Pilbara region | WA | 2022

Supported GIS Officer and Yinhawangka rangers in management and development of environmental monitoring data collection methods using Fulcrum.

Environmental Intern | Practical Ecology

Melbourne | VIC | 2021

Regularly accompanied environmental consultants on environmental surveys, including Habitat Hectare assessments, bushfire risk assessments, habitat surveys, and vegetation quality assessments.

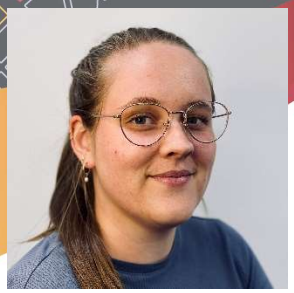
Volunteer | Fauna Assessment | Winton Wetlands

Winton | VIC | 2021

Data collection and trap management to assess species abundance at Winton Wetlands.

PUBLICATIONS/AWARDS

- Environmental Graduate Study Award 2019, 2020
- Dean of Science Award 2020
- Professor John Lovering Graduate Environmental Program Scholarship 2020
- Margaret Harrap Foundation Bursary 2019



LILY ROSS

Ecologist

Lily is a graduate ecologist with 12 months experience in both fauna and flora biodiversity assessments. Lily provides assistance in surveys, reporting, plant identification and data management.

QUALIFICATIONS + ACCREDITATIONS

> Bachelor of Environmental Science and Management, University of Newcastle - (2019-2023)

WORK HISTORY

Premise Pty Ltd | Ecologist (Nov 2023 - present)

Biodiversity Monitoring Services | Field Assistant (Jun 2023- Dec 2023)

Macquarie Geotechnical | Quality Coordinator (Jan 2022 – Sep 2022)

Macquarie Geotechnical | Laboratory Technician (Sep 2020 – Jan 2022)

Transport for NSW | Technical Officer (Jan 2017- Feb 2019)

CAREER AND EXPERIENCE OVERVIEW

Lily is a recent graduate with approximately 12 months experience. She has experience assisting in field surveys, GIS, reporting, plant identification and data management. Her special interests include environmental conservation and invasive species management.

RELEVANT EXPERIENCE

Ecologist | McPhillamys Gold Project – Water Supply Pipeline | Regis Resources Limited
Bathurst, Orange, Lithgow | NSW | 2023-2024

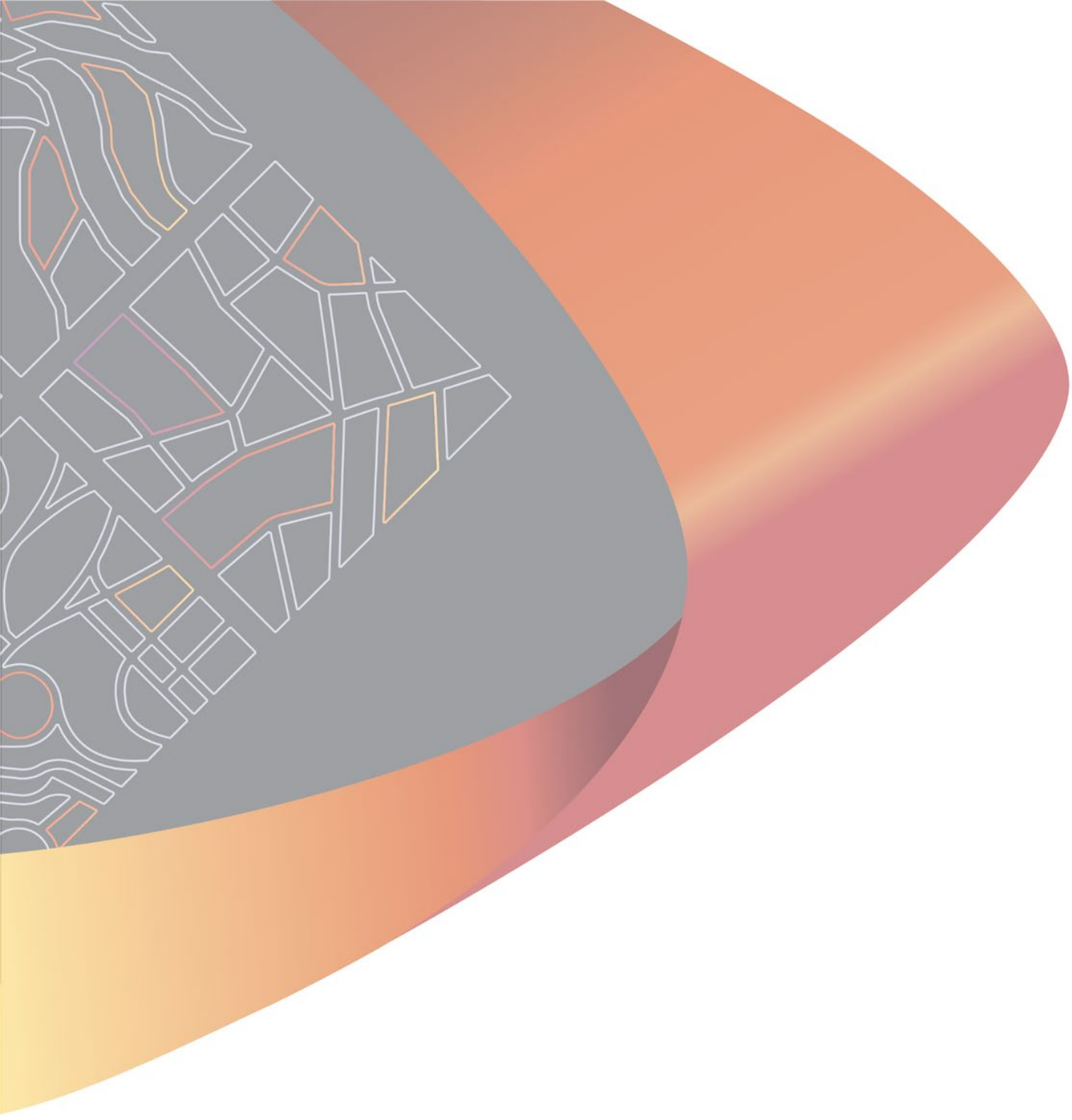
Assisting in vegetation surveys using the Biodiversity Assessment Method (BAM), threatened flora species surveys and assisting in the preparation of a Baseline Flora Report and Biodiversity Development Assessment Report (BDAR).

Ecologist | Maules Creek Coal Mine | Whitehaven Coal Australia
BOGGABRI | NSW |2023-2024

Assisting in the preparation of a Baseline Flora Report and Biodiversity Development Assessment Report (BDAR).

Ecologist | Moffatt Estate | Dubbo Regional Council
Dubbo | NSW | 2023

Assisting in vegetation surveys using the Biodiversity Assessment Method (BAM), threatened flora species surveys and assisting in the preparation of a Baseline Flora Report and Biodiversity Development Assessment Report (BDAR).



Premise

APPENDIX D

Migratory Species Assessment

Table 30 - Migratory Species Assessment

Scientific Name	Common Name	Threatened Status		Database Source	SAII	Species Assessment Geographic Limitations (Cth DoE, 2015)	Occurrence Likelihood
		BC Act	EPBC Act				
Actitis hypoleucos	Common Sandpiper	-	-	PMST	No	Within NSW, the Common Sandpiper occurs within coastal and inland wetlands post breeding season from August, however these movements are poorly known. The species is mostly found around muddy margins or rocky shores and rarely on mudflats. While the subject land contains a small irrigation channel, the species has not been recorded around Finley or in the broader area and is highly unlikely to occur.	Nil
Apus pacificus	Fork-tailed Swift	-	-	PMST	No	The Fork-tailed Swift is a non-breeding visitor to Australia which occurs predominantly east of the Great Dividing Range in NSW (NSW DCCEEW, 2025b). This species is almost exclusively aerial, occurring over dry or open habitats, and can inhabit riparian woodland, swamps or saltmarshes, and occur over settled areas, including towns, urban areas and cities. There are no records of this species around Finley or in the broader area and it is very unlikely that this species would utilise any of the subject land as foraging habitat.	Low
Calidris acuminata	Sharp-tailed Sandpiper	-	V	PMST	No	This species is a non-breeding visitor to south-eastern Australia, occurring in freshwater and saline habitats along the coast and inland with inundated or emergent sedges, grass, saltmarsh or other low vegetation. Suitable habitat for this species is absent from the subject land and there are no records around Finley. It is highly unlikely that this species will occur on the Subject land.	Nil
Calidris ferruginea	Curlew Sandpiper	CE	CE	PMST	Yes	This species generally occupies littoral and estuarine habitats, and in New South Wales is mainly found in intertidal mudflats of sheltered coasts. It also occurs in non-tidal swamps, lakes and lagoons on the coast and sometimes inland (NSW DCCEEW, 2025b). Suitable habitat for this species is absent from the subject land and there are no	Nil

Scientific Name	Common Name	Threatened Status		Database Source	SAII	Species Assessment Geographic Limitations (Cth DoE, 2015)	Occurrence Likelihood
		BC Act	EPBC Act				
						records around Finley. It is highly unlikely that this species will occur on the Subject land.	
Calidris melanotos	Pectoral Sandpiper	-	-	PMST	No	The Pectoral Sandpiper is widespread throughout NSW in shallow fresh to saline wetlands. Suitable habitat for this species is absent from the subject land and there are no records around Finley. It is highly unlikely that this species will occur on the Subject land.	Nil
Gallinago hardwickii	Latham's Snipe	V	V	PMST	No	Latham's Snipe is a non-breeding visitor to south-eastern Australia, inhabiting permanent and ephemeral wetlands. They usually occur in open, freshwater wetlands that have some form of shelter (usually low and dense vegetation) nearby. Suitable habitat for this species is absent from the Subject land and there are no records around Finley. It is highly unlikely that this species will occur on the subject land.	Nil
Hirundapus caudacutus	White-throated Needletail	V	V	PMST	No	Migratory species found in Australian from October to April. This species has been recorded in a wide variety of habitats including flying above farmland and wooded areas. This species hasn't been recorded around the Subject land however, the species may utilise the airspace over the Subject land.	Low
Motacilla flava	Yellow Wagtail	-	-	PMST	No	Yellow Wagtails inhabit damp habitats with low vegetation including bogs, meadows, marshes, waterside pasture and tundra. Suitable habitat is absent from the subject land and the only records for this species occur in coastal areas of NSW. The species has not been recorded around Finley or in the broader area and is unlikely to occur.	Nil

APPENDIX E

Matters of National Environmental Significance

White-throated Needletail

White-throated Needletail (*Hirundapus caudacutus*)	Vulnerable Species	Likelihood
Distribution: The White-throated Needletail is a large migratory bird species that is widespread along the east of Australia, from Queensland through to Tasmania and on mainland Australia extending to the western slopes of the Great Dividing Range in all states (Cth TSSC, 2019b). This species generally occurs in large flocks, occasionally with other insect-eating birds like *Apus pacificus* (Fork-tailed Swift) and *Petrochelidon ariel* (Fairy Martin). The White-throated Needletail breeds in Asia and spends its non-breeding season in Australia. **Habitat:** This species is predominantly aerial when in Australia and have been recorded over a wide variety of habitats and landscapes, including forests, pasture, and plantations, although most often over wooded areas (Cth TSSC, 2019b). They have also been recorded in coastal areas, often observed flying over sand dunes and cliffs. **Potential impacts associated with the Project:** This species has not been recorded around the subject land, with the closest records occurring approximately 60 km west near Deniliquin. A potential indirect impact on the species as a result of the project is that a small amount habitat for their invertebrate food source will be removed through clearing of native derived grassland. Interaction with machinery is also a minor possibility prior to storms, when the species flies at a lower altitude. **Avoidance and mitigation measures:** Mitigation would involve avoidance of clearing prior to storms when the species is most likely to be located close to the ground.		
An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it would:		
1. lead to a long-term decrease in the size of an important population of a species;		
Under the EPBC Act, an important population is defined as: - *key source populations either for breeding or dispersal* - *populations that are necessary for maintaining genetic diversity, and/or* - *populations that are near the limit of the species range.* (Cth DoE, 2013b). Its foraging range extends along the entire eastern coast of Australia and inland over most of NSW and Victoria (TSSC, 2019b), therefore the subject land is not located in the edge of its range within Australia. This species is migratory, does not breed in Australia, and therefore does not have a geographically restricted population, therefore the project would not affect populations necessary for maintaining genetic diversity.		Unlikely
reduce the area of occupancy of an important population;		
The area of occupancy for this species is estimated at 18,000 km2 and is widely distributed across eastern Australia. The subject land is not considered an important population of the species; hence the project would be unlikely to reduce the AOO of such a population.		Unlikely
2. fragment an existing important population into two or more populations;		

White-throated Needletail (*Hirundapus caudacutus*) Vulnerable Species	Likelihood
The White-throated Needletail's population has not been estimated in Australia, but it is widespread with no geographic boundaries. The subject land is located within the centre of the mapped known range for the species in Australia and as such it is unlikely that clearing within the subject land would lead to fragmentation of the population.	Unlikely
3. adversely affect habitat critical to the survival of a species;	
The White-throated Needletail has been adversely affected by loss of breeding habitat in the Northern Hemisphere, however it is also thought that loss of woodland habitat in Australia affects the species through loss of roosting sites and reduction in invertebrate prey (Cth TSSC, 2019b). No trees are to be removed as part of the project.	Unlikely
4. disrupt the breeding cycle of an important population;	
The species does not breed in Australia and its breeding will not be affected by the project.	Unlikely
5. modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline;	
The White-throated Needletail has been adversely affected by loss of breeding habitat in the Northern Hemisphere, however it is also thought that loss of woodland habitat in Australia affects the species through loss of roosting sites and reduction in invertebrate prey (Cth TSSC, 2019b). A total area of 5.18 ha of derived native grassland will be removed as part of the proposed project. There is minimal leaf litter cover and no log cover within the area to be cleared, and therefore invertebrate habitat is of low quality. It is considered unlikely that the quality or availability of habitat will be affected by the project such that the species is likely to decline.	Unlikely
6. result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat;	
No direct threats from invasive species are listed for the White-throated Needletail (Cth TSSC, 2019b).	Unlikely
7. introduce disease that may cause the species to decline, or	
There are no known diseases that may cause this species to decline (Cth TSSC, 2019b) and the introduction of disease as an impact of the project is highly unlikely.	Unlikely
8. Interfere substantially with the recovery of the species.	
The main threats to the White-throated Needletail in Australia are restricted to loss of suitable habitat and prey availability. There are no threat abatement or recovery actions proposed by either the NSW DPE or DAWE and therefore this item is not relevant.	Unlikely
Conclusion: The Project is considered unlikely to result in a significant impact to the White-throated Needletail. Referral to the Commonwealth is not required.	

Grey Falcon

Grey Falcon (*Falco hypoleucos*)	Vulnerable Species	Likelihood
Distribution: The Grey Falcon is sparsely distributed in NSW, chiefly throughout the Murray-Darling Basin, with the occasional vagrant east of the Great Dividing Range (NSW DCCEEW, 2025b). The breeding range has contracted since the 1950s with most breeding now confined to arid parts of the range. There are possibly less than 5000 individuals left. Population trends are unclear, though it is believed to be extinct in areas with more than 500mm rainfall in NSW. **Habitat:** The species is usually restricted to shrubland, grassland and wooded watercourses of arid and semi-arid regions, although it is occasionally found in open woodlands near the coast (NSW DCCEEW, 2025b). The Grey Falcon also occurs near wetlands where surface water attracts prey. Nests high in living eucalypts in old stick nests of other species. **Potential impacts associated with the Project:** Suitable foraging habitat may be present on the subject land, in VZ1, VZ2, VZ3 and the cropped paddock. No breeding habitat is present due to a lack of suitable nesting trees. A total area of 5.18 hectares of derived native grassland and 2.78 ha of cropping will be removed as part of the project. **Avoidance and mitigation measures:** Native vegetation has been avoided where possible by refinement of the subject land to avoid scattered trees and reduce areas on DNG to be cleared. Pre-clearing inspections will be carried out to identify any foraging animals on the site and take measures to encourage animals to move prior to clearing or reschedule clearing.		
An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it would:		
1. lead to a long-term decrease in the size of an important population of a species;		
Under the EPBC Act, an important population is defined as: - key source populations either for breeding or dispersal - populations that are necessary for maintaining genetic diversity, and/or - populations that are near the limit of the species range. (DoE, 2013b). The species is considered one population (Cth TSSC, 2020). The species occurs at low densities across arid and semi-arid Australia. The subject land is not located at the edge of the species range, and there is no suitable breeding habitat present. While suitable foraging habitat exists in the subject land, it consists of a very small area of low-quality derived grassland that is unlikely to provide a substantial area for hunting of small birds and other prey, for even a single individual of the species. There is an abundance of similar or better-quality vegetation in the surrounding area, and therefore it is considered unlikely the project will lead to a long-term decrease in the size of an important population of the species.		Unlikely
reduce the area of occupancy of an important population;		
Unlikely – there is no breeding or nesting habitat present on the Subject land and foraging habitat is a small area with similar vegetation present nearby.		Unlikely
2. fragment an existing important population into two or more populations;		
Unlikely as the species is mobile.		Unlikely
3. adversely affect habitat critical to the survival of a species;		

Grey Falcon (*Falco hypoleucos*) Vulnerable Species	Likelihood
No breeding habitat occurs on the subject land. While potentially suitable foraging habitat occurs in the Subject land, the habitat to be impacted is a very small area, is of low quality and is represented by an abundance of similar vegetation in the surrounding area.	Unlikely
4. disrupt the breeding cycle of an important population;	
Unlikely – no suitable breeding habitat is present.	Unlikely
5. modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline;	
No breeding habitat is present on the subject land and foraging habitat to be impacted is not likely to compose a large part of the diet of any single individual of the species.	Unlikely
6. result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat;	
The project will not lead to the introduction of invasive species harmful to the species.	Unlikely
7. introduce disease that may cause the species to decline, or	
No diseases are listed applicable to this species.	Unlikely
8. Interfere substantially with the recovery of the species.	
Since the project will not impact breeding habitat for the species and foraging/hunting habitat to be impacted is minor, it is considered unlikely impacts from the project will interfere substantially with the recovery of this species.	Unlikely
Conclusion: The Project is considered unlikely to result in a significant impact to the Grey Falcon. Referral to the Commonwealth is not required.	

South-eastern Hooded Robin

South-eastern Hooded Robin (Melanodryas cucullata cucullata)	Endangered Species	Likelihood
Distribution: The south-eastern form (subspecies cucullata) is found from Brisbane to Adelaide and throughout inland NSW (except for the north-west) (NSW DCCEEW 2025b). **Habitat:** This sedentary species prefers open eucalypt woodland in or near clearings or open areas. Hooded Robins require structurally diverse habitats with mature eucalyptus, saplings, small shrubs, native tussock grasses, fallen timber and stumps. Foraging occurs using a perch-and-pounce method, while nesting occurs in tree forks or crevices and birds often return to the same breeding site each season (NSW DCCEEW 2025b). **Potential impacts associated with the Project:** The South-eastern Hooded Robin is retained as an ecosystem credit species for foraging purposes. The subject land contains 5.18 ha of potentially suitable foraging habitat (VZ1, VZ2, VZ3) which would be directly impacted. **Avoidance and mitigation measures:** Native vegetation has been avoided where possible by refinement of the subject land to avoid scattered trees and reduce areas on DNG to be cleared. Pre-clearing inspections will be carried out to identify any foraging animals on the site and take measures to encourage animals to move prior to clearing or reschedule clearing.		
An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it would:		
1. lead to a long-term decrease in the size of an important population of a species;		
The South-eastern Hooded Robin (subspecies cucullata) comprises a single population (Cth DCCEEW, 2023c). No sighting occur near the subject land or the surrounding area, with the closet records occurring approximately 40 km south near Barooga. Given the highly mobile nature of the species, and wide occurrence of potential foraging habitat in the surrounding landscape, the removal of 5.18 ha of potential foraging habitat in the Subject land is not considered to lead to a long-term decrease in the size of the population of this species.		Unlikely
2. reduce the area of occupancy of the species;		
The estimated total AOO of the species is 30,000 km2 (Cth DCCEEW, 2023c). The area of the species' geographic range to be impacted by the project would be 5.18 ha, or 0.0518 km2. This would account for 0.0002% of the overall AOO. This impact is not considered critical due to the relative abundance of foraging habitat adjoining the subject land that would not be impacted.		
3. fragment an existing population into two or more populations;		
The South-eastern Hooded Robin exists as a single population (Cth DCCEEW, 2023c). Given the highly mobile nature of the species, and the fact that no breeding habitat would be impacted, the project is considered unlikely to fragment an existing important population into two or more populations.		Unlikely
4. adversely affect habitat critical to the survival of a species;		
No breeding habitat occurs on the subject land. While potentially suitable foraging habitat occurs in the subject land, the habitat to be impacted is a very small area, is of low quality and is represented by an abundance of similar vegetation in the surrounding area.		

South-eastern Hooded Robin (Melanodryas cucullata cucullata)	Endangered Species	Likelihood
5. disrupt the breeding cycle of a population		
Unlikely – no suitable breeding habitat is present.		Unlikely
6. modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline;		
No breeding habitat is present on the subject land and foraging habitat (5.18 ha) to be impacted is not likely to compose a large part of the diet of any single individual of the species.		Unlikely
7. result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat;		
This species faces increased competition and aggressive exclusion from other bird species such as Noisy Miners. This species is likely to be already established on the subject land and the minimal extent of works in suitable foraging habitat is unlikely to lead to an increase in the abundance of Noisy Miners in this habitat.		Possible
8. introduce disease that may cause the species to decline, or		
There are no diseases listed as threats for this species.		Unlikely
9. Interfere with the recovery of the species.		
Since the project will not impact breeding habitat for the species and foraging/hunting habitat to be impacted is minor, it is considered unlikely impacts from the project will interfere substantially with the recovery of this species.		Unlikely
Conclusion: The project is considered unlikely to result in a significant impact on the South-eastern Hooded Robin. Referral to the Commonwealth is not required.		

Diamond Firetail

Diamond Firetail (Stagonopleura guttata)	Vulnerable	Likelihood
Distribution: The Diamond Firetail is widely distribution in NSW with concentrated records occurring from the tablelands to the western slopes, plains and Riverina (NSW DCCEEW, 2025b) **Habitat:** The sedentary species inhabits grassy eucalypt woodlands, Natural Temperate Grassland and secondary grassland derived from other communities (NSW DCCEEW, 2025b). Diamond Firetails forage on the ground on plant matter and insects, while nesting occurs in nests built in the shrubby understory or higher up under hawk's or raven's nests. **Potential impacts associated with the Project:** The Diamond Firetail was not recorded near the subject land or the surrounding area, with the closet records occurring approximately 30 km north of the subject land. The Diamond Firetail is retained as an ecosystem credit species for foraging purposes as 5.18 ha of potentially suitable foraging habitat occurs on the subject land within (VZ1, VZ2, VZ3) and would be directly impacted. **Avoidance and mitigation measures:** Native vegetation has been avoided where possible by refinement of the subject land to avoid scattered trees and reduce areas on DNG to be cleared. Pre-clearing inspections will be carried out to identify any foraging animals on the site and take measures to encourage animals to move prior to clearing or reschedule clearing.		
An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it would:		
1. lead to a long-term decrease in the size of an important population of a species;		
Diamond Firetails occur as a single population in NSW (Cth DCCEEW, 2023d). Given the highly mobile nature of the species, and wide occurrence of potential foraging habitat in the surrounding landscape, the removal of 5.18 ha of potential foraging habitat in the subject land is not considered to lead to a long-term decrease in the size of the population of this species.		Unlikely
2. reduce the area of occupancy of the species;		
The estimated total area of occupancy (AOO) of the species is 25,000 km2 (Cth DCCEEW, 2023d). The area of the species' geographic range to be impacted by the project would be 5.18 ha, or 0.0518 km2. This would account for 0.0002% of the overall AOO. This impact is not considered critical due to the relative abundance of foraging habitat adjoining the subject and that would not be directly impacted.		
3. fragment an existing population into two or more populations;		
The Diamond Firetail exists as a single population (Cth DCCEEW, 2023d). Given the highly mobile nature of the species, and the fact that no breeding habitat would be impacted, the project is considered unlikely to fragment an existing important population into two or more populations.		Unlikely
4. adversely affect habitat critical to the survival of a species;		
No breeding habitat occurs on the subject land. While potentially suitable foraging habitat occurs in the subject land, the habitat to be impacted is a very small area, is of low quality and is represented by an abundance of similar vegetation in the surrounding area.		

Diamond Firetail (Stagonopleura guttata) Vulnerable	Likelihood
5. disrupt the breeding cycle of a population	
Unlikely – no suitable breeding habitat is present.	Unlikely
6. modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline;	
No breeding habitat is present on the subject land and foraging habitat (5.18 ha) to be impacted is not likely to compose a large part of the diet of any single individual of the species.	Unlikely
7. result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat;	
Diamond Firetails are susceptible to predation of eggs and nestlings by increased populations of native predators such as Pied Currawongs. This species is likely to be already established on the subject land and surrounds, and the minimal extent of works in suitable foraging habitat is unlikely to lead to an increase in the abundance of Pied Currawongs in this habitat. The project is not considered likely to result in Pied Currawongs and other native predators becoming established in adjacent habitat as they are likely already present in the surrounding area.	Possible
8. introduce disease that may cause the species to decline, or	
There are no diseases listed as threats for this species.	Unlikely
9. Interfere with the recovery of the species.	
Since the project will not impact breeding habitat for the species and foraging/hunting habitat to be impacted is minor, it is considered unlikely impacts from the project will interfere substantially with the recovery of this species.	Unlikely
Conclusion: The project is considered unlikely to result in a significant impact on the Diamond Firetail. Referral to the Commonwealth is not required.	

APPENDIX F

Southern Myotis Survey Findings

Lachlan McRae Fauna Services
ABN: 96 905 438 927
Lmcrae.ecology@gmail.com
16 Feb 2025 – Job#021

Lily Ross
Premise
Level 1, 60-62 McNamara Street,
Orange NSW, 2800
Lily.ross@premise.com.au

RE: Targeted Southern Myotis (*Myotis macropus*) bat surveys at Finley Substation, NSW

Dear Lily Ross and the rest of the Premise team,

Thank you for engaging me, Lachlan McRae, and my field assistant, Carissa Harris, to conduct microbat harp trap surveys targeting the threatened Southern Myotis (*Myotis macropus*) at Finley Substation, NSW. Surveys were conducted from Tuesday 28th Jan until Saturday 1st Feb 2025 based on the recommendations in "*'Species credit' threatened bats and their habitats NSW survey guide for the Biodiversity Assessment Method*".

All surveys were conducted in accordance with Animal Ethics & Scientific Licence approval:
Secretary's ACEC Project No. RVF24/364
Scientific Licence No. SL102943

See the appendix for a CV of the lead bat surveyor's experience, Lachlan McRae.

Survey methodology

A combination of survey techniques was used to determine the presence/absence of Southern Myotis (Fig. 3). Six harp traps were set each night before sunset and left open overnight from 28 Jan to 1 Feb 2025; two Austbat Mini Harp Traps and four Austbat Full-sized Harp Traps (https://www.titley-scientific.com/product/full-sized-harp-traps). Traps were placed within 200m of waterbodies >3m wide in areas most likely to capture the target species. Two traps were typically placed side by side (Fig. 1) to maximise the chances of capturing the species, since it was not suitable habitat for lone harp trap deployment. We consider the additional two harp traps (six instead of the minimum four) as sufficient for offsetting the fact that we placed the traps pairs. Additionally, due to the very limited number of suitable on-site harp trap deployment locations, traps were left in place for two consecutive nights. Moving traps every night would have resulting in traps being deployed in sub-optimal locations. I note that all of our bat captures came from the 2nd night that harp traps had been in the same spot, demonstrating learned trap avoidance was not an issue.

There was no rain during the entire survey period, and winds were light to moderate.

To complement the harp trapping effort, active bat call monitoring with an Anabat Walkabout was conducted each night for approximately one hour from 9-10pm (Fig. 2). Additionally, a single Anabat Ranger was deployed overnight each night in various locations (Fig. 3).

Figure 1 - Carissa deploying harp traps on a road culvert.

Figure 2 - Lachlan surveying with Anabat Walkabout.

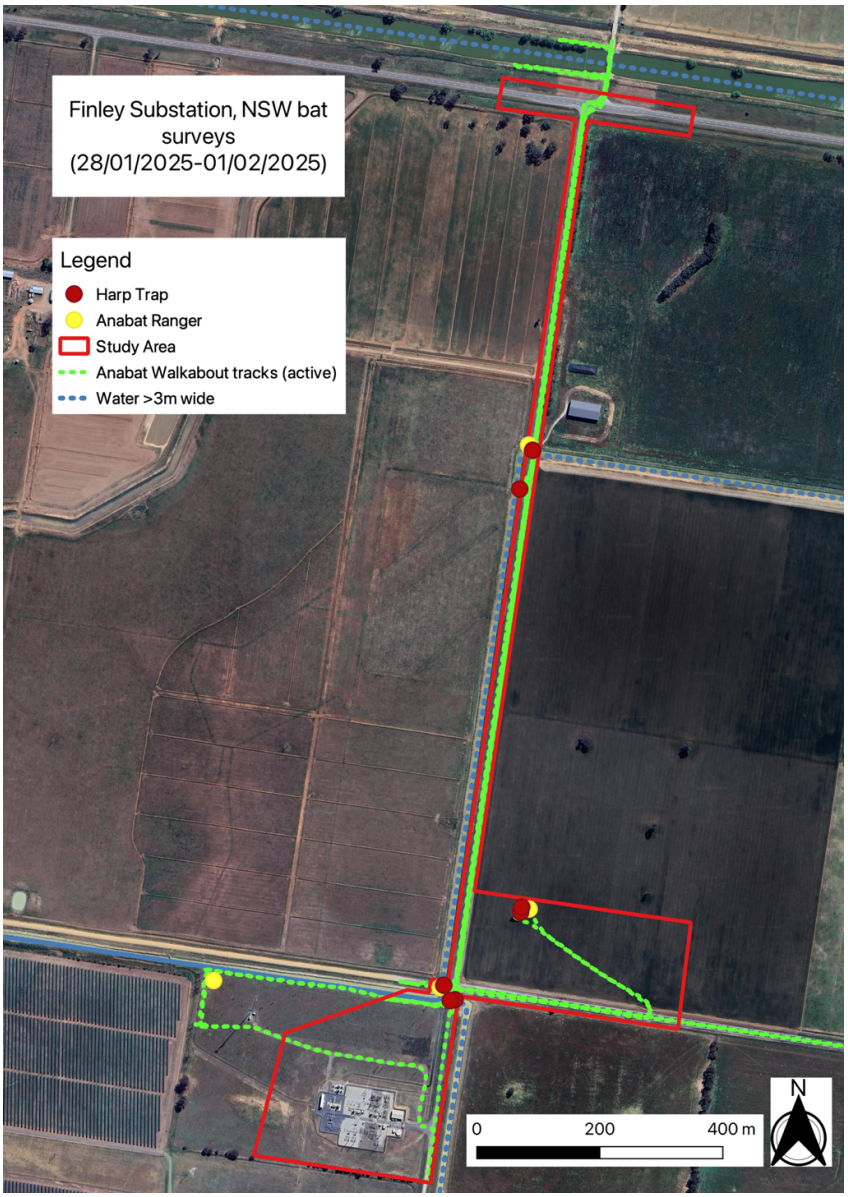


Figure 3 - Map of survey effort.

Survey results

Harp traps yielded 11 bat captures over the four nights including White-striped Freetail Bat (*Austronomus australis*; Fig. 4), Southern Freetail Bat (*Ozimops planiceps*), Goulds Wattled Bat (*Chalinolobus gouldii*), and Southern Forest Bat (*Vespadelus regulus*; Fig. 5) (Table 1). No Southern Myotis were captured.

Table 1 - Data on the 11 bats captured during the Jan 2025 Finley surveys.

Common Name	Scientific Name	Conservation Status	# individuals captured	Location (Lat/Long)	Vegetation Zone
White-striped Free-tailed Bat	*Austronomus australis*	Least Concern	1	-35.636756 145.515303	"Scattered Tree"
Gould's Wattled Bat	*Chalinolobus gouldii*	Least Concern	2	-35.636756 145.515303	"Scattered Tree"
South-eastern Freetail Bat	*Ozimops planiceps*	Least Concern	1	-35.636756 145.515303	"Scattered Tree"
Southern Forest Bat	*Vespadelus regulus*	Least Concern	7	-35.637822 145.513921	"Infrastructure"

Figure 4 - Captured White-striped Freetail Bat.

Figure 5 - Captured Southern Forest Bat and measuring equipment.

Active Anabat Walkabout and passive Anabat Ranger monitoring recorded 1,941 files containing up to 10 bat species. Nine out of the 1,941 files contained echolocation calls that belonged to the *Nyctophilus/Myotis* species complex, which are difficult to distinguish acoustically. When *Myotis macropus* is present, its echolocation calls are typically abundant, especially over water where it forages continuously. Due to the very low number of *Nyctophilus/Myotis* calls recorded, it suggests they are more likely from a *Nyctophilus* species. However, some calls exhibit characteristics more consistent with *Myotis* (Fig. 6), leaving open the possibility of a vagrant individual.

Yours sincerely,
Lachlan McRae
Fauna Ecologist

Lachlan McRae

Fauna Ecologist

Lachlan has over 5 years of experience surveying for threatened microbats, which is his specialist fauna group. He has demonstrated skills in conducting all aspects of microbat surveys and possesses a thorough knowledge of bat ecology and how to find them.

Lachlan has captured and collected reference calls from hundreds of microbats throughout NSW. Hundreds of hours have been spent processing and extracting call metrics from those reference calls to determine identification features for each species. These reference calls now form part of his personal NSW reference call library, which is used to significantly increase the accuracy of microbat call analysis within NSW.

Fortunate to have worked alongside and had mentoring from fauna experts Brad Law, John Young, Corey Mead, Chad Beranek, & Matt Hayward. Lachlan also keeps in regular communication with recognised bat experts such as Michael Pennay, Brad Law, and Chris Corben to ensure he remains at the forefront of the latest techniques and knowledge to identify bat calls.

Expertise

Lachlan's microbat expertise includes:

- Microbat radio-tracking and maternity roost assessment
- Echolocation call identification & analysis (Anabat Insight & Kaleidoscope Pro)
- Active call monitoring (Anabat Walkabout)
- Harp Trap deployment
- In-hand microbat species identification and breeding status evaluation
- Reference call collection
- Breeding habitat evaluation
- Report writing to the standard of the Australasian Bat Society and NSW Biodiversity Assessment Methodology
- Passive bat recorder deployment (Anabat Swift/Chorus/Ranger, SM4BAT, & AudioMoth)

Qualifications/Licences

- PhD on the ecology and conservation of the threatened large-eared pied bat (*Chalinolobus dwyeri*) and eastern cave bat (*Vespadelus troughtoni*) – Macquarie University (in progress)
- Bachelor of Environmental Science and Management HONOURS – 1st Class
- Anabat Insight Advanced Workshop – Titley Scientific
- Kaleidoscope Pro Advanced Training – Wildlife Acoustics

Work history

- 2023 – Current: Freelance Fauna Ecologist (specialising in bats and birds) @Independent subcontractor
- 2019 – 2024: Fauna Ecologist @Travers bushfire & ecology
- 2021 – Current: Microbat Reference Call Collector @Independent side-project
- 2021: Ecology and Conservation Intern @Australian Wildlife Conservancy

Contact details

t 0476 777 757
e LMcRae.ecology@gmail.com
w www.linkedin.com/in/lachlan-mcrae/
w https://www.youtube.com/@EcologyInsights

Publications

- Microbat call metrics of the species in the greater Sydney region — Internal publication with Travers Bushfire and Ecology.
- Microbat Survey Protocol for Yookamurra Sanctuary — Internal publication with Australian Wildlife Conservancy.
- The population density and trap-revealed home range of short-eared possums (*Trichosurus caninus*) in Northern Tablelands, NSW, Australia — Journal of Australian Mammalogy

Affiliations

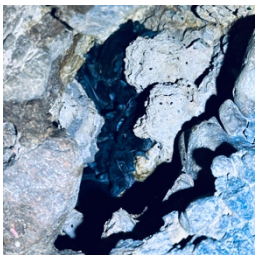
- Australasian Bat Society
- Australian Bat Identification Facebook group
- Ku-ring-gai Bat Association

Referees

- Dr Brad Law
  Principal Scientist
  NSW DPI/Forestry
  0417 673 890
  brad.law@dpi.nsw.gov.au
- Lindsay Holmes
  Manager of Ecology
  Travers Bushfire and Ecology
  0414 365 723
  Lholmes@traversecology.com.au
- Dr Alexandra Ross
  Wildlife Ecologist
  Australian Wildlife Conservancy (AWC)
  0422 445 450
  Alexandra.ross@australianwildlife.org
- Professor Matt Hayward
  Honours Research Project Supervisor
  University of Newcastle
  0428 055 012
  Matthew.hayward@newcastle.edu.au

Notable project involvements

- **PhD microbat surveys @Pilliga, Ulan, Pearl Beach, McCullys Gap & Glenbawn Dam.**
  Deployed harp traps, explored caves, and radio-tracked the threatened large-eared pied bat and eastern cave bat. Successfully found new maternity roosts for both species (see photos below).




- **Annual fauna workshop @Watagans/Olney SF**
  Train university students to deploy harp traps, identify microbats via in-hand measurements, and how to use active bat call devices such as Anabat Walkabout. We also capture and collect reference calls from threatened species such as golden-tipped bats, large bent-winged bats, & eastern-coastal freetail bats.
- **Australian Wildlife Conservancy (AWC) annual microbat survey @Yookamurra, SA**
  Designed and implemented an annual microbat survey for AWC's Yookamurra Sanctuary (SA). This involved the programming of dozens of AudioMoths, tests to determine optimum recorder settings for mallee habitat, and the preparation of a standard operating procedure (SOP) for future AWC ecologists.
- **Targeted Southern Myotis BAM surveys @Wallacia**
  Successfully trapped southern myotis with harp traps to confirm presence on a development site. Collected reference calls from all captured species incl. *Nyctophilus geoffroyi* and *Myotis macropus*.
- **Bat Banding Assistant @Chichester SF**
  Assisted bat expert Brad Law with bat banding harp trap surveys. We successfully captured many threatened species including the Large Bent-winged Bat, Greater Broad-nosed Bat, and Eastern Coastal Free-tailed Bat.
- **Target Golden-tipped Bat surveys @Mt Hyland NR**
  Conducted harp trap surveys in temperate rainforest targeting golden-tipped bats. Successfully captured multiple target individuals as well as threatened eastern false pipistrelles.

Lachlan McRae Fauna Services
ABN: 96 905 438 927
Lmcrae.ecology@gmail.com
22 April 2025 – Job#031

Lily Ross
Premise
Level 1, 60-62 McNamara Street,
Orange NSW, 2800
Lily.ross@premise.com.au

RE: Targeted Southern Myotis (*Myotis macropus*) bat surveys at Finley Substation, NSW (report update)

Dear Lily Ross and the rest of the Premise team,

Thank you for engaging me, Lachlan McRae, and my field assistants Carissa Harris and Daniel Pennal, to conduct microbat harp trap surveys targeting the threatened Southern Myotis (*Myotis macropus*) at Finley Substation, NSW. Initial surveys were conducted from 28th Jan to 1st Feb 2025 and additional follow-up surveys were conducted from 29th March to 1st April 2025, in accordance with "*'Species credit' threatened bats and their habitats NSW survey guide for the Biodiversity Assessment Method*".

All surveys were conducted in accordance with Animal Ethics & Scientific Licence approval:
Secretary's ACEC Project No. RVF24/364
Scientific Licence No. SL102943

See the appendix for a CV of the lead bat surveyor's experience, Lachlan McRae.

Survey methodology

Initial surveys
A combination of survey techniques was used to determine the presence/absence of Southern Myotis (Fig. 3). Six harp traps were set each night before sunset and left open overnight from 28 Jan to 1 Feb 2025; two Austbat Mini Harp Traps and four Austbat Full-sized Harp Traps (https://www.titley-scientific.com/product/full-sized-harp-traps). Traps were placed within 200m of waterbodies >3m wide in areas most likely to capture the target species. Two traps were typically placed side by side (Fig. 1) to maximise the chances of capturing the species, since it was not suitable habitat for lone harp trap deployment. We consider the additional two harp traps (six instead of the minimum four) as sufficient for offsetting the fact that we placed the traps pairs. Additionally, due to the very limited number of suitable on-site harp trap deployment locations, traps were left in place for two consecutive nights. Moving traps every night would have resulting in traps being deployed in sub-optimal locations. I note that all of our bat captures came from the 2nd night that harp traps had been in the same spot, demonstrating learned trap avoidance was not an issue.

There was no rain during the entire survey period, and winds were light to moderate.

To complement the harp trapping effort, active bat call monitoring with an Anabat Walkabout was conducted each night for approximately one hour from 9-10pm (Fig. 2). Additionally, a single Anabat Ranger was deployed overnight each night in various locations (Fig. 3).

Figure 1 - Carissa deploying harp traps on a road culvert.

Figure 2 - Lachlan surveying with Anabat Walkabout.

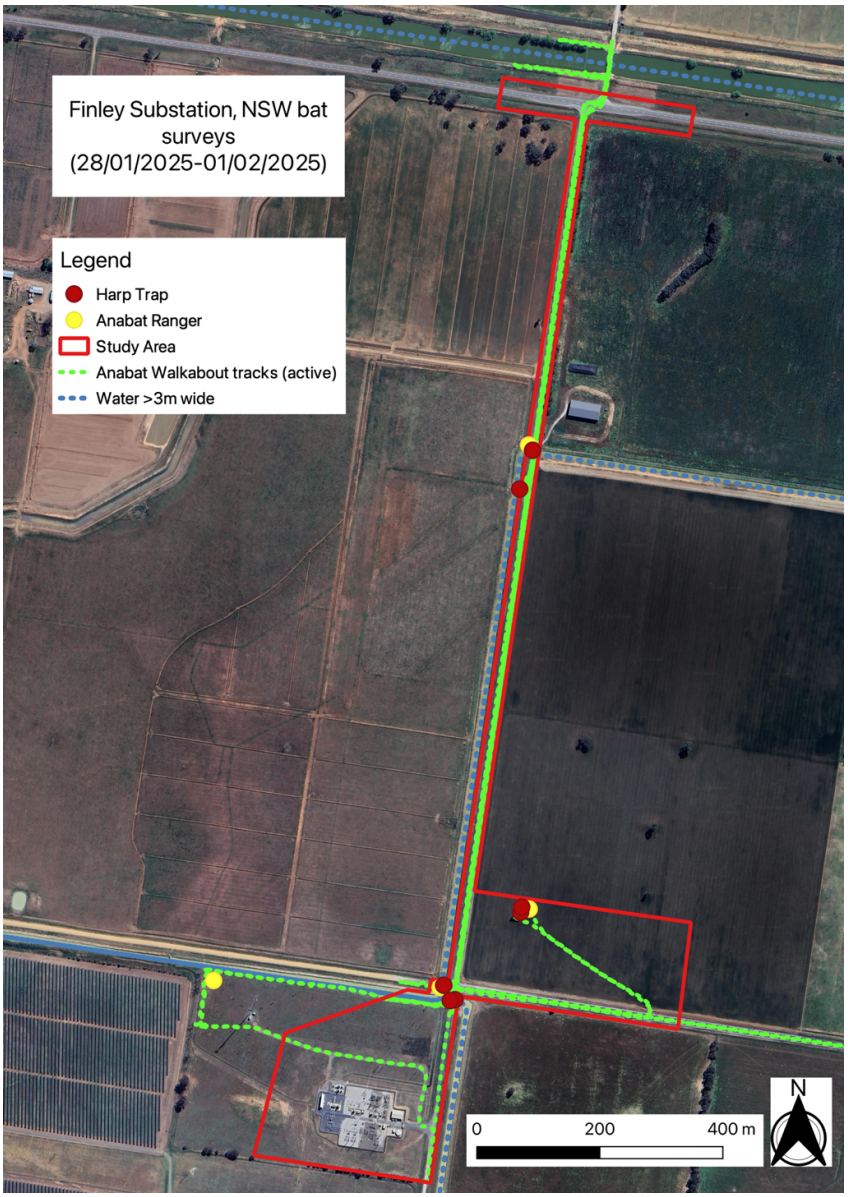


Figure 3 - Map of survey effort.

Additional follow-up surveys

It is my understanding that the D*epartment of Climate Change, Energy, the Environment and Water* (DCCEEW) was not satisfied with the original survey effort to confirm the absence of Southern Myotis. The key concerns raised were that traps were placed too close together and traps stayed in the same location for two consecutive nights. As a result, *Premise Pty ltd* re-engaged me to undertake supplementary harp trapping surveys to address these concerns.

As outlined in the initial survey methodology, there were valid logistical and ecological reasons for placing traps side-by-side and not relocating them nightly. Nevertheless, in response to the feedback, five full-sized (4.2 m²) Austbat Harp Traps were deployed for an additional three nights from 29 March to 1 April 2025 (Fig. 4). Traps were left open for the entire night and were positioned within 200 m of waterbodies >3 m wide. To address the department's specific concerns, all traps were spaced at least 20 m apart and were relocated to new positions (also >20 m apart) each night.

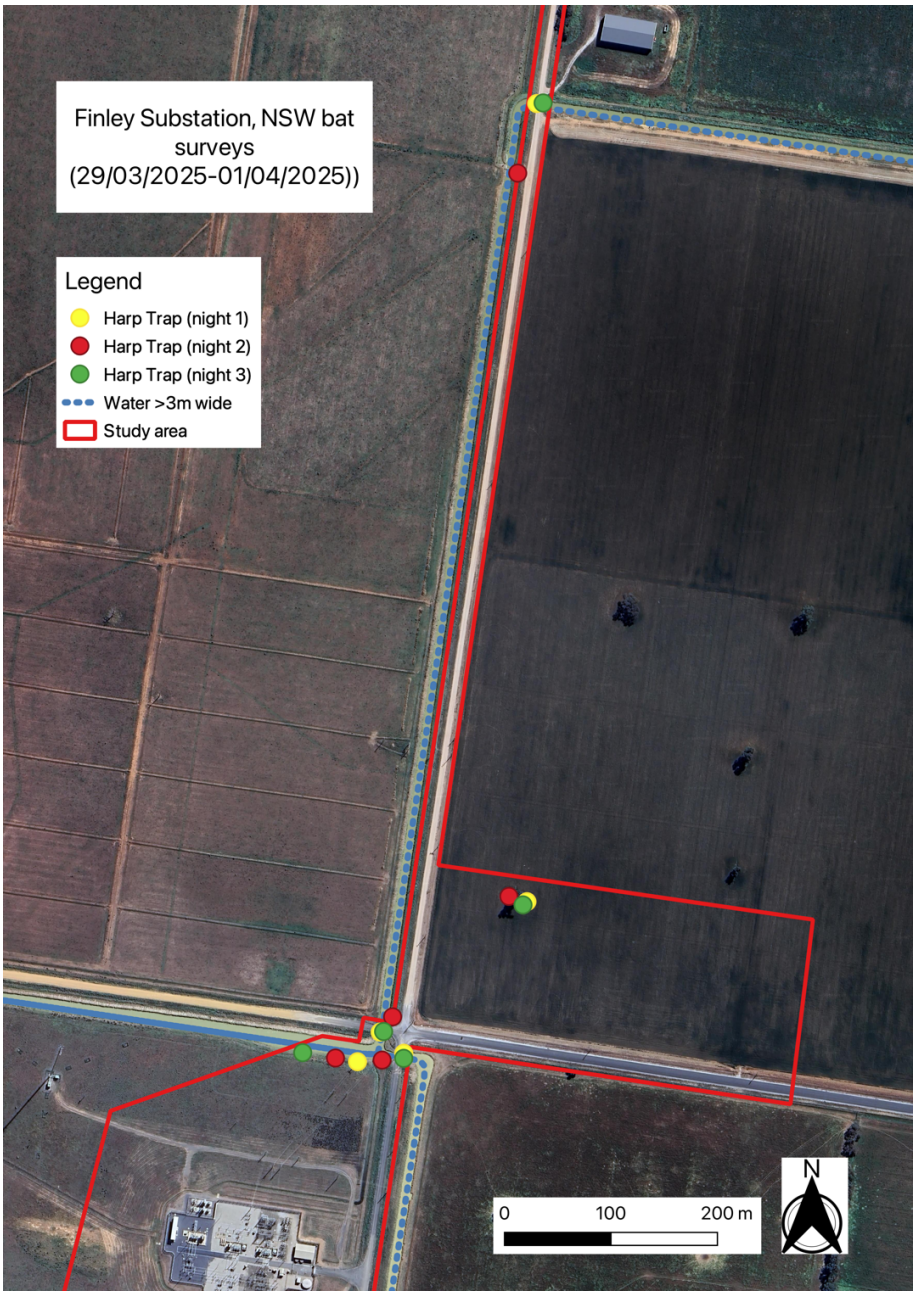


Figure 4 – Harp trap locations during the additional surveys conducted from 29/03/2025-01/04/2025.

Survey results

Harp traps yielded 12 bat captures over the four nights including White-striped Freetail Bat (*Austronomus australis*; Fig. 5), Southern Freetail Bat (*Ozimops planiceps*), Goulds Wattled Bat (*Chalinolobus gouldii*), and Southern Forest Bat (*Vespadelus regulus*; Fig. 6) (Table 1). No Southern Myotis were captured.

Table 1 - Data on the 12 bats captured during the Jan & March 2025 Finley surveys.

Common Name	Scientific Name	Conservation Status	# individuals captured	Location (Lat/Long)	Vegetation Zone
White-striped Free-tailed Bat	*Austronomus australis*	Least Concern	1	-35.636756 145.515303	"Scattered Tree"
Gould's Wattled Bat	*Chalinolobus gouldii*	Least Concern	2	-35.636756 145.515303	"Scattered Tree"
South-eastern Freetail Bat	*Ozimops planiceps*	Least Concern	1	-35.636756 145.515303	"Scattered Tree"
Southern Forest Bat	*Vespadelus regulus*	Least Concern	8	-35.637822 145.513921	"Infrastructure"

Figure 5 - Captured White-striped Freetail Bat.

Figure 6 - Captured Southern Forest Bat and measuring equipment.

Active Anabat Walkabout and passive Anabat Ranger monitoring recorded 1,941 files containing up to 10 bat species. Nine out of the 1,941 files contained echolocation calls that belonged to the *Nyctophilus/Myotis* species complex, which are difficult to distinguish acoustically. When *Myotis macropus* is present, its echolocation calls are typically abundant, especially over water where it forages continuously. Due to the very low number of *Nyctophilus/Myotis* calls recorded, it suggests they are more likely from a *Nyctophilus* species. However, some calls exhibit characteristics slightly more consistent with *Myotis* (Fig. 7), leaving open the possibility of a vagrant individual.

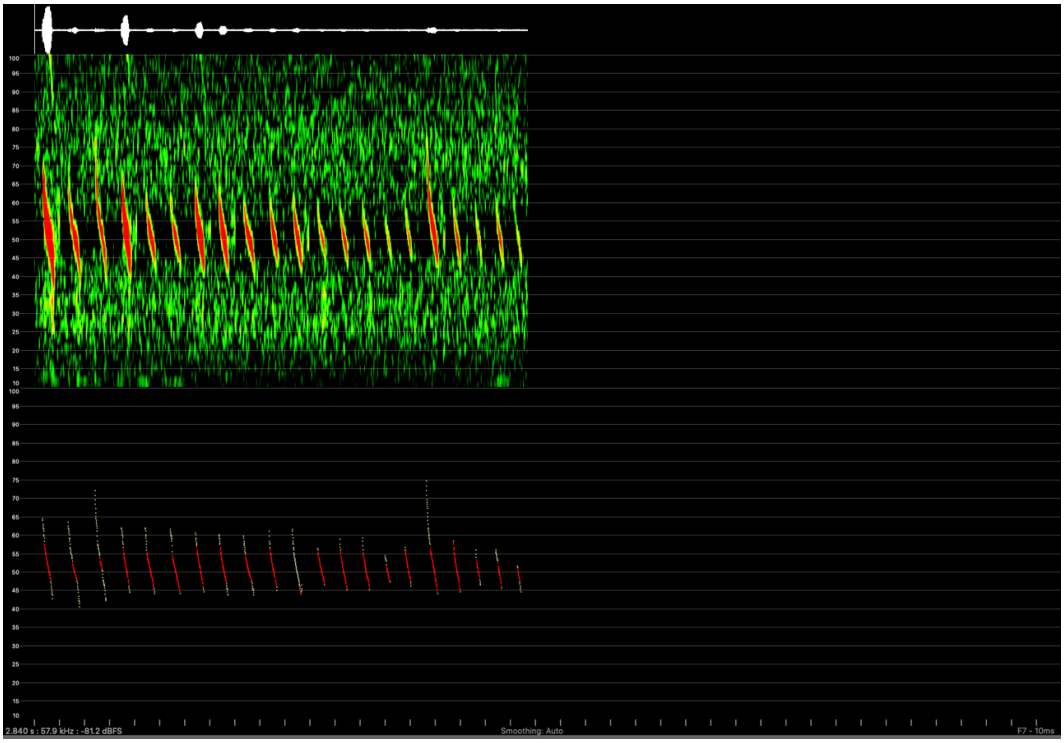


Figure 7 - Possible Southern Myotis call.

Conclusion

A total of 39 harp trap nights were completed in total across both survey periods — more than double the minimum effort recommended under the NSW Biodiversity Assessment Method (BAM) threatened bat survey guidelines. Despite this intensive effort, Southern Myotis was not captured at any point, nor was it detected with confidence through acoustic monitoring.

Although a small number of echolocation calls recorded during the survey showed characteristics similar to Southern Myotis, these calls were extremely limited in number (9 out of 1,941 files) and not clearly attributable to the species. Given that Southern Myotis typically produces frequent and distinctive calls when present, particularly over open water, the very low number of recordings strongly suggests the calls are more likely from a *Nyctophilus* species, which share similar acoustic signatures.

Given the comprehensiveness of the survey effort, the lack of any definitive acoustic detections, and the complete absence of captures, it is reasonable to considered Southern Myotis absent from the Finley Substation site.

Yours sincerely,
Lachlan McRae
Fauna Ecologist

APPENDIX G

Vegetation Survey Data

Table 31 – Vegetation survey data and locations

plot	pct	area	patchsize	condition class	zone	easting	northing	bearing	compTree	compShrub	compGrass	compForbs	compFerns	compOther	strucTree	strucShrub	strucGrass	strucForbs	strucFerns	strucOther	funLargeTrees	funHollowtrees	funLitterCover	funLenFallenLogs	funTreeStem5to9	funTreeStem10to19	funTreeStem20to29	funTreeStem30to49	funTreeStem50to79	funTreeRegen	funHighThreatExotic
Q1	76	0.14	19.27	DNG_Roadside	55	365454	6055149	188	0	0	8	2	0	0	0.0	0.0	35.2	0.2	0.0	0.0	0	0.0	13.0	0	0	0	0	0	0	0	31.8
Q2	76	4.74	19.27	DNG_Poor	55	365408	6054941	185	0	2	1	1	0	0	0.0	2.1	15.0	0.1	0.0	0.0	0	0.0	13.8	0	0	0	0	0	0	0	0.5
Q3	76	0.3	19.27	DNG_Wet	55	365413	6055082	310	0	1	4	0	0	0	0.0	0.2	65.4	0.0	0.0	0.0	0	0.0	12.0	0	0	0	0	0	0	0	0.7
Q6	76	4.74	19.27	DNG_Poor	55	365285	6055151	135	0	3	5	4	0	0	0.0	0.3	19.4	1.3	0.0	0.0	0	0.0	21.0	0	0	0	0	0	0	0	0.2

APPENDIX H

Credit Reports

BAM Biodiversity Credit Report (Variations)

Proposal Details

Assessment Id

00049169/BAAS21027/24/00049170

Assessor Name

Sally Kirby

Proponent Name(s)

Russell Anderson, Terri Anderson

Assessment Revision

1

Date Finalised

22/04/2025

Proposal Name

Finley BESS

Assessor Number

BAAS21027

Report Created

22/04/2025

BAM data last updated *

28/10/2024

BAM Data version *

Current classification (live - default) (80)

BAM Case Status

Finalised

Assessment Type

Major Projects

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

Potential Serious and Irreversible Impacts

Name of threatened ecological community	Listing status	Name of Plant Community Type/ID
Nil		
Species		
Nil		

Additional Information for Approval

PCT Outside Ibra Added

None added

PCTs With Customized Benchmarks

PCT
No Changes

Predicted Threatened Species Not On Site

Name
Climacteris picumnus victoriae / Brown Treecreeper (eastern subspecies)
Lathamus discolor / Swift Parrot
Polytelis swainsonii / Superb Parrot
Pomatostomus temporalis temporalis / Grey-crowned Babbler (eastern subspecies)
Chthonicola sagittata / Speckled Warbler
Petroica phoenicea / Flame Robin
Petroica boodang / Scarlet Robin
Artamus cyanopterus cyanopterus / Dusky Woodswallow

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

Name of Plant Community Type/ID	Name of threatened ecological community	Area of impact	HBT Cr	No HBT Cr	Total credits to be retired
76-Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions	Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions	5.2	0	45	45.00

BAM Biodiversity Credit Report (Variations)

76-Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions	Like-for-like credit retirement options					
	Class	Trading group	Zone	HBT	Credits	IBRA region
	Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions This includes PCT's: 76, 80, 81, 82, 101, 110, 237, 248, 267, 3405	-	76_DNG_Roadside	No	1	Murray Fans,Inland Slopes, Lower Slopes, Murrumbidgee, Robinvale Plains, South Olary Plain and Robinvale Plains. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
	Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions This includes PCT's: 76, 80, 81, 82, 101, 110, 237, 248, 267, 3405	-	76_DNG_Poor	No	44	Murray Fans,Inland Slopes, Lower Slopes, Murrumbidgee, Robinvale Plains, South Olary Plain and Robinvale Plains. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
	Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions This includes PCT's: 76, 80, 81, 82, 101, 110, 237, 248, 267, 3405	-	76_DNG_Wet	No	0	Murray Fans,Inland Slopes, Lower Slopes, Murrumbidgee, Robinvale Plains, South Olary Plain and Robinvale Plains. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

BAM Biodiversity Credit Report (Variations)

76-Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions	Variation options					
	Formation	Trading group	Zone	HBT	Credits	IBRA region
	Grassy Woodlands	Tier 1	76_DNG_Roadside	No	1	IBRA Region: Riverina, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
	Grassy Woodlands	Tier 1	76_DNG_Poor	No	44	IBRA Region: Riverina, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
	Grassy Woodlands	Tier 1	76_DNG_Wet	No	0	IBRA Region: Riverina, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

Species Credit Summary

No Species Credit Data

Credit Retirement Options

Like-for-like options

BAM Biodiversity Credit Report (Like for like)

Proposal Details

Assessment Id
00049169/BAAS21027/24/00049170

Proposal Name
Finley BESS

BAM data last updated *
28/10/2024

Assessor Name
Sally Kirby

Assessor Number
BAAS21027

BAM Data version *
Current classification (live - default) (80)

Proponent Names
Russell Anderson, Terri Anderson

Report Created
22/04/2025

BAM Case Status
Finalised

Assessment Revision
1

Assessment Type
Major Projects

Date Finalised
22/04/2025

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

Potential Serious and Irreversible Impacts

Name of threatened ecological community	Listing status	Name of Plant Community Type/ID
Nil		

Species
Nil

Additional Information for Approval

BAM Biodiversity Credit Report (Like for like)

PCT Outside Ibra Added

None added

PCTs With Customized Benchmarks

PCT
No Changes

Predicted Threatened Species Not On Site

Name
Climacteris picumnus victoriae / Brown Treecreeper (eastern subspecies)
Lathamus discolor / Swift Parrot
Polytelis swainsonii / Superb Parrot
Pomatostomus temporalis temporalis / Grey-crowned Babbler (eastern subspecies)
Chthonicola sagittata / Speckled Warbler
Petroica phoenicea / Flame Robin
Petroica boodang / Scarlet Robin
Artamus cyanopterus cyanopterus / Dusky Woodswallow

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

BAM Biodiversity Credit Report (Like for like)

Name of Plant Community Type/ID	Name of threatened ecological community	Area of impact	HBT Cr	No HBT Cr	Total credits to be retired
76-Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions	Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions	5.2	0	45	45

76-Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions

Like-for-like credit retirement options

Name of offset trading group	Trading group	Zone	HBT	Credits	IBRA region
Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions This includes PCT's: 76, 80, 81, 82, 101, 110, 237, 248, 267, 3405	-	76_DNG_Roadside	No	1	Murray Fans, Inland Slopes, Lower Slopes, Murrumbidgee, Robinvale Plains, South Olary Plain and Robinvale Plains. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

	Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions This includes PCT's: 76, 80, 81, 82, 101, 110, 237, 248, 267, 3405	-	76_DNG_Poor	No	44	Murray Fans, Inland Slopes, Lower Slopes, Murrumbidgee, Robinvale Plains, South Olary Plain and Robinvale Plains. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
	Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions This includes PCT's: 76, 80, 81, 82, 101, 110, 237, 248, 267, 3405	-	76_DNG_Wet	No	0	Murray Fans, Inland Slopes, Lower Slopes, Murrumbidgee, Robinvale Plains, South Olary Plain and Robinvale Plains. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

Species Credit Summary

No Species Credit Data

Credit Retirement Options

Like-for-like credit retirement options

BAM Candidate Species Report

Proposal Details

Assessment Id 00049169/BAAS21027/24/00049170	Proposal Name Finley BESS	BAM data last updated * 28/10/2024
Assessor Name Sally Kirby	Report Created 22/04/2025	BAM Data version * Current classification (live - default) (80)
Assessor Number BAAS21027	Assessment Type Major Projects	BAM Case Status Finalised
Assessment Revision 1		Date Finalised 22/04/2025

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

List of Species Requiring Survey

Name	Presence	Survey Months
Austrostipa wakoolica A spear-grass	No (surveyed)	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☑ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?
Crinia sloanei Sloane's Froglet	No (surveyed)	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☑ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?
Myotis macropus Southern Myotis	No (surveyed)	☑ Jan ☐ Feb ☑ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?

BAM Candidate Species Report

Swainsona sericea Silky Swainson-pea	No (surveyed)	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☑ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?

Threatened species Manually Added

None added

Threatened species assessed as not on site

Refer to BAR for detailed justification

Common name	Scientific name	Justification in the BAM-C
Brush-tailed Phascogale	Phascogale tapoatafa	Habitat degraded
Koala	Phascolarctos cinereus	Habitat constraints
Pink Cockatoo	Lophochroa leadbeateri	Habitat constraints
Slender Darling Pea	Swainsona murrayana	Refer to BAR
Squirrel Glider	Petaurus norfolcensis	Habitat degraded
Superb Parrot	Polytelis swainsonii	Habitat constraints
Swift Parrot	Lathamus discolor	Habitat constraints
White-bellied Sea-Eagle	Haliaeetus leucogaster	Habitat constraints

BAM Credit Summary Report

Proposal Details

Assessment Id
00049169/BAAS21027/24/00049170

Proposal Name
Finley BESS

BAM data last updated *
28/10/2024

Assessor Name
Sally Kirby

Report Created
22/04/2025

BAM Data version *
Current classification (live - default) (80)

Assessor Number
BAAS21027

BAM Case Status
Finalised

Date Finalised
22/04/2025

Assessment Revision
1

Assessment Type
Major Projects

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

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

Zone	Vegetation zone name	TEC name	Current Vegetation integrity score	Change in Vegetation integrity (loss / gain)	Area (ha)	Sensitivity to loss (Justification)	Species sensitivity to gain class	BC Act Listing status	EPBC Act listing status	Biodiversity risk weighting	Potential SAII	Ecosystem credits

Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions												
1	76_DNG_Roadside	Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions	15	15.0	0.14	Biodiversity Conservation Act listing status	High Sensitivity to Gain	Endangered Ecological Community	Not Listed	2.00		1
2	76_DNG_Poor	Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions	18.4	18.4	4.7	Biodiversity Conservation Act listing status	High Sensitivity to Gain	Endangered Ecological Community	Not Listed	2.00		44
3	76_DNG_Wet	Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions	13.2	13.2	0.3	Biodiversity Conservation Act listing status	High Sensitivity to Gain	Endangered Ecological Community	Not Listed	2.00		0

		Subtotal	**45**
		Total	**45**

Species credits for threatened species

Vegetation zone name	Habitat condition (Vegetation Integrity)	Change in habitat condition	Area (ha)/Count (no. individuals)	Sensitivity to loss (Justification)	Sensitivity to gain (Justification)	BC Act Listing status	EPBC Act listing status	Potential SAII	Species credits

BAM Predicted Species Report

Proposal Details

Assessment Id	Proposal Name	BAM data last updated *
00049169/BAAS21027/24/00049170	Finley BESS	28/10/2024
Assessor Name	Report Created	BAM Data version *
Sally Kirby	22/04/2025	Current classification (live - default) (80)
Assessor Number	Assessment Type	BAM Case Status
BAAS21027	Major Projects	Finalised
Assessment Revision		Date Finalised
1		22/04/2025

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

Common Name	Scientific Name	Vegetation Types(s)
Black Falcon	Falco subniger	76-Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions
Diamond Firetail	Stagonopleura guttata	76-Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions
Grey Falcon	Falco hypoleucos	76-Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions
Pink Cockatoo	Lophochroa leadbeateri	76-Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions
South-eastern Hooded Robin	Melanodryas cucullata cucullata	76-Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions
White-bellied Sea-Eagle	Haliaeetus leucogaster	76-Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions

White-throated Needletail	Hirundapus caudacutus	76-Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions

Threatened species Manually Added

None added

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

Common Name	Scientific Name	Plant Community Type(s)
Brown Treecreeper (eastern subspecies)	Climacteris picumnus victoriae	76-Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions
Dusky Woodswallow	Artamus cyanopterus cyanopterus	76-Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions
Flame Robin	Petroica phoenicea	76-Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions
Grey-crowned Babbler (eastern subspecies)	Pomatostomus temporalis temporalis	76-Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions
Scarlet Robin	Petroica boodang	76-Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions
Speckled Warbler	Chthonicola sagittata	76-Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions
Superb Parrot	Polytelis swainsonii	76-Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions
Swift Parrot	Lathamus discolor	76-Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions

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

Refer to BAR for detailed justification

Common Name	Scientific Name	Justification in the BAM-C
Brown Treecreeper (eastern subspecies)	Climacteris picumnus victoriae	Refer to BAR
Dusky Woodswallow	Artamus cyanopterus cyanopterus	Refer to BAR

Flame Robin	Petroica phoenicea	Refer to BAR
Grey-crowned Babbler (eastern subspecies)	Pomatostomus temporalis temporalis	Refer to BAR
Scarlet Robin	Petroica boodang	Refer to BAR
Speckled Warbler	Chthonicola sagittata	Refer to BAR
Superb Parrot	Polytelis swainsonii	Refer to BAR
Swift Parrot	Lathamus discolor	Refer to BAR

BAM Vegetation Zones Report

Proposal Details

Assessment Id
00049169/BAAS21027/24/00049170

Assessment name
Finley BESS

BAM data last updated *
28/10/2024

Assessor Name
Sally Kirby

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Assessor Number
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22/04/2025

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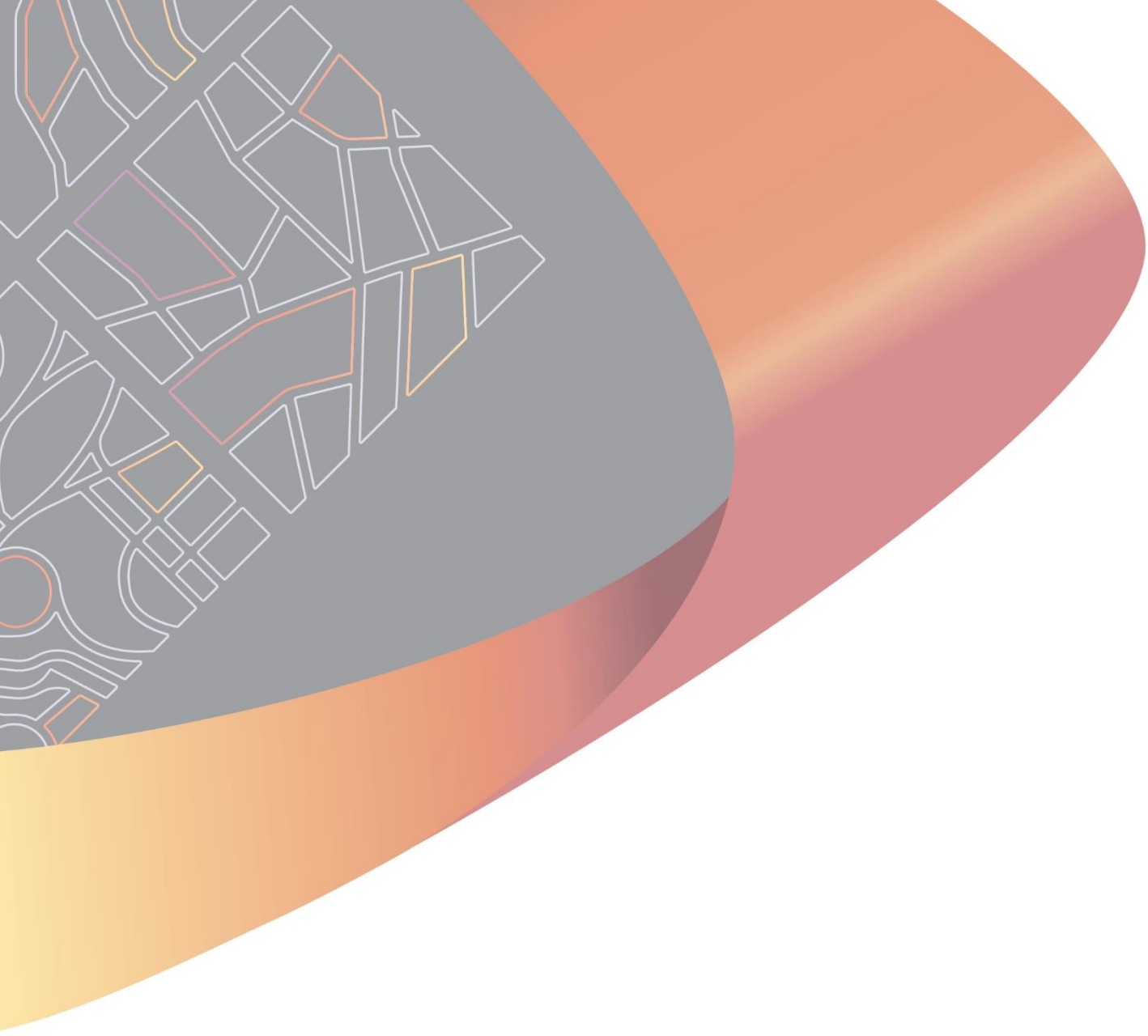
Vegetation Zones

#	Name	PCT	Condition	Area	Minimum number of plots	Management zones
1	76_DNG_Roadside	76-Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions	DNG_Roadside	0.14	1	

2	76_DNG_Poor	76-Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions	DNG_Poor	4.74	2	
3	76_DNG_Wet	76-Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions	DNG_Wet	0.3	1	



Premise