



Appendix E

BDAR

Battery Energy Storage System - Jindera

FOR: BESS Atlantic Pty Ltd c/o Gransolar Development Australia Pty Ltd

SLR PROJECT No: 620.041088.00002

Revision: 3.0



Revision Record

Revision	Date	Prepared	Checked/Authorised	Details
3.0	16 June 2026	F Iolini	C Brennock	Response to RFI
2.0	18 February 2026	F Iolini	M Freeman, J Pepper	Amended in response to NSW DCCEEW advice
1.0	22 May 2025	F Iolini	J Pepper	Final issued with SSD Application



Basis of Report

This report has been prepared by SLR Consulting Australia (SLR) with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with BESS Atlantic Pty Ltd c/o Gransolar Development Australia (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of the Client. No warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR.

SLR disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the work.



Executive Summary

This Biodiversity Development Assessment Report (BDAR) accompanies a State Significant Development Application (SSDA) for a proposed Battery Energy Storage System (BESS) facility at Jindera, NSW. The following is a summary of information required for decision-making by the consent authority:

- The proposed development involves the construction and operation of a new BESS facility and associated infrastructure.
- The Secretary's Environmental Assessment Requirements (SEARs) for the Environmental Impact Statement (EIS) require the preparation of a BDAR.
- The BDAR also includes a description of aquatic ecosystems on the site and an assessment of impacts on aquatic flora and fauna, as required by the SEARs.
- Measures to avoid and minimise impacts include:
 - Locating the BESS facility in areas where biodiversity values are limited.
 - Limiting clearing associated with powerline easement, including avoiding higher-condition native vegetation and hollow-bearing trees.
 - Minimising clearing along the water pipeline by adopting under-boring rather than open trenching methods and locating indicative work areas to avoid native vegetation and hollow-bearing trees.
 - Using sediment barriers and ponds as recommended by the engineer.
 - Implementing flora and fauna management measures outlined in this BDAR.
- The subject land contains patches of grassy woodland identified as PCT 277 Blakely's Red Gum - Yellow Box Grassy Tall Woodland, which also constitutes White Box-Yellow Box- Blakely's Red Gum Grassy Woodland and Derived Native Grassland ('Box Gum Woodland'), listed as a Critically Endangered Ecological Community (CEEC) under the *Biodiversity Conservation Act 2016* (BC Act).
- The Box Gum Woodland TEC is in a degraded condition state and does not meet the condition threshold requirements for listing under the *Environment Protection and Biodiversity Conservation 1999* (EPBC Act).
- The subject land also provides foraging and breeding habitat for the Squirrel Glider, which was recorded during targeted threatened species surveys of the subject land.
- The following species have potential to occur within the subject land and have been partially 'assumed present': Small Purple-pea and Silky Swainson-pea. These species were not surveyed during the appropriate survey periods for parts of the subject land.
- The subject land does not represent 'important habitat' for any threatened or migratory species listed under the EPBC Act, although some ecosystem credit species are also EPBC Act-listed and assessments of significance are included for these species.
- The proposed development will likely involve:
 - Direct clearing of native vegetation and removal of threatened species habitats.
 - Indirect impacts, including potential impacts on adjacent Box Gum Woodland TEC habitats.



- Prescribed impacts, including potential impacts on habitat corridors and hydrology.
- Impacts on one Serious and Irreversible Impact (SAII) entity: Box Gum Woodland TEC. An assessment of impacts on Box Gum Woodland (as it occurs on the subject land) against the BAM criteria for SAIIs is included.
- Residual impacts will be minimised through the following mitigation measures:
 - Implementation of construction management measures (e.g. clearing protocols, protective fencing, light shields).
 - Development and implementation of a Biodiversity Management Plan (BMP).
- Biodiversity offsets are required under the BAM for the permanent removal of 2.88 hectares (ha) of native vegetation associated with the construction of the project. Offsetting requirements are summarised in Table E1 (ecosystem credits) and Table E2 (species credits) below. A total of 86 ecosystem credits are required to offset the loss of native vegetation (see Table E1), and 72 species credits are required to offset the loss of threatened species habitat for the Squirrel Glider, Small Purple-pea and Silky Swainson-pea (see Table E2).

Table E1: Impacts That Require an Offset – Ecosystem Credits

Vegetation Zone	PCT	TEC/EC	Impact Area (ha)	No. Ecosystem Credits
277_Mod	PCT 277 Blakely's Red Gum - Yellow Box Grassy Tall Woodland	White Box-Yellow Box- Blakely's Red Gum Grassy Woodland and Derived Native Grassland TEC	1.75	67
277_Low	PCT 277 Blakely's Red Gum - Yellow Box Grassy Tall Woodland	White Box-Yellow Box- Blakely's Red Gum Grassy Woodland and Derived Native Grassland TEC	1.13	22
		Total	2.88	89

Table E2: Impacts That Require an Offset – Species Credits

Common Name	Scientific Name	Loss of Habitat (ha) or Individuals	No. Species Credits
Squirrel Glider	<i>Petaurus norfolcensis</i>	2.88	70
Small Purple-pea	<i>Swainsona recta</i>	0.06	2
Silky Swainson-pea	<i>Swainsona sericea</i>	0.06	2
		Total	74



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(n/a)**

Appendix H Credit Reports



Acronyms, Abbreviations and Definitions

Short Form	Long Form
APZ (s)	Asset Protection Zone (s)
Assessment Area	In accordance with the BAM (DPIE, 2020a), the Assessment Area includes the subject land and the area of land within the 1500 m buffer zone surrounding the subject land (or 500 m buffer zone for linear proposals) that is determined as per Subsection 3.1.2 (of BAM 2020).
BAM	Biodiversity Assessment Method (DPIE, 2020a)
BAM-C	Biodiversity Assessment Method Calculator
BC Act	<i>Biodiversity Conservation Act 2016</i> (NSW)
BC Regulation	<i>Biodiversity Conservation Regulation 2017</i> (NSW)
BDAR	Biodiversity Development Assessment Report
BESS	Battery Energy Storage System
BMP	Biodiversity Management Plan
BOAMS	Biodiversity Offsets and Agreement Management System
BOS	Biodiversity Offsets Scheme
CEEC (s)	Critically Endangered Ecological Community (s)
Construction Footprint	As required by the BAM (DPIE, 2020a), this is defined as the proportion of the Development Footprint, including temporary and ancillary construction facilities. For this proposed development the Construction Footprint is the proposed temporary construction compound.
DBH	Diameter at Breast Height
Development Footprint	In accordance with the BAM (DPIE, 2020a), this refers to the area of land directly impacted by the proposed development, including access roads and zones designated for storing construction materials.
EC	Ecological Community listed under the EPBC Act
EEC	Endangered Ecological Community (s)
EIS	Environmental Impact Statement
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i> (NSW)
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Commonwealth)
EPI (s)	Environmental Planning Instrument (s)
FM Act	<i>Fisheries Management Act 1994</i> (NSW)
Ha	Hectare
HBT (s)	Hollow-bearing tree (s)
Hollow-bearing tree	In accordance with the BAM (DPIE, 2020a), this refers to a living or dead tree that has at least one hollow. A tree is considered to contain a hollow if: (a) the entrance can be seen; (b) the entrance width is at least 5 cm; (c) the hollow appears to have depth (i.e. solid wood cannot be seen beyond the entrance); and (d) the hollow is at least 1 m above the ground. Trees must be examined from all angles.
HTW (s)	High Threat Weed (s)



Short Form	Long Form
IBRA	Interim Biogeographic Regionalisation for Australia
Kg	Kilograms
kV	kilovolt
LLS Act	<i>Local Land Services Act 2013 (NSW)</i>
m	Meters
MNES	Matters of National Environmental Significance
MW	Megawatts
MWh	Megawatt-hours
NPW Act	<i>National Parks and Wildlife Act 1974 (NSW)</i>
NSW	New South Wales
Operational Footprint	As required by the NSW BAM (DPIE, 2020a) this is defined as the proportion of the Development Footprint that will remain operational following construction.
PCT (s)	Plant Community Type (s)
PMST	Protected Matters Search Tool
Proponent	BESS Atlantic Pty Ltd
Rehabilitation	The vegetation rehabilitation is defined as the return of native vegetation within disturbed areas
RFI	Request for Information
SAII	Serious and Irreversible Impact
SEARs	Secretary's Environmental Assessment Requirements
SSDA	State Significant Development Application
Subject Land	In accordance with the BAM (DPIE, 2020a), this refers to land subject to a development, activity, clearing, biodiversity certification or a biodiversity stewardship proposal.
TBDC	Threatened Biodiversity Data Collection
TEC (s)	Threatened Ecological Community (s)
Vegetation SEPP	<i>State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017 (NSW)</i>



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: _____ *Kialini* _____

Date: _____ 18 February 2026* _____

BAM Assessor Accreditation no: _____ BAAS19042 _____

* It is noted that the BDAR and BAM-C were originally finalised on 22 May 2025, and the BDAR was submitted on 28 May 2025, within 14 days of the BAM-C being finalised.

Following updates in response to formal NSW DCCEEW advice, the BAM-C was finalised on 18 February 2026 and the BDAR was resubmitted on 24 February 2026, within 14 days of the BAM-C being finalised.

The current version of the BDAR includes minor amendments to the project, which required inconsequential updates to the BDAR (Sections 1.1.1 and 1.1.3). Therefore, the BAM-C has not been reopened, and the certification date has not been amended.

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

Table DC1: Authors and contributors

Name	BAM Assessor Accreditation No.	Position/Role	Tasks Performed	Relevant Qualifications
Jeremy Pepper	BAAS17104	SLR Technical Director (Ecology), Project Director	Document review (technical review of BDAR)	Bachelor of Science (Hons Class 1) University of NSW (1996) Cert II Bushland Regeneration, TAFE NSW Cert III Horticulture (Arboriculture), TAFE NSW
Brendan Alderson	n/a	SLR Principal Consultant (Marine Science)	Report preparation (aquatic ecology sections)	Doctor of Philosophy (Marine Science), University of Newcastle (2007) Bachelor of Science (Honours), University of Newcastle (2001)
Matthew Freeman	BAAS19019	SLR Principal Ecologist	Document review, targeted threatened flora surveys, targeted threatened fauna surveys	Bachelor of Natural Science (Nature Conservation), University of Western Sydney (2012)



Name	BAM Assessor Accreditation No.	Position/Role	Tasks Performed	Relevant Qualifications
Fiona Iolini	BAAS19042	SLR Associate Ecologist, Project Manager	BAM plot surveys, targeted threatened flora surveys, targeted threatened fauna surveys, Report preparation, BAM-C data entry and analysis	Bachelor of Environmental Science and Management, University of Newcastle (2007) Cert III Conservation and Land Management, TAFE NSW (2015)
Bo Davidson	BAAS19079	SLR Associate Ecologist	BAM plot surveys, targeted threatened flora surveys, targeted threatened fauna surveys	Master of Environment, Macquarie University (2014) Postgraduate Diploma of Environmental Science, Macquarie University (2013) Bachelor of Environmental Science (BSc), Macquarie University (2010)
Joshua Drane	n/a	SLR Project Ecologist	Targeted threatened fauna surveys	Bachelor of Environmental Science, Australian Catholic University (2018) Advanced Plant Identification Skills for Research and Environmental Assessment (2023)
Vander Bertoldo	n/a	SLR Project Ecologist	BAM plot surveys, targeted threatened flora surveys, targeted threatened fauna surveys	Master of Marine and Environmental Science, SCU University (2022) Bachelor's Degree in Biological Science (Honours), UNESC University (2013) Diploma in Business Management, Lexis School (2019) Certificate IV in Business, English in Paradise (2017)
Elise Newberry	n/a	SLR Project Ecologist	Targeted threatened fauna surveys	Bachelor of Environmental Biotechnology, University of Technology Sydney (2023) Eucalypt Identification Course, ECA (2024)
Ashleigh Rosenkranz	n/a	SLR Project Ecologist	Targeted threatened flora surveys, targeted threatened fauna surveys	Bachelor of Environmental Science and Management, University of Newcastle (2024)
James Hugo	n/a	SLR GIS Technician	Figure preparation (and GIS data management)	Master of Environmental Management and Sustainability, University of Newcastle (2020)



Name	BAM Assessor Accreditation No.	Position/Role	Tasks Performed	Relevant Qualifications
				Bachelor of Science (Hons), University of Newcastle (2016)
Isaac Floyd	n/a	Night Time Ecology Bioacoustic Scientist	Target threatened fauna survey (bat analysis)	Bachelor of Biomedical Science



iii. Conflict of interest

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

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

Signature: _____ *Kialini* _____

Date: _____ 16 June 2026 _____

BAM Assessor Accreditation no: _____ BAAS19042 _____



STAGE 1: BIODIVERSITY ASSESSMENT

1.0 Introduction

1.1 Proposed Development

1.1.1 Development Overview

BESS Atlantic Pty Ltd, c/o Gransolar Development Australia, seeks to establish a Battery Energy Storage System (BESS) connected to the existing electricity grid via an above-ground transmission line to TransGrid's Jindera 330/132 kilovolt (kV) transmission substation.

The proposed development will involve the design, construction, operation, and eventual decommissioning of a BESS with an approximate capacity of 250 megawatts (MW), 625 megawatt-hours (MWh), connecting directly to the existing Jindera Substation via a transmission line. The BESS will comprise containers (or enclosures), each approximately 6 meters (m) in length and weighing around 35,000 kilograms (kg). The system will be supported by inverters that convert electricity from the BESS and connect to the TransGrid substation via approximately 500 m of 330 kV overhead lines.

Other physical features of the project include a transmission line, control room/switchgear and auxiliary transmission infrastructure, car parking, landscaping, an acoustic barrier, security fencing and lighting and a single storage structure. The BESS is self-operating requires only minor periodic visits by authorised personnel. The facility will be otherwise restricted to the public.

The project also includes proposed water pipeline upgrades, comprising 1.2 km underbored section along Ortlipp Road and 851 m underbored section along Linder Road. Two vehicle entry and exit points for site access, and sealing of Ortlipp Road, form part of the proposed development and are not expected to require work outside existing disturbance footprints.

The proposed development is classified as a State Significant Development (SSD) requiring consent under Part 4 of the *Environmental Planning and Assessment Act 1979* (NSW) (EP&A Act).

1.1.2 Location

The BESS is proposed on a portion of Lot 204 DP 753342 at 204 Ortlipp Road, Glenellen New South Wales (NSW) 2642 (the 'BESS site'). The existing Jindera substation is located on Lot 1 DP 588720, at 140 Ortlipp Road, Jindera NSW 2642 (the 'substation site'), approximately 500 m south of the BESS site. The transmission line will traverse an area of Unformed Crown Road, and the water pipeline will be installed within existing road reserves.

Collectively, these properties are hereafter referred to as the 'subject land'. The subject land is located within the Greater Hume Local Government Area (LGA). Refer to Figure 1 and Figure 2.

1.1.3 Proposed Development and the Subject Land

The proposed development will involve the following components:

- Transport of construction personnel associated heavy and light vehicles, and materials to and from the subject land on a day-to-day basis, depending on the construction schedule.



- Site establishment works, including native vegetation clearing within the BESS boundary and transmission line footprint, bulk earthworks, and a temporary construction compound.
- Road works to formalise internal site access road to accommodate heavy vehicles and a new driveway crossing, as well as to seal a portion of Ortlipp Road and formalise two vehicle entry/exit points.
- Construction of hardstand areas, paved internal roads, control room and switch gear, auxiliary transformer, battery enclosures, and inverter and transformer stations.
- Construction of an overhead 330 kV transmission line within a 60 m wide transmission line easement to facilitate connection to the existing Jindera 330/132 kV TransGrid substation, including associated high-voltage steel poles.
- Construction of three transmission line towers that will be approximately 30 m in height with a ground clearance of 7.5 m. The towers will be located within the BESS site and substation site, with only the overhead lines passing within the Unformed Crown Road Reserve.
- Construction of ancillary works, including parking areas, water tank, storage structures, stormwater management infrastructure, and security lighting and fencing.
- Vegetative screening.
- Installation of an acoustic barrier.
- Removal of temporary construction facilities and rehabilitation of disturbed areas following completion of construction works.
- Construction of water pipeline via underground boring, including four indicative laydown clearing areas.

The construction schedule is expected to be approximately 10 months, and the BESS site is anticipated to be decommissioned after 20-25 years. The proposed development is depicted in Figure 3.

The subject land comprises 40.81 ha, as shown in Figure 1. Most of the proposed development footprint will form the 'operational footprint', with a temporary construction compound the only feature expected to form the 'construction footprint'.

The subject land is located within the South Western Slopes IBRA region and Lower Slopes IBRA subregion. The site is positioned at an elevation of approximately 220 m Above Sea Level (ASL) and is flat. The *Reconnaissance Soil and Land Resources of the Murray Catchment* (NSW DCCEEW, 2024a) maps the soil landscapes of subject land as Kindra in the north (the BESS site) and Yarra Yarra in the south (the substation site and a small portion of the southern tip of the BESS site, as well as the proposed pipeline route).

The Kindra soil landscapes generally comprise broad, gently sloping plains formed on colluvium below metasedimentary hills, with slopes of 1-3% and local relief <5 m. The geology is quaternary slopewash derived from Ordovician metasediments. Parent materials consist of gravel, sand, silt and clay colluvial deposits. Soils include red chromosols (red-brown earths), red dermosols (brown podzolic soils and non-calcic brown soils), and red kurosols (red podzolic soils).

The Yarra Yarra soil landscapes are characterised by gently inclined footslopes and fans on granite-derived colluvium, with slopes of 2-8%, and local relief 10-30 m. The geology is Quaternary colluvium derived from the adjacent Jindera Granite, with some scattered outcrop. Soils on upper and midslopes are very deep (>1.5 m), imperfectly to moderately



well-drained red, brown and yellow chromosols (podzolic soils). Soils on lower slopes are typically deep (1-1.5 m), imperfectly drained brown and grey sodosols and kurosols (soloths and solodized solonetz soils). Fans contain very deep (1.5-5 m), well-drained orthic tenosols (earthy sands).

An Aboriginal due diligence assessment (Artefact, 2023) describes the soils at the site as “*light brown, sandy silt, with minor inclusions of small, rounded gravel clasts*” and at a dam on the northern property as containing “*light grey silty sand*”. Soils were also assessed to 1 m depth, recording silty loam topsoils transitioning to light and moderate clays (Water Technology, 2025).

There is one mapped watercourse within the subject land: Kilnacroft Creek, which occurs in the western corner of the substation site. Kilnacroft Creek is a third-order ephemeral stream meandering east-west through the landscape buffer. There are also two small dams within each property.

The subject land has undergone historic clearing, although various patches of native vegetation remain. Historic aerial imagery indicates that the BESS site and substation site were used for cropping in 1961 (Premise, 2024b). The BESS site is currently used for farming, whilst the substation site forms a transmission substation. The road reserve is mostly vegetated, with various small areas of past clearing and disturbance to facilitate existing services, site access and road maintenance.

The biodiversity values map does not include areas of vegetated land but does include a buffer area along Kilnacroft Creek (Figure 4).

1.1.4 Other Documentation

A preliminary ecological assessment, involving a brief site inspection, was previously undertaken by RPS (2023). Portions of the subject land and adjacent properties have also been assessed by Eco Logical Australia (2023) and NGH Environmental (2019) for associated solar farm developments. The current biodiversity assessment draws partly on information within the previous studies (as background), supplemented and superseded by additional work undertaken by SLR in 2024 and 2025.

Other documents relied upon for the current proposal include:

- Environmental Impact Statement (SLR, 2025a)
- Landscape Character and Visual Impact Assessment (SLR, 2025b)
- Transport Impact Assessment (SLR, 2025c)
- Noise and Vibration Impact Assessment (SLR, 2025d)
- Waste Management Plan (SLR, 2025e)
- Hazard and Risk Assessment (SLR, 2025f)
- Social Impact Assessment Report (SLR, 2025g)
- Light Spill Assessment (SLR, 2025h)
- Bushfire Risk Assessment Report (SLR, 2025i)
- Aboriginal Cultural Heritage Assessment (Virtus Heritage, 2025)
- Flood Risk and Impact Assessment Report (Water Technology, 2025)
- Heritage Impact Statement (Premise, 2024a)
- Agricultural Impact Assessment (Premise, 2024b)



- Economic Assessment (Gillespie Economics, 2025)
- Land Use Conflict Risk Assessment (Premise, 2025)

1.2 Objectives and Project SEARs

The SEARs for the EIS (Application SSD-68815961, issued 18 April 2024) require the preparation of a BDAR, inclusive of an aquatic assessment. In relation to 'biodiversity' and 'aquatic ecology', the following requirements are listed in the SEARs:

- 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), the Biodiversity Assessment Method (BAM) 2020 and documented in a Biodiversity Development Assessment Report (BDAR). 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 (SAIL) 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, 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.
- If an offset is required, details of the measures proposed to address the offset obligations.

The BDAR has been prepared using the approved template and addresses specific advice provided by the Biodiversity, Conservation and Science Group (BCS) of NSW DCCEW in their SEARs (dated 2 April 2024) regarding the composition of grassland areas, consideration of impacts to the threatened Squirrel Glider (*Petaurus norfolcensis*), and detailed mitigation measures for all potential impacts to threatened species.

The aquatic assessment also addresses key issues raised by DPI (Fisheries) in their SEARs (dated 22 March 2024), including:

- Waterway crossings – designed to facilitate fish passage.
- Riparian buffer zones maintained to limit bed and bank erosion.
- Threatened Species, Populations and Ecological Communities – *Fisheries Management Act 1994* (FM Act). Kilnacraft Creek is indicative habitat for Flathead galaxias and Southern pygmy perch – both species are listed under threatened species provisions of the FM Act.

The aquatic ecology assessment evaluates potential impacts on waterways and key fish habitats within the subject land and assessment area, including Kilnacraft Creek, as per the SEARs. It includes an assessment of impacts to listed aquatic threatened species,



populations or ecological communities, under State and Federal legislation and provides a detailed description of measures to minimise and rehabilitate impacts.

The assessment was carried out in accordance with the NSW Department of Primary Industries (Fisheries) *Policy and Guidelines for Fish Habitat Conservation and Management (Updated 2013)* (DPI, 2013) and includes:

- Clear identification of waterways that may be affected either directly or indirectly by the development or activity.
- A description of aquatic and riparian vegetation present, with photographs and maps where relevant.
- The extent of aquatic habitat removal or modification resulting from the Project.
- Details of the location of any construction activities that may affect waterways, including access tracks and transmission towers, and a construction timetable with details of various phases.
- Details of methodology (e.g. directional drilling, trenching, boring) for any works within or adjacent to waterways.
- Management measures during construction and post-completion to minimise impacts e.g. Environment Management Plans.

1.3 Excluded Impacts

The subject land includes areas of 'Category 1 – Exempt Land', 'Category 2 – Regulated Land' and 'Category 2 – Vulnerable Regulated Land' as mapped under the Draft Native Vegetation Regulatory Mapping (see Figure 5).

As the proposal is a State Significant Development, impacts are not excluded and are assessed in accordance with the BAM.

1.4 Matters of National Environmental Significance

An assessment of EPBC Act matters and a Protected Matters Search Report is provided in Appendix E, and EPBC Act matters are also addressed throughout relevant sections of the BDAR. The assessment concludes that the project will not have a significant impact on any matters listed under the EPBC Act and as such, no referral is to be lodged.

1.5 Information Sources

Existing information on the terrestrial and aquatic flora and fauna of the subject land and surrounding locality, including relevant threatened biota, was sourced from the following resources:

- NSW BioNet (NSW DCCEEW, 2024b), Protected Matters Search Tool (Commonwealth DCCEEW, 2024a) and Atlas of Living Australia (CSIRO, 2024) for previous records of threatened species, populations, and ecological communities within a 10 km radius centred on the subject land.
- NSW BioNet 'Threatened Biodiversity Data Collection' (NSW DCCEEW, 2024b), Final Determinations (TSC, 2024) and Species Profile and Threats Database (Commonwealth DCCEEW, 2024b) for information on threatened species, populations and ecological communities.
- Preliminary Ecological Assessment (RPS, 2023), Glenellen Solar Farm BDAR (EcoLogical, 2023), Jindera Solar Farm BDAR (NGH Environmental, 2019) and



BioNet Vegetation Classification (NSW DCCEE, 2024c) for information on Plant Community Types (PCTs).

- The Department of Primary Industries (DPI) Fish Communities and Threatened Species Distribution of NSW (DPI, 2016) and DPI Threatened Species Lists (DPI, 2024a) for information on threatened aquatic species.

A full list of resources is provided in Section 13.0.



2.0 Methods

2.1 Site Context Methods

2.1.1 Landscape Features

Various field surveys were undertaken by SLR in 2024 and 2025 to identify landscape features within the subject land. The key methods used to identify landscape features in the assessment area include review of:

- Recent Nearmap aerial imagery (Nearmap, 2025).
- Regional vegetation mapping (NSW DCCEEW, 2022; NSW DCCEEW, 2024c).
- Other general GIS data (e.g. wetlands, cliff lines, EPI protection layers) available on the SEED portal (NSW DCCEEW, 2024d).

2.1.2 Native Vegetation Cover

Regional native vegetation mapping for the subject land (NSW DCCEEW, 2022) was compared to Nearmap aerial imagery (2025) and verified through field reconnaissance by SLR in 2024/2025. A review of regional vegetation mapping (NSW DCCEEW, 2022) and aerial imagery (Nearmap, 2025) was undertaken to confirm the extent of native vegetation cover in the assessment area (Section 3.3).

2.2 Native Vegetation, Threatened Ecological Communities and VI Methods

2.2.1 Existing Information

Existing information used to identify PCTs (Section 4.2) and TECs (Section 4.3) for the subject land included regional vegetation mapping (NSW DCCEEW, 2022 - Versions C1.1M1.1 and C2.0M2.0), investigations by other ecological consultants (RPS, 2023; EcoLogical, 2023; NGH Environmental, 2018) and the associated profiles available in the BioNet Vegetation Classification (NSW DCCEEW, 2024c), as well as relevant Scientific Determinations (TSC, 2024; Commonwealth DCCEEW, 2024b).

One BAM plot was undertaken within the subject land in 2017 (NGH Environmental, 2019), and an additional three plots were completed in 2018 (EcoLogical, 2023). This data has been used to support the PCT determination.

2.2.2 Mapping Native Vegetation Extent

Regional vegetation mapping (NSW DCCEEW, 2022) and recent Nearmap aerial imagery (2025) were compared and verified through field reconnaissance conducted by SLR in 2024/2025.

2.2.3 Plot-based Vegetation Survey

Plot-based vegetation surveys, in accordance with BAM Subsection 4.2.1, were undertaken by SLR during winter and spring 2024. The spring surveys included an update of the BAM plots sampled in winter 2024, to verify the cover and abundance of plants during the growth season. Data from the current survey is provided in Appendix F and the plot locations are shown in Figure 6. Sampling locations were generally selected at random and in accordance with BAM requirements.



2.2.4 Vegetation Integrity Survey

The methods used to undertake the Vegetation Integrity (VI) survey (Subsection 4.5.1) were consistent with BAM Subsection 4.3.4. The number of VI plots sampled in each vegetation zone was determined in accordance with Table 3 of the BAM. Within the subject land, six 20 m by 50 m (1,000 m²) plots/transects ('BAM plots'), each containing a nested 20 m by 20 m (400 m²) floristic plot, were established and sampled. Four plots were located in one zone (containing vegetation in moderate condition) and two plots in another zone (containing vegetation in low condition), as noted below.

The number of vegetation integrity plots completed per vegetation zone within the subject land is presented in Table 1. The vegetation survey completed for this BDAR meets or exceeds the minimum plot requirements per zone under the BAM. One BAM plot (BAM01) has been removed from the VI assessment because it was not representative of the PCT 277 vegetation zones. This plot was initially located to sample the variation in species composition and vegetation structure across the woodland vegetation on the site and was positioned in small area that exhibits open-wetland characteristics.

Originally, following the PCT assessment, it was incorporated into the PCT 277_Moderate vegetation zone. However, further analysis of VI scores and plot data revealed the plot to be uncharacteristic of PCT 277, due to historical disturbance factors, including clearing, earthworks and modifications to surface hydrology. This means three out of four plots were used in the assessment for the 277_Mod vegetation zone (see Table 1), which still meets the minimum plot requirements of this zone under the BAM.

Table 1: Vegetation Integrity Plots

Vegetation Zone	Area (ha)	BAM Category	Plots Required	Plots Completed	Plots used in BAM-C
277_Mod	13.55	>5-20ha	3	4	3
277_Low	2.79	>2-5ha	2	2	2

2.3 Threatened Flora Survey Methods

2.3.1 Review of Existing Information

The BAM calculator and a BioNet Atlas search were used to compile a list of threatened flora species for consideration as target threatened species. The TBDC was then used to identify habitat constraints and potential microhabitats (see Section 5.1) for each species likely to occur within the PCTs mapped for the subject land.

2.3.2 Habitat Constraints Assessment

Field surveys to assess habitat constraints and microhabitats (see Section 5.1) were undertaken by SLR in 2024/2025.

Specific habitat assessment survey techniques for threatened flora species included:

- Opportunistic and incidental observations during all field surveys.
- Inspection, note-taking, GPS recording, and photography of waterbodies and other incidental habitat features detected during site surveys by SLR.



2.3.3 Field Surveys

Targeted surveys for threatened flora species, were conducted during spring and summer 2024/2025, as follows:

- *Swainsona sericea* - October 2024 for all areas except the water pipeline
- *Swainsona recta* - October 2024 for all areas except the water pipeline
- *Cullen parvum* - December 2024 for the water pipeline, December 2025 for the remainder of the proposed development footprint area

The parallel surveys of the proposed water pipeline route were conducted during December 2024, outside of the correct survey months for the *Swainsona* spp, which are September, October, November. Therefore, these two species have been assumed present within the water pipeline route due to the presence of suitable habitat (but not within the BESS site due to absence of sightings during surveys).

Field survey tracks by month are shown in Figure 6.

2.4 Threatened Fauna Survey Methods

2.4.1 Review of Existing Information

The BAM calculator and BioNet Atlas search were used to compile a list of threatened fauna species for consideration as target threatened species. The TBDC was then used to identify habitat constraints and potential microhabitats (see Section 5.1) for each species likely to occur within the PCTs mapped for the subject land.

2.4.2 Habitat Constraints Assessment

Various field surveys to assess habitat constraints and microhabitats (see Section 5.1) were undertaken by SLR in 2024-2025. Specific habitat assessment survey techniques for threatened fauna species included:

- Mapping hollow-bearing trees.
- Searching for areas of rocky ground.
- Conducting Koala SAT surveys, including searches for Koala scratches and scats.
- Recording opportunistic and incidental observations of fauna species during field surveys, including signs of fauna activity such as scats, tracks, burrows, or other traces.

2.4.3 Field Surveys

Surveys undertaken by SLR to target threatened fauna species include:

- Twelve nights of call playback surveys on 2 July 2024, 3 July 2024, 4 July 2024, 29 July 2024, 30 July 2024, 31 July 2024, 30 October 2025, 24 November 2025, 25 November 2025, 26 November 2025, 16 December 2025 and 17 December 2025 to target Bush Stone-curlew, Barking Owl, Masked Owl and Koala.
- Three days of Koala SAT searches on 2 July 2024, 3 July 2024 and 4 July 2024.
- Six nights of spotlighting on 29 July 2024, 30 July 2024, 8 October 2024, 9 October 2024, 17 December 2024 and 18 December 2024 to target the Koala and Squirrel Glider.



- One hundred and four nights of arboreal remote camera recording (52 nights, 2 cameras) from 9 October 2024 to 11 October 2024, and from 30 October 2025 to 17 December 2025 to target the Eastern Pygmy-possum.
- Eleven days of diurnal bird/habitat surveys on 8 October 2024, 9 October 2024, 10 October 2024, 11 October 2024, 18 December 2024, 19 December 2024, 30 October 2025, 31 October 2025, 25 November 2025, 26 November 2025 and 27 November 2025 to target Superb Parrot, Gang-gang Cockatoo, Little Eagle, Square-tailed Kite, White-bellied Sea-Eagle, Bush Stone-curlew and Grey-headed Flying-fox.
- Four nights of targeted bat surveys on 17 March 2025, 18 March 2024, 19 March 2024, 20 March 2025 to target Southern Myotis.

Targeted threatened fauna survey locations are shown in Figure 6.

2.5 Aquatic Assessment

2.5.1 Review of Existing Information

A review of information and data was completed in August 2024 to gain an understanding of aquatic ecology values within the assessment area and the broader study locality (within 10 km of the subject land). The sources reviewed are listed in Section 1.5. Sensitive ecological sites and areas protected under State and local Environmental Planning Instruments (EPIs) due to their ecological significance (e.g. National Parks and Reserves, wetlands and other conservation areas) were also identified using the following resources:

- Critical Habitat Register (DPI, 2024b)
- Fisheries Register (DPI, 2024c)
- Key Fish Habitat Maps (DPI, 2024d)
- Register of Critical Habitat (Commonwealth DCCEEW, 2024d)
- Directory of Important Wetlands Australia (Commonwealth DCCEEW, 2024c)

2.5.2 Habitat Assessment

An aquatic habitat assessment of Kilnacraft Creek, within and adjacent to the subject land, was undertaken to describe the aquatic habitat and assess the likelihood of occurrence of threatened or migratory species, threatened populations or ecological communities with potential to occur within the assessment area. The likelihood of occurrence criteria are detailed in Table 2.

Species are considered 'likely to occur' (i.e. moderate to high likelihood of occurrence) where:

- The species' geographic distribution is known or predicted to include the drainage catchment in which the project is located; and
- The assessment area contains habitat features or components associated with the species; or
- Past or current surveys undertaken within the project footprint indicate the species is present.

A test of significance (under the FM Act or BC Act) and/or an assessment of significance (under the EPBC Act) was completed for aquatic species considered 'likely to occur'.



Table 2: Likelihood of Occurrence Criteria

Likelihood	Criteria
Recorded	The species was observed in the assessment area during the current survey
High	It is highly likely that a species inhabits the assessment area and is dependent on identified suitable habitat (i.e. for breeding or important life cycle periods), has been recorded recently (within 20 years) in the locality (five kilometres) and is known or likely to maintain resident populations in the assessment area. Also includes species known or likely to visit the assessment area during regular seasonal movements or migration.
Moderate	Potential habitat is present in the assessment area. Species unlikely to maintain sedentary populations, however, may seasonally use resources within the assessment area opportunistically or during migration. The species is unlikely to be dependent (i.e. for breeding or important life cycle periods) on habitat within the assessment area, or habitat is in a modified or degraded state.
Low	It is unlikely that the species inhabits the assessment area and has not been recorded recently in the locality (five kilometres). It may be an occasional visitor, but habitat similar to the assessment area is widely distributed in the local area, meaning that the species is not dependent on available habitat.
Unlikely	Suitable habitat is absent from the assessment area.

2.5.3 Field Inspection

An inspection of the subject land and the assessment area within the vicinity of Kilnacroft Creek was conducted in October 2024 to evaluate the extent and quality of aquatic habitat and to assist in describing existing aquatic habitat that may be affected by the current Project. The inspection included a site meander to ground-truth the findings of the background review and aquatic habitat assessment, with particular attention given to aquatic species of conservation concern that may occur within the subject land. No sampling of aquatic fauna was undertaken during the field inspection due to the minimal water present in Kilnacroft Creek at the time.

2.6 Weather Conditions

General environmental conditions leading up to the 2024/2025 surveys were influenced by two to three years of intermittent La Niña weather patterns. Weather conditions during the surveys are summarised in Table 3.

With respect to weather conditions required for target threatened species:

- Call playback surveys for target nocturnal species (Bush Stone-curlew, Barking Owl, Masked Owl) generally require calm, clear, evenings – conditions on the evenings of the surveys were calm and clear.
- Koala SAT surveys must be undertaken following three consecutive days without rain. Although rain was recorded at the nearest weather station, there was no rain forecast for the subject land prior to or during the surveys.



Table 3: Environmental Conditions during Threatened Species Surveys

Survey undertaken (e.g. method / targeted species)	Date	Time	Temperature (min. & max.)	Wind (light, mod or km)	Rainfall (mm)	Other conditions
Lead up to Koala SATs	29 June 2024	9am-3pm	6.9-12.6	13-4	0	n/a
Lead up to Koala SATs	30 June 2024	9am-3pm	3.9-14	Calm-6	19	n/a
Lead up to Koala SATs	1 July 2024	9am-3pm	-1.2-13.2	Calm-7	0	n/a
Koala SATs, call playback, floristic quadrats	2 July 2024	9am-3pm	0.9-14.2	4-9	0.2	Calm, clear evening
Koala SATs, call playback, floristic quadrats	3 July 2024	9am-3pm	-1.2-15	Calm-13	0	Calm, clear evening
Koala SATs, call playback, floristic quadrats	4 July 2024	9am-3pm	1.3-14.1	2-11	0	Calm, clear evening
Call playback, spotlighting	29 July 2024	9am-3pm	-1.4-13.4	6-11	0	Calm, clear evening
Call playback, spotlighting	30 July 2024	9am-3pm	-3.3-13.5	4-9	0.2	Calm, clear evening
Call playback	31 July 2024	9am-3pm	-2.4-14.7	2-7	0	Calm, clear evening
Bird survey, spotlighting	8 October 2024	9am-3pm	5.4-18.5	22-17	0	n/a
Bird survey, threatened flora searches, spotlighting, arboreal camera trapping	9 October 2024	9am-3pm	4.3-20.9	11-9	0	n/a
Bird survey, floristic quadrats, threatened flora searches, arboreal camera trapping	10 October 2024	9am-3pm	4.8-23.3	9-13	0	n/a
Bird survey, threatened flora searches, arboreal camera trapping	11 October 2024	9am-3pm	8.4-25.6	Calm-13	0	n/a
Spotlighting	17 December 2024	9am-3pm	26.1-30.2	24-26	0	n/a
Bird survey, spotlighting, threatened flora searches	18 December 2024	9am-3pm	13-28.1	24-19	0	n/a
Bird survey, threatened flora searches	19 December 2024	9am-3pm	12.7-29.4	4-11	0	n/a
Bat survey	17 March 2025	9am-3pm	9.3-22.4	7-11	3.8	n/a
Bat survey	18 March 2025	9am-3pm	8.7-27.2	7-13	0	n/a



Survey undertaken (e.g. method / targeted species)	Date	Time	Temperature (min. & max.)	Wind (light, mod or km)	Rainfall (mm)	Other conditions
Bat survey	19 March 2025	9am-3pm	13.3-34.3	4-17	0	n/a
Bat survey	20 March 2025	9am-3pm	17.6-25.2	11-15	0	n/a
Bat survey	21 March 2025	9am-3pm	19.8-28	11-22	38.4	n/a
Bird survey, call playback, arboreal camera trapping	30 October 2025	9am-3pm	8-25	2-9	0	Calm clear evening
Bird survey, arboreal camera trapping	31 October 2025	9am-3pm	11.9-24.2	9-20	0	n/a
Arboreal camera trapping	1 November 2025	9am-3pm	14.5-28.9	11-13	0	n/a
Arboreal camera trapping	2 November 2025	9am-3pm	12.1-31.6	9-13	0	n/a
Arboreal camera trapping	3 November 2025	9am-3pm	17.6-21.9	7-22	0	n/a
Arboreal camera trapping	4 November 2025	9am-3pm	10.6-15.9	17-15	11	n/a
Arboreal camera trapping	5 November 2025	9am-3pm	8.6-20.2	13-20	4.6	n/a
Arboreal camera trapping	6 November 2025	9am-3pm	6.1-25	7-9	0.2	n/a
Arboreal camera trapping	7 November 2025	9am-3pm	13.1-31.7	9-17	0	n/a
Arboreal camera trapping	8 November 2025	9am-3pm	15.4-25.2	19-31	0	n/a
Arboreal camera trapping	9 November 2025	9am-3pm	8.3-21.8	7-20	0	n/a
Arboreal camera trapping	10 November 2025	9am-3pm	5.3-21.7	17-22	0	n/a
Arboreal camera trapping	11 November 2025	9am-3pm	6.3-16.4	19-37	0	n/a
Arboreal camera trapping	12 November 2025	9am-3pm	1.4-21.4	19-24	0.4	n/a
Arboreal camera trapping	13 November 2025	9am-3pm	4.3-29.1	9-31	0	n/a
Arboreal camera trapping	14 November 2025	9am-3pm	9.8-28.5	2-17	0	n/a
Arboreal camera trapping	15 November 2025	9am-3pm	11.4-32.1	11-30	0.4	n/a
Arboreal camera trapping	16 November 2025	9am-3pm	12.6-24.4	17-31	0	n/a



Survey undertaken (e.g. method / targeted species)	Date	Time	Temperature (min. & max.)	Wind (light, mod or km)	Rainfall (mm)	Other conditions
Arboreal camera trapping	17 November 2025	9am-3pm	10.4-18.2	20-20	3.6	n/a
Arboreal camera trapping	18 November 2025	9am-3pm	11.3-24.3	11-19	0	n/a
Arboreal camera trapping	19 November 2025	9am-3pm	11.7-29.4	6-20	0	n/a
Arboreal camera trapping	20 November 2025	9am-3pm	10.8-25.2	15-22	0.2	n/a
Arboreal camera trapping	21 November 2025	9am-3pm	10.5-27.3	19-20	0.2	n/a
Arboreal camera trapping	22 November 2025	9am-3pm	12.2-29.2	9-15	0	n/a
Arboreal camera trapping	23 November 2025	9am-3pm	17.9-28.7	20-19	0.4	n/a
Call playback, Arboreal camera trapping	24 November 2025	9am-3pm	15.8-31.4	19-7	0.2	Calm, low cloud
Bird survey, call playback, arboreal camera trapping	25 November 2025	9am-3pm	18.6-32.1	11-31	0	Calm, low cloud
Bird survey, call playback, arboreal camera trapping	26 November 2025	9am-3pm	12.1-25.8	20-44	0	Moderate wind, no cloud
Bird survey, arboreal camera trapping	27 November 2025	9am-3pm	12.5-25.3	19-19	0	n/a
Arboreal camera trapping	28 November 2025	9am-3pm	8.1-28.9	6-24	0	n/a
Arboreal camera trapping	29 November 2025	9am-3pm	15.3-25.1	20-31	10	n/a
Arboreal camera trapping	30 November 2025	9am-3pm	11.2-19.4	13-20	0.4	n/a
Arboreal camera trapping	1 December 2025	9am-3pm	8.6-17.8	17-13	n/a	n/a
Arboreal camera trapping	2 December 2025	9am-3pm	6.1-21.8	13-20	5.2	n/a
Arboreal camera trapping	3 December 2025	9am-3pm	8.3-29	7-17	0.2	n/a
Arboreal camera trapping	4 December 2025	9am-3pm	11.1-34.1	7-26	0	n/a
Arboreal camera trapping	5 December 2025	9am-3pm	12.2-38.9	9-22	0	n/a
Arboreal camera trapping	6 December 2025	9am-3pm	23.1-31.5	6-20	0	n/a
Arboreal camera trapping	7 December 2025	9am-3pm	10.1-23.7	13-19	0.2	n/a



Survey undertaken (e.g. method / targeted species)	Date	Time	Temperature (min. & max.)	Wind (light, mod or km)	Rainfall (mm)	Other conditions
Arboreal camera trapping	8 December 2025	9am-3pm	8.7-29.3	9-17	0	n/a
Arboreal camera trapping	9 December 2025	9am-3pm	11-33.1	7-24	0	n/a
Arboreal camera trapping	10 December 2025	9am-3pm	14.7-32.2	6-31	0	n/a
Arboreal camera trapping	11 December 2025	9am-3pm	17.1-32.1	17-11	0	n/a
Arboreal camera trapping	12 December 2025	9am-3pm	14.3-31.6	17-19	0	n/a
Arboreal camera trapping	13 December 2025	9am-3pm	16.6-26.7	11-19	0	n/a
Arboreal camera trapping	14 December 2025	9am-3pm	14.2-29.3	11-35	0.2	n/a
Arboreal camera trapping	15 December 2025	9am-3pm	10.2-26	15-15	0.2	n/a
Call playback, Arboreal camera trapping	16 December 2025	9am-3pm	10.3-31.1	15-6	0	Calm clear evening
Threatened flora searches, Arboreal camera trapping	17 December 2025	9am-3pm	13.7-36.5	7-19	0	Calm clear evening
Arboreal camera trapping	18 December 2025	9am-3pm	17.6-40.7	7-26	0	n/a
# Weather data sourced from BOM 2026. Temperature, wind and rainfall data sourced from Albury AWS station (number 72160) located at Albury Airport, NSW (i.e. approximately 20 km south southwest of the subject land).						



2.7 Limitations

2.7.1 Biodiversity Surveys

Given the duration and timing of the field surveys, it is likely that some species that may occur within the subject land (i.e. permanently, seasonally, or transiently) were not detected. However, a detailed habitat assessment was undertaken to inform the 'likelihood of occurrence' of threatened species known or predicted to occur within the locality. Limitations relating to survey timing in connection with candidate species is addressed in Section 5.3.

Multiple threatened flora species were surveyed simultaneously during targeted flora searches (see Section 2.3), and multiple fauna species were also targeted during fauna surveys (see Section 2.4). This approach is unlikely to have affected the outcomes of the fieldwork. Because the initial VI surveys were conducted in winter 2024 and did not adequately represent the understorey, supplementary BAM plot surveys were completed in spring 2024.

Site conditions (including the presence of threatened flora and fauna species) may change after the date of this report. SLR does not accept responsibility for any changes to site conditions arising from, or in connection with, such changes. SLR is also not responsible for updating this report should site conditions change.

The SLR ecology team operates under a Scientific Licence (Licence No. SL100176, issued under the BC Act), which authorises field staff to trap, capture, harm, hold and release plants and animals protected under the BC Act and the *National Parks and Wildlife Act 1974*. The team also holds an Animal Research Authority (issued by the Secretary of the NSW Animal Care and Ethics Committee of NSW DCCEE), which permits the trapping of animals in NSW for the purposes of 'animal research'.

Soft copies of data files relating to the SLR surveys have been archived on the SLR project server.

2.7.2 Aquatic Survey

The field inspection is influenced by a range of factors and limitations. For this type of inspection, limitations are generally due to a single, short duration inspection which does not account for seasonal or other temporal variation. The detection of certain species may be affected by:

- The sometimes-ephemeral nature of aquatic habitat.
- Seasonal migration (particularly for migratory and transient species).
- Seasonal availability of resources.
- Weather conditions during the survey period (as some species exhibit activity cycles related to specific weather conditions).
- Species lifecycle.

These potential limitations have been addressed by applying the precautionary principle in cases where inspection methods may have given a false negative result (e.g. a species that could reasonably be expected to occur, based on previous records and available habitat, was not observed). All species, including threatened species, have been assessed based on the presence of suitable habitat and the likely significance of that habitat to a viable local population.



3.0 Site Context

3.1 Assessment Area

The assessment area is the area of land within the 1,500 m buffer zone surrounding the subject land and is presented in Figure 2. The assessment area covers a total of 1,779.70 ha.

3.2 Landscape Features

Landscape features identified within the subject land and assessment area are shown on Figure 1 and Figure 2, respectively. A discussion of relevant landscape features is provided below.

3.2.1 IBRA Bioregions and IBRA Subregions

The subject land lies within the NSW South Western Slopes IBRA Region, located on the lower inland slopes of the Great Dividing Range. This region occupies approximately 10% of NSW and extends from north of Cowra through southern NSW into western Victoria (NPWS, 2003). It is dominated by a sub-humid climate, characterised by hot summers and no distinct dry season.

The subject land is wholly within the Lower Slopes IBRA Subregion. This subregion is characterised by Ordovician to Devonian folded and faulted sedimentary sequences with inter-bedded volcanic rocks and extensive areas of intrusive granites, as well as large deposits of Tertiary and Quaternary alluvium. Soils include shallow, stony profiles on steep slopes and texture-contrast soils that grade from red subsoils on upper slopes to yellow subsoils on lower slopes. Alluvial sands, loams and clays occur alongside extensive red-brown earths on undulating plains and more extensive grey clays on alluvium.

According to NPWS (2003), vegetation in this region typically comprises Dwyer's Gum on granite, Red Ironbark on sedimentary rocks, Hill Red Gum/White Cypress Pine/Red Stringybark in the ranges, Grey Box/Yellow Box/White Cypress Pine/Belah on lower areas, Poplar Box/Kurrajong/Wilga/Red Box in the north, Mallee in the central west, Myall/Rosewood/Yarran on grey clays, Yellow Box/Polar Box/Belah on alluvial loams, and River Red Gum or Black Box along streams.

3.2.2 Rivers, Streams, Estuaries and Wetlands

Kilnacraft Creek is an ephemeral, third-order stream that crosses the southwest corner of the subject land (see Photo 1). It joins the Bowna Creek system approximately 4 km east of the subject land and eventually flows into the Murray River about 20 km southeast of the site.

There are two dams located on the subject land, as shown in Photo 2 and Photo 3. Within the assessment area, four Floodplain Wetlands have been identified on the NSW wetland layer (NSW DCCEEW, 2010b) (see Figure 2).



Photo 1: Kilnacroft Creek



Photo 2: Waterbody on Northern Lot



Photo 3: Waterbody near the Substation on the Southern Lot



3.2.3 Habitat Connectivity

A review of the available wildlife corridor mapping on the SEED portal (NSW DCCEEW, 2024d) indicates that there is no mapped wildlife corridor associated with the subject land. However, an examination of aerial imagery and regional vegetation mapping (NSW DCCEEW, 2022) for the assessment area suggest that the vegetation and habitats within the subject land are generally connected to those in the broader landscape. The vegetation within the subject land is likely to facilitate wildlife movement in a northeast-southwest direction (see Figure 2).

The proposed development does not involve the construction of wind turbines; therefore, there are no anticipated impacts on flyways for migratory species that pass over the subject land.

3.2.4 Karst, Caves, Crevices, Cliffs, Rocks or Other Geological Features of Significance

The subject land and assessment area do not contain any karst features, caves, crevices, cliffs, rocky outcrops, or areas of geological significance. This has been determined through examination of karst, cave, cliff and geological mapping available on the SEED portal (NSW DCCEEW, 2024d), as well as a review of LiDAR data and aerial imagery to detect potential cliff lines and rocky areas.

3.2.5 Areas of Outstanding Biodiversity Value

There are no areas of outstanding biodiversity value, as defined under the BC Act, within the subject land or the assessment area.



3.2.6 NSW (Mitchell) Landscape

The subject land and assessment area occur entirely within the Brokong Plains Mitchell landscape (DECC, 2002). The Brokong Plains are described as Quaternary alluvial plains. The general elevation is approximately 170 m, with local relief of less than 10 m. Soils consist of red-brown texture-contrast profiles that have been extensively cleared and cropped. Historically, vegetation comprised woodland to open forest dominated by *Eucalyptus microcarpa*, *Eucalyptus melliodora*, *Eucalyptus blakelyi* and *Callitris glaucophylla*.

3.2.7 Additional Landscape Features identified in SEARs

The Secretary's Environmental Assessment Requirements (SEARs) for SSD-68815961 (DPHI, 2024) do not identify any additional landscape features requiring assessment in relation to the BDAR.

3.2.8 Soil Hazard Features

As the proposed development does not involve vegetation clearing (i.e. a development requiring approval from the Native Vegetation Panel under Part 5A of the LLS Act, or the Vegetation SEPP), soil hazard features are not relevant.

3.3 Native Vegetation Cover

Native vegetation cover within the assessment area was mapped using regional vegetation mapping (NSW DCCEEW, 2022) and a review of aerial imagery (Nearmap, 2025).

Table 4 provides a summary of the extent of native vegetation cover in the assessment area, and Figure 2 illustrates its distribution.

Table 4: Native Vegetation Cover in the Assessment Area

Assessment area (ha)	1,779.7
Total area of native vegetation cover (ha)	573.6
Percentage of native vegetation cover (%)	32
Class (0-10, >10-30, >30-70 or >70%)	>30-70

3.4 Existing Aquatic Environment

This section describes the existing environment within the subject land and assessment area, based on the findings of the desktop review and the completed field inspection of Kilnacraft Creek. This description provides the basis for the impact assessment and the development of environmental management recommendations.

3.4.1 Flow Regime

An examination of numerous historical aerial maps (Nearmap, 2025) of Kilnacraft Creek within the subject land, spanning several years (dating back to around 2010), revealed that minimal water and low flow were likely present before and after the times of image capture. This indicates that Kilnacraft Creek is ephemeral in nature, with flow generally minimal except during periods of high rainfall.



3.4.2 Aquatic Habitat and Vegetation

During the recent site inspection, minimal water was observed within Kilnacroft Creek, consisting only of small, disconnected shallow pools scattered sporadically along the creek line throughout the subject land and beyond (Photo 4, Photo 5, Photo 6). A larger dam, located immediately southwest of the subject land boundary, was the only substantial waterbody observed along the creek during the site inspection. This dam may provide some refuge for aquatic organisms during periods of low rainfall and creek flow; however, limited connectivity with other waterbodies in the area restricts fish movement along the creek line and, therefore, it is not considered valuable aquatic habitat. Where water was present, clarity was poor, although no odour or foam/scum was observed on the water surface. The inspection indicated a lack of quality aquatic habitat within the creek, such as large woody debris and snags, instream native macrophytes, gravel beds and undercuts within and near the subject land.

The creek bed through the subject land and beyond was predominantly covered with dense pasture grasses and exotic weeds, with some *Juncus* spp. interspersed in certain areas (Photo 7). Based on this vegetation cover, it appeared that very little flow has occurred in the creek for some time. The creek bed was generally stable due to the density of exotic grass cover, although some low-lying areas where water had accumulated were soft and loose (Photo 8).

Surrounding land use beyond the immediate riparian zone was primarily pastoral. Within the subject land itself, very little woody vegetation was present within the riparian zone (Photo 9). Riparian vegetation consisted mainly of pasture grasses and exotic weeds, with occasional *Juncus* spp. and some canopy-covering Eucalypt species. Further upstream, larger pockets of woody riparian vegetation were observed; however, connectivity and continuity of the riparian strip were limited. Similar to bed stability, creek bank stability was generally good, aided by the dense pasture grasses binding the bank soils.

Photo 4: Adjoining Property to the South with Scattered Shallow Pools

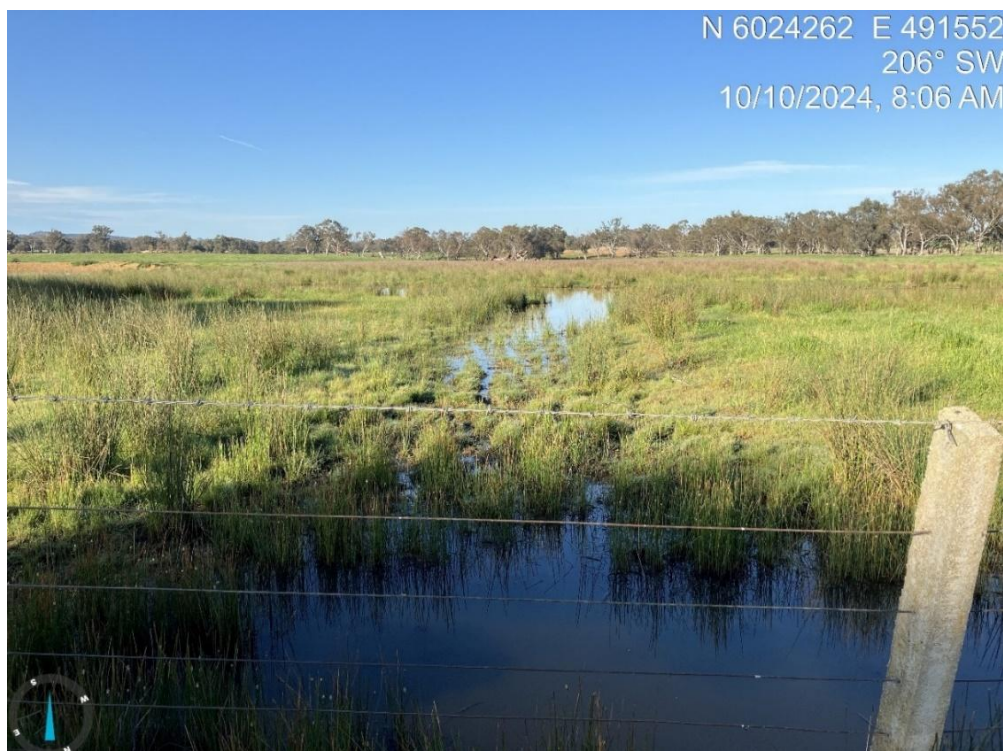


Photo 5: Scattered Shallow Pools in the Southwest Edge of the Subject Land



Photo 6: Adjoining Property to North with Minimal Water Flow along the Creek Line



Photo 7: Creek within Subject Land is Mostly Densey Covered with Pasture Grasses and Exotic Weeds with Some *Juncus* spp. Interspersed in Some Areas



Photo 8: Water Accumulation in Low Lying Areas of the Creek Line



Photo 9: Very Minimal Woody Debris Present within the Riparian Zone



3.4.3 Key Fish Habitat

The indicative Key Fish Habitat (KFH) map provided by NSW DPI within the vicinity of the assessment area indicates that Kilnacraft Creek is considered KFH (Figure 2).

Based on the observations made during the field inspection and the KFH classification criteria outlined in Table 5, the aquatic habitat within Kilnacraft Creek can be considered Type 3 - Minimally Sensitive KFH. The creek's aquatic habitat within the assessment area was largely ephemeral and did not support native aquatic or wetland vegetation.

Although indicative distribution maps for Flathead Galaxias and Southern Pygmy Perch (both listed as threatened species under the FM Act) suggest these species may occur within Kilnacraft Creek near the subject land (see Figure 2), it is considered that suitable aquatic habitat is lacking. Therefore, viable populations are unlikely to rely on this watercourse during any stage of their life cycle.



Table 5 Classification of Key Fish Habitat according to Sensitivity (DPI, 2013)

Classification	Habitat Type
Type 1 – highly sensitive KFH	- Freshwater habitats that contain in-stream gravel beds, rocks greater than 500 millimetres in two dimensions, snags greater than 300 millimetres in diameter or three metres in length, or native aquatic plants. - Any known or expected protected or threatened species habitat or area of declared 'critical habitat' under the FM Act. - Mound springs.
Type 2 – Moderately sensitive KFH	- Freshwater habitats and brackish wetlands, lakes and lagoons other than those defined in Type 1. - Weir pools and dams up to full supply level where the weir or dam is across a natural waterway.
Type 3 – Minimally sensitive KFH	- Freshwater habitats not included in Types 1 or 2. - Ephemeral aquatic habitat not supporting native aquatic or wetland vegetation.
Not considered KFH	- First and second order gaining streams (based on the Strahler method of stream ordering). - Farm dams on first and second order streams or unmapped gullies. - Agricultural and urban drain. - Urban or other artificial ponds (e.g. evaporation basins, aquaculture ponds). - Sections of stream that have been concrete-lined or piped (not including a waterway crossing)

3.4.4 Critical Habitat

The assessment area does not encompass any critical aquatic habitat declared under the FM Act or the EPBC Act.

3.4.5 Wetlands and Other Aquatic Areas of Conservation Significance

There are no nationally important wetlands located within the assessment area.



4.0 Native Vegetation, Threatened Ecological Communities and VI

4.1 Native Vegetation Extent

The subject land covers an area of 40.81 ha, with native vegetation occupying 16.76 ha, or approximately 41%. The extent of native vegetation is shown in Figure 7.

4.1.1 Changes to the Mapped Native Vegetation Extent

Differences between the actual native vegetation extent and the vegetation extent shown on aerial imagery (Nearmap, 2025) used in the figures for this BDAR are due to the presence of exotic pasture and non-native planted vegetation. This is supported by field reconnaissance conducted by SLR in 2024. The native vegetation extent is shown in Figure 7.

4.1.2 Areas that are not Native Vegetation

Areas that are not native vegetation are shown in Figure 7 and include:

- Planted non-native vegetation around the dwelling and substation (see Photo 10).
- Cleared land, consisting of maintained pasture.

These areas were reported by RPS (2023), excluded by regional mapping (NSW DCCEEW, 2022) and verified and updated by SLR in 2024.

Photo 10: Planted Exotic Vegetation and Pasture around Dwelling



4.2 Plant Community Types

4.2.1 Overview

Native vegetation within the subject land has been assessed as corresponding to the BioNet Vegetation Classification PCTs listed in Table 6, with their extent illustrated in Figure 8. Detailed descriptions of each PCT are provided in the following subsections.

Table 6: PCTs Identified Within the Subject Land

PCT ID	PCT name	Subject land area (ha)
277	Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion	16.34
Total area		16.34

4.2.2 PCT 277 Blakely's Red Gum - Yellow Box Grassy Tall Woodland

4.2.2.1 PCT Overview

Table 7 provides an overview of PCT 277, based on data from the BioNet Vegetation Classification, and indicates the extent of this PCT within the subject land.

Table 7: PCT 277 Blakely's Red Gum - Yellow Box Grassy Tall Woodland

PCT ID	277
PCT Name	Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
Vegetation Formation	Grassy Woodlands
Vegetation Class	Western Slopes Grassy Woodlands
Per Cent Cleared Value (%)	94
Extent within Subject Land (ha)	16.34

PCT 277 is typically a tall woodland reaching approximately 20 m in height, with a limited to absent shrub layer and a grassy ground layer. This community occurs in two broad condition states across much of the subject land. Within the subject land, the tree canopy is dominated by *Eucalyptus blakelyi* and *Eucalyptus melliodora*. A single *Eucalyptus albens* was recorded at the site boundary along Ortlipp Road in the northern section of the site. Some *Eucalyptus polyanthemus* were also noted along Ortlipp Road and Lindner Road. The shrub layer is largely absent, with only one shrub species, *Acacia baileyana*, recorded.

The ground layer is dominated by grasses and graminoids, including *Austrostipa scabra*, *Lomandra filiformis*, *Rytidosperma caespitosum*, *Rytidosperma fulvum*, *Rytidosperma setaceum*, *Cymbopogon refractus* and *Microlaena stipoides*. Forbs are present in low abundance and include *Desmodium varians*, *Tricoryne elatior*, *Dichondra repens*, *Hypericum gramineum* and *Rumex brownii*. Weeds are common including *Hypericum perforatum*, *Paspalum dilatatum*, *Phalaris aquatica*, *Lolium perenne*, *Dactylis glomerata*, *Bromus molliformis*, *Bromus diandrus*, *Bromus catharticus*, *Avena fatua*, *Plantago lanceolata*, *Hypochaeris radicata*, *Romulea rosea*, *Arctotheca calendula*, *Cirsium vulgare* and *Conyza bonariensis*.



4.2.2.2 Condition states

Two condition states have been mapped for PCT 277 within the subject land:

- Moderate, being areas that contain a mature canopy with a degraded understorey (see Photo 11).
- Low, being areas of regrowth, with a degraded understorey (see Photo 12).

Photo 11: PCT 277 Blakely's Red Gum - Yellow Box Grassy Tall Woodland - Moderate



Photo 12: PCT 277 Blakely's Red Gum - Yellow Box Grassy Tall Woodland - Low



4.2.2.3 Justification of PCT selection

The evidence-based justification for selecting PCT 277 is provided in Table 8. This PCT was the dominant type mapped within the subject land and was verified by RPS (2023), Ecological (2023) and NGH Environmental (2019). The vegetation is characterised by a canopy of *Eucalyptus blakelyi* and *Eucalyptus melliodora*, an absence of a shrub layer, and a ground layer that has been moderately to heavily degraded due to a history of clearing and farming practices. Lower-lying areas within the subject land also support moisture-tolerant species such as *Carex appressa*; therefore, potential wetland formations were considered when assigning the PCT.

Table 8: PCT 277 Selection

Search Term	Selection
IBRA Bioregion	NSW South Western Slopes
IBRA Sub-region	Lower Slopes
Vegetation Formation	Forested Wetlands, Freshwater Wetlands, Grassy Woodlands
Vegetation Class	Western Slopes Grassy Woodlands, Inland Floodplain Swamps, Inland Riverine Forests
Upper Stratum Species	<i>Eucalyptus blakelyi</i> , <i>Eucalyptus melliodora</i>
Short list	Returned a list of 13 PCTs: 79, 80, 81, 85, 201, 266, 276, 277, 278, 280, 282, 283, 360
Selection	PCT 79 was discarded due to species composition (lacking the dominant canopy <i>Eucalyptus camaldulensis</i>), landscape position (riverbanks and river flats along major watercourses), and distribution (occurring in the upper slopes sub-region of the NSW South-western Slopes Bioregion and extending into the Southeastern Highlands Bioregion). PCT 80 was discarded based on species composition (lacking the dominant <i>Eucalyptus macrocarpa</i> and <i>Callitris glaucophylla</i>) and distribution (mainly restricted to the western section of the NSW South-western Slopes Bioregion). PCT 81 was discarded based on species composition (lacking the dominant <i>Eucalyptus microcarpa</i>), soils (well drained alluvial brown sandy loam to loam) and distribution (typically occurring north of Dubbo, mainly in the Brigalow Belt South Bioregion). PCT 85 was discarded due to species composition (lacking the dominant canopy <i>Casuarina cunninghamiana</i>), soils (gravels, sands and loams) and landscape position (along major watercourses). PCT 201 was excluded based on species composition (lacking the dominant canopy <i>Eucalyptus conica</i>) and distribution (mainly around Forbes). PCT 266 was excluded due to species composition (lacking the dominant canopy <i>Eucalyptus albens</i>) and landscape position (on hill slopes). PCT 276 was discarded due to species composition (dominant species being <i>Eucalyptus melliodora</i>) and distribution (north of the site, from Wagga Wagga to Wellington). PCT 278, although having a similar floristic match to the site, was discarded based on landscape position, being described as occurring “in gullies and on creek flats in hill landscapes or along creeks mainly in the Upper Slopes sub-region of the NSW South-western Slopes Bioregion”.



Search Term	Selection
	PCT 280 was discarded due to species composition (lacking dominant canopy <i>Eucalyptus macrorhyncha</i> and a shrub layer), landscape position (on steep hillslopes and hillcrests) and distribution (east of Cootamundra). PCT 282 was discarded based on species composition (mostly lacking the usual co-dominant <i>Eucalyptus albens</i>) and landscape position (on hillslopes, hillcrests or footslopes on undulating hills). PCT 283 was discarded based on species composition (lacking the dominant canopy <i>Eucalyptus bridgesiana</i>). PCT 360 was discarded based on species composition (absence of wetland grasses such as Swamp Wallaby Grass <i>Amphibromus</i> spp.) and soil types (lack of light grey, heavy clay gilgai soil). PCT 277 is the best-fit PCT as it is dominated by <i>Eucalyptus blakelyi</i> and <i>Eucalyptus melliodora</i>. It is a very widespread community on fertile, deep loam or clay soils derived from a range of substrates, including fine-grained sedimentary and metamorphic rocks, as well as volcanics and fine-grained granite. It occurs on flats, footslopes and hillslopes.

4.2.2.4 Alignment with TECs

PCT 277 is associated with a TEC within the BioNet Vegetation Classification, being *White Box-Yellow Box- Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions* ('Box Gum Woodland').

All areas classified as 'PCT 277_Mod' and 'PCT 277_Low' across the subject land are considered to meet the definition of this TEC based on the following criteria from the Scientific Determination (TSC, 2024):

- The community occurs within the NSW South Western Slopes Bioregion, which is the region within which the subject land occurs.
- The community occupies a broad range of landscapes and soils; therefore, the subject land conditions are likely to fall under the definition, described as "*hilly to undulating landscapes in areas with soils of moderate fertility derived from a range of lithologies, including alkaline and acid volcanics, granites, sediments, serpentinites, and metamorphics*".
- The wide range of elevations mean that the subject land at 220 m elevation occurs within typical range, being 170 m to 1,200 m.
- Two of the three dominant characteristic canopy species, being *Eucalyptus blakelyi* and *Eucalyptus melliodora*, are prevalent on the site, and one specimen of the third species, *Eucalyptus albens*, was also recorded.
- The shrub layer is absent, which is typical of this community.
- Seventeen characteristic species listed in the final determination occur on the subject land, including *Eucalyptus blakelyi*, *Eucalyptus melliodora*, *Eucalyptus albens*, *Austrostipa scabra*, *Lomandra filiformis*, *Rytidosperma setaceum*, *Cymbopogon refractus*, *Microlaena stipoides*, *Poa sieberiana*, *Desmodium varians*, *Tricoryne elatior*, *Dichondra repens*, *Hypericum gramineum*, *Leptorhynchus squamatus*, *Arthropodium fimbriatum*, *Euchiton involucratus* and *Rumex brownii*.



- The floristic composition and abundance of the community vary significantly in the derived native grassland component, particularly following periods of good rainfall, when grassland areas may be dominated by only a few species.
- Areas of regrowth are considered part of the ecological community.

4.2.2.5 Alignment with EPBC Act Listed ECs

PCT 277 is associated with an EC listed under the EPBC Act within the BioNet Vegetation Classification, being *White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland* ('Box Gum Grassy Woodland'). Box Gum Grassy Woodland is listed as critically endangered under the EPBC Act.

Key diagnostic characteristics for identifying Box Gum Grassy Woodland are as follows (Commonwealth DCCEEW, 2023):

- The ecological community occurs in the following bioregions: Brigalow Belt South, Murray Darling Depression, Nandewar, New England Tableland, NSW North Coast, NSW South Western Slopes, Riverina, South Eastern Queensland, South East Corner, South East Coastal Plain, South Eastern Highlands, Southern Volcanic Plain, Sydney Basin and Victorian Midlands.
- It has, or previously had, an overstorey dominated or co-dominated, by:
 - *E. albens* and/or *E. melliodora* and/or *E. blakelyi* (applicable across the entire range of the ecological community); or
 - in the Nandewar bioregion any of the above three species and/or *E. microcarpa* and/or *E. moluccana*.
- It has a predominantly native ground layer.
- Tussock grasses are conspicuous in the ground layer (except in some situations, such as under dense groves of shrubs or regenerating trees), usually with several native species from some the following genera: *Austrostipa*, *Bothriochloa*, *Chloris*, *Cymbopogon*, *Dichanthium*, *Microlaena*, *Poa*, *Themeda*, *Rytidosperma* or *Sorghum*.
- Amongst the grass tussocks and sometimes in swathes, a range of broad-leaved forbs and petaloid monocots may be a major component of the plant diversity.
- While shrubs may be dominant locally within areas of the ecological community, areas of native vegetation with a more continuous shrub layer, in which the average shrub cover of the whole patch is greater than 30%, is considered to be a shrubby woodland and so is not part of the listed ecological community. In assessing this, the effects of disturbance need to be considered, for example where heavy grazing may result in high densities of shrubs during a recovery phase.

Assemblages of native species that do not meet the key diagnostic criteria for Box Gum Grassy Woodland are not considered part of the nationally listed TEC. Table 9 outlines the criteria for the three eligible condition classes of Box Gum Grassy Woodland as defined in the Approved Conservation Advice (Commonwealth DCCEEW, 2023).



**Table 9: Box Gum Grassy Woodland Condition Classes and Thresholds
(Commonwealth DCCEEW, 2023)**

Condition Classes	Criteria Thresholds
Class A Good quality understorey and mature overstorey both present.	0.1 ha (1,000 m²) or larger. - The ground layer is predominantly native*. - The understorey contains at least 12 native, non-grass species (such as forbs, shrubs, ferns and sedges) - At least one of the understorey species should be a species recognised as 'important' (e.g. grazing sensitive, regionally significant, listed threatened or uncommon species). - The patch contains 10 or more mature trees* per hectare consistent with the key diagnostics for the ecological community.
Class B Good quality understorey present. Characteristic trees may be absent.	0.1 ha (1,000 m²) or larger. - The ground layer is predominantly native*. - The understorey contains at least 12 native, non-grass species (such as forbs, shrubs, ferns and sedges). - At least one of the understorey species should be a species recognised as 'important' (e.g. grazing sensitive, regionally significant, listed threatened or uncommon species).
Class C Allows for a lower diversity in the understorey in areas where there is regeneration and/or tree density may be relatively dense	2 ha (20,000m²) or larger. - The ground layer is predominantly native*. - The patch contains 20 or more mature trees* per hectare. - The patch contains natural regeneration of dominant overstorey eucalypts*.
*KEY: Patch: a continuous area containing the ecological community. The patch is the larger of: - an area that contains five or more trees in which the gap between the outer canopy of any tree and the outer canopy of the nearest tree is no greater than 75 m, or - the area over which the ground layer is predominantly native (at least 50% of the perennial vegetation cover in the ground layer is made up of native species). Ground layer: The ground layer is the structural layer closest to the ground containing grasses, forbs and sub-shrubs (below 50 cm tall). Regeneration of dominant overstorey species: the patch contains eucalyptus saplings of the dominant species that are 5 cm diameter or greater at breast height. Mature trees: are those with a circumference of at least 125 cm measured at a height of 130 cm above the ground (equivalent to diameter of 40 cm).	

The Box Gum Grassy Woodland assessment for the patch within the subject land relies on floristic information from site data collected by SLR Consulting, including a survey of the PCT 277 patch and BAM plot data collected by Associate Ecologist Bo Davidson in July 2024 and resampled by Associate Ecologist and BAM Assessor Fiona Iolini in October 2024. Due to favourable rainfall conditions (i.e. non-drought conditions), these surveys are considered adequate for assessing the community.

The survey of PCT 277 conducted in October 2024 confirmed initial observations made in July 2024, as well as observations by others (see EPBC Act referral 2021/8901 - Jindera Solar Farm), indicating a degraded ground layer that does not meet the EPBC listing for the



Box Gum Grassy Woodland TEC. Photographs illustrating the ground layer condition during the surveys of the patch are shown in Photo 13 and Photo 14.

Photo 13: Ground Layer Survey of Patch Undertaken in October 2024



Photo 14: Ground Layer Survey of Patch Undertaken in October 2024



An assessment of the ground layer perennial species using BAM plot data (Appendix F) is presenting in Table 10. The following exotic species were removed from the assessment as they are annuals: *Arctotheca calendula*, *Avena fatua*, *Bromus diandrus*, *Bromus hordeaceus*, *Bromus molliformis*, *Cerastium glomeratum*, *Conyza bonariensis*, *Ehrharta longiflora*, *Galium aparine*, *Hordeum leporinum*, *Plantago coronopus*, *Poa annua*, *Sonchus asper*, *Trifolium* spp. and *Vulpia bromoides*. One annual native species was also removed: *Ranunculus sessiliflorus*.

Table 10: Average Cover and Count of Perennial Species in Ground Layer from BAM Plots

Variable	277_Moderate			277_Low		Averages		
	BAM02	BAM03	BAM04	BAM05	BAM06	Mod	Low	Patch
HTW Total Cover	1	10	2.1	10	20.1	4.4	15.1	8.6
Non-HTW Total Cover	19	15.1	14.1	2	27.1	14.7	14.6	15.5
Exotic Total Cover	20	25.1	16.2	12	47.2	19.1	29.6	24.1
Native Total Cover	27.9	12.3	32	15.3	15	13.6	5.2	20.5
HTW Total Species	1	1	2	2	3	1.3	2.5	1.8
Non-HTW Total Species	4	2	5	1	3	2.3	2.0	3.0
Exotic Total Species	5	3	7	3	6	3.7	4.5	4.8
Native Total Species	9	8	8	5	1	5.7	2.0	6.2

The Approved Conservation Advice (Commonwealth DCCEE, 2023) defines a “predominately native ground layer” as one in which “at least 50% of the perennial vegetation cover in the ground layer is made up of native species.” Field observations and plot data indicate that the perennial ground layer is predominantly exotic, with an average exotic species cover of 24.1% and an average native species cover of 20.5%.

Based on the key diagnostic criteria and the thresholds defined in Table 9, the vegetation on subject land does not meet the definitions for Box Gum Grassy Woodland Class A, B or C due to the degraded condition of the ground layer.

4.3 Threatened Ecological Communities

TECs and, where relevant, ECs identified within the subject land are listed in Table 11, and their extent is shown in Figure 9.

Table 11: TECs within the Subject Land

TEC Name	SAIL#	BC Act Status	EPBC Act Status	Associated Vegetation Zones (within the Subject Land)	Area within Subject Land (ha)
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Yes	Critically Endangered	n/a	277_Mod, 277_Low	16.34
# Entity at risk of a 'serious and irreversible impact'					



4.4 Vegetation Zones

Section 4.3.1 of BAM 2020 describes the mapping of vegetation condition under “*broad condition states*” and suggests the following approach: “*Disturbance to growth form groups for tree, shrub and ground cover or extent of exotics (or combinations of these) can be used to identify areas of similar condition*”.

The subject land patches were grouped into two broad condition states of “*moderate*” and “*low*”. The moderate condition class typically includes areas with a mature canopy and degraded ground layers. The low condition class includes areas of regrowth vegetation with degraded ground layers.

As defined in Section 4.3.2 of BAM 2020, “*A patch is an area of native vegetation that occurs on the subject land and includes native vegetation that has a gap of less than 100m from the next area of native vegetation (or ≤ 30m for non-woody ecosystems)*”.

Patch size was calculated for each vegetation zone and assigned to one of the following classes:

- <5 ha
- 5-24 ha
- 25-100 ha
- ≥100 ha

All vegetation zones on the subject land fall within the ≥100 ha patch size class.

Vegetation zones and associated patch sizes are listed in Table 12 and displayed in Figure 10.

Table 12: Vegetation Zones and Patch Sizes

Vegetation Zone ID	PCT ID Number and Name	Condition / Other Defining Feature	Area (ha)	Patch Size Class (ha)	No. VI Plots Required	No. VI Plots Completed	No. VI Plots Used	Plot IDs of VI Plots Used
277_Mod	PCT 277 Blakely's Red Gum - Yellow Box Grassy Tall Woodland	Mature canopy	13.55	≥100	3	4	3	BAM02, BAM03, BAM04
277_Low	PCT 277 Blakely's Red Gum - Yellow Box Grassy Tall Woodland	Regrowth	2.79	≥100	2	2	2	BAM05, BAM06

4.5 Vegetation Integrity (Vegetation Condition)

4.5.1 Vegetation Integrity Survey Plots

The number of BAM plots sampled in each vegetation zone was determined based on the minimum required for the area of land subject to development, in accordance with Table 3 of BAM 2020. The minimum number of plots per vegetation zone, as specified by BAM requirements, was sampled, as shown in Table 12.



4.5.2 Scores

The vegetation integrity scores for each vegetation zone are presented in Table 13.

Table 13: Vegetation Integrity Scores

Vegetation Zone ID	Composition Condition Score	Structure Condition Score	Function Condition Score	VI Score	Hollow-bearing Trees Present? (Yes/No)
277_Mod	42.6	82.9	64.1	60.9	Yes
277_Low	10.7	62.5	42.5	30.5	Yes

4.5.3 Use of Benchmark Data

Vegetation benchmarks used in calculating the Vegetation Integrity (VI) score were not amended and were adopted as per the BAM Calculator available at the time of the assessment.



5.0 Habitat Suitability for Terrestrial Threatened Species

5.1 Identification of Threatened Species for Assessment

5.1.1 Ecosystem Credit Species

Table 14 lists all ecosystem credit species predicted to occur on or use the subject land (based on the PCTs present), and:

- Identifies the source of information (e.g. automatically populated in BAM-C, recently listed under the BC Act and not yet added to the TBDC, previous ecological reports).
- Justifies species added to the BAM-C auto-populated list or removed from the list in accordance with BAM Subsections 5.2.1 and 5.2.2.
- Includes the sensitivity to gain class (from the TBDC).

None of the predicted ecosystem credit species have been excluded based on the TBDC habitat constraints, nor have they been assessed differently across vegetation zones. The Large Bent-winged Bat (*Miniopterus orianae oceanensis*) was detected during the targeted bat survey in March 2025 and has therefore been added to the list of ecosystem credit species.



Table 14: Predicted Ecosystem Credit Species

Common Name	Scientific Name	Listing Status		Dual Credit Sp. (Yes / No)	Source (BAM-C / TBDC / Previous Survey / Current Survey)	Species Retained? (Yes / No / Partial*)	Reason For Exclusion (Geographic Limitations / Habitat Constraint / Vagrant)	Veg Zone ID Species Retained Within, (Including PCT ID)	Sensitivity To Gain Class (Very High / High / Moderate / Low)
		BC Act	EPBC Act						
Black Falcon	<i>Falco subniger</i>	V	-	No	BAM-C	Yes	n/a	277_Mod, 277_Low	Moderate
Black-chinned Honeyeater (eastern subspecies)	<i>Melithreptus gularis gularis</i>	V	-	No	BAM-C	Yes	n/a	277_Mod, 277_Low	Moderate
Brown Treecreeper (eastern subspecies)	<i>Climacteris picumnus victoriae</i>	V	V	No	BAM-C	Yes	n/a	277_Mod, 277_Low	High
Diamond Firetail	<i>Stagonopleura guttata</i>	V	V	No	BAM-C	Yes	n/a	277_Mod, 277_Low	Moderate
Dusky Woodswallow	<i>Artamus cyanopterus cyanopterus</i>	V	-	No	BAM-C	Yes	n/a	277_Mod, 277_Low	Moderate
Flame Robin	<i>Petroica phoenicea</i>	V	-	No	BAM-C, Current Survey	Yes	n/a	277_Mod, 277_Low	Moderate
Gang-gang Cockatoo	<i>Callocephalon fimbriatum</i>	E	E	Yes	BAM-C	Yes	n/a	277_Mod, 277_Low	Moderate
Grey-crowned Babbler (eastern subspecies)	<i>Pomatostomus temporalis temporalis</i>	V	-	No	BAM-C	Yes	n/a	277_Mod, 277_Low	Moderate
Grey-headed Flying-fox	<i>Pteropus poliocephalus</i>	V	V	Yes	BAM-C	Yes	n/a	277_Mod, 277_Low	High



Common Name	Scientific Name	Listing Status		Dual Credit Sp. (Yes / No)	Source (BAM-C / TBDC / Previous Survey / Current Survey)	Species Retained? (Yes / No / Partial*)	Reason For Exclusion (Geographic Limitations / Habitat Constraint / Vagrant)	Veg Zone ID Species Retained Within, (Including PCT ID)	Sensitivity To Gain Class (Very High / High / Moderate / Low)
		BC Act	EPBC Act						
Large Bent-winged Bat	<i>Miniopterus orianae oceanensis</i>	V	-	Yes	Current Survey	Yes	n/a	277_Mod, 277_Low	High
Little Eagle	<i>Hieraaetus morphnoides</i>	V	-	Yes	BAM-C	Yes	n/a	277_Mod, 277_Low	Moderate
Little Lorikeet	<i>Glossopsitta pusilla</i>	V	-	No	BAM-C	Yes	n/a	277_Mod, 277_Low	High
Painted Honeyeater	<i>Grantiella picta</i>	V	V	No	BAM-C	Yes	n/a	277_Mod, 277_Low	Moderate
Regent Honeyeater	<i>Anthochaera phrygia</i>	CE	CE	Yes	BAM-C	Yes	n/a	277_Mod, 277_Low	High
Scarlet Robin	<i>Petroica boodang</i>	V	-	No	BAM-C	Yes	n/a	277_Mod, 277_Low	Moderate
Southern Whiteface	<i>Aphelocephala leucopsis</i>	V	V	No	BAM-C	Yes	n/a	277_Mod, 277_Low	Low
South-eastern Hooded Robin	<i>Melanodryas cucullata cucullata</i>	E	E	No	BAM-C	Yes	n/a	277_Mod, 277_Low	Moderate
Speckled Warbler	<i>Chthonicola sagittata</i>	V	-	No	BAM-C	Yes	n/a	277_Mod, 277_Low	High
Spotted Harrier	<i>Circus assimilis</i>	V	-	No	BAM-C	Yes	n/a	277_Mod, 277_Low	Moderate
Spotted-tailed Quoll	<i>Dasyurus maculatus</i>	V	E	No	BAM-C	Yes	n/a	277_Mod, 277_Low	High



Common Name	Scientific Name	Listing Status		Dual Credit Sp. (Yes / No)	Source (BAM-C / TBDC / Previous Survey / Current Survey)	Species Retained? (Yes / No / Partial*)	Reason For Exclusion (Geographic Limitations / Habitat Constraint / Vagrant)	Veg Zone ID Species Retained Within, (Including PCT ID)	Sensitivity To Gain Class (Very High / High / Moderate / Low)
		BC Act	EPBC Act						
Square-tailed Kite	<i>Lophoictinia isura</i>	V	-	Yes	BAM-C	Yes	n/a	277_Mod, 277_Low	Moderate
Superb Parrot	<i>Polytelis swainsonii</i>	V	V	Yes	BAM-C	Yes	n/a	277_Mod, 277_Low	Moderate
Swift Parrot	<i>Lathamus discolor</i>	E	CE	Yes	BAM-C	Yes	n/a	277_Mod, 277_Low	Moderate
Turquoise Parrot	<i>Neophema pulchella</i>	V	-	No	BAM-C	Yes	n/a	277_Mod, 277_Low	High
Varied Sittella	<i>Daphoenositta chrysoptera</i>	V	-	No	BAM-C	Yes	n/a	277_Mod, 277_Low	Moderate
White-bellied Sea-Eagle	<i>Haliaeetus leucogaster</i>	V	-	Yes	BAM-C	Yes	n/a	277_Mod, 277_Low	High
White-throated Needletail	<i>Hirundapus caudacutus</i>	V	V	No	BAM-C	Yes	n/a	277_Mod, 277_Low	High
Yellow-bellied Sheath-tail-bat	<i>Saccolaimus flaviventris</i>	V	-	No	BAM-C	Yes	n/a	277_Mod, 277_Low	High
Listing status: V=vulnerable, E=endangered, CE=critically endangered									



5.1.2 Candidate (Species Credit) Species

All species credit species (e.g. those automatically populated in BAM-C, recently listed under the BC Act or not yet added to the TBDC) and their relevant sources of information (e.g. previous ecological reports, environmental impact statements, scientific literature, Council reports, site survey etc.) are listed in this section.

Candidate flora species are listed in Table 15. No candidate flora species were excluded in the BAM-C based on geographic limitations as indicated by the Threatened Species Profile distribution mapping. No species were excluded due to TBDC habitat constraints. No candidate species credit species have been assessed differently across vegetation zones.

Candidate fauna species are listed Table 16. No candidate fauna species have been excluded based on geographic limitations (as mapped by the Threatened Species Profile distribution mapping). However, the Squirrel Glider (*Petaurus norfolcensis*) endangered population is legally described as occurring within the Wagga Wagga Local Government Area (LGA). As the subject land at Jindera lies outside of Wagga Wagga LGA, the Squirrel Glider endangered population falls outside its geographic limitation and has therefore been removed from further assessment in the BAM-C.

The following fauna species have been excluded based on TBDC habitat constraints:

- The TBDC habitat constraints for the Regent Honeyeater (*Anthochaera phrygia*), and Swift Parrot (*Lathamus discolor*) are “Other: As per Important Habitat Map”. The Important Habitat Map does not identify any areas of habitat for these species (or others) on the subject land.
- The TBDC habitat constraints for the Pink-tailed Legless Lizard *Aprasia parapulchella* are “Rocky areas - Or within 50m of rocky areas”; there are no rocky areas on or within 50 m of the subject land.
- The TBDC habitat constraints for the Large-eared Pied Bat *Chalinolobus dwyeri* are “Cliffs: Within two kilometres of rocky areas containing caves, overhangs, escarpments, outcrops, or crevices, or within two kilometres of old mines or tunnels”; there are no cliffs (or rocky areas containing caves, overhangs, escarpments, outcrops or crevices) or old mines or tunnels within 2 km of the subject land.
- The TBDC habitat constraints for the Large Bent-winged Bat *Miniopterus orianae oceanensis* are “Caves: Cave, tunnel, mine, culvert or other structure known or suspected to be used for breeding including species records with microhabitat code “IC - in cave;” observation type code “E nest-roost;” with numbers of individuals >500”. There are no caves or similar breeding structures for the Large Bent-winged Bat within the subject land.

The Large Bent-winged Bat (*Miniopterus orianae oceanensis*) was detected during the targeted bat survey in March 2025 and has therefore been added to the list of candidate fauna species.



Table 15: Candidate Flora Species

Common Name	Scientific Name	Listing Status		Source (BAM-C / TBDC / Previous Survey / Current Survey)	Species Retained? (Yes / No / Partial)	Reason For Exclusion (1. Geographic Limitations 2. Habitat Constraints 3. Microhabitats)	Veg Zone ID Species Retained Within (Including PCT ID)
		BC Act	EPBC Act				
Small Scurf-pea	<i>Cullen parvum</i>	E	-	BAM-C	Yes	n/a	277_Mod, 277_Low
Small Purple-pea	<i>Swainsona recta</i>	E	E	BAM-C	Yes	n/a	277_Mod, 277_Low
Silky Swainson-pea	<i>Swainsona sericea</i>	V	-	BAM-C	Yes	n/a	277_Mod, 277_Low
Listing status: V=vulnerable, E=endangered							

Table 16: Candidate Fauna Species

Common Name	Scientific Name	Listing Status		Dual Credit Species (Yes / No)	Sources (BAM / TBDC / Previous Survey / Current Survey)	Species Retained? (Yes / No / Partial)	Reason for Exclusion (Geographic Limitations / Habitat Constraints / Vagrant Species / Microhabitats)	Vegetation Zone ID Species Retained Within (including PCT ID)
		BC Act	EPBC Act					
<i>Anthochaera phrygia</i>	Regent Honeyeater	CE	CE	Yes	BAM-C	No	Habitat constraint	n/a
<i>Aprasia parapulchella</i>	Pink-tailed Legless Lizard	V	V	No	BAM-C	No	Habitat constraint	n/a
<i>Burhinus grallarius</i>	Bush Stone-curlew	E	-	No	BAM-C	Yes	n/a	277_Mod, 277_Low
<i>Callocephalon fimbriatum</i>	Gang-gang Cockatoo	E	E	Yes	BAM-C	Yes	n/a	277_Mod, 277_Low
<i>Cercartetus nanus</i>	Eastern Pygmy-possum	V	-	No	BAM-C	Yes	n/a	277_Mod, 277_Low
<i>Chalinolobus dwyeri</i>	Large-eared Pied Bat	E	E	No	BAM-C	No	Habitat constraints	n/a



Common Name	Scientific Name	Listing Status		Dual Credit Species (Yes / No)	Sources (BAM / TBDC / Previous Survey / Current Survey)	Species Retained? (Yes / No / Partial)	Reason for Exclusion (Geographic Limitations / Habitat Constraints / Vagrant Species / Microhabitats)	Vegetation Zone ID Species Retained Within (including PCT ID)
		BC Act	EPBC Act					
<i>Haliaeetus leucogaster</i>	White-bellied Sea-Eagle	V	-	Yes	BAM-C	Yes	n/a	277_Mod, 277_Low
<i>Hieraaetus morphnoides</i>	Little Eagle	V	-	Yes	BAM-C	Yes	n/a	277_Mod, 277_Low
<i>Lathamus discolor</i>	Swift Parrot	E	CE	Yes	BAM-C	No	Habitat constraints	n/a
<i>Lophoictinia isura</i>	Square-tailed Kite	V	-	Yes	BAM-C	Yes	n/a	277_Mod, 277_Low
<i>Miniopterus orianae oceanensis</i>	Large Bent-winged Bat	V	-	Yes	Current Survey	No	Habitat constraints	n/a
<i>Myotis macropus</i>	Southern Myotis	V	-	No	BAM-C	Yes	n/a	277_Mod, 277_Low
<i>Ninox connivens</i>	Barking Owl	V	-	No	BAM-C	Yes	n/a	277_Mod, 277_Low
<i>Petaurus norfolcensis</i>	Squirrel Glider	V	-	No	BAM-C, Current Survey	Yes	n/a	277_Mod, 277_Low
<i>Petaurus norfolcensis</i> - endangered population	Squirrel Glider in the Wagga Wagga LGA	EP	-	No	BAM-C	No	Geographic limitations	n/a
<i>Phascolarctos cinereus</i>	Koala	E	E	No	BAM-C	Yes	n/a	277_Mod, 277_Low
<i>Polytelis swainsonii</i>	Superb Parrot	V	V	Yes	BAM-C	Yes	n/a	277_Mod, 277_Low
<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	V	V	Yes	BAM-C	Yes	n/a	277_Mod, 277_Low
<i>Tyto novaehollandiae</i>	Masked Owl	V	-	No	BAM-C	Yes	n/a	277_Mod, 277_Low
Listing status: V=vulnerable, E=endangered, EP=Endangered Population, CE=critically endangered								



5.2 Presence of Candidate Species Credit Species

In accordance with BAM Subsection 5.2.4, candidate species listed in Table 17 and Table 18 are determined to be present within the subject land based on:

- Assumed presence within the subject land.
- An important habitat map (for dual credit species).
- Targeted threatened species surveys.
- An expert report.

For the candidate species listed below, presence was determined using targeted surveys or by assumed presence. No species were determined present via important habitat map or expert report.

Table 17: Determining the Presence of Candidate Flora Species Credit Species

Common Name	Scientific Name	Listing Status		Method Used to Determine Presence (Target Survey/ Assumed Present/ Important Habitat Mapped Area/ Expert Report)	Present? (Yes/ No/ Assumed Present)	Further Assessment Required? (BAM Subsections 5.2.5 and 5.2.6) (Yes/ No)
		BC Act	EPBC Act			
Small Scurf-pea	<i>Cullen parvum</i>	E	-	Target survey	No	No
Small Purple-pea	<i>Swainsona recta</i>	E	E	Target survey/ Assumed Present	No (in areas surveyed)/ Assumed Present (water pipeline)	Yes (partially)
Silky Swainson-pea	<i>Swainsona sericea</i>	V	-	Target survey/ Assumed Present	No (in areas surveyed)/ Assumed Present (water pipeline)	Yes (partially)
Listing status: V=vulnerable, E=endangered						

Table 18: Determining the Presence of Candidate Fauna Species Credit Species

Common Name	Scientific Name	Listing Status		Method Used to Determine Presence (Target Survey / Assumed Present / Important Habitat Mapped Area / Expert Report)	Present? (Yes / No / Assumed Present)	Further Assessment Required? (BAM Subsections 5.2.5 and 5.2.6) (Yes / No)
		BC Act	EPBC Act			
Bush Stone-curlew	<i>Burhinus grallarius</i>	E	-	Target Survey	No	No



Common Name	Scientific Name	Listing Status		Method Used to Determine Presence (Target Survey / Assumed Present / Important Habitat Mapped Area / Expert Report)	Present? (Yes / No / Assumed Present)	Further Assessment Required? (BAM Subsections 5.2.5 and 5.2.6) (Yes / No)
		BC Act	EPBC Act			
Gang-gang Cockatoo	<i>Callocephalon fimbriatum</i>	E	E	Target Survey	No	No
Eastern Pygmy-possum	<i>Cercartetus nanus</i>	V	-	Target Survey	No	No
White-bellied Sea-Eagle	<i>Haliaeetus leucogaster</i>	V	-	Target Survey	No	No
Little Eagle	<i>Hieraaetus morphnoides</i>	V	-	Target Survey	No	No
Square-tailed Kite	<i>Lophoictinia isura</i>	V	-	Target Survey	No	No
Southern Myotis	<i>Myotis macropus</i>	V	-	Target Survey	No	No
Barking Owl	<i>Ninox connivens</i>	V	-	Target Survey	No	No
Squirrel Glider	<i>Petaurus norfolcensis</i>	V	-	Target Survey	Yes	Yes
Koala	<i>Phascolarctos cinereus</i>	E	E	Target Survey	No	No
Superb Parrot	<i>Polytelis swainsonii</i>	V	V	Target Survey	No	No
Grey-headed Flying-fox	<i>Pteropus poliocephalus</i>	V	V	Target Survey	No	No
Masked Owl	<i>Tyto novaehollandiae</i>	V	-	Target Survey	No	No
Listing status: V=vulnerable, E=endangered						

5.3 Threatened Species Surveys

This section lists details of targeted threatened species surveys completed (to date) for candidate species (where surveys have been used to determine presence). Additionally, the presence of candidate species can be determined via assumed presence, important habitat map or expert report. Species assumed present on the subject land are listed above in Section 5.2. No expert reports were employed for the current assessment, and no species were deemed present on the basis of the important habitat map.

Candidate flora species that require 'further assessment' and have undergone targeted survey are listed in Table 19. Threatened flora surveys, as detailed in Section 2.3, were undertaken with reference to the BAM *Surveying threatened plants and their habitats* guide (DPIE, 2020b) and survey notes within the TBDC.

Habitat suitability and survey adequacy for relevant species are described as follows:



- *Cullen parvum* is typically found in grassland, River Red Gum Woodland or Box-Gum Woodland, sometimes on grazed land and usually on table drains or adjacent to drainage lines or watercourses, in areas with rainfall between 450 and 700 mm. Plants tend to die back in dry seasons and resprout with rain in winter or spring; in dry years, plants may not produce shoots but survive below the ground. Surveys involve parallel transects with a maximum width of 5-10 m in areas of native vegetation from December to January. Targeted surveys were undertaken in December 2024 and 2025, and the species was not detected.
- *Swainsona recta* occurs in the grassy understorey of woodlands and open forests dominated by *Eucalyptus blakelyi*, *E. melliodora*, *E. rubida* and *E. goniocalyx*. It grows in association with understorey dominants such as *Themeda australis*, *Poa* spp. and *Austrostipa* spp. Plants die back in summer, surviving as a rootstock until they shoot again in autumn. Surveys involve parallel transects with a maximum width of 5-10 m in areas of native vegetation from September to November. Targeted surveys of the subject land (excluding the water pipeline) were undertaken in October 2024, and the species was not detected. The species was not surveyed for within the proposed water pipeline and is assumed present at this location.
- *Swainsona sericea* is found in Box-Gum Woodland in the Southern Tablelands and South West Slopes. Surveys involve parallel transects with a maximum width of 5-10 m in areas of native vegetation from September to October. Targeted surveys of the subject land (excluding the water pipeline) were undertaken in October 2024, and the species was not detected. The species was not surveyed for within the proposed water pipeline and is assumed present at this location.

Candidate fauna species that require 'further assessment' and targeted surveys are listed in Table 20, along with details of the survey method, effort, and timing.

Threatened fauna surveys (as detailed in Section 2.4) were undertaken with reference to the survey notes within the TBDC, as well as the following survey guidelines:

- Koala BAM survey guide (DPE, 2022b).
- 'Species credit' threatened bats and their habitats NSW survey guide for the Biodiversity Assessment Method (DPIE, 2021a).
- Survey guidelines for Australia's threatened birds (DEWHA, 2010).

Survey requirements and habitat considerations are summarised below:

- Bush Stone-curlew *Burhinus grallarius*: May be surveyed all year. It may be easier to detect during breeding season, possibly calls all year, but it is unclear how well it responds to playback. It cannot be predicted to occur at a site based on vegetation surrogates but can be detected reliably from survey. Call playback surveys diurnal habitat searches have been completed, and the species has not been recorded.
- Gang-gang Cockatoo *Callocephalon fimbriatum*: Survey months are October to January. Surveys involve looking for signs of breeding, identifying potential nest trees (at least 3 m above the ground and with hollow diameter of 7 cm or larger), then monitoring potential nest trees during breeding season (October to January). Several suitably sized hollows have been identified during the surveys, but there were no signs of breeding during the 2024-2025 surveys. There are also no records of the Gang-gang Cockatoo within the BioNet 10 km search.
- Eastern Pygmy-possum *Cercartetus nanus*: Survey months are October to March. There are no specific survey guidelines for this species. Survey techniques may include spotlighting, passive traps, infrared cameras, pitfall traps, Elliot trapping. The



TBDC notes that this species is very difficult to detect, particularly via spotlighting. It was not recorded during spotlight or infrared camera trap surveys. The species typically prefers areas with dense understorey, which are absent on the subject land. There are no records of the species within the BioNet 10 km search area. Therefore, it has been determined that the species does not occur on the subject land.

- White-bellied Sea-Eagle *Haliaeetus leucogaster*: Survey months are July to December. Surveys involve searching for breeding habitat (nests) and confirming species presence. Breeding habitat consists of large, live old trees within 1 km of rivers, lakes, large dams, creeks, wetlands or coastlines, and the presence of a large stick nest within tree canopy; or an adult carrying nest material; or adults observed duetting during the breeding period. Diurnal bird and habitat surveys in 2024-2025 showed no signs of the species or suitable large nests.
- Little Eagle *Hieraaetus morphnoides*: Survey months are August to October. Surveys involve searching for breeding habitat (nests) and confirming species presence. Breeding habitat consists of live (occasionally dead) large old trees within vegetation and evidence of breeding activity, such as: presence of a male and female; adult carrying nesting material; an individual on a large stick nest in the upper half of the tree canopy; pairs displaying (soaring, diving, chasing), or a male calling in flight while a female begs from a tree. The Little Eagle was recorded flying over the subject land by RPS in 2023; however targeted surveys conducted in 2024-2025 did not record the species, or suitable nests within the subject land.
- Square-tailed Kite *Lophoictinia isura*: Survey months are September to January. Identifying a Kite nest can be challenging as many similarly sized stick nests are built by other species. Kites must be observed in attendance to confirm breeding sites. Breeding habitat consists of large, live, old trees within suitable vegetation and evidence of breeding such as the presence of a male and female; a female carrying nesting material; or an individual occupying a large stick nest in the upper half of the tree canopy. Targeted surveys conducted in 2024-2025 did not record the species. There are also no records of the Square-tailed Kite within the BioNet 10 km search area, making it unlikely that the Square-tailed Kite occurs on the subject land or in surrounding areas.
- Southern Myotis *Myotis macropus*: Survey months are October to March. Potential habitat includes the range of PCTs associated with the species (as per the TBDC) within 200 meters of any medium to large permanent creeks, rivers, lakes or other waterways (i.e. with pools or stretches 3 m or wider). Traps or nets should be set besides, or preferably over, pools of water along creeks or rivers, particularly in flat areas or areas of low relief. Roost searches involve inspecting any bridges, tunnels, culverts or other structures identified as potential breeding habitat for bats or signs of bats (e.g. guano). Survey effort involves 16 trap nights over a minimum of four nights for harp traps or mist nets, and 30 minutes of search per structure for roost inspections. Targeted bat surveys (harp traps and bat detectors) were undertaken in March 2025, and the species was not recorded within the subject land. There are currently no records of the species within the 10 km BioNet Atlas search area, and it is unlikely that the species occurs within the subject land.
- Barking Owl *Ninox connivens*: Surveys may be conducted year-round. Surveys involve acoustic recording (however this technique is in infancy and requires site specific survey design consultation with NSW DCCEEW) or six nights of call playback using one station per 100 ha. Paddock trees may be important for this species. Call playback surveys of the subject land were completed in 2024 and 2025, and the species was not recorded.



- Squirrel Glider *Petaurus norfolcensis*: Survey year-round; however, sites containing bipinnate acacia, autumn-winter flowering trees and shrubs such as *Eucalyptus robusta* and *Banksia* species. (e.g. *B. integrifolia*) should be subject to a more retracted survey period between March and August. This species relies on large, old trees with hollows for breeding and nesting. These trees are also critical for movement and typically need to be closely connected (i.e. no more than 50 m apart). No specific survey techniques are provided for this species. The Squirrel Glider was recorded within the subject land opportunistically during call playback surveys and also during targeted spotlighting surveys conducted in July, October and December 2024. The species was not recorded during nocturnal surveys in 2025.
- Koala *Phascolarctos cinereus*: The species may be surveyed all year-round. Surveys must follow the *Koala Biodiversity Assessment Method Survey Guide* and may include the following techniques: 1. Spot Assessment Technique (SAT); 2. Conservation detection dogs; 3. Spotlighting; 4. Passive acoustic; 5. Drones. A combination of SAT and spotlighting is required (or a combination of other approved techniques). SAT surveys require: 3 SAT sites per <5 ha; grid with 150 m spacing over habitat; identify a centre tree, then move outward to identify the 29 nearest trees; undertake a radial search for koala scats within 1 m of each tree base (2 minutes per tree). Spotlighting involves two nights spotlighting along transects spaced 100 m apart, each 200 m in length per 5 ha. Koala SAT surveys and spotlighting were undertaken in July 2024, with additional spotlighting carried out in October and December 2024. To date, no koalas or evidence of koala presence have been recorded within the subject land. The water pipeline is not considered to be suitable habitat for the Koala.
- Superb Parrot *Polytelis swainsonii*: Survey months are September to November. The TBCD notes that NSW DCCEEW is developing survey guidance for threatened bird species. In the interim, assessors must undertake species surveys using best-practice methods that can be replicated for repeat surveys. Accordingly, the October 2024/2025 surveys involved transects and area searches conducted over four days in accordance with the *Survey guidelines for Australia's threatened birds* (DEWHA, 2010). The Superb Parrot was not recorded on the subject land during targeted surveys.
- Grey-headed Flying-fox *Pteropus poliocephalus*: Survey months are October to December. Surveys involve searches for camps and roosting habitats, followed by surveys to identify breeding females and map the camp. No Grey-headed Flying-fox individuals or breeding camps were identified during the various surveys conducted in 2024 to 2025.
- Masked Owl *Tyto novaehollandiae*: Surveys may be conducted year-round. Surveys involve acoustic recording (although this technique is still in its infancy and requires site-specific survey design consultation with NSW DCCEEW) or six nights of call playback using one station per 100 ha. Paddock trees may be important for this species. There are no records of the Masked Owl within the BioNet 10 km search area, and it is unlikely that the species occurs on the subject land. Call playback surveys of the subject land were completed in 2024 and 2025, and the species was not recorded.



Table 19: Threatened Species Surveys for Candidate Flora Species Credit Species

Common Name	Scientific Name	Threatened Flora Species Surveys			Present (Yes/ No/ Assumed Present)	Further Assessment Required (BAM Subsections 5.2.5 and 5.2.6) (Yes/No)
		Survey Method (Transects or Grids)	Timing of Survey – within Recommended Period? (BAM-C / TBDC) (Yes/No: enter date)	Effort (Hours & No. People)		
Small Scurf-pea	<i>Cullen parvum</i>	Transects	Yes: 18, 19 December 2024	12 hours, 2 persons	No	No
			Yes: 17 December 2025	5 hours, 1 person	No	No
Small Purple-pea	<i>Swainsona recta</i>	Transects	Yes: 9, 10, 11 October 2024	14 hours, 2 persons and 3 hours, 1 person	No (in areas surveyed)/ Assumed Present (water pipeline)	Yes - partially
Silky Swainson-pea	<i>Swainsona sericea</i>	Transects	Yes: 9, 10, 11 October 2024	14 hours, 2 persons and 3 hours, 1 person	No (in areas surveyed)/ Assumed Present (water pipeline)	Yes - partially

Table 20: Threatened Species Surveys for Candidate Fauna Species Credit Species

Common Name	Scientific Name	Threatened Fauna Species Surveys			Present (Yes / No / Assumed Present)	Further assessment required (BAM Subsections 5.2.5 and 5.2.6) (Yes / No)
		Survey Method (e.g. Harp Trap, Elliott Trap, Bioacoustics, etc.)	Timing of Survey – within Recommended Period? (BAM-C / TBDC) (Yes/No: enter date)	Effort (Hours & No. People)		
Bush Stone-curlew	<i>Burhinus grallarius</i>	Call playback	2, 3, 4, 29, 30, 31 July 2024	9hrs, 2 persons	No	No
		Diurnal bird/habitat surveys	2, 3, 4, 29, 30, 31 July 2024	9hrs, 2 persons	No	No
			8, 9, 10, 11 October 2024	8hrs, 2 persons	No	No



Common Name	Scientific Name	Threatened Fauna Species Surveys			Present (Yes / No / Assumed Present)	Further assessment required (BAM Subsection s 5.2.5 and 5.2.6) (Yes / No)
		Survey Method (e.g. Harp Trap, Elliott Trap, Bioacoustics, etc.)	Timing of Survey – within Recommended Period? (BAM- C / TBDC) (Yes/No: enter date)	Effort (Hours & No. People)		
			18, 19 December 2024	4hrs, 2 persons	No	No
			30, 31 October 2025	2.5hrs, 1 person	No	No
			25, 26, 27 November 2025	5hrs, 1 person	No	No
Gang-gang Cockatoo	<i>Callocephalon fimbriatum</i>	Diurnal bird/habitat surveys	8, 9, 10, 11 October 2024	8hrs, 2 persons	No	No
			18, 19 December 2024	4hrs, 2 persons	No	No
			30, 31 October 2025	2.5hrs, 1 person	No	No
			25, 26, 27 November 2025	5hrs, 1 person	No	No
Eastern Pygmy- possum	<i>Cercartetus nanus</i>	IR cameras	9, 10, 11 October 2024	3 nights, 2 devices	No	No
			30-31 October 2025	2 nights, 2 devices	No	No
			1-30 November 2025	30 nights, 2 devices	No	No
			1-17 December 2025	17 nights, 2 devices	No	No
		Spotlighting	8, 9 October 2024	4hrs, 2 persons	No	No
			17, 18 December 2024	4hrs, 2 persons	No	No
White-bellied Sea-Eagle	<i>Haliaeetus leucogaster</i>	Diurnal bird/habitat surveys	2, 3, 4, 29, 30, 31 July 2024	9hrs, 2 persons	No	No
			8, 9, 10, 11 October 2024	8hrs, 2 persons	No	No
			18, 19 December 2024	4hrs, 2 persons	No	No
			30, 31 October 2025	2.5hrs, 1 person	No	No
			25, 26, 27 November 2025	5hrs, 1 person	No	No



Common Name	Scientific Name	Threatened Fauna Species Surveys			Present (Yes / No / Assumed Present)	Further assessment required (BAM Subsection s 5.2.5 and 5.2.6) (Yes / No)
		Survey Method (e.g. Harp Trap, Elliott Trap, Bioacoustics, etc.)	Timing of Survey – within Recommended Period? (BAM- C / TBDC) (Yes/No: enter date)	Effort (Hours & No. People)		
Little Eagle	<i>Hieraaetus morphnoides</i>	Diurnal bird/habitat surveys	8, 9, 10, 11 October 2024	8hrs, 2 persons	No	No
			30, 31 October 2025	2.5hrs, 1 person	No	No
Square-tailed Kite	<i>Lophoictinia isura</i>	Diurnal bird/habitat surveys	8, 9, 10, 11 October 2024	8hrs, 2 persons	No	No
			18, 19 December 2024	4hrs, 2 persons	No	No
			30, 31 October 2025	2.5hrs, 1 person	No	No
			25, 26, 27 November 2025	5hrs, 1 person	No	No
Southern Myotis	<i>Myotis macropus</i>	Harp trap, bioacoustics	17, 18, 19, 20, 21 March 2025	16 trap nights	No	No
Barking Owl	<i>Ninox connivens</i>	Call playback	2, 3, 4, 29, 30, 31 July 2024	9hrs, 2 persons	No	No
			30 October 2025	2hrs, 1 person	No	No
			24, 25, 26 November 2025	6hrs, 1 person	No	No
			16, 17 December 2025	4hrs, 1 person	No	No
Squirrel Glider	<i>Petaurus norfolcensis</i>	Call playback	2, 3, 4, 29, 30, 31 July 2024	9hrs, 2 persons	Yes	Yes
		Spotlighting	29, 30 July 2024	4hrs, 2 persons	Yes	Yes
		Spotlighting	8, 9 October 2024	4hrs, 2 persons	Yes	Yes
		Spotlighting	17, 18 December 2024	4hrs, 2 persons	Yes	Yes
Koala	<i>Phascolarctos cinereus</i>	Call playback	2, 3, 4, 29, 30, 31 July 2024	9hrs, 2 persons	No	No
		Koala SAT survey	2, 3, 4 July 2024	9hrs, 2 persons	No	No
		Spotlighting	29, 30 July 2024	4hrs, 2 persons	No	No



Common Name	Scientific Name	Threatened Fauna Species Surveys			Present (Yes / No / Assumed Present)	Further assessment required (BAM Subsection s 5.2.5 and 5.2.6) (Yes / No)
		Survey Method (e.g. Harp Trap, Elliott Trap, Bioacoustics, etc.)	Timing of Survey – within Recommended Period? (BAM- C / TBDC) (Yes/No: enter date)	Effort (Hours & No. People)		
			8, 9 October 2024	4hrs, 2 persons	No	No
			17, 18 December 2024	4hrs, 2 persons	No	No
Superb Parrot	<i>Polytelis swainsonii</i>	Diurnal bird/habitat surveys	8, 9, 10, 11 October 2024	8hrs, 2 persons	No	No
			30, 31 October 2025	2.5hrs, 1 person	No	No
			25, 26, 27 November 2025	5hrs, 1 person	No	No
Grey-headed Flying-fox	<i>Pteropus poliocephalus</i>	Spotlighting	8, 9 October 2024	4hrs, 2 persons	No	No
		Diurnal bird/habitat surveys	8, 9, 10, 11 October 2024	8hrs, 2 persons	No	No
			17, 18 December 2024	4hrs, 2 persons	No	No
			30, 31 October 2025	2.5hrs, 1 person	No	No
			25, 26, 27 November 2025	5hrs, 1 person	No	No
Masked Owl	<i>Tyto novaehollandiae</i>	Call playback	2, 3, 4, 29, 30, 31 July 2024	9hrs, 2 persons	No	No
			30 October 2025	2hrs, 1 person	No	No
			24, 25, 26 November 2025	6hrs, 1 person	No	No
			16, 17 December 2025	4hrs, 1 person	No	No



5.4 Expert Reports

No expert reports have been used to determine species presence/absence.

5.5 More Appropriate Local Data (Where Relevant)

More appropriate local data has not been adopted for this assessment.

5.6 Species Polygons

Species polygons are indicated in Figure 11. Species polygons are based on the methods identified in the TBDC. Results are summarised in Table 21 and Table 22.

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Table 21: Results for Present Species

Common Name	Scientific Name	Biodiversity Risk Weighting (BAM-C & TBDC) (Very High 3, High 2, Moderate 1.5, Low 1)	SAIL entity (BAM-C & TBDC) (Yes/No)	Habitat Constraints / Microhabitats Present on the Subject Land / Vegetation Zone	Abundance – No. Individual Plants Present on Subject Land (Flora with Unit of Measure of Count)	Extent (ha) of Suitable Habitat Present on Site (Impact Areas - Flora or Fauna with Unit of Measure of Area)	TBDC Info (e.g. Buffers, General Comments, Where Relevant)	Habitat Condition (VI score for each Vegetation Zone in the Polygon – Area Species Only)
Squirrel Glider	<i>Petaurus norfolcensis</i>	High (2)	No	PCT 277 with hollow-bearing trees	n/a	2.88	n/a	277_mod is 58.6, 277_low is 30.5
Small Purple-pea	<i>Swainsona recta</i>	Moderate (1.5)	No	PCT 277	n/a	0.06	n/a	277_mod is 58.6
Silky Swainson-pea	<i>Swainsona sericea</i>	High (2)	No	PCT 277	n/a	0.06	n/a	277_mod is 58.6

Table 22: Results for EPBC Act Listed Species Present

Common Name	Scientific Name	Abundance – No. Individual Plants Present on Subject Land (Flora with Unit of Measure as Count)	Extent (ha) of Suitable Habitat Present on Site (Flora or Fauna with Unit of Measure as Area)
Small Purple-pea	<i>Swainsona recta</i>	n/a	0.06



6.0 Habitat Suitability for Aquatic Threatened Species

6.1 Listed Aquatic Threatened Species

A review of the BioNet Atlas database, the NSW DPI threatened species list, and the Commonwealth DCCEE Protected Matters Search Tool (PMST) identified three threatened aquatic species with the potential to occur within the assessment area. Each species is discussed in detail below. Migratory aquatic species listed under the EPBC Act are addressed in Section 6.2.1.

6.1.1 Flathead Galaxias

The species is generally found in mid-water within still or slow-moving waters of small watercourses, lakes, lagoons, billabongs and backwaters, typically over a substratum of coarse sand or mud with aquatic vegetation. It forages for aquatic insects and crustaceans and spawns in spring when water temperatures are above 10.5°C.

Flathead Galaxias, listed as critically endangered under both the FM Act and the EPBC Act, are endemic to the southern tributaries of the Murray-Darling River system and the upper Macquarie River catchment (DPI, 2016). Historically they were intermittently widespread and locally abundant. However, this species has experienced significant declines in distribution and abundance throughout NSW and is thought to be locally extinct in the lower Murray, Murrumbidgee, Macquarie and Lachlan Rivers (DPI, 2016).

Indicative distributions of threatened freshwater fish in mapped by DPI (2016) suggest that Flathead Galaxias have the potential to occur within Kilnacraft Creek near the subject land. However, occurrence records contained in the Atlas of Living Australia (ALA) database (CSIRO, 2024) show no records of Flathead Galaxias in Kilnacraft Creek or within the study locality, with only a few records predating 2003 occurring in the Murray River near Albury.

Based on the ALA database and the aquatic habitat assessment undertaken for the Project, it is considered highly unlikely that Flathead Galaxias occur within the assessment area.

6.1.2 Southern Pygmy Perch

Southern Pygmy Perch are found in well-vegetated, slow-flowing or still waters, including streams, lakes, billabongs and other types of wetlands. They reach sexual maturity within their first year, when males are approximately 30 mm and females about 33 mm long. Each female can produce up 4,000 small, transparent, non-adhesive eggs, which are scattered over vegetation or rocks on the bottom. They prefer covered habitats and are not usually found in open water.

The Southern Pygmy Perch is a small fish that was once widely distributed throughout the Murrumbidgee and Murray River systems. In NSW, the species has suffered dramatic declines in recent decades and, as a result, is listed as an endangered species under the FM Act. There have been large-scale reductions in their range since European settlement, particularly inland.

Southern Pygmy Perch were formerly found in the Murray and lower Murrumbidgee River systems. Populations have recently been discovered in tributaries of the upper Lachlan and upper Murray River catchments. Indicative distributions of mapped by DPI (2016) suggest that Southern Pygmy Perch have the potential to occur within Kilnacraft Creek near the subject land. However, according to occurrence records contained in the ALA database, no records of Southern Pygmy Perch have been caught in Kilnacraft Creek or within the assessment area, with only a few older records occurring within smaller tributaries of the Murray River near Albury.



Based on the information presented in the ALA database and the aquatic habitat assessment undertaken for the Project, it is considered highly unlikely that Southern Pygmy Perch occur within the assessment area.

6.1.3 Macquarie Perch

Macquarie Perch prefer clear water and deep, rocky holes with extensive cover provided by aquatic vegetation, large boulders, debris and overhanging banks. They spawn in spring or summer, laying their eggs in shallow, fast-flowing water over stones and gravel in upland watercourses or flowing sections of rivers.

Macquarie Perch are listed as endangered under both the FM Act and the EPBC Act.

Macquarie Perch occur in the Murray-Darling Basin (particularly upstream reaches) and parts of south-eastern coastal NSW, including the Hawkesbury and Shoalhaven catchments (DPI, 2016). They inhabit rivers and lakes, particularly the upper reaches of rivers and their tributaries. The species has also been stocked or translocated into several reservoirs, including Talbingo, Cataract, Khancoban and Coliban, and into watercourses such as the Yarra, Mongarlowe and Wannon rivers, as well as Sevens Creek.

The indicative distribution of Macquarie Perch mapped by DPI (2016) does not include Kilnacroft Creek or any part of the assessment area. Their inclusion in the PMST results most likely reflects historical records and/or the presence of suitable habitat within the Murray-Darling Basin. ALA records indicate no occurrences in Kilnacroft Creek or the assessment area, with only a small number of historical records in the Murray River and some of its smaller tributaries near Albury.

Based on the ALA database information, indicative DPI distributions, and the aquatic habitat assessment undertaken for the Project, Macquarie Perch are considered highly unlikely to occur within the assessment area.

6.2 Matters of National Environmental Significance

There are eight types of Matters of Environmental Significance (MNES) listed under the EPBC Act. Actions that have, or are likely to have, a significant impact on any of these matters require approval from the Australian Government Minister (the commonwealth minister). Of the eight types of MNES, four are potentially relevant to this assessment:

- Wetlands of International Importance
- Listed threatened species and ecological communities
- Listed threatened species
- Listed migratory Species

6.2.1 Migratory Species

Migratory species are animals that migrate to Australia and its external territories or pass through or over Australian waters during their annual migrations. Listed migratory species may include any native species identified in an international agreement approved by the Minister. All listed migratory species are MNES under the EPBC Act. An action will require approval if it has, will have, or is likely to have, a significant impact on a listed migratory species.

The PMST indicated that no migratory aquatic species recorded or predicted to occur within the assessment area or study locality.



7.0 Identifying Prescribed Impacts

Prescribed impact features are identified in Table 23 and are mapped on the Site Map (Figure 1) and Location Map (Figure 2). The list of threatened entities was generated based on site surveys, habitat assessments and consideration of the habitats described for each species in the TBDC.

Table 23: Prescribed impacts identified

Feature	Present (Yes/No)	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	No	n/a	n/a
Human-made structures	No	n/a	n/a
Non-native vegetation	No	n/a	n/a
Habitat connectivity	Yes	The Squirrel Glider has been recorded in the northeastern corner of the substation site and along Ortlipp Road to the southwest. It is therefore likely that the species dens and forages in these areas, and the proposed powerline would create a 60 m wide barrier to existing movements. Squirrel Gliders are known to glide up to 100 m, and the existing feeder running northwest from the substation presents a similar barrier. However, based on the location of recent records, this existing feeder does not appear to significantly impact Squirrel Glider movements. Linkages for Squirrel Gliders are likely to occur throughout the locality where breaks in native vegetation and canopy trees are less than 100 m.	Squirrel Glider
Waterbodies, water quality and hydrological processes	Yes	Kilnacraft Creek	Ecosystem credit species that may forage across waterbodies (such as bats) or drink from them (i.e. most ecosystem species)
Wind turbine strikes (wind farm development only)	No	n/a	n/a
Vehicle strikes	No	n/a	n/a



STAGE 2: IMPACT ASSESSMENT

8.0 Avoid and Minimise Impacts

8.1 Avoid and Minimise Direct and Indirect Impacts

8.1.1 Project Location

The proposal is for a BESS facility to be constructed on land suitably located adjacent to an existing substation and solar farm developments.

Alternative sites were deemed unsuitable for the Project due to various constraints, including unfavourable site topography and land use, lack of proximity to an existing substation, challenges in landowner leasing discussions, permissibility issues and greater distances from sensitive receivers.

Most of the development footprint is positioned on previously cleared land, and areas containing TECs and threatened species habitats have largely been avoided in the layout design. The water pipeline will be installed using under-boring techniques, meaning its construction will not require clearing of native vegetation, except at a few select locations where inlet and outlet pits will be established. Laydown areas, measuring 20m x 10m, have been positioned to avoid native vegetation and habitats where possible.

8.1.2 Project Design

The project has been designed to maximise use of already cleared land. The BESS facility footprint has been positioned within cleared paddock areas; however, ancillary features, such as powerlines and access driveways will require a small amount of vegetation clearing and ongoing maintenance.

A powerline will need to pass through an area of TEC to connect the facility to the substation. This will involve clearing three pads for power pole installation, as well as tree and shrub clearing and maintenance within a 60 m-wide area of TEC and Squirrel Glider habitat.

Alternative footprints for the powerline easement considered during the design phase are shown in Figure 12. The final footprint requires a 60 m width of clearing in accordance with TransGrid requirements, compared to the 40 m width initially considered. However, the final design of the powerline easement has been located to avoid higher-quality native vegetation and hollow-bearing trees along Ortlipp Road.

8.2 Avoid and Minimise Prescribed Impacts

8.2.1 Project Location

Prescribed impact features identified in Section 6.0 include habitat connectivity, waterbodies, water quality and hydrological processes. The 60 m width of clearing required to facilitate the proposed powerline easement is considered a suitable distance for the Squirrel Glider to cross; therefore, it is not necessary to relocate the project site based on impacts to Squirrel Glider movements. The development footprint has been positioned to avoid impacts on creeks and riparian buffers; therefore, relocation of the project site is not required based on potential impacts to creeks.



8.2.2 Project Design

In relation to habitat connectivity, the proposal is likely to impact Squirrel Glider habitat connectivity to some extent. Mitigation measures, such as pre-clearance surveys and clearing protocols, are proposed to minimise impacts on fauna during site clearing and development activities. The proposed development also occurs upstream of creek habitats, which are likely to be sensitive to hydrological changes. The development footprint has been positioned to avoid the riparian zones of watercourses. Additional mitigation measures are proposed to reduce the likelihood of impacts on hydrology (Water Technology, 2025).

8.3 Other Measures Considered

No other measures were considered in relation to avoiding and minimising project impacts.

8.4 Summary of Measures to Avoid and Minimise Impacts

Table 24 documents the measures to avoid and minimise impacts.

Table 24: 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
Locate BESS facility in areas where biodiversity values are limited	Minimise direct impacts on TEC/EC/Squirrel Glider and potential threatened species habitats	Design/DA	Proponent, designers
Limit clearing associated with powerline easement including avoiding better condition native vegetation and hollow-bearing trees	Minimise direct impacts on TEC/EC/Squirrel Glider and potential threatened species habitats	Design/DA	Proponent, designers
Limit clearing along water pipeline by adopting under-boring rather than open trenching methods and locating indicative works areas to avoid native vegetation and hollow-bearing trees	Minimise direct impacts on TEC/EC/Squirrel Glider and potential threatened species habitats	Design/DA	Proponent, designers
Use of sediment barriers and ponds as recommended by engineer	Minimise indirect impacts on riparian corridor	Implemented during Construction	Proponent, engineers
Flora and fauna management measures outlined in this BDAR	Minimise impacts of vegetation clearing activities and BESS operation	Implemented during Construction	Proponent, construction team, project ecologist
Biodiversity Management Plan	Minimise impacts on retained threatened entities and habitats	Construction and operation	Landowner, project ecologist



9.0 Impact Assessment

9.1 Direct Impacts

9.1.1 Residual Direct Impacts

Impacts likely to occur on the subject land after steps are taken to avoid and minimise impacts are identified in Table 25 and Figure 12.

Table 25: 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	SAIL entity	Project phase/timing of impact (e.g. construction, operation, rehabilitation)	Extent (ha, number of individuals)
Clearing of PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion	Critically endangered	n/a	Yes	Construction	2.88
Clearing of Squirrel Glider habitat	Vulnerable	n/a	No	Construction	2.88
Clearing of potential habitat for Small Purple-pea	Endangered	Endangered	No	Construction	0.06
Clearing of potential habitat for Silky Swainson-pea	Vulnerable	n/a	No	Construction	0.06

9.1.2 Change in Vegetation Integrity Score

Table 26 documents the change in vegetation integrity for residual direct impacts on native vegetation, TECs, threatened species and their habitat that were identified on the subject land.

9.2 Indirect Impacts

Table 27 documents the residual indirect impacts (likely to occur on native vegetation, threatened entities and their habitat beyond the development footprint). Indirect impact areas are identified on Figure 12 where relevant.



Table 26: Impacts to Vegetation Integrity

Vegetation zone	PCT ID	Management zone	Area (ha)	Before Development				After Development				Change in VI score
				Composition	Structure	Function	VI score	Composition	Structure	Function	VI score	
277_Mod	277	Clear all vegetation	1.75	42.6	82.9	64.1	60.9	0	0	0	0	-60.9
277_Low	277	Clear all vegetation	1.13	10.7	62.6	42.5	30.5	0	0	0	0	-30.5

Table 27: Summary of Residual Indirect Impacts

Indirect impact (Describe impact, e.g. transport of weeds and pathogens from 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
2a. Inadvertent impacts on adjacent habitat or vegetation	PCT 277 which represents Box Gum Woodland TEC, Squirrel Glider habitat and potential habitat for threatened <i>Swainsona</i> spp.	13.5	Daily for the duration of construction (10 months). Sporadically during operation.	Short-term and long-term	Construction and operation	Low likelihood. Reduced condition of vegetation and habitats.
2b. Reduced viability of adjacent habitat due to edge effects	PCT 277 which represents Box Gum Woodland TEC, Squirrel Glider habitat and potential habitat for threatened <i>Swainsona</i> spp.	13.5	Daily for the duration of construction (10 months). Sporadically during operation.	Short-term and long-term	Construction and operation	Low likelihood. Reduced condition of vegetation and habitats.
2c. Reduced viability of adjacent habitat due to	PCT 277 which represents Box Gum Woodland TEC, Squirrel Glider habitat and potential	13.5	Daily for the duration of construction (10 months).	Short term and long-term	Construction and operation	Moderate likelihood. Reduced suitability of directly adjoining



Indirect impact (Describe impact, e.g. transport of weeds and pathogens from 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
<i>noise, dust or light spill</i>	habitat for threatened <i>Swainsona</i> spp.		Sporadically during operation.			habitats for foraging and breeding activities.
<i>2d. Transportation of weeds and pathogens from the site to adjacent vegetation</i>	PCT 277 which represents Box Gum Woodland TEC, Squirrel Glider habitat and potential habitat for threatened <i>Swainsona</i> spp.	13.5	Monthly	Long-term	Construction and operation	Moderate likelihood. Reduced condition of vegetation and habitats.
<i>2e. Increased risk of starvation or exposure, and loss of shade or shelter</i>	Squirrel Glider	13.5	One off	Short term	Construction	Low likelihood. Reduced suitability of directly adjoining habitats for foraging activities.
<i>2f. Loss of breeding habitat</i>	Squirrel Glider	13.5	One off	Short term	Construction	Low likelihood. Reduced suitability of directly adjoining habitats for breeding activities.
<i>2g. Trampling of threatened flora species</i>	n/a	n/a	n/a	n/a	n/a	n/a
<i>2h. Inhibition of nitrogen fixation and increased soil salinity</i>	n/a	n/a	n/a	n/a	n/a	n/a
<i>2i. Fertiliser drift</i>	n/a	n/a	n/a	n/a	n/a	n/a



Indirect impact (Describe impact, e.g. transport of weeds and pathogens from 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
2j. Rubbish dumping	PCT 277 which represents Box Gum Woodland TEC, Squirrel Glider habitat and potential habitat for threatened <i>Swainsona</i> spp.	13.5	Potentially daily or weekly	Long term	Construction and operation	Moderate likelihood. Reduced vegetation and habitat condition.
2k. Wood collection	PCT 277 which represents Box Gum Woodland TEC, Squirrel Glider habitat and potential habitat for threatened <i>Swainsona</i> spp.	13.5	Potentially every few months or years	Long term	Construction and operation	Low likelihood. Reduced condition of vegetation and habitats.
2l. Removal and disturbance of rocks, including bush rock	n/a	n/a	n/a	n/a	n/a	n/a
2m. Increase in predators	Squirrel Glider	13.5	Daily	Long-term	Operation	Low likelihood. Loss of breeding habitat or deaths.
2n. Increase in pest animal populations	n/a	n/a	n/a	n/a	n/a	n/a
2o. Changed fire regimes	PCT 277 which represents Box Gum Woodland TEC, Squirrel Glider habitat and potential habitat for threatened <i>Swainsona</i> spp.	13.5	Fires might occur every 5-10 years	Long term	Operation	Moderate likelihood. Reduced extent and condition of vegetation and habitats.



Indirect impact (Describe impact, e.g. transport of weeds and pathogens from 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
<i>2p. Disturbance to specialist breeding and foraging habitat (e.g. beach nesting for shorebirds).</i>	Squirrel Glider	13.5	Daily	Long-term	Operation	Low likelihood. Reduced suitability of directly adjoining habitats for foraging activities.



9.3 Prescribed Impacts

9.3.1 Habitat Connectivity

- **Nature:** Construction of the powerline easement will temporarily interrupt habitat connectivity for the Squirrel Glider. However, following construction, the species is likely to be able to glide between the vegetation remaining on either side of the powerline. There are no other threatened species likely to be impacted by reduced habitat connectivity.
- **Extent:** The area of reduced habitat connectivity measures approximately 60 m by 200 m and is shown in Figure 12 (location where the proposed powerline easement impacts PCT 277).
- **Duration:** Short-term during construction and long-term during operation.
- **Consequences:** Temporary disruption of habitat connectivity for the Squirrel Glider, which may lead to reduced foraging and breeding successes. Mitigation measures are required. Longer term the Squirrel Glider may be less inclined to access habitats on either side of the powerline, reducing long term breeding and foraging.

9.3.2 Waterbodies, Water Quality and Hydrological Processes

- **Nature:** Impacts on water bodies, water quality and hydrological processes could affect the condition of receiving waters and the availability of watering habitat for threatened fauna species. The risk of groundwater contamination from the project is assessed as negligible due to the lack of stored chemicals and oils, depth to groundwater, and the layered clay lithology in the region (Water Technology, 2025). The risk of erosion is considered low (Water Technology, 2025).
- **Extent:** The extent of water bodies is shown in Figure 1.
- **Duration:** Short-term impacts during construction and long-term impacts during operation.
- **Consequences:** Impacts on water bodies, water quality and hydrological processes could result in erosion, sedimentation, pollution, increased phosphorous levels in soils, weed invasion and changes to native species composition. Mitigation measures have been proposed.

9.4 Aquatic Impacts

Impacts on aquatic habitats are expected to be spatially and temporally limited. Some vegetation clearing associated with the construction of the proposed overhead lines will be required for the Project; however, this will occur outside a 40 m buffer from the top of the creek line. Further discussion of Impacts from this vegetation clearing is provided in Section 9.1.

The only construction activity that may affect the creek's ecology is the installation of a 100 mm water pipe beneath Kilnacroft Creek near Ortlipp Road. At this stage, the exact methodology for installing the pipe under the creek is unclear. For the purposes of this impact assessment, it is assumed that, at a minimum, the installation process will involve the use of a specialist drilling rig and the establishment of entry and exit points on either side of the creek.

This report assesses the following potential impacts associated with the pipe installation:



- Clearing of riparian vegetation
- Sediment and erosion
- Habitat fragmentation
- Operation and maintenance of vehicles and other equipment, including potential fuel spills

9.4.1 Riparian Vegetation Clearing

Some vegetation near the creek line may need to be cleared to allow for drilling rigs and establishment of entry and exit points. Based on the site inspection, the only vegetation in the vicinity of the proposed works consists of a moderate, low cover of invasive weeds and pasture grasses. This poor-quality vegetation provides minimal stability and limited creek bank protection.

Given the small area required for entry/exit points and potential drilling pads, the poor quality and very limited ecological value of this vegetation, along with the low-quality aquatic habitat of the creek near the proposed works, it is expected that its removal would not have any adverse impact on creek ecology. Furthermore, any potential impacts on the creek's aquatic ecology would be minor and temporary in nature.

9.4.2 Sedimentation and Erosion

Following the clearing of riparian vegetation associated with the installation of the underground water pipe, there is potential for soil erosion and sedimentation within the creek during rainfall. This could impact aquatic ecology (e.g. increased turbidity and nutrient levels) and alter aquatic habitats. Increased sediment and eroded material may smother retained riparian vegetation, cause dieback of grasses and shrubs, and reduce regeneration of groundcover species.

The areas of vegetation to be removed for drilling rigs and entry/exit points would be relatively small; therefore, significant alteration of sedimentation and erosion within the creek is unlikely. Although erosion and sedimentation impact on aquatic ecology are considered unlikely, vegetation clearing should be kept to a minimum and located as far from the creek as practicable to reduce runoff through cleared areas. Where possible, silt fences should be installed to minimise runoff. A Construction Environmental Management Plan including a Sediment and Erosion Control Plan, should be prepared prior to construction. Additionally, works should be scheduled during the drier months to minimise the likelihood of runoff into Kilnacroft Creek.

9.4.3 Habitat Fragmentation

There is potential that drilling beneath the creek line could compromise the integrity of the creek bed and facilitate the loss of water from the creek. This risk depends on the underlying bed composition (e.g. soft soil versus bedrock) and the influence of groundwater on the creek. Loss of water from the creek could lead to habitat fragmentation and reduced connectivity between upstream and downstream aquatic habitats. Habitat fragmentation is the process by which habitat loss divides large, continuous habitats into smaller, isolated fragments (Ewers and Didham, 2006). The areas between these fragments are typically man-made and largely unsuitable for the species that previously inhabited the area. The ecological impacts of habitat fragmentation include (Andrews, 1990):

- Changes in the number of species within fragments
- Alterations to the composition of faunal assemblages



- Disruptions to ecological processes in fragments, such as food chains, fish passage, predator-prey interactions, and dispersal associations

Best-practice mitigation measures during drilling activities are essential to maintain creek bed integrity throughout the pipe installation process. If these measures are properly implemented, it is highly unlikely that water loss from the creek, and consequently habitat fragmentation, would occur as a result of underground drilling activities.

9.4.4 Operation and Maintenance of Vehicles and Other Equipment

Fuel and oil required for operating vehicles and construction machinery during the installation of the water pipe pose a risk to aquatic ecology if spills enter watercourses, either via either surface or groundwater. Both diesel and petrol are toxic to aquatic flora and fauna at relatively low concentrations.

Spilled diesel and petrol are likely to form a layer on the water's surface. Their volatility contributes to substantial evaporative loss, and neither product is likely to form water-in-oil emulsions due to their low viscosity. Fuel spills are most likely to occur through accidental discharge on roads near creek crossings, or during construction activities adjacent to waterways.

The likelihood of spills and their impact on surrounding waterways is considered very low, due to the absence of waterways in close proximity to the subject land and the high level of control required by Australian Standard 1940:2004 - *The storage and handling of flammable and combustible liquids*.

9.5 Cumulative Impacts

In relation to the impacts of the Proposal on biodiversity values, the SEARs require consideration of 'cumulative impacts'. The biodiversity values within the subject land are described, and impacts and biodiversity offsets are calculated in accordance with the Biodiversity Assessment Method (BAM). However, it is noted that there are no specific requirements under the BAM for the assessment of cumulative impacts.

A consideration of the cumulative impacts of the Proposal on biodiversity values must take into account other similar projects in terms of scale and nature. In this regard, other development applications for solar farms within the locality that are either under assessment, approved, or under construction are:

- Glenellen Solar Farm (Approved December 2023).
- Jindera Solar Farm (Approved December 2020).

The cumulative impact of these projects is not expected to result in a significant reduction in the extent of native vegetation or TECs within the region.

Construction and installation of the proposed pipeline route are not likely to substantially increase cumulative impacts in the area. The selected route for the proposed pipeline is predominately through pastures, with only very small amounts of mostly exotic vegetation to be removed, primarily along the edges of existing tracks and roads. Therefore, the scale of the impacts associated with construction and operation are predicted to be very minor and manageable.



9.6 Mitigating Residual Impacts – Management Measures and Implementation

Proposed mitigation and management measures are identified in Table 28 and further details are provided in Table 29. A detailed BMP is to be prepared to ensure the mitigation measures can be implemented, monitored and reviewed. The BMP is to be prepared and approved by NSW DCCEE prior to site clearing and construction activities.

Residual direct impacts require further assessment for SAI (BAM Section 9.1) and to determine a credit requirement (BAM Section 9.2). Residual indirect or prescribed impacts for which no mitigation measures are proposed require an adaptive management strategy (BAM Section 8.5). Other indirect and prescribed impacts that remain after the avoid, minimise and mitigate measures have been applied, may be offset using additional biodiversity credits (above the credit requirement generated by the BAM-C for direct impacts) and/or other conservation measures.

9.7 Adaptive Management Strategy for Uncertain Impacts

An adaptive management plan can be used to address impacts that are infrequent or difficult to measure. These include indirect or prescribed impacts, or other remaining biodiversity impacts. The proponent must develop an adaptive management plan to address any remaining impacts where mitigation measures have not been proposed. SLR is of the opinion that all indirect, prescribed, or other residual biodiversity impacts are minor in nature and/or will be sufficiently mitigated and managed by implementing measures outline in this BDAR. As such an adaptive management plan is not proposed.



Table 28: Summary of Proposed Mitigation and Management Measures for Residual Impacts (direct, indirect and prescribed)

Mitigation measure (specify if none proposed and ensure an adaptive management strategy is developed and addressed in Section 1.1)	Method / technique	Timing	Frequency	Responsibility	Likely efficacy (incl. risk of failure)	MNES (when relevant)
Fauna displacement (BAM 8.4.1, 2)						
<i>2a. Timing works to avoid critical life cycle events, such as breeding or nursing</i>	Limit clearing and construction during Squirrel Glider breeding season	Site clearing and construction	One off	Proponent, construction team	High efficacy, low risk	n/a
<i>2b. Instigating clearing protocols, including pre-clearing surveys, daily surveys and staged clearing, and using a trained ecologist or licensed wildlife handler during clearing events</i>	Pre-clearance surveys and daily wildlife capture	Site clearing	Daily	Proponent, construction team, ecologist	High efficacy, low risk	n/a
<i>2c. Relocating habitat features (e.g. fallen timber, hollow logs) from the development or clearing site, to adjacent retained vegetation</i>	Relocate habitat features (especially hollows) – details to be included in BMP	Site clearing	Daily	Proponent, construction team, ecologist	High efficacy, low risk	n/a
	Install nest boxes – details to be included in BMP	Prior to tree felling	One off	Proponent, construction team, ecologist	High efficacy, low risk	n/a
Indirect impacts on native vegetation and habitats (BAM 8.4.1, 3)						
<i>3a. Adoption of clearing protocols that identify vegetation to be retained, prevent inadvertent damage and reduce soil disturbance; for example, a chainsaw is preferable to heavy machinery to remove native vegetation for partial clearing</i>	Staged clearing, limit use of heavy machinery	Site clearing and construction	One off	Proponent, construction team, ecologist	High efficacy, low risk	n/a
<i>3b. Using noise barriers, or daily/seasonal timing of construction and operational activities to reduce impacts of noise</i>	Limit clearing and construction during Squirrel Glider breeding season and evening hours	Construction	One off	Proponent, construction team	High efficacy, low risk	n/a



Mitigation measure (specify if none proposed and ensure an adaptive management strategy is developed and addressed in Section 1.1)	Method / technique	Timing	Frequency	Responsibility	Likely efficacy (incl. risk of failure)	MNES (when relevant)
<i>3c. Using light shields, or daily/seasonal timing of construction and operational activities to reduce impacts of light spill</i>	Use of light shields and limiting evening construction works. Follow recommendations of Light Spill Assessment (SLR, 2025).	Construction and operation	Daily	Proponent, construction team, site management	High efficacy, low risk	n/a
<i>3d. Using adaptive dust management and monitoring programs to control air quality</i>	Dust management and monitoring surveys	Construction	One off	Proponent, construction team	High efficacy, low risk	n/a
<i>3e. Scheduling the timing of construction activities to avoid impacts (e.g. timing the construction for when migratory species are not at the site, or when particular species known to, or likely to use the habitat on the site, are not breeding or nesting)</i>	Limit clearing and construction during Squirrel Glider breeding season and evening hours	Construction	One off	Proponent, construction team	High efficacy, low risk	n/a
<i>3f. Erecting temporary fencing to protect significant environmental features, such as riparian zones</i>	Temporary fencing (non-barbed and with reflective markers) of construction area	Construction	One off	Proponent, construction team	High efficacy, low risk	n/a
<i>3g. Using hygiene protocols to prevent the spread of weeds or pathogens between infected and uninfected areas</i>	Machinery wash-down prior to site entry	Construction	Daily	Proponent, construction team	High efficacy, low risk	n/a
<i>3h. Training staff and conducting site briefings to communicate environmental features to be protected and measures to be implemented</i>	Environmental site briefings identifying areas of retained native vegetation	Construction	One off	Proponent, construction team	High efficacy, low risk	n/a
<i>3i. Preparing a vegetation management plan to regulate activity in vegetation and habitats adjacent to residential developments. The plan may include controls on pet ownership, rubbish</i>	n/a	n/a	n/a	n/a	n/a	n/a



Mitigation measure (specify if none proposed and ensure an adaptive management strategy is developed and addressed in Section 1.1)	Method / technique	Timing	Frequency	Responsibility	Likely efficacy (incl. risk of failure)	MNES (when relevant)
<i>disposal, wood collection, fire management, and disturbance to nests and other niche habitats</i>						
<i>3j. Providing for the ecological restoration, rehabilitation and/or ongoing maintenance of retained native vegetation habitat on, or adjacent to, the development or clearing site</i>	Rehabilitation survey and implementation	Post-construction	One off	Proponent, construction team, ecologist	High efficacy, low risk	n/a
Prescribed Impacts (BAM 8.4.2, 1)						
<i>1a. Scheduling the timing of construction activities to avoid critical life cycle events (e.g. timing construction activities to avoid migratory species on site, or using the site)</i>	Limit clearing and construction during Squirrel Glider breeding season	Construction	One off	Proponent, construction team, ecologist	High efficacy, low risk	n/a
<i>1b. Instigating clearing protocols, including pre-clearing surveys, daily surveys and staged clearing, and using a trained ecologist or licensed wildlife handler during clearing, construction and maintenance activities for human-made structures and non-native vegetation</i>	n/a	n/a	n/a	n/a	n/a	n/a
<i>1c. Retaining habitat features (e.g. fallen timber, hollow logs, rocks) within the subject land, or relocating them to adjacent retained remnant vegetation</i>	Relocate habitat features (especially hollows)	Site clearing	Daily	Proponent, construction team, ecologist	High efficacy, low risk	n/a
<i>1d. Installing artificial connectivity measures (e.g. glider poles, rope crossings, habitat bridges) to re-establish</i>	Ensure Squirrel Glider habitat connectivity is safely maintained by using non-barbed fencing with reflective markers. One glider	Operation	One off	Proponent, construction team, ecologist	High efficacy, low risk	n/a



Mitigation measure (specify if none proposed and ensure an adaptive management strategy is developed and addressed in Section 1.1)	Method / technique	Timing	Frequency	Responsibility	Likely efficacy (incl. risk of failure)	MNES (when relevant)
<i>connections between habitat and favoured transport corridors</i>	pole is to be installed at the centre of the proposed powerline corridor, aligned with the end of Ortlipp Road near to where Squirrel Glider records were previously made. In addition, the retained vegetation on either side of the powerline corridor at the glider pole is to be supplemented with 40 tube-stock plantings of <i>Acacia dealbata</i> to enhance habitat quality and encourage the species to use the crossing.					
<i>1e. Erecting temporary fencing to protect significant environmental features, such as karst, caves, rock outcrops and water bodies</i>	Temporary fencing (non-barbed and with reflective markers) of construction area	Construction	One off	Proponent, construction team	High efficacy, low risk	n/a
<i>1f. Replacing habitat provided by human-made structures and non-native vegetation with alternative habitat</i>	n/a	n/a	n/a	n/a	n/a	n/a
<i>1g. Using sediment barriers or sedimentation ponds to control the quality of water released from the site into the receiving environment</i>	Sediment barriers and ponds, where recommended by engineer	Construction and operation	One off	Proponent, construction team, engineer, site operator	High efficacy, low risk	n/a
<i>1h. Training staff and conducting site briefings to communicate environmental features to be protected and the measures implemented to protect them</i>	Environmental site briefings identifying waterways	Construction	One off	Proponent, construction team	High efficacy, low risk	n/a



Mitigation measure (specify if none proposed and ensure an adaptive management strategy is developed and addressed in Section 1.1)	Method / technique	Timing	Frequency	Responsibility	Likely efficacy (incl. risk of failure)	MNES (when relevant)
<i>1i. Ecological restoration, rehabilitation actions and/or maintenance of retained native vegetation on, or adjacent to, the subject land</i>	Rehabilitation survey and implementation	Post-construction	One off	Proponent, construction team, ecologist	High efficacy, low risk	n/a
<i>1j. Development control measures that regulate the types of activities that can occur in native vegetation and habitat adjacent to residential development, including prohibiting the collection of bush rocks</i>	n/a	n/a	n/a	n/a	n/a	n/a

Table 29: Mitigation and Management Measures - implementation

Measure/action	Monitoring and evaluation strategy (Data, frequency, timing and reporting)	Performance criteria (linked to monitoring and evaluation strategy)	Adaptive management threshold (trigger for adaptive management plan/actions)	Adaptive management response (when triggered)
Limit clearing and construction during Squirrel Glider breeding season (June to January)	Record timing of works in flora and fauna management report	Works take place from February to May, with timing of works recorded in report	Minor works are required in breeding season	Seek ecological advice on how to best manage works to reduce impacts on Squirrel Glider breeding (e.g. use hollow tree inspection camera to determine whether breeding is occurring, stagger work program, limit work to daylight hours)
Pre-clearance surveys and daily wildlife capture	Survey once prior to commencement of native vegetation clearing and daily during site clearing. Details	Pre-clearance and daily surveys recorded in report. Fauna relocated safely.	Fauna injured during clearing	Injured wildlife taken to nearest vet or animal carer and re-released on site



Measure/action	Monitoring and evaluation strategy (Data, frequency, timing and reporting)	Performance criteria (linked to monitoring and evaluation strategy)	Adaptive management threshold (trigger for adaptive management plan/actions)	Adaptive management response (when triggered)
	and outcomes reported in flora and fauna management report.			
Relocate habitat features - Ecologist to supervise relocation and placement of salvaged habitat features into retained bushland on site.	Once during site clearing or as needed. Relocated habitat features (i.e. sectioned hollows and felled logs) are to be mapped and documented in flora and fauna management report.	Suitable habitat features re-located and documented in report.	Location of salvaged habitat feature found to be unsuitable, or relocation not completed or failed	Reposition habitat feature and/or install alternative habitat feature (e.g. nest box)
	Install nest boxes in suitable host trees. Prepare nest box strategy to be included in the BMP.	Occupancy rate (of native arboreal fauna) during post-construction phase	Damaged boxes or occupied by feral species	Replace any damaged boxes and/or remove feral species
Staged clearing, limit use of heavy machinery in areas of retained vegetation	For duration of construction, compliance to be monitored during and post construction and demonstrated in reporting.	Reporting shows that retained vegetation not significantly impacted by construction and any areas of disturbance are rehabilitated	Impacts to areas of retained vegetation	Seek ecological advice to rehabilitate any areas of disturbance
Use of light shields and limiting evening construction works. Follow recommendations of Light Spill Assessment (SLR 2025).	For duration of construction and operation, compliance monitored and communicated in construction compliance documentation	Light spill is reduced	Light spill into adjacent vegetation	Adjust lighting
Dust management and monitoring surveys	For duration of construction, compliance monitored and communicated in construction compliance documentation	Dust generated by construction is appropriately managed	Visible dust accumulations observed in adjacent habitats	Review and improve dust management measures



Measure/action	Monitoring and evaluation strategy (Data, frequency, timing and reporting)	Performance criteria (linked to monitoring and evaluation strategy)	Adaptive management threshold (trigger for adaptive management plan/actions)	Adaptive management response (when triggered)
Temporary fencing (non-barbed and with reflective markers) of construction area	For duration of construction, compliance monitored and communicated in construction compliance documentation	Fencing is installed and condition is maintained for duration of works	Fencing becomes damaged	Reinstate fencing
Machinery wash down prior to site entry	For duration of construction, compliance monitored and communicated in construction compliance documentation	Machine hygiene is maintained for duration of works	n/a	n/a
Environmental site briefings identifying areas of retained native vegetation and waterways	For duration of construction, compliance monitored and communicated in construction compliance documentation	Workers are informed of areas of retained vegetation and waterways for duration of construction	n/a	n/a
Rehabilitation survey and implementation	Ecologist to perform an inspection during construction and post construction to check condition of areas of retained native vegetation, documented in flora and fauna management report. Any areas of disturbance are mapped and photographed for rehabilitation.	Any areas of disturbance are rehabilitated	n/a	n/a
Sediment barriers and ponds, where recommended by engineer	Engineer/site manager to inspect sediment flows and install barriers as required.	Appropriate sediment barriers installed and maintained for duration of construction and operation	Visible sediment flows occurring after rain fall event, sediment barriers damaged	Seek engineer advice and reinstate sediment barriers



Measure/action	Monitoring and evaluation strategy (Data, frequency, timing and reporting)	Performance criteria (linked to monitoring and evaluation strategy)	Adaptive management threshold (trigger for adaptive management plan/actions)	Adaptive management response (when triggered)
	Report in construction compliance documentation.			
Ensure Squirrel Glider habitat connectivity is safely maintained by using non-barbed fencing with reflective markers. Where connectivity <60m consider use of glider poles and rope crossings.	Ecologist to perform an inspection during and post construction to check fencing and habitat connectivity, with findings and recommendations documented in flora and fauna management report.	Fencing is appropriate and habitat connectivity is maintained	Fencing is inappropriate and habitat connectivity is compromised	Retrofit fencing, install glider poles and rope crossings



10.0 Serious and Irreversible Impacts

10.1 Assessment for Serious and Irreversible Impacts on Biodiversity Values

Entities at risk of an SAIL that are relevant to the proposed development are identified in Table 30.

Table 30: Entities at risk of an SAIL

Common name	Scientific name	Reason for inclusion in assessment
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	n/a	Included in current list of entities at risk of an SAIL and is likely to be impacted by the proposal

10.1.1 Additional Impact Assessment Provisions for TECs At Risk of an SAIL

Serious and irreversible impact entities are assessed in the following section and mapped in Figure 14.

10.1.1.1 White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland

1. Actions to avoid and minimise direct and indirect impacts

Actions to avoid and minimise direct and indirect impacts are included in Section 8.1 and include locating the development to avoid areas of TEC where possible, maximising use of already cleared land and under boring the water pipeline.

2. Current status (excluding impacts of the proposal)

Table 31: Current status – White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland

Criteria	Data/Information	Data sources	Details of data deficiency, assumptions, reasons for low confidence in information (e.g. TBDC indicates data is unknown or deficient)
Current total geographic extent (ha) of the TEC in NSW	51,930-253,700 ha based on component ranges reported by Benson (2008) as cited in the NSW Final Determination.	NSW Scientific Committee Final Determination (17 Jul 2020).	Data deficient in TBDC. NSW total extent is not provided in the Final Determination, Conservation Advice or Saving our Species reporting. The provided estimated range is calculated by summing component vegetation communities (IDs 266, 267, 274, 275, 276, 277, 278, 279, 282, 312, 347). ID 277 has an explicit 30,000 ha remaining; others use % extant multiplied by pre-1750 area. Ranges reflect the % extant intervals reported for each component in the Determination; hence, totals inherit those uncertainties.



Criteria	Data/Information	Data sources	Details of data deficiency, assumptions, reasons for low confidence in information (e.g. TBDC indicates data is unknown or deficient)
Estimated reduction in geographic extent of the TEC since 1970	This community is at risk of an SAI as it meets the reduction in geographic extent of $\geq 90\%$ since 1750 or $\geq 80\%$ since 1970. There is an up to 96% decline since 1750 in some areas.	Conservation Advice (TSC, 2024)	n/a
Extent of reduction in ecological function, describing the degree of environmental degradation or disruption to biotic processes (Principle 2) indicated by factors listed in BAM Subsection 9.1.1(2.b.)			
This community is at risk of an SAI based on Principle 2. It meets the reduction in ecological function of $\geq 90\%$ since 1750 or $\geq 80\%$ since 1970 (TSC, 2024). There is an up to 96% decline since 1750 in some areas (TSC, 2024). The Final Determination documents that the White Box–Yellow Box–Blakely's Red Gum Grassy Woodland and Derived Native Grassland show a very large decline in ecological function, with extensive evidence of structural change, loss of characteristic species, and severe disruption of ecological processes such as regeneration, soil function, and understorey dynamics. These changes are driven by long-term clearing, grazing pressure, pasture modification, exotic species invasion, and widespread habitat degradation, including soil erosion, nutrient alteration, and hydrological impacts. The TEC is now highly fragmented, occurring mostly as small, isolated remnants within heavily cleared agricultural landscapes. Despite this, the community's geographic range is not considered restricted, given its large national extent of occurrence and area of occupancy. Overall, the combination of ecosystem degradation, severe functional decline, and fragmentation underpins its Critically Endangered status.			
Evidence of restricted geographic distribution (Principle 3) based on the TEC's geographic range in NSW			
This community is not at risk of an SAI based on Principle 3. Data is deficient with respect to area of occupancy and total current extent, but the extent of occurrence is not restricted.			
Extent of occurrence (ha)	263,778 km ²	Data provided by NSW DCCEEW	
Area of occupancy (ha)	Not available	n/a	Data deficient in TBDC. No information provided in Final Determination, Conservation Advice or Saving our Species reporting.
Number of threat-defined locations	Not available	n/a	Data deficient in TBDC. No information provided in Final Determination, Conservation Advice or Saving our Species reporting.



3. Impact assessment

Table 32: Impact Assessment - White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland

Criteria	Data/Information	Data sources	Details of data deficiency, assumptions, reasons for low confidence in information (e.g. TBDC indicates data is unknown or deficient)
Impact on the geographic extent of the TEC (Principles 1 and 3)			
Area of TEC to be impacted by the proposal (ha)	2.88	n/a	n/a
Area of TEC to be impacted by the proposal as a % of the current geographic extent in NSW (%)	>0.005%	n/a	n/a
Direct/indirect impacts likely as a result of the proposal to contribute to loss of flora/fauna species characteristic of the TEC (BAM Subsection 9.1.1(4.a.ii.))	2.88 ha direct clearing. Indirect and prescribed impacts are addressed in Section 9.2 and 9.3 respectively. All areas have been assessed as direct loss and no partial loss applies.	n/a	n/a
Impacts likely to contribute to further environmental degradation or disruption of biotic processes (Principle 2)			
Remaining extent of isolated areas of TEC (ha)	Most areas of native vegetation remaining in the assessment area are connected via a <100 m gap therefore are not isolated - see Figure 10. PCT 277 constitutes most of the remaining areas of native vegetation in the assessment area.	n/a	n/a
Average distance between remaining remnants –	For the assessment area these distances	n/a	n/a



Criteria	Data/Information	Data sources	Details of data deficiency, assumptions, reasons for low confidence in information (e.g. TBDC indicates data is unknown or deficient)
remnant is retained (m)	are <100 m – see Figure 10		
Average distance between remaining remnants – remnant is removed (m)	<100 m	n/a	n/a
Estimated maximum dispersal distance of species associated with the TEC (km)	<100 m	n/a	n/a
Area to perimeter ratio of remaining remnants (ratio)	unknown	n/a	n/a
Vegetation integrity analysis			
277_Mod (Composition score)	46.7	n/a	n/a
277_Mod (Structure score)	89.4	n/a	n/a
277_Mod (Function score)	48.3	n/a	n/a
277_Low (Composition score)	10.7	n/a	n/a
277_Low (Structure score)	62.5	n/a	n/a
277_Low (Function score)	42.5	n/a	n/a
Greyed cells are not relevant/required because the assessment is the source of data.			

10.1.2 Additional Impact Assessment Provisions for Threatened Species at Risk of an SAI

For this assessment there are no threatened species at risk of a serious and irreversible impact.



11.0 Impact Summary

11.1 Determine an Offset Requirement for Impacts

11.1.1 Impacts on Native Vegetation and TECs or ECs (Ecosystem Credits)

For this assessment there are no impacts on native vegetation and TECs or ECs that do not require an offset (as per BAM Subsection 9.2.1(3.)). Table 33 identifies impacts that require an offset (as per BAM Subsection 9.2.1(1.)). Thresholds for assessment and offsetting impacts are identified in Figure 15.

Table 33: 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
277_Mod	Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion	White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	1.75	60.9	0	-60.9	2.5	67
277_Low	Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion	White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	1.13	30.5	0	-30.5	2.5	22
Total credits								89

11.1.2 Impacts on Threatened Species and their Habitat (Species Credits)

Table 34 identifies impacts on threatened species (species credits) that require an offset (as per BAM Subsection 9.2.2).



Table 34: Impacts that require an Offset – Species Credits

Common name	Scientific name	BC Act status	EPBC Act status	Loss of habitat (ha)	Biodiversity risk weighting	Number of species credits required
Squirrel Glider	<i>Petaurus norfolcensis</i>	V	-	2.88	2	70
Small Purple-pea	<i>Swainsona recta</i>	E	E	0.06	1.5	2
Silky Swainson-pea	<i>Swainsona sericea</i>	V	-	0.06	2	2
Total credits						74

11.1.3 Indirect and Prescribed Impacts

The retirement of biodiversity credits may be used with other conservation measures to mitigate prescribed impacts or the indirect impacts of a proposal on areas of native vegetation, TECs and/or threatened species, or their habitat adjacent to the subject land. SLR is of the opinion that all indirect and prescribed impacts are minor in nature and/or will be sufficiently mitigated and managed by implementing measures outlined in this BDAR.

As such, additional biodiversity credits to mitigate indirect or prescribed impacts are not proposed.

11.2 Impacts that do not Need Further Assessment

Table 35 identifies impacts that do not need further assessment for ecosystem credits (as per BAM Section 9.3(1-2). These areas are also identified Figure 15.

Table 35: Impacts that do not Need Further Assessment for Ecosystem Credits

Impact	Location within subject land	Justification why no further assessment is required
Cleared Land	Most of the proposed development footprint	No native vegetation or habitats for threatened species present



12.0 Biodiversity Credit Report

The Biodiversity Credit Report for the project is included in Appendix H.

Biodiversity credits that share the same attributes form a class of credits. The credit classes for ecosystem credits are included in Table 36 and species credits are presented in Table 37.



Table 36: 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 277	Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion	Western Slopes Grassy Woodlands	Grassy Woodlands	White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions	White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions	Yes	Lower Slopes

Table 37: Species Credit Class and Matching Credit Profile

Species credit	Attributes shared with matching credits				
	Name of threatened species	Kingdom	BC Act status	EPBC Act status	IBRA region (In which proposal is located)
Squirrel Glider	<i>Petaurus norfolcensis</i>	Fauna	V	-	Lower Slopes
Small Purple-pea	<i>Swainsona recta</i>	Flora	E	E	Lower Slopes
Silky Swainson-pea	<i>Swainsona sericea</i>	Flora	V	-	Lower Slopes



13.0 References

- Andrews, A. 1990, "*Fragmentation of habitat by roads and utility corridors: A review*". Australian Zoologist, 26(3-4), 130-141. <https://doi.org/10.7882/AZ.1990.00>.
- Artefact 2023, "*Draft Aboriginal Heritage Due Diligence Report – Battery Energy Storage System (BESS) facilities at Jindera*" letter dated 27 November 2023.
- BOM 2026, "*Climate Data Online*", Bureau of Meteorology, Commonwealth of Australia. Retrieved from: <http://www.bom.gov.au/climate/data/>.
- Commonwealth DCCEEW 2023, "*Conservation advice for White Box–Yellow Box–Blakely's Red Gum Grassy Woodland and Derived Native Grassland*", Australian Government, Canberra. Retrieved from: <http://www.environment.gov.au/cgi-bin/sprat/public/publicshowcommunity.pl?id=43&status=Critically+Endangered>.
- Commonwealth DCCEEW 2024a, "*EPBC Act Protected Matters Search Tool*", Department of Climate Change, Energy, the Environment and Water. Retrieved from: <http://www.environment.gov.au/epbc/pmst>.
- Commonwealth DCCEEW 2024b, "*Species Profile and Threats Database*", Department of Climate Change, Energy, the Environment and Water. Retrieved from: <http://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl>.
- Commonwealth DCCEEW 2024c, "*Directory of Important Wetlands Australia*" Department of Climate Change, Energy, the Environment and Water. Retrieved from: <https://www.environment.gov.au/water/wetlands/australian-wetlands-database/directory-important-wetlands>.
- Commonwealth DCCEEW 2024d, "*Register of Critical Habitat*", Department of Climate Change, Energy, the Environment and Water. Retrieved from: <http://www.environment.gov.au/cgi-bin/sprat/public/publicregisterofcriticalhabitat.pl>
- CSIRO 2024, "*Atlas of Living Australia*", Commonwealth Scientific and Industrial Research Organisation. Retrieved from: <http://www.ala.org.au/>.
- DEC 2004, "*Threatened Species Survey and Assessment: Guidelines for developments and activities (working draft)*", Department of Environment and Conservation, Hurstville, NSW.
- DECC 2002, "*Descriptions for NSW (Mitchell) Landscapes Version 2. Based on the descriptions by Dr. Peter Mitchell*", Department of Environment and Climate Change. Retrieved from: <https://www.environment.nsw.gov.au/resources/conservation/landscapesdescriptions.pdf>.
- DECCW 2010, "*National Recovery Plan for White Box–Yellow Box–Blakely's Red Gum Grassy Woodland and Derived Native Grassland*", Department of Environment, Climate Change and Water NSW, Sydney.
- DEE 2017, "*EPBC Act Policy Statement 3.21—Industry guidelines for avoiding, assessing and mitigating impacts on EPBC Act listed migratory shorebird species*", Department of the Environment and Energy and Commonwealth of Australia.
- DEH 2006, "*EPBC Act Policy Statements, White Box - Yellow Box - Blakely's Red Gum grassy woodlands and derived native grasslands*", Department of Environment and Heritage. Retrieved from: <https://www.environment.gov.au/cgi-bin/sprat/public/publicshowcommunity.pl?id=43>
- DEWHA 2010, "*Survey guidelines for Australia's threatened birds*", Commonwealth Department of the Environment, Water, Heritage and the Arts



DoE 2013, “*Matters of National Environmental Significance, Significant Impact Guidelines 1.1, Environment Protection and Biodiversity Conservation Act 1999*”, Department of the Environment and Commonwealth of Australia.

DoE 2015, “*Draft referral guideline for 14 migratory birds listed under the EPBC Act*”, Department of the Environment and Commonwealth of Australia.

DPHI 2024, “*Planning Secretary’s Environmental Assessment Requirements, Application Number SSD-68815961*”, date of issue 18/04/2024, NSW Department of Housing and Infrastructure (DPHI), Parramatta, NSW. Retrieved from:
<https://www.planningportal.nsw.gov.au/major-projects/projects/jindera-bess>.

DPE 2022a, “*Koala (Phascolarctos cinereus) Biodiversity Assessment Method Survey Guide*”, Department of Planning and Environment, Parramatta, NSW. Retrieved from:
https://www.environment.nsw.gov.au/research-and-publications/publications?sort=field_publish_event_date.

DPE 2022b, “*Threatened reptiles Biodiversity Assessment Method survey guide*”, State Government of NSW and Department of Planning and Environment, Parramatta, NSW. Retrieved from: https://www.environment.nsw.gov.au/research-and-publications/publications?sort=field_publish_event_date.

DPE 2022c, “*Biodiversity Assessment Method 2020 Operational Manual - Stage 1*”, Department of Planning and Environment, Sydney, NSW. Retrieved from:
https://www.environment.nsw.gov.au/research-and-publications/publications?sort=field_publish_event_date.

DPE 2023, “*Biodiversity Assessment Method Operational Manual Stage 2*”, State Government of NSW and NSW Department of Planning and Environment. Retrieved from:
https://www.environment.nsw.gov.au/research-and-publications/publications?sort=field_publish_event_date.

DPI 2013, “*Policy and Guidelines for Fish Habitat Conservation and Management (Updated 2013)*”, NSW Department of Primary Industries (Fisheries) (DPI (Fisheries)). Retrieved from:
https://www.dpi.nsw.gov.au/__data/assets/pdf_file/0005/634694/Policy-and-guidelines-for-fish-habitat.pdf.

DPI 2016, “*Fish Communities and Threatened Species Distribution of NSW*”, NSW Department of Primary Industries. Retrieved from:
<https://www.dpi.nsw.gov.au/fishing/threatened-species/threatened-species-distributions-in-nsw>.

DPI 2024a, “*Threatened species lists*”, NSW Department of Primary Industries. Retrieved from: <https://www.dpi.nsw.gov.au/fishing/species-protection/what-current>.

DPI 2024b, “*Critical Habitat Register*”, NSW Department of Primary Industries. Retrieved from: <https://www.dpi.nsw.gov.au/fishing/threatened-species/conservation/what/register>.

DPI 2024c, “*Fisheries Register*”, NSW Department of Primary Industries. Retrieved from: <https://www.dpi.nsw.gov.au/fishing/threatened-species/threatened-species-registers>.

DPI 2024d, “*Key Fish Habitat Maps*”, NSW Department of Primary Industries. Retrieved from: <http://www.dpi.nsw.gov.au/fishing/habitat/publications/pubs/key-fish-habitat-maps>.

DPIE 2019a, “*Guidance to assist a decision-maker to determine a serious and irreversible impact*”, Department of Planning, Industry and Environment, Sydney, NSW. Retrieved from:
https://www.environment.nsw.gov.au/research-and-publications/publications?sort=field_publish_event_date.



DPIE 2020a, "*Biodiversity Assessment Method 2020*", Department of Planning, Industry and the Environment, Sydney, NSW. Retrieved from:
https://www.environment.nsw.gov.au/research-and-publications/publications?sort=field_publish_event_date.

DPIE 2020b, "*Surveying threatened plants and their habitats*", Department of Planning, Industry and the Environment, Sydney, NSW. Retrieved from:
https://www.environment.nsw.gov.au/research-and-publications/publications?sort=field_publish_event_date.

DPIE 2020c, "*NSW Survey Guide for Threatened Frogs*", Department of Planning, Industry and the Environment, Sydney, NSW. Retrieved from:
https://www.environment.nsw.gov.au/research-and-publications/publications?sort=field_publish_event_date.

DPIE 2020d, "*Biodiversity Assessment Method 2020 Operational Manual - Stage 3*", Department of Planning, Industry and Environment, Sydney, NSW. Retrieved from:
https://www.environment.nsw.gov.au/research-and-publications/publications?sort=field_publish_event_date.

DPIE 2021a, "*Species credit' threatened bats and their habitats NSW survey guide for the Biodiversity Assessment Method*", NSW Department of Planning, Industry and the Environment. Retrieved from: https://www.environment.nsw.gov.au/research-and-publications/publications?sort=field_publish_event_date.

DPIE 2021b, "*Koala SEPP 2021 - FACTSHEET - development applications*", NSW Department of Planning, Industry and the Environment. Retrieved from:
<https://www.planning.nsw.gov.au/sites/default/files/2023-03/koala-sepp-2021-fact-sheet.pdf>.

ESRI 2023, "*ArcGIS Stream Order*". Retrieved from:
<https://www.arcgis.com/home/webmap/viewer.html?url=https%3A%2F%2Fspatial.industry.nsw.gov.au%2Farcgis%2Frest%2Fservices%2FPUBLIC%2FstreamOrder%2FmapServer&source=sd>.

Ewers, R. M., & Didham, R. K. 2006, "*Confounding factors in the detection of species responses to habitat fragmentation*", *Biological Reviews*, 81(1), 117–142.
<https://doi.org/10.1017/S1464793105006949>.

Gillespie Economics 2025, "*Economic Assessment*", dated May 2025.

Keith, D. 2004, "*Ocean Shores to Desert Dunes: the native vegetation of New South Wales*", Department of Environment and Conservation (NSW), Sydney, NSW.

Nearmap 2025, "*Nearmap*", Barangaroo, NSW. Retrieved from:
<https://www.nearmap.com/au/en> (via subscription)

NGH Environmental 2019, "*Biodiversity Development Assessment Report - Jindera Solar Farm*", August 2019

NPWS 2003, "*The Bioregions of New South Wales – their biodiversity, conservation and history*", National Parks and Wildlife Services (NPWS), Hurstville, NSW. Retrieved from:
<https://www.environment.nsw.gov.au/topics/animals-and-plants/biodiversity/bioregions/about>.

NSW DCCEEW 2010a, "*Estuary Drainage Catchments*", State Government of NSW and NSW Department of Climate Change, Energy, the Environment and Water. Retrieved from:
<https://datasets.seed.nsw.gov.au/dataset/estuary-drainage-catchmentseafb7>.



NSW DCCEEW 2010b, “*NSW Wetlands*”, State Government of NSW and NSW Department of Climate Change, Energy, the Environment and Water. Retrieved from: <https://datasets.seed.nsw.gov.au/dataset/nsw-wetlands047c7>.

NSW DCCEEW 2018, “*NSW Koala Prioritisation Project - Areas of Regional Koala Significance (ARKS)*”. State Government of NSW and NSW Department of Climate Change, Energy, the Environment and Water. Retrieved from: <https://datasets.seed.nsw.gov.au/dataset/areas-of-regional-koala-significance-arks>.

NSW DCCEEW 2019, “*NSW Koala Likelihood Map v2.0 - Aug 2019*”. State Government of NSW and NSW Department of Climate Change, Energy, the Environment and Water. Retrieved from: <https://datasets.seed.nsw.gov.au/dataset/koala-likelihood-map-v2-0-august-2019>.

NSW DCCEEW 2022, “*NSW State Vegetation Type Map*”, State Government of NSW and NSW Department of Climate Change, Energy, the Environment and Water. Retrieved from: <https://datasets.seed.nsw.gov.au/dataset/nsw-state-vegetation-type-map>.

NSW DCCEEW 2024a, “*Reconnaissance Soil and Land Resources of the Murray Catchment*”, State Government of NSW and NSW Department of Climate Change, Energy, the Environment and Water. Retrieved from: <https://datasets.seed.nsw.gov.au/dataset/c7b14588-e5c9-4447-906d-67dc8c445c90>.

NSW DCCEEW 2024b, “*BioNet Atlas of NSW Wildlife*”, State Government of NSW and NSW Department of Climate Change, Energy, the Environment and Water. Retrieved from: <https://www.environment.nsw.gov.au/topics/animals-and-plants/biodiversity/nsw-bionet/about-bionet-atlas>.

NSW DCCEEW 2024c, “*BioNet Vegetation Classification*”, State Government of NSW and NSW Department of Climate Change, Energy, the Environment and Water. Retrieved from: <https://www.environment.nsw.gov.au/research/Visclassification.htm>.

NSW DCCEEW 2024d, “*SEED Portal*”, State Government of NSW and NSW Department of Climate Change, Energy, the Environment and Water. Retrieved from: <https://www.seed.nsw.gov.au/>.

Premise 2024a, “*Heritage Impact Statement*”, Draft dated 22 November 2024, Premise Australia.

Premise 2024b “*Agricultural Impact Assessment*”, dated 20 November 2024, Premise Australia.

Premise 2025 “*Land Use Conflict Risk Assessment*” dated 27 March 2025, Premise Australia.

RBGDT 2023, “*PlantNET (The NSW Plant Information Network System)*”, Royal Botanic Gardens and Domain Trust, Sydney, NSW. Retrieved from: <http://plantnet.rbgsyd.nsw.gov.au>.

RPS 2023, “*Ecological Constraints Assessment Gransolar Development Australia Battery Energy Storage System Jindera NSW 2642, 21 November 2023*”

SLR 2025a, “*Environmental Impact Statement*”, dated May 2025, SLR Consulting Australia.

SLR 2025b, “*Landscape Character and Visual Impact Assessment*”, dated 14 May 2025, SLR Consulting Australia.

SLR 2025c, “*Transport Impact Assessment*”, dated 11 April 2025, SLR Consulting Australia.

SLR 2025d, “*Noise and Vibration Impact Assessment*”, dated 6 May 2025, SLR Consulting Australia.



SLR 2025e, "*Waste Management Plan*", dated 2 May 2025, SLR Consulting Australia.

SLR 2025f, "*Hazard and Risk Assessment*", dated 12 May 2025, SLR Consulting Australia.

SLR 2025g, "*Social Impact Assessment Report*", SLR Consulting Australia.

SLR 2025h, "*Light Spill Assessment*", dated 8 May 2025, SLR Consulting Australia.

SLR 2025i, "*Bushfire Risk Assessment Report*", dated 12 May 2025, SLR Consulting Australia.

Specht, R.L. 1970, "*Vegetation*", Pages 44–67 in Leeper, G.W. (ed.), "Australian Environment", 4th Edn. Melbourne University Press, Melbourne, VIC.

TSC 2024, "*Final determinations*", Threatened Species Scientific Committee (NSW), Hurstville, NSW. Retrieved from: <https://www.environment.nsw.gov.au/topics/animals-and-plants/threatened-species/nsw-threatened-species-scientific-committee/determinations/final-determinations>.

TSSC 2006, "*White Box - Yellow Box - Blakely's Red Gum Grassy Woodlands and Derived Native Grasslands listing advice and conservation advice*", Threatened Species Scientific Committee, Canberra, ACT.

Virtus Heritage 2025, "*Aboriginal Cultural Heritage Assessment*", dated 15 April 2025.

Water Technology 2025, "*Flood Risk and Impact Assessment Report*", dated 13 May 2025.

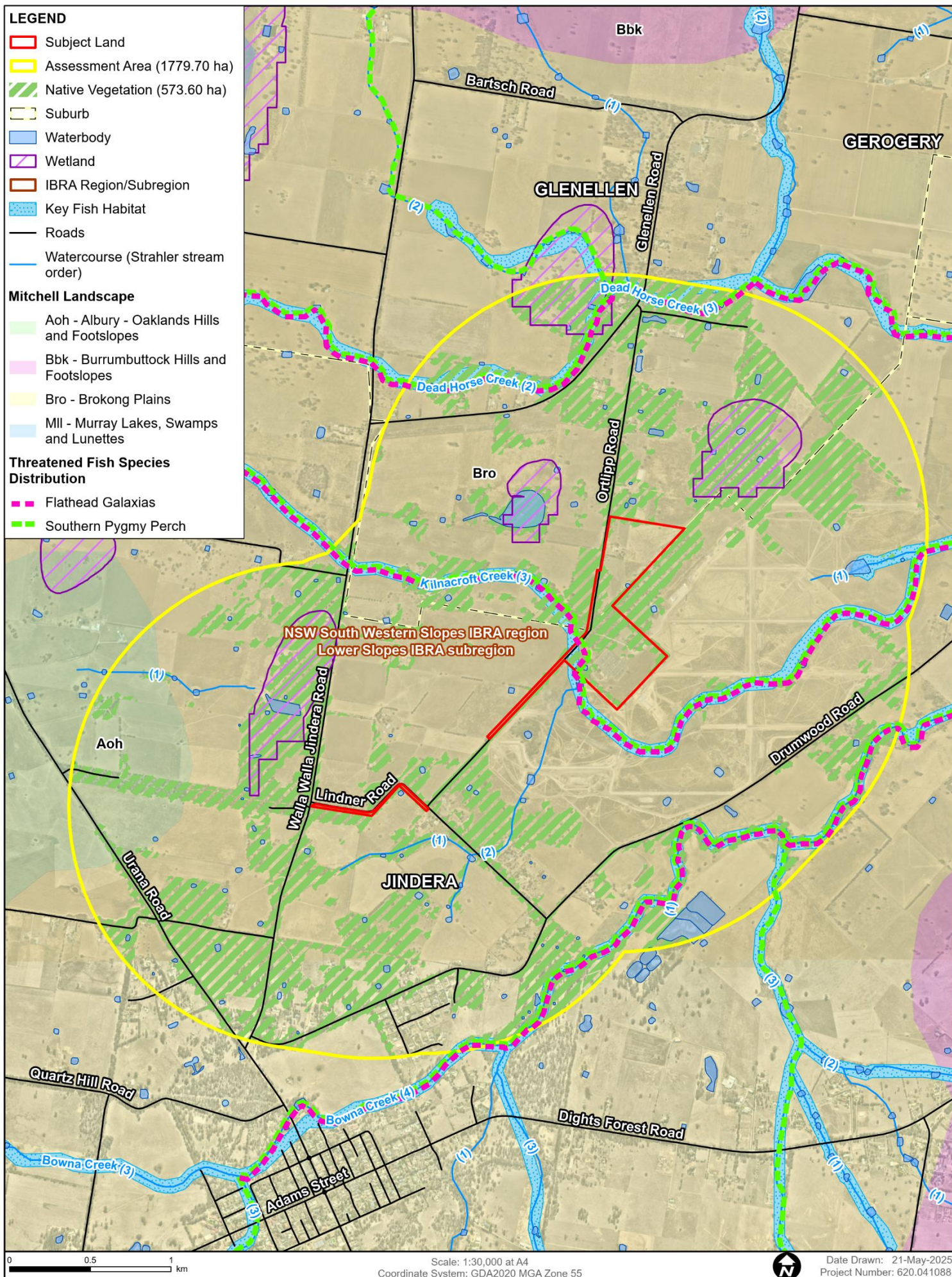


Data Sources:
NSW SS (2024)
Aerial imagery: Nearmap (November 2024)
Mitchell Landscapes: NSW DCCEEW (2016)
IBRA regions: Commonwealth DCCEEW (2012)
Wetlands: NSW EPI Wetlands (NSW DPHI 2023)

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SITE MAP

FIGURE 1



Data Sources:
NSW SS (2024). Waterbodies within Assessment Area digitised by SLR (2025) through aerial imagery interpretation
Aerial imagery: Nearmap (November 2024). Wetlands: NSW EPI Wetlands (NSW DPHI 2023)
Native vegetation: derived from SVTM (NSW DPE 2023)
Mitchell Landscapes: NSW DCCEEW (2016)
IBRA regions: Commonwealth DCCEEW (2012)

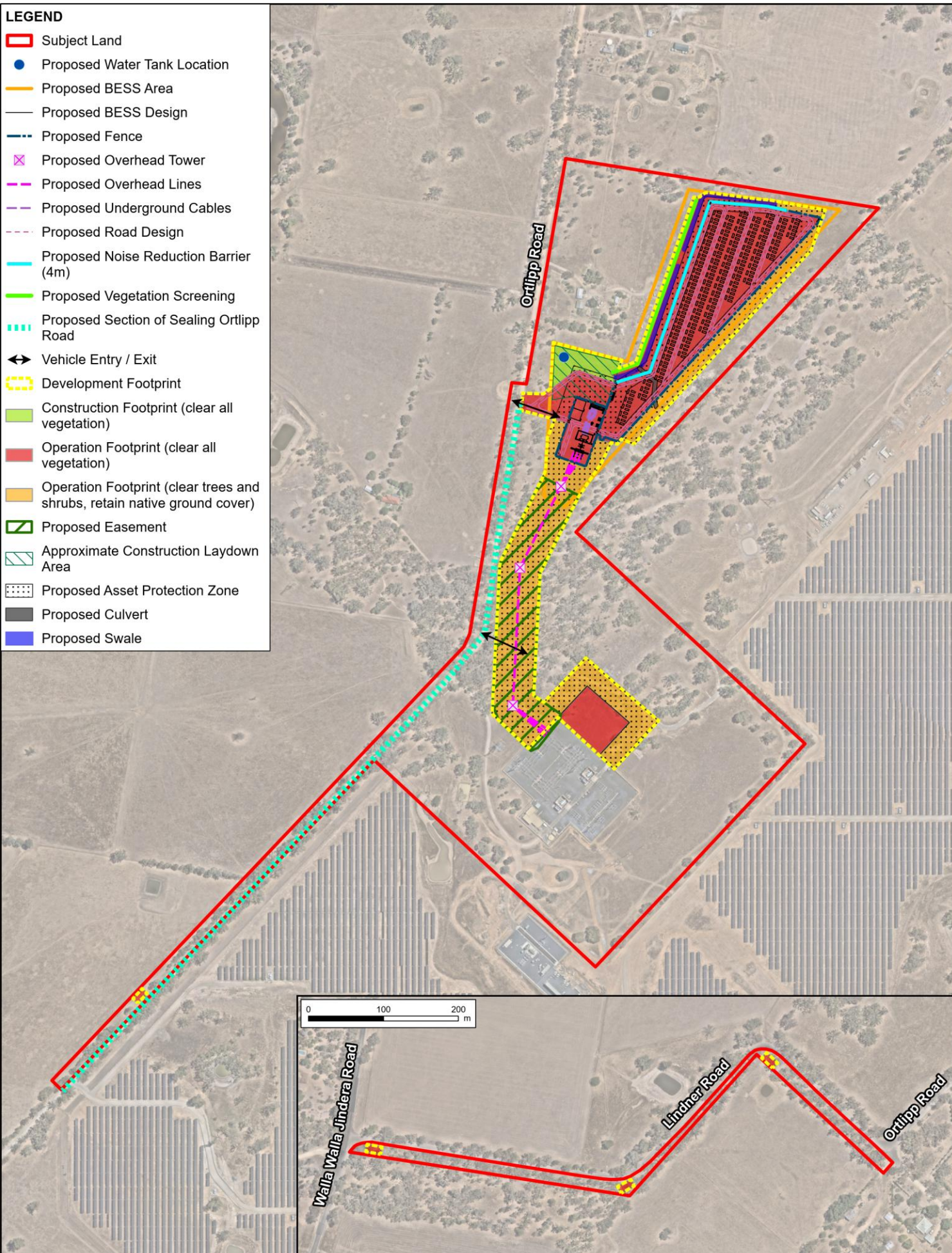
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LOCATION MAP

FIGURE 2

LEGEND

- Subject Land
- Proposed Water Tank Location
- Proposed BESS Area
- Proposed BESS Design
- Proposed Fence
- ✕ Proposed Overhead Tower
- Proposed Overhead Lines
- Proposed Underground Cables
- Proposed Road Design
- Proposed Noise Reduction Barrier (4m)
- Proposed Vegetation Screening
- Proposed Section of Sealing Ortlipp Road
- ↔ Vehicle Entry / Exit
- Development Footprint
- Construction Footprint (clear all vegetation)
- Operation Footprint (clear all vegetation)
- Operation Footprint (clear trees and shrubs, retain native ground cover)
- Proposed Easement
- Approximate Construction Laydown Area
- Proposed Asset Protection Zone
- Proposed Culvert
- Proposed Swale



0 100 200 m

Scale: 1:7,200 at A4
Coordinate System: GDA2020 MGA Zone 55

0 100 200 m

North Arrow

Date Drawn: 15-Jun-2026
Project Number: 620.041088

Data Sources:
NSW SS (2024)
Aerial imagery: Nearmap (January 2026)



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DEVELOPMENT LAYOUT

FIGURE 3

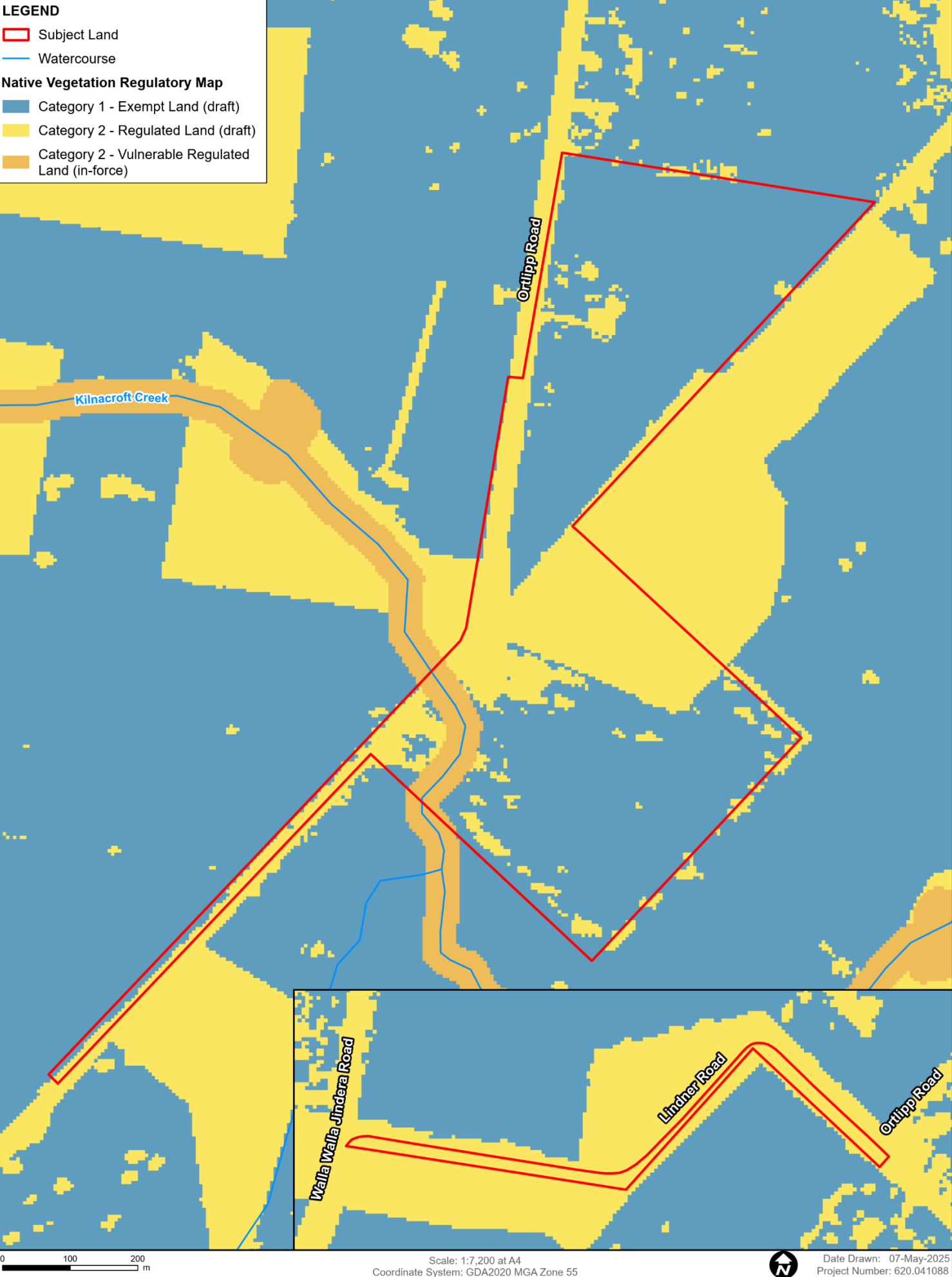


Data Sources:
NSW SS (2024)
Aerial Imagery: Nearmap (November 2024)
Biodiversity Values: Version 16.13, NSW DCCEEW (18 July 2024)

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BIODIVERSITY VALUES MAP

FIGURE 4



Data Sources:
NSW SS (2024)
NVRM: NSW DPPI (2024)



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EXCLUDED IMPACTS

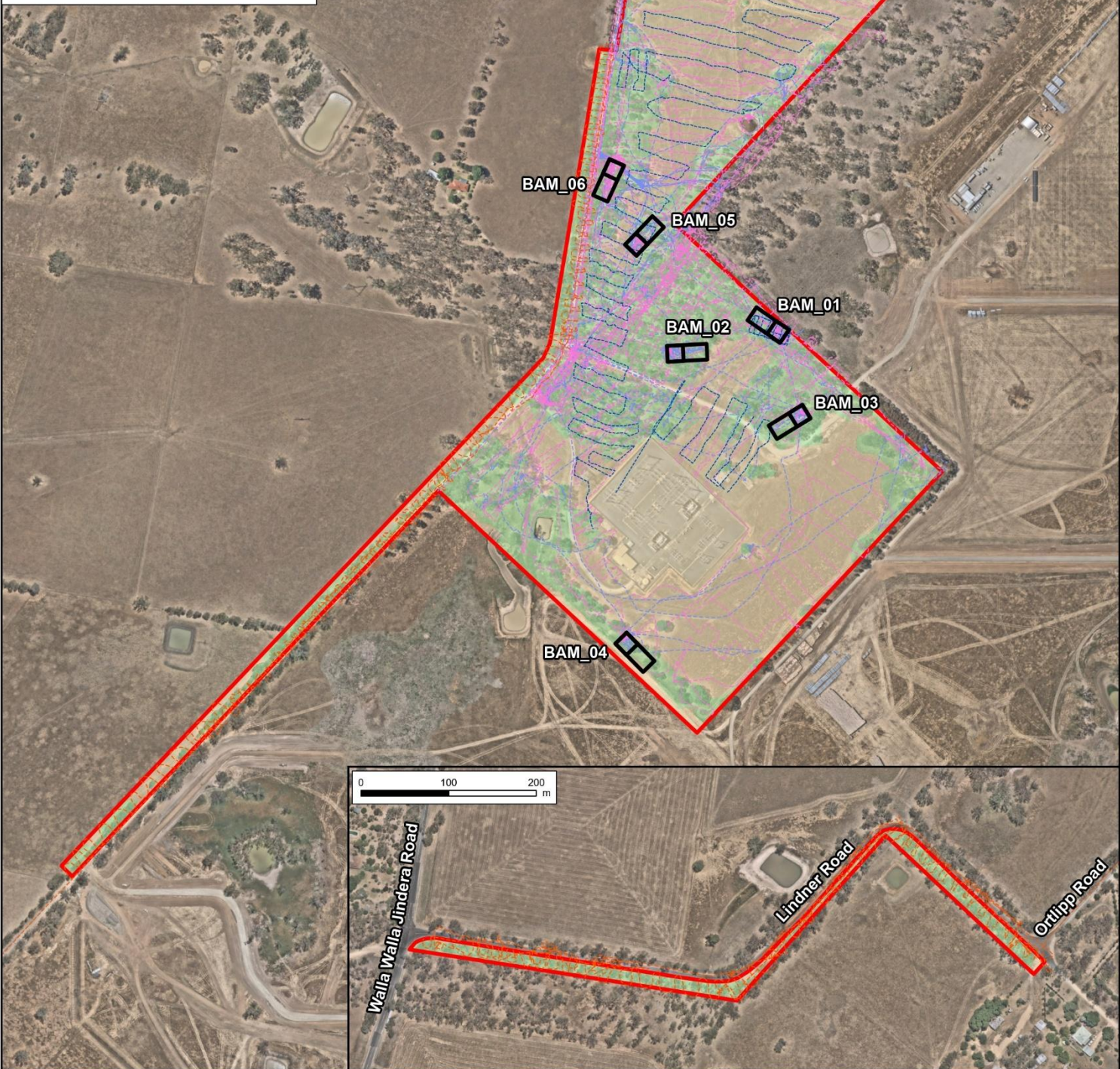
FIGURE 5

LEGEND

- Subject Land
- BAM Plot Location
- Field Survey Tracks (July 2024)
- Field Survey Tracks (October 2024)
- Field Survey Tracks (December 2024)
- Field Survey Tracks (December 2025)

Vegetation

- PCT 277 - Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
- Non-Native Vegetation / Cleared Land



0 100 200 m

Scale: 1:7,200 at A4
Coordinate System: GDA2020 MGA Zone 55

0 100 200 m

North Arrow

Date Drawn: 07-Jan-2026
Project Number: 620.041088

Data Sources:
NSW SS (2024)
Aerial Imagery: Nearmap (November 2024)



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FIELD SURVEY LOCATIONS FLORA

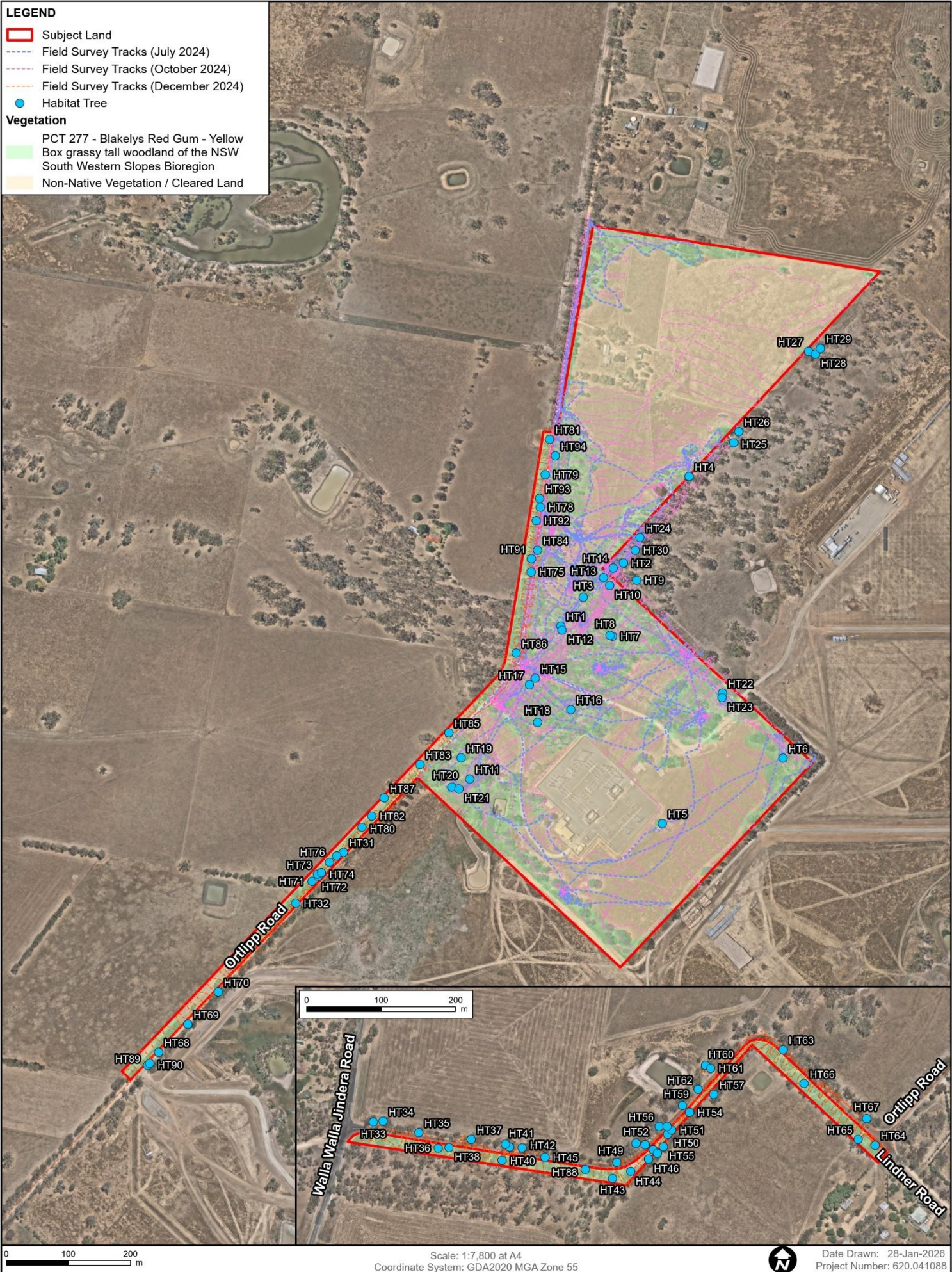
FIGURE 6a

LEGEND

- Subject Land
- Field Survey Tracks (July 2024)
- Field Survey Tracks (October 2024)
- Field Survey Tracks (December 2024)
- Habitat Tree

Vegetation

- PCT 277 - Blakelys Red Gum - Yellow
- Box grassy tall woodland of the NSW South Western Slopes Bioregion
- Non-Native Vegetation / Cleared Land



0 100 200 m

Scale: 1:7,800 at A4
Coordinate System: GDA2020 MGA Zone 55

0 100 200 m

North Arrow

Date Drawn: 28-Jan-2026
Project Number: 620.041088

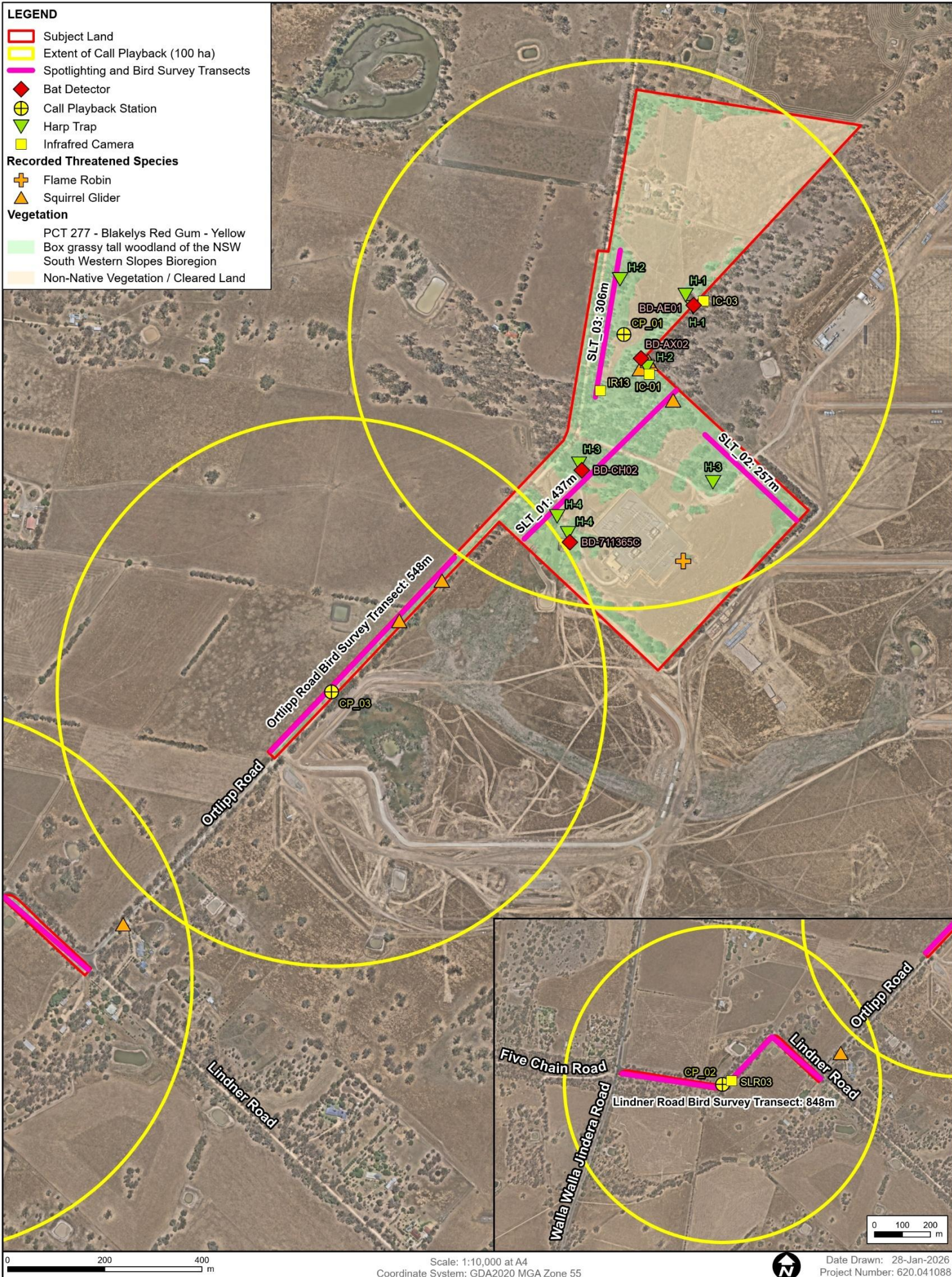
Data Sources:
NSW SS (2024)
Aerial Imagery: Nearmap (November 2024)



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FAUNA SURVEY LOCATIONS HABITAT

FIGURE 6b



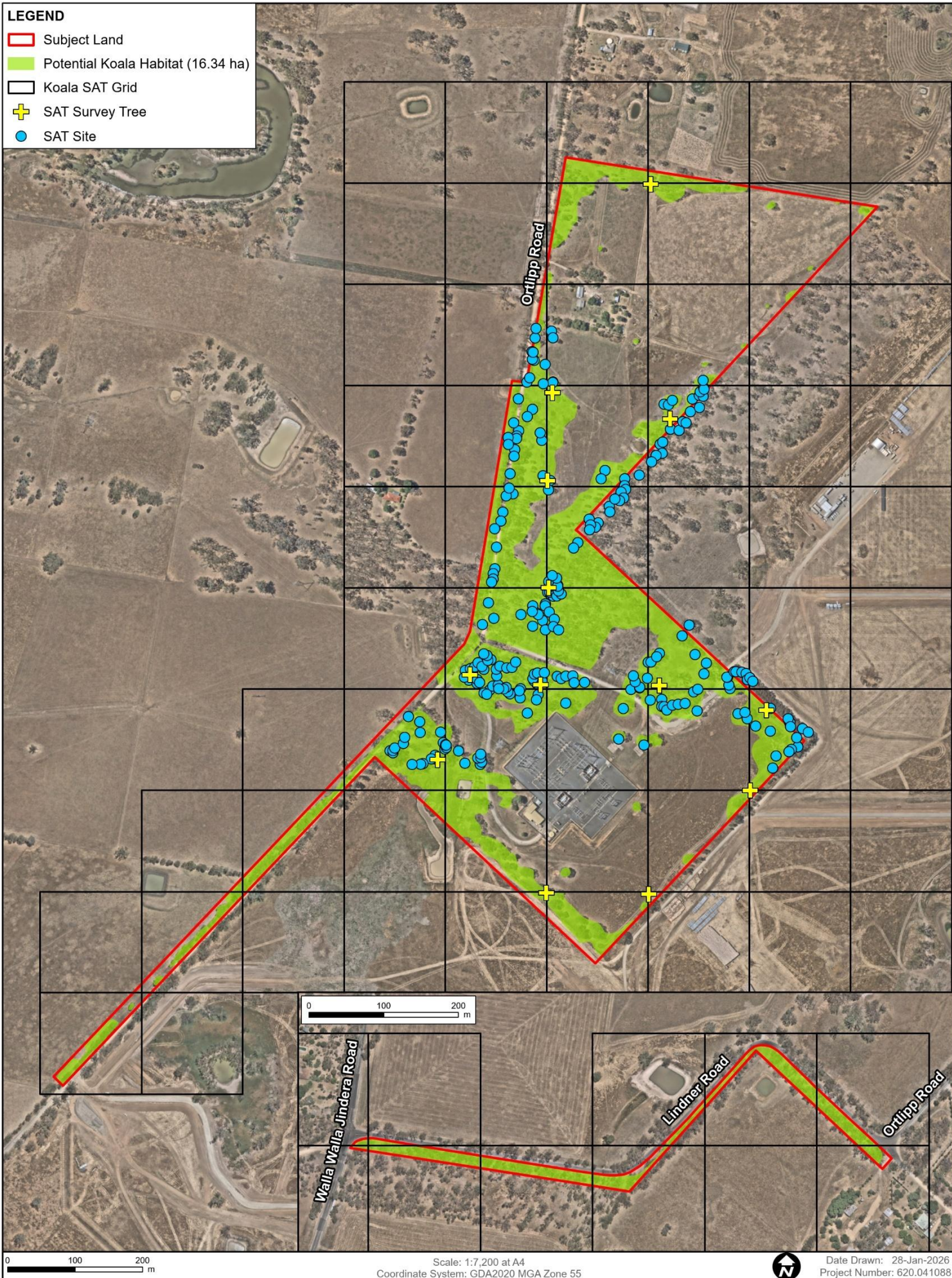
Data Sources:
NSW SS (2024)
Aerial Imagery: Nearmap (November 2024)



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FAUNA SURVEY LOCATIONS TRAP STATIONS

FIGURE 6c



Data Sources:
NSW SS (2024)
Aerial Imagery: Nearmap (November 2024)



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FAUNA SURVEY LOCATIONS KOALA

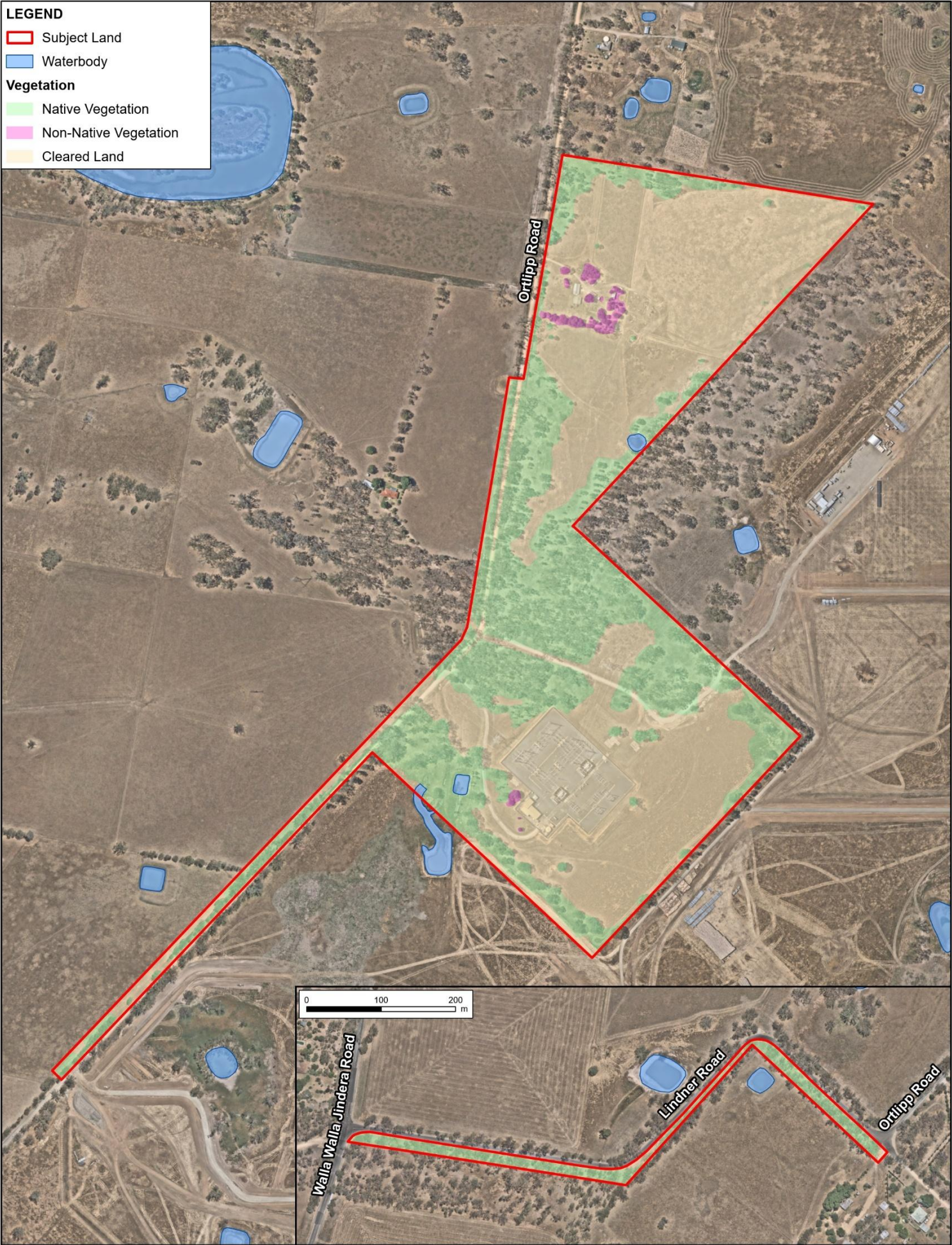
FIGURE 6d

LEGEND

- Subject Land
- Waterbody

Vegetation

- Native Vegetation
- Non-Native Vegetation
- Cleared Land



0 100 200 m

Scale: 1:7,200 at A4
Coordinate System: GDA2020 MGA Zone 55

Date Drawn: 07-May-2025
Project Number: 620.041088

Data Sources:
NSW SS (2024)
Aerial Imagery: Nearmap (November 2024)



DISCLAIMER: All information within this document may be based on external sources. SLR Consulting Pty Ltd makes no warranty regarding the data's accuracy or reliability for any purpose.

NATIVE VEGETATION EXTENT

FIGURE 7

LEGEND

 Subject Land

Plant Community Type (PCT)

PCT 277 - Blakelys Red Gum - Yellow
 Box grassy tall woodland of the NSW
 South Western Slopes Bioregion



0 100 200
m

Scale: 1:7,200 at A4
 Coordinate System: GDA2020 MGA Zone 55



Date Drawn: 07-May-2025
 Project Number: 620.041088

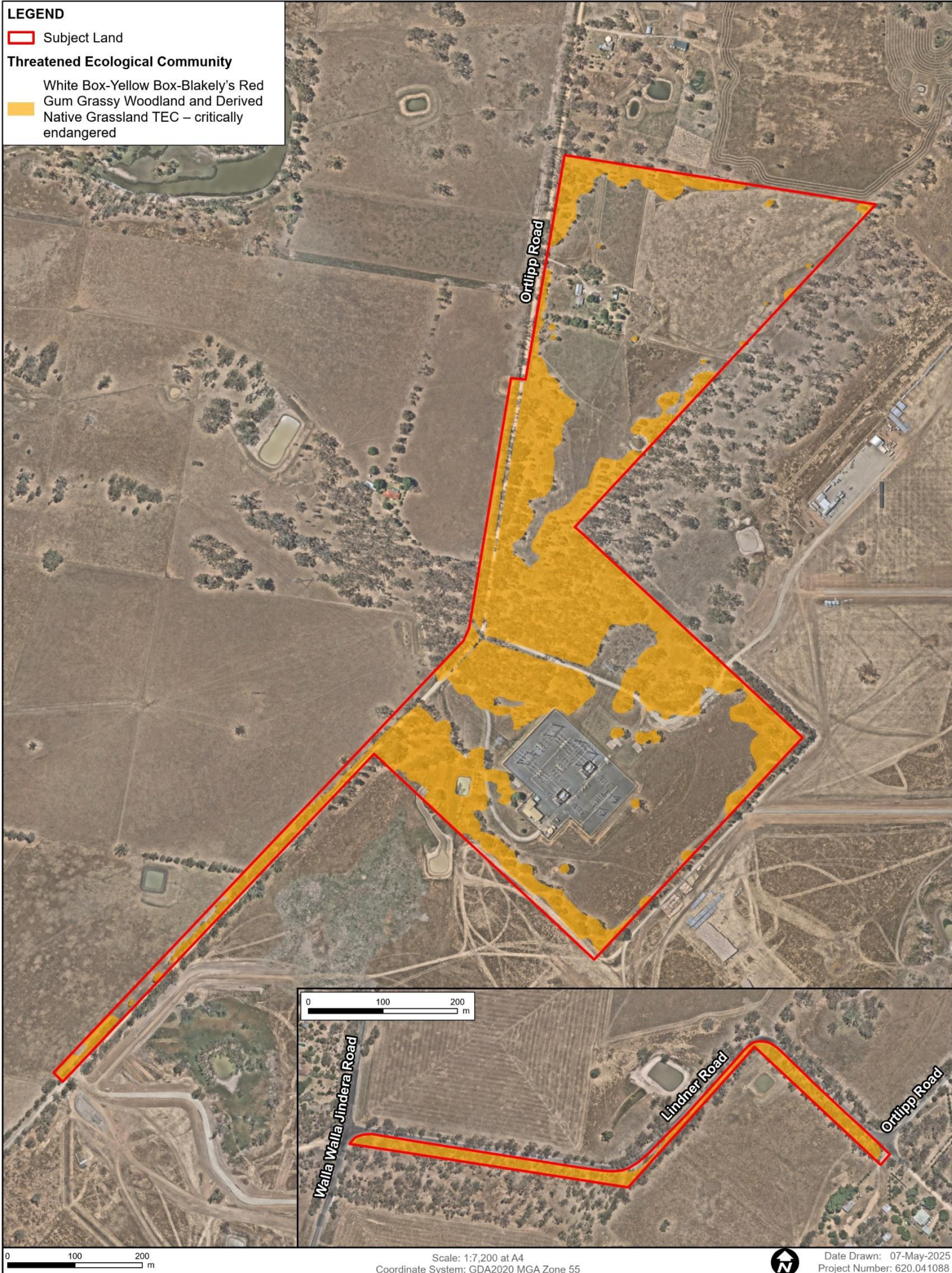
Data Sources:
 NSW SS (2024)
 Aerial Imagery: Nearmap (November 2024)



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PLANT COMMUNITY TYPES

FIGURE 8



Data Sources:
NSW SS (2024)
Aerial Imagery: Nearmap (November 2024)



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THREATENED ECOLOGICAL COMMUNITIES AND ECOLOGICAL COMMUNITIES

FIGURE 9

LEGEND

Subject Land

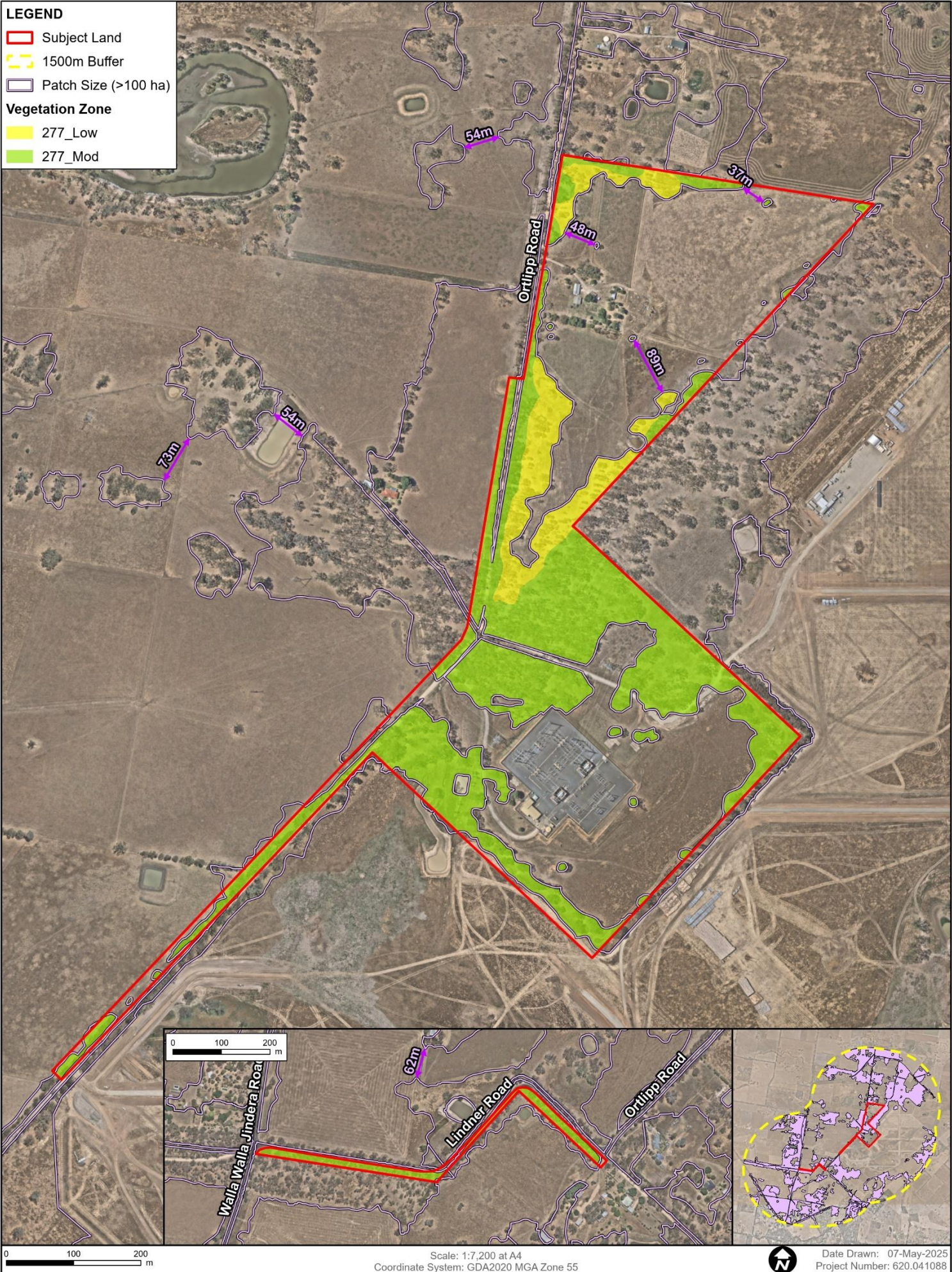
1500m Buffer

Patch Size (>100 ha)

Vegetation Zone

277_Low

277_Mod



0 100 200 m Scale: 1:7,200 at A4 Coordinate System: GDA2020 MGA Zone 55

Data Sources:
NSW SS (2024)
Aerial Imagery: Nearmap (November 2024)

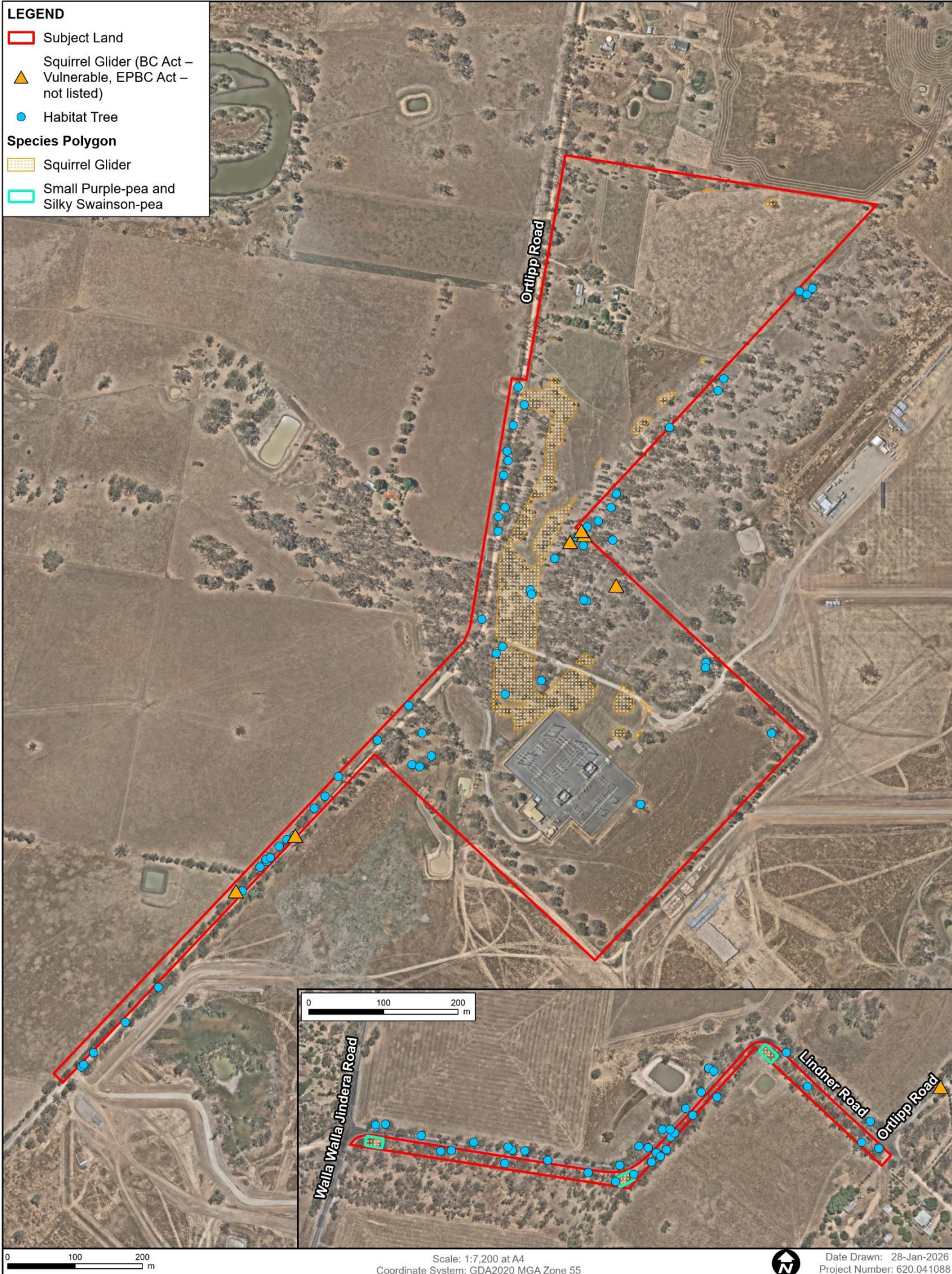
Date Drawn: 07-May-2025
Project Number: 620.041088



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VEGETATION ZONES

FIGURE 10



0 100 200 m

Data Sources:
NSW SS (2024)
Aerial Imagery: Nearmap (November 2024)



Date Drawn: 28-Jan-2026
Project Number: 620.041088



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CANDIDATE SPECIES CREDIT SPECIES RECORDS AND SPECIES POLYGONS

FIGURE 11

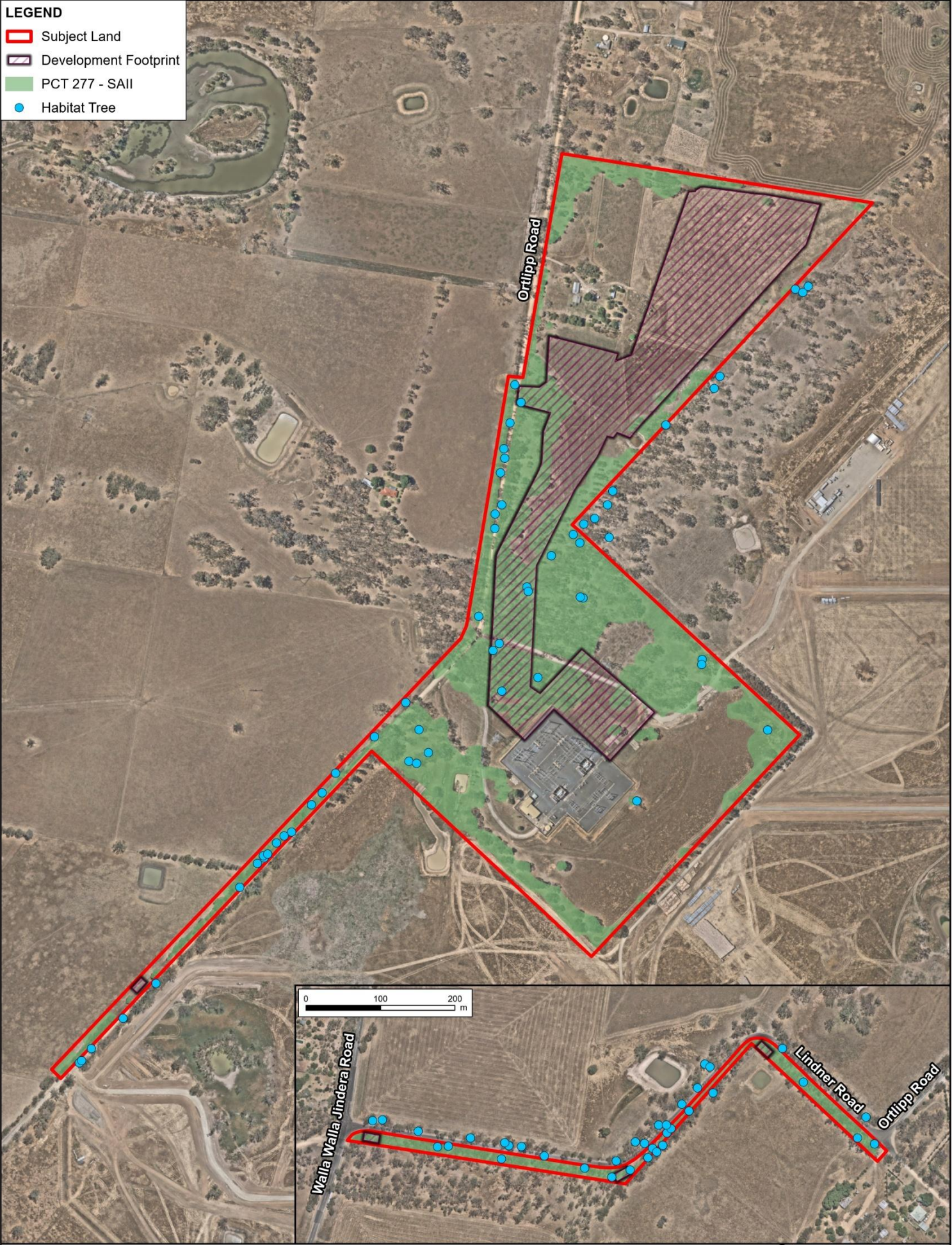


Figure 13: Wind Turbine Disturbance Zone (Not Relevant)



LEGEND

-  Subject Land
-  Development Footprint
-  PCT 277 - SAIL
-  Habitat Tree



0100200
m

Scale: 1:7,200 at A4
Coordinate System: GDA2020 MGA Zone 55


Date Drawn: 07-May-2025
Project Number: 620.041088

Data Sources:
NSW SS (2024)
Aerial Imagery: Nearmap (November 2024)



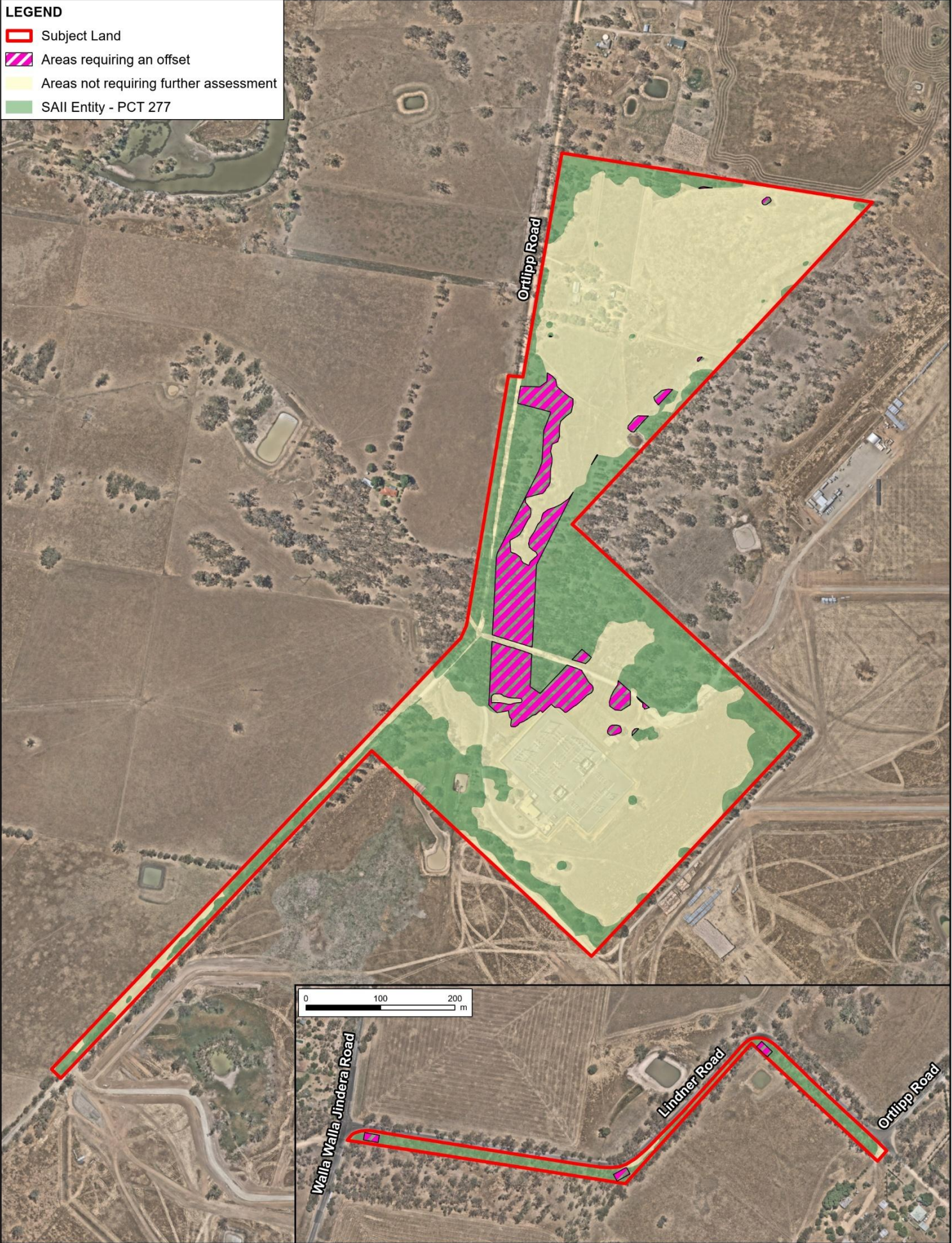
DISCLAIMER: All information within this document may be based on external sources. SLR Consulting Pty Ltd makes no warranty regarding the data's accuracy or reliability for any purpose.

**SERIOUS AND IRREVERSIBLE
IMPACTS**

FIGURE 14

LEGEND

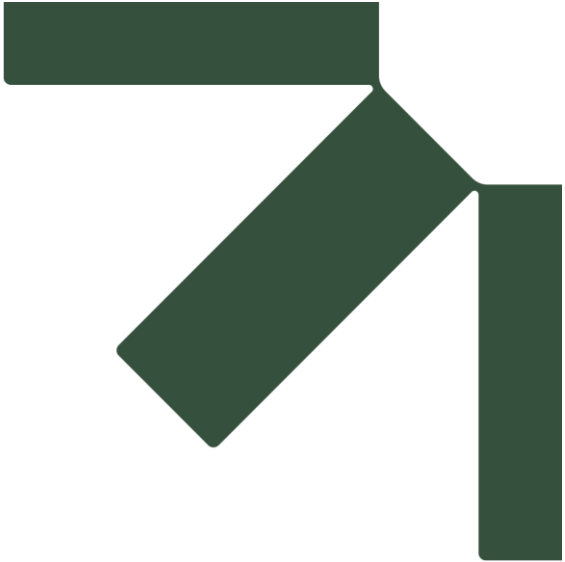
- Subject Land
- Areas requiring an offset
- Areas not requiring further assessment
- SAIL Entity - PCT 277



0 100 200 m

Scale: 1:7,200 at A4
Coordinate System: GDA2020 MGA Zone 55

Date Drawn: 07-May-2025
Project Number: 620.041088



Appendix A BDAR Requirements Compliance

Biodiversity Development Assessment Report

SSD-68815961: Proposed BESS Facility
140 Ortlipp Road, Jindera NSW / 204 Ortlipp Road, Glenellen, NSW

BESS Atlantic Pty Ltd c/o Gransolar Development Australia

SLR Project No.: 620.041088.00002

16 June 2026

Table A-1: Compliance of introduction chapter with BDAR minimum information requirements (BAM reference: Chapters 2 and 3)

Information Type	BAM requirement	Section in BDAR
Information	Introduction to the biodiversity assessment including:	-
	☒ brief description of the proposal	1.1.1
	☒ identification of subject land boundary, including: ☒ operational footprint ☒ construction footprint indicating clearing associated with temporary/ancillary construction facilities and infrastructure	1.1.3
	☒ general description of the subject land	1.1.3
	☒ sources of information used in the assessment, including reports and spatial data	1.5
	☒ identification and justification for entering the BOS	1.2
Maps and Table	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

Table A-2: Compliance of landscape chapter with BDAR minimum information requirements (BAM reference: Sections 3.1 and 3.2, Appendix E)

Information Type	BAM requirement	Section in BDAR
Information	Identification of site context components and landscape features, including:	—
	☒ general description of subject land topographic and hydrological setting, geology and soils	1.1.3
	☒ per cent native vegetation cover in the assessment area (as described in BAM Section 3.2)	3.3
	☒ IBRA bioregions and subregions (as described in BAM Subsection 3.1.3(2.))	3.2.1
	☒ rivers and streams classified according to stream order (as described in BAM Subsection 3.1.3(3.) and Appendix E)	3.2.2
	☒ wetlands within, adjacent to and downstream of the site (as described in BAM Subsection 3.1.3(3.))	3.2.2
	☒ connectivity of different areas of habitat (as described in BAM Subsection 3.1.3(5–6.))	3.2.3
	☒ 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.))	3.2.4



Information Type	BAM requirement	Section in BDAR
	☒ areas of outstanding biodiversity value occurring on the subject land and assessment area (as described in BAM Subsection 3.1.3(8–9.))	3.2.5
	☒ any additional landscape features identified in any SEARs for the proposal	3.2.7
	☒ NSW (Mitchell) landscape on which the subject land occurs	3.2.6
	☒ 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)	2.1
Maps and tables	☒ 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
	☒ 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
	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 ☒ 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 and Figure 2
Data	☒ All report maps as separate jpeg files	-
	Individual digital shape files of:	-
	☒ subject land boundary	-



Information Type	BAM requirement	Section in BDAR
	☒ assessment area (i.e. subject land and 1500 m buffer area) boundary	-
	☒ cadastral boundary of subject land	-
	☒ areas of native vegetation cover	-
	☒ landscape features	-

Table A-3: Compliance of native vegetation chapter with BDAR minimum information requirements (BAM reference: Chapter 4, Appendix A and Appendix H)

Information Type	BAM requirement	Section in BDAR
Information	☒ 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)	4.1 and Figure 7
	☒ Provide justification for all parts of the subject land that do not contain native vegetation (as described in BAM Subsection 4.1.2)	4.1.2
	☒ 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)	2.1.2, 2.2.2
	☒ Describe the systematic field-based floristic vegetation survey undertaken in accordance with BAM Section 4.2	2.2.3
	☒ 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)	5.5 and Appendix G
	For each PCT within the subject land, describe:	–
	☒ PCT name and ID	4.2 and Figure 8
	☒ vegetation class	4.2
	☒ extent (ha) within subject land	4.2
	☒ evidence used to identify a PCT including any analyses undertaken, references/sources, existing vegetation maps (BAM Section 4.2(1–3.))	4.2
	☒ plant species relied upon for identification of the PCT and relative abundance of each species	4.2
	☒ if relevant, TEC status including evidence used to determine vegetation is the TEC (BAM Subsection 4.2.2(1–2.))	4.2 and Figure 9
	☒ estimate of per cent cleared value of PCT (BAM Subsection 4.2.1(5.))	4.2



Information Type	BAM requirement	Section in BDAR
	Describe the vegetation integrity assessment of the subject land, including:	–
	☒ identification and mapping of vegetation zones (as described in BAM Subsection 4.3.1)	4.4 and Figure 10
	☒ description of vegetation zones within the subject land (as described in Operational Manual Stage 1 Table 2 and Subsection 3.3.2)	4.4 and Figure 10
	☒ area (ha) of each vegetation zone	4.4
	☒ assessment of patch size (as described in BAM Subsection 4.3.2)	4.4
	☒ survey effort (i.e. number of vegetation integrity survey plots) as described in BAM Subsection 4.3.4(1–2.)	4.5.1
	☒ use of relevant benchmark data from BioNet Vegetation Classification (as described in BAM Subsection 4.3.3(5.))	4.5.3
	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):	4.5.3
	☒ 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)	
Maps and tables	☒ provide justification for use of local data rather than BioNet Vegetation Classification benchmark values	4.5.3
	☒ provide written confirmation from the decision-maker that they support the use of local benchmark data	Appendix G
	☒ 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
	☒ Map of PCTs within the subject land (as described in BAM Section 4.2(1.))	Figure 8
	☒ Map of vegetation zones within the subject land (as described in BAM Subsection 4.3.1)	Figure 10
	☒ Map the location of floristic vegetation survey plots and vegetation integrity survey plots relative to PCT boundaries	Figure 6
	☒ Map of TEC distribution on the subject land and table of TEC listing, status and area (ha)	Figure 9 and Table 11



Information Type	BAM requirement	Section in BDAR
	☒ 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 and Table 12
	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 13
Data	☒ All report maps as separate jpeg files	-
	☒ Plot field data (MS Excel format)	Appendix F
	☒ Plot field datasheets	Appendix F
	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	-

Table A-4: Compliance of threatened species chapter with BDAR minimum information requirements (BAM reference: Chapter 5)

Information Type	BAM requirement	Section in BDAR
Information	Identify ecosystem credit species likely to occur on the subject land, including:	-
	☒ list of ecosystem credit species derived from the BAM-C (as described in BAM Subsection 5.1.1 and Section 5.2(1.))	Table 14
	☒ 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)	5.1.1
	☒ justification for addition of any ecosystem credit species to the list	5.1.1
	Identify species credit species likely to occur on the subject land, including:	-
	☒ list of species credit species derived from the BAM-C (as described in BAM Subsection 5.1.1)	Table 15 and Table 16
	☒ 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)	5.1.2
	☒ 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)	5.1.2



Information Type	BAM requirement	Section in BDAR
	☒ justification for addition of any species credit species to the list	5.1.2
	From the list of candidate species credit species, identify: ☒ 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.)) ☒ species for which an expert report is to be used to determine species presence (BAM Subsection 5.2.4(2.c.))	Table 17 and Table 18
	Present the outcomes of species credit species assessments from:	-
	☒ threatened species survey (as described in BAM Section 5.2.4)	Table 19 and Table 20
	☒ 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)	5.4
	Where survey has been undertaken include detailed information on:	-
	☒ survey method and effort (as described in BAM Section 5.3)	Table 19 and Table 20
	☒ 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	Table 19 and Table 20
	☒ survey personnel and relevant experience	Declaration ii
	☒ describe any limitations to surveys and how these were addressed/overcome	2.7, 5.3
	Where an expert report has been used in place of survey (as described in BAM Section 5.3, Box 3), include:	-
	☒ 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	5.4
	Where use of local data is proposed (BAM Subsection 1.4.2):	-
	☒ identify relevant species ☒ identify data to be amended	5.5



Information Type	BAM requirement	Section in BDAR
	☒ 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	Appendix G
	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:	-
	☒ the unit of measure for each species is documented	Table 21 and Table 22
	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)	Figure 11
	☒ 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	5.6
	for species assessed by counts of individuals:	-
	☒ the number of individual plants present on the subject land (as described in BAM Subsection 5.2.5(3.))	5.6
	☒ the method used to derive this number (i.e. threatened species survey or expert report) and evidence-based justification for the approach taken	5.6
	☒ 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	Figure 11
	☒ Identify the biodiversity risk weighting for each species credit species identified as present within the subject land (as described in BAM Section 5.4)	Table 21
Maps and tables	☒ Table showing ecosystem credit species in accordance with BAM Subsection 5.1.1, and identifying:	-
	☒ the ecosystem credit species removed from the list	Table 14
	☒ the sensitivity to gain class of each species	Table 14
	☒ Table detailing species credit species in accordance with BAM Section 5.2 and identifying:	Table 15 and Table 16
	☒ 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	



Information Type	BAM requirement	Section in BDAR
	☒ the candidate species credit species not recorded on the subject land as determined by targeted survey, expert report or important habitat map	Table 17 and Table 18
	☒ 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)	Table 21 and Table 22
	☒ 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)	Figure 11
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.	-

Table A-5: Compliance of prescribed Impacts chapter with BDAR minimum information requirements (BAM reference: Chapter 6)

Information Type	BAM requirement	Section in BDAR
Information	Identify potential prescribed biodiversity impacts on threatened entities, including:	-
	☒ karst, caves, crevices, cliffs, rocks and other geological features of significance (as described in BAM Subsection 6.1.1)	Table 23
	☒ 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)	
	☒ 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)	Table 23
	☒ 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)	Table 23



Information Type	BAM requirement	Section in BDAR
	☒ Identify a list of threatened entities that may be dependent upon or may use habitat features associated with any of the prescribed impacts	Table 23
	☒ 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)	Table 23
	Where the proposed development is for a wind farm:	-
	☐ 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.))	n/a
	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	Table 23
Maps and tables	☒ Map showing location of any prescribed impact features (i.e. karst, caves, crevices, cliffs, rocks, human-made structures, etc.)	Figure 1 and Figure 2
	☒ Map showing location of potential vehicle strike locations	Figure 1
	☒ 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)	Figure 1 and Figure 2
Data	☒ Digital shape files of prescribed impact feature locations	–
	☒ Prescribed impact features map in jpeg format	–

Table A-6: Compliance of avoid and minimise impacts chapter with BDAR minimum information requirements (BAM reference: Chapter 7)

Information Type	BAM requirement	Section in BDAR
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:	-
	☒ modes or technologies that would avoid or minimise impacts on biodiversity values and justification for selecting the proposed mode or technology	8.1 and 8.2



Information Type	BAM requirement	Section in BDAR
	☒ routes that would avoid or minimise impacts on biodiversity values and justification for selecting the proposed route	8.1 and 8.2
	☒ alternative locations that would avoid or minimise impacts on biodiversity values and justification for selecting the proposed location	8.1 and 8.2
	☒ 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	8.1 and 8.2
	☒ 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)	8.1 and 8.2
	☒ 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.))	8.0
	☒ Detail measures or options considered but not implemented because they are not feasible and/or practical (e.g. due to site constraints)	8.3
Maps and tables	☒ Table of measures to be implemented to avoid and minimise the impacts of the proposal, including action, outcome, timing and responsibility	Table 24
	☒ Map of alternative footprints considered to avoid or minimise impacts on biodiversity values; and of the final proposal footprint, including construction and operation	Figure 3, Figure 12
	☒ Maps demonstrating indirect impact zones where applicable	Figure 12
Data	Digital shape files of:	-
	☒ alternative and final proposal footprint	-
	☒ direct and indirect impact zones	-
	☒ Maps in jpeg format	-

Table A-7: Compliance of assessment of impacts chapter with BDAR minimum information requirements (BAM reference: Chapter 8, Sections 8.1 and 8.2)

Information Type	BAM requirement	Section in BDAR
Information	☒ 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)	Table 25
	Assessment of indirect impacts on vegetation and threatened species and their habitat including (as described in BAM Section 8.2):	-
	☒ description of the nature, extent, frequency, duration and timing of indirect impacts of the proposal	Table 27



Information Type	BAM requirement	Section in BDAR
	☒ documenting the consequences to vegetation and threatened species and their habitat including evidence-based justifications	9.2
	☒ reporting any limitations or assumptions, etc. made during the assessment	9.2
	☒ identification of the threatened entities and their habitat likely to be affected	Table 27
	Assessment of prescribed biodiversity impacts (as described in BAM Section 8.3) including:	-
	assessment of the nature, extent frequency , duration and timing of impacts on the habitat of threatened species or ecological communities associated with:	-
	☒ karst, caves, crevices, cliffs, rocks and other features of geological significance	9.3
	☒ human-made structures	9.3
	☒ non-native vegetation	9.3
	☒ connectivity of different areas of habitat of threatened species that facilitates the movement of those species across their range	9.3.1
	☒ movement of threatened species that maintains their life cycle	9.3.1
	☒ water quality, waterbodies and hydrological processes that sustain threatened species and threatened ecological communities	9.3.2
	☒ assessment of the impacts of wind turbine strikes on protected animals	9.3
	☒ assessment of the impacts of vehicle strikes on threatened species of animals or on animals that are part of a TEC	9.3
	☒ evaluate the consequences of prescribed impacts	9.3
	☒ describe impacts that are uncertain	9.3
	☒ document limitations to data, assumptions and predictions	9.3
Maps and tables	☒ Table showing change in vegetation integrity score for each vegetation zone as a result of identified impacts	Table 26
Data	N/A	-

Table A-8: Compliance of mitigation and management of impacts chapter with BDAR minimum information requirements (BAM reference: Chapter 8, Sections 8.4 and 8.5)

Information Type	BAM requirement	Section in BDAR
Information	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	Table 28
	☒ identify measures for which there is risk of failure	
	☒ evaluate the risk and consequence of any residual impacts	



Information Type	BAM requirement	Section in BDAR
	☒ document any adaptive management strategy proposed	Table 29
	Identification of measures for mitigating impacts related to:	-
	☒ displacement of resident fauna (as described in BAM Subsection 8.4.1(2.))	9.6
	☒ indirect impacts on native vegetation and habitat (as described in BAM Subsection 8.4.1(3.))	
	☒ mitigating prescribed biodiversity impacts (as described in BAM Subsection 8.4.2)	
	☒ Details of the adaptive management strategy proposed to monitor and respond to impacts on biodiversity values that are uncertain (BAM Section 8.5)	9.7
Maps and tables	☒ 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	Table 28
Data	N/A	

Table A-9: Compliance of impact summary chapter with BDAR minimum information requirements (BAM reference: Chapter 9)

Information Type	BAM requirement	Section in BDAR
Information	Identification and assessment of impacts on TECs and threatened species that are at risk of a serious and irreversible impacts (SAIL, in accordance with BAM Section 9.1) including:	-
	☒ addressing all criteria in Subsection 9.1.1 for each TEC listed as at risk of an SAIL present on the subject land	10.0
	☒ for each TEC, report the extent of the TEC in NSW	10.0
	☒ addressing all criteria in Subsection 9.1.2 for each threatened species at risk of an SAIL present on the subject land	10.0
	☒ for each threatened species, report the population size in NSW	10.0
	☒ documenting assumptions made and/or limitations to information	Table 31
	☒ documenting all sources of data, information, references used or consulted	
	☒ clearly justifying why any criteria could not be addressed	
	☒ Identification of impacts requiring offset in accordance with BAM Section 9.2	Table 33 and Table 34
	☒ Identification of impacts not requiring offset in accordance with BAM Subsection 9.2.1(3.)	11.2
Maps and tables	☒ Identification of areas not requiring assessment in accordance with BAM Section 9.3	Table 35
	☒ Map showing the extent of TECs at risk of an SAIL within the subject land	Figure 14
	☒ Map showing location of threatened species at risk of an SAIL within the subject land	Figure 14
	Map showing location of:	-
	☒ impacts requiring offset	Figure 15



Information Type	BAM requirement	Section in BDAR
Data	☒ impacts not requiring offset	Figure 15
	☒ areas not requiring assessment	Figure 15
	Digital shape files of:	-
	☒ extent of TECs at risk of an SAIL within the subject land	-
	☒ location of threatened species at risk of an SAIL 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	-

Table A-10: Compliance of impact summary chapter with BDAR minimum information requirements (BAM reference: Chapter 10)

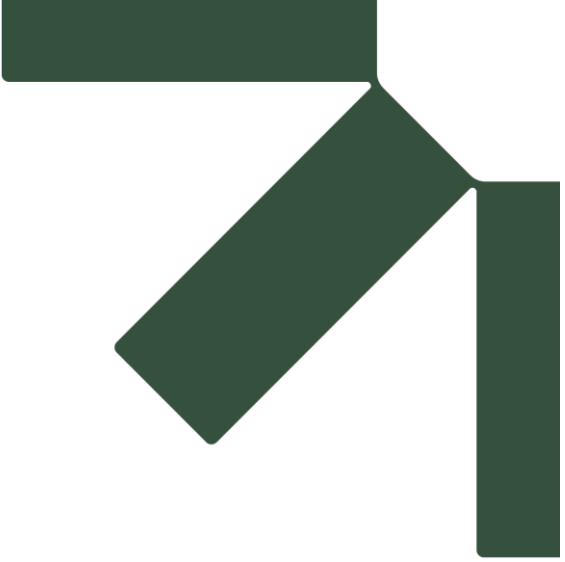
Information Type	BAM requirement	Section in BDAR
Information	Ecosystem credits and species credits that measure the impact of the development on biodiversity values, including:	-
	☒ future vegetation integrity score for each vegetation zone within the subject land (Equation 25 and Equation 26 in BAM Appendix H)	Table 33
	☒ 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	Table 33 and Table 34
	☒ number of required species credits for each candidate threatened species that is directly impacted on by the proposal (BAM Subsection 10.1.3)	Table 34
Maps and tables	☒ Table of PCTs requiring offset and the number of ecosystem credits required	Table 33
	☒ Table of threatened species requiring offset and the number of species credits required	Table 34
Data	☒ Submitted proposal in the BAM Calculator	-



Table A-11: Compliance of biodiversity credit report chapter with BDAR minimum information requirements (BAM reference: Chapter 10)

Information Type	BAM requirement	Section in BDAR
Information	☒ 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)	Table 36 and Table 37
	☒ BAM credit report in pdf format	Appendix H
Maps and tables	☒ Table of credit class and matching credit profile	Table 37
Data	☒ BAM credit report in pdf format	Appendix H





Appendix B Biodiversity Values Map and Threshold Tool Report

Biodiversity Development Assessment Report

SSD-68815961: Proposed BESS Facility
140 Ortlipp Road, Jindera NSW / 204 Ortlipp Road, Glenellen, NSW

BESS Atlantic Pty Ltd c/o Gransolar Development Australia

SLR Project No.: 620.041088.00002

16 June 2026

Biodiversity Values Map and Threshold Report

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

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

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

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

Biodiversity Values Map and Threshold Report		
Date of Report Generation		25/08/2024 5:33 PM
1. Biodiversity Values (BV) Map - Results Summary (Biodiversity Conservation Regulation Section 7.3)		
1.1	Does the development Footprint intersect with BV mapping?	yes
1.2	Was <u>ALL</u> BV Mapping within the development footprinted added in the last 90 days? (dark purple mapping only, no light purple mapping present)	no
1.3	Date of expiry of dark purple 90 day mapping	N/A
1.4	Is the Biodiversity Values Map threshold exceeded?	yes
2. Area Clearing Threshold - Results Summary (Biodiversity Conservation Regulation Section 7.2)		
2.1	Size of the development or clearing footprint	353,281.8 sqm
2.2	Native Vegetation Area Clearing Estimate (NVACE) (within development/clearing footprint)	93,565.4 sqm
2.3	Method for determining Minimum Lot Size	LEP
2.4	Minimum Lot Size (10,000sqm = 1ha)	1,000,000 sqm
2.5	Area Clearing Threshold (10,000sqm = 1ha)	10,000 sqm
2.6	Does the estimate exceed the Area Clearing Threshold? (NVACE results are an estimate and can be reviewed using the Guidance)	yes
REPORT RESULT: Is the Biodiversity Offset Scheme (BOS) Threshold exceeded for the proposed development footprint area? (Your local council will determine if a BDAR is required)		yes

What do I do with this report?

- If the result above indicates the BOS Threshold has been exceeded, your local council **may require** a Biodiversity Development Assessment Report with your development application. Seek further advice from Council. An accredited assessor can apply the Biodiversity Assessment Method and prepare a BDAR for you. For a list of accredited assessors go to: <https://customer.lmbc.nsw.gov.au/assessment/AccreditedAssessor>.
- If the result above indicates the BOS Threshold has not been exceeded, you may not require a Biodiversity Development Assessment Report. This BMAT report can be provided to Council to support your development application. Council can advise how the area clearing threshold results should be considered. Council will review these results and make a determination if a BDAR is required. Council may ask you to review the area clearing threshold results. You may also be required to assess whether the development is “likely to significantly affect threatened species” as determined under the test in Section 7.3 of the *Biodiversity Conservation Act 2016*.
- If a BDAR is not required by Council, you may still require a permit to clear vegetation from your local council.
- If **all** Biodiversity Values mapping within your development footprint was less than 90 days old, i.e. areas are displayed as dark purple on the BV map, a BDAR may not be required if your Development Application is submitted within that 90 day period. Any BV mapping less than 90 days old on this report will expire on the date provided in Line item 1.3 above.

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

Review Options:

- If you believe the Biodiversity Values mapping is incorrect please refer to our [BV Map Review webpage](#) for further information.
- If you or Council disagree with the area clearing threshold estimate results from the NVACE in Line Item 2.6 above (i.e. area of Native Vegetation within the Development footprint proposed to be cleared), review the results using the [Guide for reviewing area clearing threshold results from the BMAT Tool](#).

Acknowledgement

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

Signature: _____

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

Date: _____

25/08/2024 05:33 PM

Biodiversity Values Map and Threshold Tool

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

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

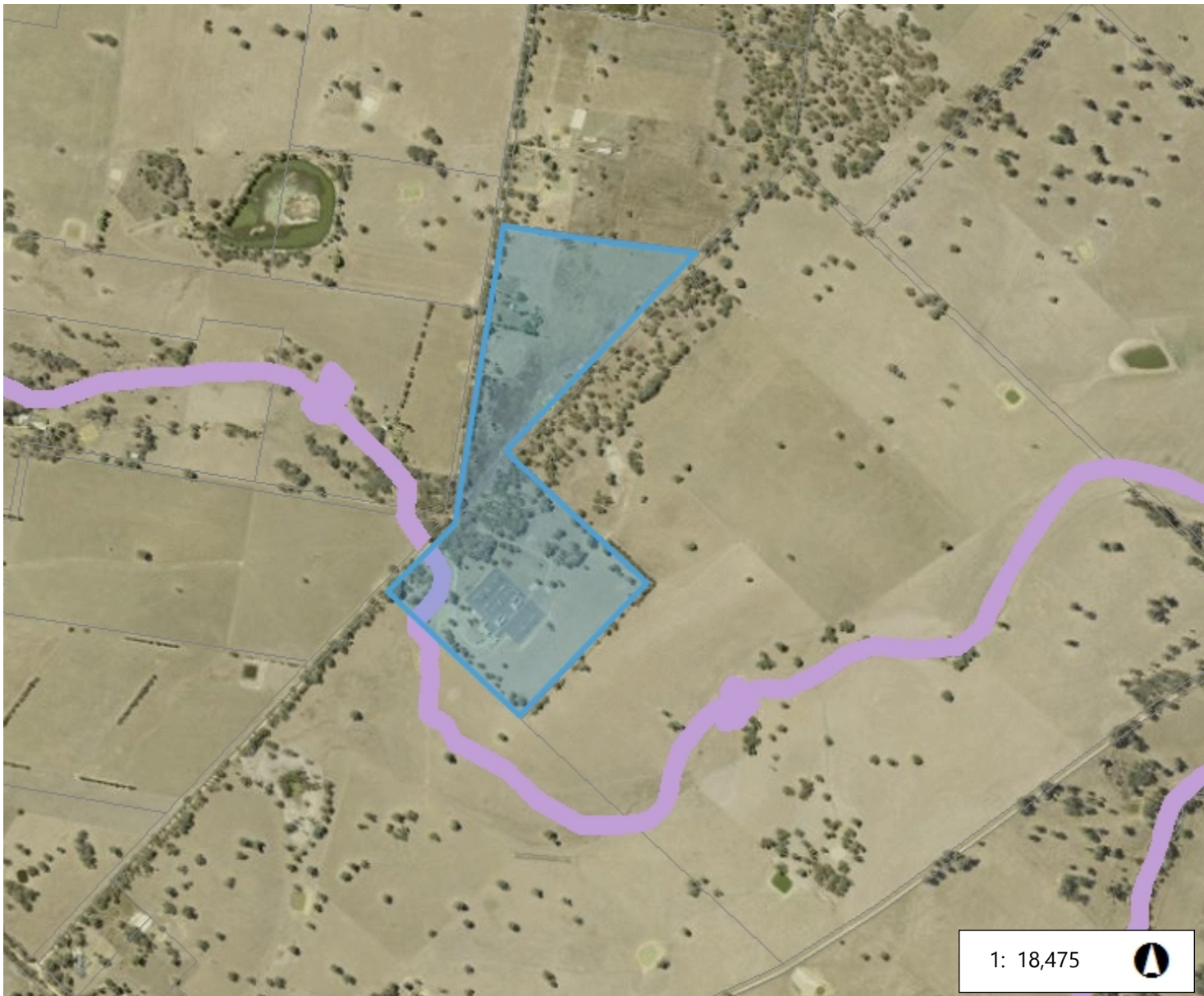
This report may be used as evidence for development applications submitted to councils. You may also use this report when considering native vegetation clearing under the State Environmental Planning Policy (Biodiversity and Conservation) 2021 - Chapter 2 vegetation in non-rural areas.

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

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

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

Biodiversity Values Map



938.5 0 469.27 938.5 Metres

WGS_1984_Web_Mercator_Auxiliary_Sphere

Legend

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

25/08/2024 05:33 PM

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

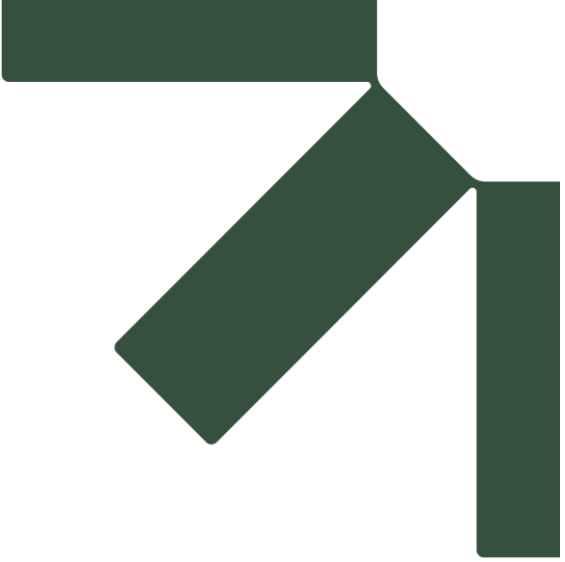
Imagery © Airbus DS/Spot Image 2016

© NSW Department of Customer Service, Basemaps 2019

© NSW Department of Planning and Environment

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

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



Appendix C Test of Significance (n/a)

Biodiversity Development Assessment Report

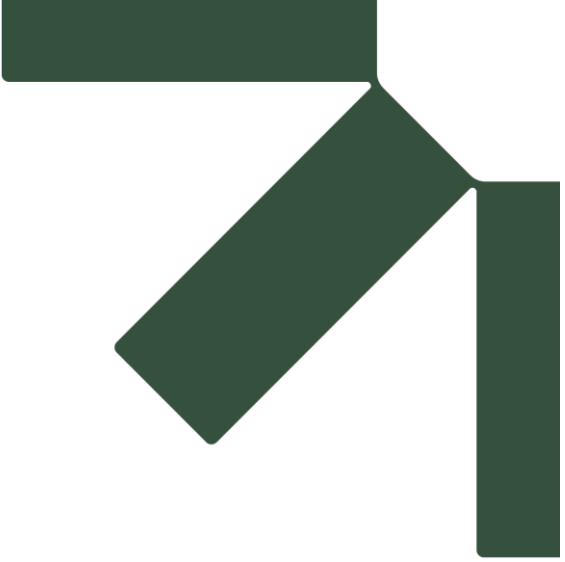
SSD-68815961: Proposed BESS Facility

140 Ortlipp Road, Jindera NSW / 204 Ortlipp Road, Glenellen, NSW

BESS Atlantic Pty Ltd c/o Gransolar Development Australia

SLR Project No.: 620.041088.00002

16 June 2026



Appendix D Determination of Excluded Impacts (n/a)

Biodiversity Development Assessment Report

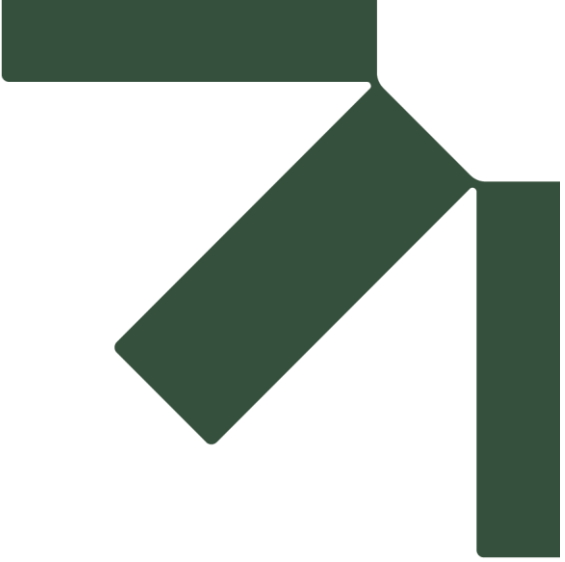
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Appendix E Matter of National Environmental Significance

Biodiversity Development Assessment Report

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E.1 Overview of EPBC Act Protected Matters

Under the EPBC Act an action will require approval from the Australian Government Environment Minister (the 'minister') if the action has, will have, or is likely to have, a significant impact on a Matter of National Environmental Significance (MNES). The general test for significance is whether an impact is 'important, notable or of consequence, having regard to its context or intensity'.

The following section provides an assessment of the Matters of National Environmental Significance Significant Impact Guidelines 1.1 (DoE, 2013) with respect to threatened species and communities, as well as migratory species that could utilise the subject land. This assessment aims to assist the applicant to decide whether they should submit a referral to the Commonwealth Department of Climate Change, Energy, the Environment and Water for a decision by the minister on whether assessment and approval is required under the EPBC Act.

E.2 Relevant MNES

E.2.1 PMST Search Results

A search of the Protected Matters Search Tool (PMST) reveals that 38 threatened species, nine migratory species (and/or their habitats) and three threatened ecological communities listed in the EPBC Act are predicted to occur within a 10km radius of the site (see attached PMST report).

E.2.2 Threatened Species

In relation to the 38 threatened species listed under the EPBC Act that have been detected by the PMST, most are also listed under the BC Act and are either not associated with PCT 277 or are assessed in other sections of the BDAR.

Accordingly, the BAM-C does not identify the following species as associated with PCT 277, and the vegetation and habitats within the subject land do not represent potential habitat for these species: Striped Legless Lizard, Southern Bell Frog, Sloane's Froglet, Key's Matchstick Grasshopper, Latham's Snipe, Australian Painted Snipe, Australasian Bittern, Common Greenshank, Curlew Sandpiper, Grey Falcon, Blue-winged Parrot, Plains-wanderer, Corben's Long-eared Bat, Slender Darling Pea *Swainsona murrayana*, Crimson Spider Orchid *Caladenia concolor*, Tarengo Leek Orchid *Prasophyllum petilum*, and Floating Swamp Wallaby-grass *Amphibromus fluitans*.

The subject land also does not represent 'important habitat' for the Pink-tailed Legless Lizard which was removed from assessment based on habitat constraints.

The subject land represents potential habitat for the following species, which have been assessed for ecosystem credits: Swift Parrot, Gang-gang Cockatoo, Painted Honeyeater, Superb Parrot, Regent Honeyeater, Brown Treecreeper, White-throated Needletail, Southern Whiteface, South-eastern Hooded Robin, Diamond Firetail, Spotted-tailed Quoll and Grey-headed Flying-fox.

The following candidate species have some potential to occur on the subject land but were not detected during targeted survey work and/or site habitats are not considered suitable: Koala, Superb Parrot and Small Purple Pea *Swainsona recta*. The Small Purple Pea has been 'assumed present' within the water pipeline area; however, based on the degraded nature of the habitats and roadside disturbances, it is considered unlikely that this species occurs within the small 0.06-hectare impact area for the water pipeline. The subject land



does not represent 'important habitat' (as defined by the 'Guidelines' - DoE, 2013) for this species.

For the remaining species listed under the EPBC Act only:

- The subject land does not represent suitable habitat for aquatic species Macquarie Perch, Flathead Galaxias and Murray Crayfish - potentially relevant species are considered further in aquatic sections of the BDAR.
- The site lacks suitable wetland habitats for the Sharp-tailed Sandpiper.

As such, further assessment is provided for ecosystem credit species retained in the assessment, being Swift Parrot, Gang-gang Cockatoo, Painted Honeyeater, Regent Honeyeater, Brown Treecreeper, White-throated Needletail, Southern Whiteface, South-eastern Hooded Robin, Diamond Firetail, Spotted-tailed Quoll and Grey-headed Flying-fox, as well as the Small Purple Pea *Swainsona recta* which was assumed present.

E.2.3 Migratory Species

The subject land and assessment area do not contain 'important habitat' for migratory shorebirds including the Latham's Snipe, Common Greenshank, Curlew Sandpiper, Pectoral Sandpiper, Sharp-tailed Sandpiper and Common Sandpiper. Important habitat for migratory shorebirds is defined as "*those recognised as nationally or internationally important*" (DEE, 2017).

Other migratory species include two non-breeding migrants from Asia (the Fork-tailed Swift and White-throated Needletail), as well as the Yellow Wagtail, which is an extremely uncommon migrant to Australia (DoE, 2015). The Fork-tailed Swift and White-throated Needletail are almost exclusively aerial, and the subject land is unlikely to provide 'important habitat' for these species. It is highly unlikely that the subject land represents important habitat for the Yellow Wagtail, based on its limited occurrence in Australia and the nature of the habitats on the subject land. Accordingly, none of the migratory species detected by the PMST are considered relevant matters for further assessment.

E.2.4 Ecological Communities

The PCT 277 vegetation within the subject land has potential to represent the EPBC Act-listed ecological community, known as *White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland*. Section 4.2.2.5 of the BDAR assesses the relevant thresholds and condition criteria required for this vegetation to qualify under the EPBC Act listing, and it has been determined that the ground layer is too degraded such that the vegetation does not meet these criteria. Further assessment is not required for this community.

E.2.5 Conclusion

Relevant matters for further assessment include the following threatened species: Swift Parrot, Gang-gang Cockatoo, Painted Honeyeater, Regent Honeyeater, Brown Treecreeper, White-throated Needletail, Southern Whiteface, South-eastern Hooded Robin, Diamond Firetail, Spotted-tailed Quoll, Grey-headed Flying-fox and Small Purple Pea *Swainsona recta*.

E.3 Impact and Avoidance for MNES

The proposed development has been designed to avoid and minimise direct impacts to threatened species and communities (see Section 8.0 of this BDAR). Due to the site's limitations 2.88 hectares of native vegetation will be directly impacted. This represents:



- Removal of 2.88 hectares of potential habitat, being primarily foraging habitat, for the Swift Parrot, Gang-gang Cockatoo, Painted Honeyeater, Regent Honeyeater, Brown Treecreeper, White-throated Needletail, Southern Whiteface, South-eastern Hooded Robin, Diamond Firetail, Spotted-tailed Quoll and Grey-headed Flying-fox.
- Removal of 0.06 hectares of potential habitat for Small Purple Pea *Swainsona recta*.

E.4 Assessments of Significance

The following Assessments of Significance have been prepared according to the criteria listed in the Significant Impact Guidelines 1.1 (Department of the Environment, 2013) for the following MNES listed under the EPBC Act of relevance to the proposed action:

- Listed threatened species with potential to occur:
 - Vulnerable threatened Birds and Bat: Painted Honeyeater, Brown Treecreeper, White-throated Needletail, Southern Whiteface, Diamond Firetail, Superb Parrot and Grey-headed Flying-fox.
 - Endangered/Critically Endangered Birds: Swift Parrot, Regent Honeyeater, Gang-gang Cockatoo and South-eastern Hooded Robin.
 - Endangered Spotted-tailed Quoll.
 - Endangered Small Purple Pea *Swainsona recta*.

Species information for each species below is sourced from the TBDC.

E.4.1 Vulnerable Threatened Birds and Bat

The Painted Honeyeater, Brown Treecreeper, White-throated Needletail, Southern Whiteface, Diamond Firetail, Superb Parrot and Grey-headed Flying-fox are all listed as Vulnerable under both the NSW BC Act and Commonwealth EPBC Act.

The Painted Honeyeater *Grantiella picta* is a small, distinctive bird with a black head, back, wings and tail highlighted by bright yellow edges, contrasted with white underparts streaked along the flanks and a pink, dark-tipped bill. A nomadic species found at low densities, it is most common, and mostly breeds, along the inland slopes of the Great Dividing Range in NSW, Victoria and southern Queensland, shifting northward in winter. It specializes in feeding on mistletoe fruits, particularly those of the genus *Amyema* growing on eucalypts and acacias.

The Brown Treecreeper *Climacteris picumnus victoriae* is a grey-brown bird with black streaks on its lower breast and belly and barred undertail, found mainly in the eucalypt woodlands of inland eastern Australia. The subspecies *Climacteris picumnus victoriae* occurs from Corowa through Wagga Wagga to Inverell, gradually blending into the more arid-zone subspecies further west. Typically, sedentary and resident year-round, these birds live in small, social groups, foraging actively on both trees and fallen timber - more on the ground than other treecreepers. They rely on hollows in dead or live trees for nesting.

The White-throated Needletail *Hirundapus caudacutus*, a large swift with a wingspan of about 50 cm, this mostly dark bird is marked by a white throat, forehead, and undertail coverts, and has a short, square tail tipped with the spines that give the species its name. It migrates to eastern Australia from October to April, breeding from June to August in forested regions of southeastern Siberia, Mongolia, the Korean Peninsula, and northern Japan.

The Southern Whiteface *Aphelocephala leucopsis* is a small, sturdy Australian passerine that inhabits arid and semi-arid regions across most of the continent's southern half. It is predominantly grey-brown with a distinctive white forehead band and a short, finch-like bill,



foraging mainly on insects and seeds in dry open woodlands, shrublands, and grasslands. The species is largely sedentary, though it may shift locally in response to drought.

The Diamond Firetail *Stagonopleura guttata* is a medium-sized finch with a bright red bill, eyes and rump, a white breast divided by a bold black band, and grey upperparts with ashy-brown wings. Found only in south-eastern Australia, it ranges from central Queensland to South Australia's Eyre Peninsula and is common across NSW. Birds roost in dense shrubs or small roosting nests. The species is mostly sedentary, though some southern populations make local movements.

The Superb Parrot *Polytelis swainsonii* is a bright green, medium-sized parrot found in eastern inland NSW, breeding mainly on the South-western Slopes and in the Riverina. Most birds migrate north in winter, while Riverina birds stay year-round. Fewer than 5,000 breeding pairs remain, nesting in large tree hollows, especially in River Red Gum forests.

The Grey-headed Flying-fox *Pteropus poliocephalus* is Australia's largest bat, measuring 23-29 cm with a wingspan up to 1 m. It has dark grey body fur, a lighter grey head, a distinctive russet collar, and black wing membranes, and can be identified by leg fur that reaches the ankles. Typically found within 200 km of Australia's eastern coast from Rockhampton to Adelaide, these bats may occasionally appear outside their usual range during natural food shortages.

There are no BioNet Atlas records of the Painted Honeyeater within 10 km of the subject land; however, there are records of all other species. The Brown Treecreeper, Superb Parrot and Grey-headed Flying-fox have records within approximately 5 km of the subject land. It is possible, though not particularly likely, that these species would utilise the subject land as part of a larger foraging or nesting area. Following extensive surveys, none of these species have been recorded within the subject land or immediate vicinity. Based on available data, no important population of any EPBC-listed vulnerable species is known or likely to occur on the subject land. Therefore, many significance criteria, which rely on impacts to an important population, are not triggered.

Table E1 Assessment of Significant Impact Criteria for Vulnerable Species - Painted Honeyeater, Brown Treecreeper, White-throated Needletail, Southern Whiteface, Diamond Firetail, Superb Parrot and Grey-headed Flying-fox

Significant Impact Criteria	Response
Will the action lead to a long-term decrease in the size of an important population of a species	Most of the species are highly mobile and wide-ranging. The Brown Treecreeper, Diamond Firetail and Southern Whiteface are largely sedentary but have not been recorded on or near the site. Surveys have been completed, and there is no evidence of these species using the subject land or the immediate vicinity. Because no important population exists on or near the subject land, the action cannot cause a long-term decrease in the size of an important population. Accordingly, the proposed development is not likely to cause a long-term decrease in the size of an important population of these species.
Will the action reduce the area of occupancy of an important population	Given the lack of evidence of these species on the subject land, and the presence of extensive foraging habitat within the broader assessment area that is likely to provide more suitable conditions, it is unlikely that the removal of vegetation from the subject land will reduce the area of occupancy of an important population for these species. There is no important population within the footprint; therefore, its area of occupancy cannot be reduced.



Significant Impact Criteria	Response
Will the action fragment an existing important population into two or more populations	The proposed action is unlikely to fragment an existing important population of these species. As mobile species that forage across large areas, they are not expected to be affected by the removal of a small portion of available habitat. Therefore, habitat fragmentation is not anticipated to occur.
Will the action adversely affect habitat critical to the survival of a species	The proposed action is unlikely to adversely affect habitat critical to the survival of these species. The available habitat on the subject land is considered to have only marginal value for foraging and shelter for these species due to poor vegetation structure and disturbance history.
Will the action disrupt the breeding cycle of an important population	Targeted bird and habitat surveys of the subject land did not record any of these species. In addition, the White-throated Needletail is largely aerial and does not breed within Australia. The subject land is assessed as providing only sub-optimal potential habitat for these species and is likely to represent only temporary foraging habitat. Accordingly, the proposed action is considered unlikely to result in a significant impact on the breeding cycle of any important population of these species.
Will the action modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	These species have not been recorded on the subject land. The habitat within the development footprint is of marginal value and likely to be used only intermittently, primarily as potential foraging habitat. Approximately 2.88 hectares of potential habitat will be impacted, while larger areas of more suitable native vegetation will remain in the locality. The proposed action is considered unlikely to modify, destroy, remove, isolate, or reduce the availability or quality of habitat to an extent that would cause these species to decline.
Will the action result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	Invasive species such as foxes and rabbits are already present within the subject land due to past and current land uses. Management plans for the control of weed and feral species will be implemented as part of the proposal's mitigation measures to ensure construction practices avoid increasing invasive species spread. The proposed action is unlikely to introduce invasive species harmful to these species and is unlikely to facilitate the establishment of harmful species.
Will the action introduce disease that may cause the species to decline	The proposed development is unlikely to introduce diseases that could cause these species to decline.
Will the action interfere substantially with the recovery of the species	The species of have not been recorded within the subject land but are known to occur in the broader locality. Habitat within the proposed development footprint is of marginal value for these species. As mobile species, they are likely to use the site only intermittently as part of a wider foraging range. Avoidance and mitigation measures will be implemented to minimise potential impacts. Consequently, the proposed action is considered unlikely to interfere with the species' recovery.

E.4.2 Critically Endangered and Endangered Threatened Birds

The Swift Parrot *Lathamus discolor* is listed as Endangered under the NSW BC Act and Critically Endangered under the Commonwealth EPBC Act. It is a small, fast-flying, migratory parrot that breeds exclusively in Tasmania during spring and summer, then



migrates to mainland south-eastern Australia, including coastal and south-western regions of NSW, from February to October. In NSW, it relies on flowering eucalypts and lerp-infested trees for food, particularly species like Swamp Mahogany, Spotted Gum, Red Bloodwood, and Forest Red Gum.

The Regent Honeyeater *Anthochaera phrygia* is listed as Critically Endangered under both the NSW BC Act and Commonwealth EPBC Act. It is a distinctive black-and-yellow woodland bird with bright yellow-edged wings and a pink or cream patch around the eye. Once widespread across south-eastern Australia, it is now mostly limited to a small area between north-eastern Victoria and south-eastern Queensland, with breeding mainly in Chiltern-Albury, the Capertee Valley, Mudgee/Wollar, the Lower Hunter, and Bundarra-Barraba. It lives in temperate woodlands and open forests, occasionally gathering in coastal woodlands when conditions suit.

The Gang-gang Cockatoo *Callocephalon fimbriatum* is listed as Endangered under both the BC Act and EPBC Act. It is a distinctive slate-grey bird, with males showing a bright scarlet head and crest and females displaying salmon-pink feather edging. Found from southern Victoria through south- and central-eastern NSW and commonly in the ACT, it is widespread within this range but rare at its edges, with only occasional sightings as far north as Coffs Harbour and west to Mudgee.

The South-eastern Hooded Robin *Melanodryas cucullata cucullata* is listed as Endangered under both the BC Act and EPBC Act. It is a 17 cm Australian bird with males showing bold black-and-white plumage and females being duller brown-grey but with similar wing patterns. It is widespread but generally uncommon, avoiding the driest deserts and wetter coastal areas such as coastal Queensland and Tasmania. Mostly sedentary with some local movement, it occurs in several subspecies: *cucullata* across much of inland NSW from Brisbane to Adelaide, *picata* in north-west NSW, and two others elsewhere in Australia. It requires structurally diverse habitats featuring mature eucalypts, saplings, some small shrubs and a ground layer of moderately tall native grasses.

The Swift Parrot, Regent Honeyeater, Gang-gang Cockatoo and South-eastern Hooded Robin have not been recorded within the subject land. There are no BioNet Atlas records of the Gang-gang Cockatoo within 10 km of the subject land; however, there are records of the Swift Parrot, Regent Honeyeater and South-eastern Hooded Robin, mainly to the southeast and more than approximately 5 km from the site. Important habitat areas have been mapped for the Swift Parrot and Regent Honeyeater, and these do not occur within the subject land. In the locality, such areas are found around Thurgoona, over 10 km to the southeast. It is possible, though not particularly likely, that these species would utilise the subject land as part of a larger foraging or nesting area.

Table E2 Assessment of Significant Impact Criteria for Critically Endangered or Endangered Species – Swift Parrot, Regent Honeyeater, Gang-gang Cockatoo and South-eastern Hooded Robin

Significant Impact Criteria	Response
Will the action lead to a long-term decrease in the size of a population	Given the lack of evidence of these species on the subject land, their high mobility and the presence of extensive foraging habitat within the broader assessment area, the proposed development is unlikely to result in a long-term decrease in the population size of these species.
Will the action reduce the area of occupancy of the species	Given the lack of evidence of these species on the subject land, including no evidence of breeding or roosting, and the presence of extensive foraging habitat within the broader assessment area that is likely to provide more suitable conditions, it is unlikely that the



Significant Impact Criteria	Response
	removal of vegetation from the subject land will reduce the area of occupancy for these bird species.
Will the action fragment an existing population into two or more populations	The proposed action is unlikely to fragment the existing populations of these bird species. As highly mobile species that forage across large areas, they are not expected to be affected by the removal of a small portion of available habitat. Therefore, habitat fragmentation is not anticipated to occur.
Will the action adversely affect habitat critical to the survival of a species	The proposed action is unlikely to adversely affect habitat critical to the survival of these birds. The available habitat on the subject land is considered to have only marginal value for foraging and shelter for these species.
Will the action disrupt the breeding cycle of a population	Targeted bird surveys of the subject land did not record any of these birds. In addition, the Swift Parrot breeds exclusively within Tasmania and the Regent Honeyeater has known breeding locations. The subject land is assessed as providing only sub-optimal potential habitat for these species and represents only foraging habitat for the Swift Parrot and Regent Honeyeater. Accordingly, the proposed action is considered unlikely to result in a significant impact on the breeding cycle of these species.
Will the action modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	These species have not been recorded on the subject land. The habitat within the development footprint is considered to be of marginal value and likely to be used only intermittently, primarily as potential foraging habitat. Approximately 2.88 hectares of potential habitat will be impacted, while larger areas of more suitable native vegetation will remain in the locality. The proposed action is considered unlikely to modify, destroy, remove, isolate, or reduce the availability or quality of habitat to an extent that would cause these species to decline.
Will the action result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat	Invasive species such as foxes and rabbits are already present within the subject land due to past and current land uses. Management plans for the control of weed and feral species will be implemented as part of the proposal's mitigation measures. The proposed action is unlikely to introduce invasive species harmful to these birds and is unlikely to facilitate the establishment of harmful species.
Will the action introduce disease that may cause the species to decline	The proposed development is unlikely to lead to processes capable of introducing diseases that may cause these species to decline.
Will the action interfere with the recovery of the species	The four species of threatened birds have not been recorded within the subject land but are known to occur in the broader locality. Habitat within the proposed development footprint is of marginal value for these species. As highly mobile birds, they are likely to use the site only intermittently as part of a wider foraging range. Avoidance and mitigation measures will be implemented to minimise potential impacts. Consequently, the proposed action is considered unlikely to interfere with the species' recovery.



E.4.3 Endangered Spotted-tailed Quoll

The Spotted-tailed Quoll *Dasyurus maculatus* is listed as Vulnerable under the NSW BC Act and Endangered under the Commonwealth EPBC Act. The Spotted-tailed Quoll is a cat-sized marsupial with rust-to dark-brown fur and white spots, now mainly found in eastern Australia and Tasmania. It shelters in hollow trees, logs, caves and burrows, with females ranging over 200-500 hectares and males covering much larger areas, often travelling along vegetated creek lines. There are no BioNet Atlas records of the Spotted-tailed Quoll within 10 km of the subject land.

Table E3 Assessment of Significant Impact Criteria for Critically Endangered or Endangered Species – Spotted-tailed Quoll

Significant Impact Criteria	Response
Will the action lead to a long-term decrease in the size of a population	Given the lack of evidence for the Spotted-tailed Quoll on the subject land and within the locality (i.e. BioNet Atlas 10-km radius) and noting the presence of suitable habitat within the broader assessment area, the proposed development is unlikely to result in a long-term decrease in the population size of this species.
Will the action reduce the area of occupancy of the species	Given the lack of evidence of this species on the subject land, and the presence of extensive habitat within the broader assessment area that is likely to offer more suitable conditions, it is unlikely that the removal of vegetation from the subject land will reduce the area of occupancy for the Spotted-tailed Quoll.
Will the action fragment an existing population into two or more populations	The proposed action is unlikely to fragment an existing population of this species. As a mobile species that forages across large areas, the Spotted-tailed Quoll is not expected to be affected by the removal of a small portion of available habitat. Therefore, habitat fragmentation is not anticipated to occur.
Will the action adversely affect habitat critical to the survival of a species	The proposed action is unlikely to adversely affect habitat critical to the survival of the Spotted-tailed Quoll. The available habitat on the subject land is considered to have only marginal value for foraging and shelter for this species.
Will the action disrupt the breeding cycle of a population	Targeted fauna surveys did not detect any evidence of the Spotted-tailed Quoll using the subject land. The subject land is assessed as providing only sub-optimal potential foraging and denning habitat. Accordingly, the proposed action is considered unlikely to result in a significant impact on the breeding cycle of these species.
Will the action modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The Spotted-tailed Quoll has not been recorded on the subject land or 10km locality. The habitat within the development footprint is considered to be of marginal value and likely to be used only intermittently, primarily as potential foraging habitat. Approximately 2.88 hectares of potential habitat will be impacted, while larger areas of more suitable native vegetation will remain in the locality. The proposed action is considered unlikely to modify, destroy, remove, isolate, or reduce the availability or quality of habitat to an extent that would cause these species to decline.
Will the action result in invasive species that are harmful to a critically endangered or endangered species becoming established	Invasive species such as foxes and rabbits are already present within the subject land due to past and current land uses. Management plans for the control of weed and feral species will be implemented as part of the proposal's mitigation measures. The proposed action is unlikely to introduce invasive species harmful to



Significant Impact Criteria	Response
in the endangered or critically endangered species' habitat	the Spotted-tailed Quoll and is unlikely to facilitate the establishment of harmful species.
Will the action introduce disease that may cause the species to decline	The proposed development is unlikely to lead to processes capable of introducing diseases that may cause this species to decline.
Will the action interfere with the recovery of the species	The Spotted-tailed Quoll has not been recorded within the subject land or the broader 10km locality. Habitat within the proposed development footprint is of marginal value for this species. As a mobile species, the site may potentially be used but only intermittently as part of a wider foraging range. Avoidance and mitigation measures will be implemented to minimise potential impacts. Consequently, the proposed action is considered unlikely to interfere with the species' recovery.

E.4.4 Endangered Small Purple Pea

The Small Purple Pea (*Swainsona recta*) is listed as Endangered under both the BC Act and EPBC Act. Small Purple-pea is a slender perennial herb up to 30 cm tall with narrow, divided leaves and sprays of purple pea-shaped flowers in spring, followed by small pods in summer. Once widespread in parts of NSW, it now survives mainly near Queanbeyan and the Wellington-Mudgee region, with most plants growing along a railway easement, plus small occurrences in the ACT and near Chiltern, Victoria. There are no BioNet Atlas records of the Small Purple Pea (*Swainsona recta*) within 10 km of the subject land.

Table E4 Assessment of Significant Impact Criteria for Critically Endangered or Endangered Species – Small Purple Pea

Significant Impact Criteria	Response
Will the action lead to a long-term decrease in the size of a population	The proposed development will impact 0.06 ha of potential habitat for the Small Purple Pea (<i>Swainsona recta</i>), which has been assumed present. Although no records of the species occur within the subject land or 10 km vicinity, all impacts on potential habitat will be offset in accordance with the BAM. Accordingly, the proposed development is not considered likely to cause a long-term decrease in the size of a population of this species.
Will the action reduce the area of occupancy of the species	There are no records Small Purple Pea (<i>Swainsona recta</i>) within the subject land or 10 km locality. Clearing of 0.06 ha of potentially suitable habitat is not considered likely to reduce the area of occupancy of this species.
Will the action fragment an existing population into two or more populations	Due to the small area of the proposed clearing and the lack of evidence of the species' occurrence within development footprint, the project is unlikely to result in fragmentation of a population of the Small Purple Pea (<i>Swainsona recta</i>).
Will the action adversely affect habitat critical to the survival of a species	Based on the absence of records within the subject land and the surrounding 10 km locality, along with the small area of proposed clearing and the degraded condition of the ground layer, the habitat to be removed is not considered critical to the survival of the Small Purple Pea (<i>Swainsona recta</i>). Accordingly, the proposed development is not expected to affect habitat essential for the species' long-term viability.



Significant Impact Criteria	Response
Will the action disrupt the breeding cycle of a population	Based on the small area of proposed clearing, the proposed development is unlikely to cause direct or indirect impacts that would disrupt the breeding cycle of the Small Purple Pea (<i>Swainsona recta</i>), should it occur on the subject land.
Will the action modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	Based on the absence of records within the subject land and the surrounding 10 km locality, along with the small area of proposed clearing and the degraded condition of the ground layer, the development is unlikely to cause direct or indirect impacts to the extent that the Small Purple Pea (<i>Swainsona recta</i>) is likely to decline.
Will the action result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat	Invasive species such as foxes, rabbits, cats, and dogs are already present within the subject land due to past and current land uses. Management plans for controlling weeds and feral species will be implemented as part of the mitigation measures for the proposed development. Therefore, the proposed development is unlikely to lead to the establishment of additional invasive species.
Will the action introduce disease that may cause the species to decline	The proposed development is unlikely to introduce diseases that could cause the Small Purple Pea (<i>Swainsona recta</i>) to decline.
Will the action interfere with the recovery of the species	Based on the absence of records within the subject land and the surrounding 10 km locality, along with the small area of proposed clearing and the degraded condition of the ground layer it is unlikely that the proposed development will substantially interfere with the recovery of the Small Purple Pea (<i>Swainsona recta</i>).

E.5 Mitigation Measures for MNES

Threatened species, migratory species and communities listed under the EPBC Act have been assessed for their relevance to the subject land and its habitats at Jindera, NSW. Mitigation measures are presented in Section 8.4 of the BDAR.

A range of mitigation measures have been developed to mitigate the impacts that are unable to be avoided on biodiversity values, including MNES entities. These include a range of measures to be undertaken before and during construction to limit the impact of the proposed development.

As outlined in the BDAR, full details will be provided post approval in detailed plans including a Biodiversity Management Plan. It is envisaged that these mitigations measures will form part of the conditions of consent for the proposal and all measures will be approved as part of the DA approval process.

E.6 Offsets for MNES

The Commonwealth requires offsets under the EPBC Act to be calculated using the Offset Assessment Guide and guided by the Environmental Offsets Policy. These offsets can be delivered through land-based conservation or financial contributions, and NSW's BOS is often used under bilateral agreements. Details of credit requirements are provided in Section 11.0 of this BDAR.



E.7 Conclusion

Based on the above self-assessment, it is unlikely that the proposed development will have a significant impact any MNES with respect to threatened species, communities or migratory species listed under the EPBC Act.

The BDAR includes appropriate mitigation measures and offsets in relation to the relevant MNES. Based on this assessment referral of the development application to the Commonwealth Department of Climate Change, Energy, the Environment and Water is not warranted.





EPBC Act Protected Matters Report

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

Report created: 03-Apr-2025

[Summary](#)

[Details](#)

[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)

Summary

Matters of National Environment Significance

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

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar)	7
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	3
Listed Threatened Species:	36
Listed Migratory Species:	9

Other Matters Protected by the EPBC Act

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

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

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

Commonwealth Lands:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	17
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

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

State and Territory Reserves:	None
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	5
Key Ecological Features (Marine):	None
Biologically Important Areas:	None
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar Wetlands)		[Resource Information]
Ramsar Site Name	Proximity	
Banrock station wetland complex	600 - 700km upstream from Ramsar site	
Barmah forest	100 - 150km upstream from Ramsar site	
Gunbower forest	200 - 300km upstream from Ramsar site	
Hattah-kulkyne lakes	400 - 500km upstream from Ramsar site	
Nsw central murray state forests	100 - 150km upstream from Ramsar site	
Riverland	500 - 600km upstream from Ramsar site	
The coorong, and lakes alexandrina and albert wetland	600 - 700km upstream from Ramsar site	

Listed Threatened Ecological Communities	[Resource Information]
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For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.

Community Name	Threatened Category	Presence Text
Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia	Endangered	Community may occur within area
Weeping Myall Woodlands	Endangered	Community may occur within area
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	Community likely to occur within area

Community Name	Threatened Category	Presence Text
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Listed Threatened Species	[Resource Information]
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Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name	Threatened Category	Presence Text
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BIRD

[Anthochaera phrygia](#)

Regent Honeyeater [82338]	Critically Endangered	Foraging, feeding or related behaviour likely to occur within area
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[Aphelocephala leucopsis](#)

Southern Whiteface [529]	Vulnerable	Species or species habitat likely to occur within area
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[Botaurus poiciloptilus](#)

Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area
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[Calidris acuminata](#)

Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area
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[Calidris ferruginea](#)

Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
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[Callocephalon fimbriatum](#)

Gang-gang Cockatoo [768]	Endangered	Species or species habitat may occur within area
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[Climacteris picumnus victoriae](#)

Brown Treecreeper (south-eastern) [67062]	Vulnerable	Species or species habitat likely to occur within area
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[Falco hypoleucos](#)

Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area
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[Gallinago hardwickii](#)

Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat likely to occur within area
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[Grantiella picta](#)

Painted Honeyeater [470]	Vulnerable	Species or species habitat likely to occur within area
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Scientific Name	Threatened Category	Presence Text
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat likely to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area
Melanodryas cucullata cucullata South-eastern Hooded Robin, Hooded Robin (south-eastern) [67093]	Endangered	Species or species habitat likely to occur within area
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat likely to occur within area
Pedionomus torquatus Plains-wanderer [906]	Critically Endangered	Species or species habitat may occur within area
Polytelis swainsonii Superb Parrot [738]	Vulnerable	Species or species habitat likely to occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat known to occur within area
Stagonopleura guttata Diamond Firetail [59398]	Vulnerable	Species or species habitat likely to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat may occur within area
CRUSTACEAN		
Euastacus armatus Murray Crayfish [81537]	Vulnerable	Species or species habitat may occur within area
FISH		
Galaxias rostratus Flathead Galaxias, Beaked Minnow, Flat-headed Galaxias, Flat-headed Jollytail, Flat-headed Minnow [84745]	Critically Endangered	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Macquaria australasica Macquarie Perch [66632]	Endangered	Species or species habitat may occur within area
FROG		
Crinia sloanei Sloane's Froglet [59151]	Endangered	Species or species habitat likely to occur within area
Litoria raniformis Southern Bell Frog, Growling Grass Frog, Green and Golden Frog, Warty Swamp Frog, Golden Bell Frog [1828]	Vulnerable	Species or species habitat may occur within area
INSECT		
Keyacris scurra Key's Matchstick Grasshopper [89739]	Endangered	Species or species habitat may occur within area
MAMMAL		
Dasyurus maculatus maculatus (SE mainland population) Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat may occur within area
Nyctophilus corbeni Corben's Long-eared Bat, South-eastern Long-eared Bat [83395]	Vulnerable	Species or species habitat may occur within area
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT) Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Endangered	Species or species habitat likely to occur within area
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
PLANT		
Amphibromus fluitans River Swamp Wallaby-grass, Floating Swamp Wallaby-grass [19215]	Vulnerable	Species or species habitat likely to occur within area
Caladenia concolor Crimson Spider-orchid, Maroon Spider-orchid [5505]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Prasophyllum validum Sturdy Leek-orchid, Mount Remarkable Leek-orchid [10268]	Vulnerable	Species or species habitat may occur within area
Swainsona murrayana Slender Darling-pea, Slender Swainson, Murray Swainson-pea [6765]	Vulnerable	Species or species habitat may occur within area
Swainsona recta Small Purple-pea, Mountain Swainson-pea, Small Purple Pea [7580]	Endangered	Species or species habitat may occur within area

REPTILE

Aprasia parapulchella Pink-tailed Worm-lizard, Pink-tailed Legless Lizard [1665]	Vulnerable	Species or species habitat likely to occur within area
Delma impar Striped Legless Lizard, Striped Snake-lizard [1649]	Vulnerable	Species or species habitat may occur within area

Listed Migratory Species [\[Resource Information \]](#)

Scientific Name	Threatened Category	Presence Text
Migratory Marine Birds		
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area

Migratory Terrestrial Species

Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat likely to occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area

Migratory Wetlands Species

Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat likely to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat may occur within area

Other Matters Protected by the EPBC Act

Listed Marine Species	[Resource Information]	
Scientific Name	Threatened Category	Presence Text
Bird		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area
Chalcites osculans as Chrysococcyx osculans Black-eared Cuckoo [83425]		Species or species habitat likely to occur within area overfly marine area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat likely to occur within area overfly marine area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat likely to occur within area overfly marine area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area overfly marine area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area overfly marine area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat likely to occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat likely to occur within area overfly marine area
Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037]	Endangered	Species or species habitat known to occur within area overfly marine area
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat may occur within area overfly marine area

Extra Information

EPBC Act Referrals [Resource Information]			
Title of referral	Reference	Referral Outcome	Assessment Status
Glenellen Solar Farm	2023/09628		Referral Decision
Not controlled action			
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed
INDIGO Central Submarine Telecommunications Cable	2017/8127	Not Controlled Action	Completed
Jindera Solar Farm, NSW	2021/8901	Not Controlled Action	Completed
Not controlled action (particular manner)			
INDIGO Marine Cable Route Survey (INDIGO)	2017/7996	Not Controlled Action (Particular Manner)	Post-Approval

Caveat

1 PURPOSE

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

The report contains the mapped locations of:

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

2 DISCLAIMER

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

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

3 DATA SOURCES

Threatened ecological communities

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

Threatened, migratory and marine species

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

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

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

4 LIMITATIONS

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

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

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

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

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

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

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

- [-Office of Environment and Heritage, New South Wales](#)
- [-Department of Environment and Primary Industries, Victoria](#)
- [-Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [-Department of Environment, Water and Natural Resources, South Australia](#)
- [-Department of Land and Resource Management, Northern Territory](#)
- [-Department of Environmental and Heritage Protection, Queensland](#)
- [-Department of Parks and Wildlife, Western Australia](#)
- [-Environment and Planning Directorate, ACT](#)
- [-Birdlife Australia](#)
- [-Australian Bird and Bat Banding Scheme](#)
- [-Australian National Wildlife Collection](#)
- [-Natural history museums of Australia](#)
- [-Museum Victoria](#)
- [-Australian Museum](#)
- [-South Australian Museum](#)
- [-Queensland Museum](#)
- [-Online Zoological Collections of Australian Museums](#)
- [-Queensland Herbarium](#)
- [-National Herbarium of NSW](#)
- [-Royal Botanic Gardens and National Herbarium of Victoria](#)
- [-Tasmanian Herbarium](#)
- [-State Herbarium of South Australia](#)
- [-Northern Territory Herbarium](#)
- [-Western Australian Herbarium](#)
- [-Australian National Herbarium, Canberra](#)
- [-University of New England](#)
- [-Ocean Biogeographic Information System](#)
- [-Australian Government, Department of Defence](#)
- [Forestry Corporation, NSW](#)
- [-Geoscience Australia](#)
- [-CSIRO](#)
- [-Australian Tropical Herbarium, Cairns](#)
- [-eBird Australia](#)
- [-Australian Government – Australian Antarctic Data Centre](#)
- [-Museum and Art Gallery of the Northern Territory](#)
- [-Australian Government National Environmental Science Program](#)
- [-Australian Institute of Marine Science](#)
- [-Reef Life Survey Australia](#)
- [-American Museum of Natural History](#)
- [-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania](#)
- [-Tasmanian Museum and Art Gallery, Hobart, Tasmania](#)
- [-Other groups and individuals](#)

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the [Contact us](#) page.

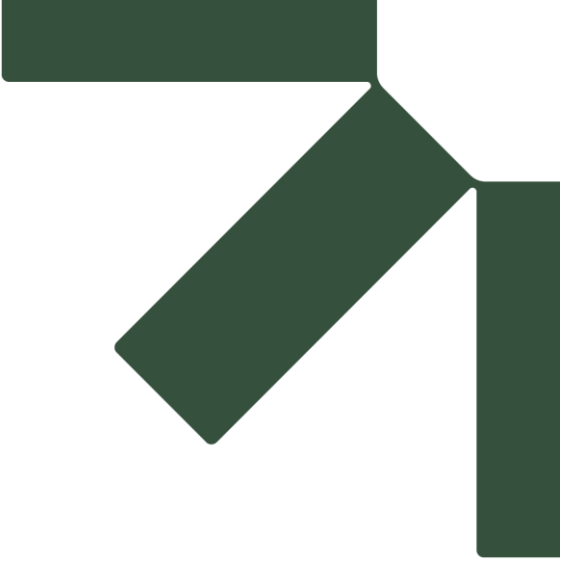
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Department of Climate Change, Energy, the Environment and Water

GPO Box 3090

Canberra ACT 2601 Australia

+61 2 6274 1111



Appendix F Vegetation Survey Data

Biodiversity Development Assessment Report

SSD-68815961: Proposed BESS Facility

140 Ortlipp Road, Jindera NSW / 204 Ortlipp Road, Glenellen, NSW

BEES Atlantic Pty Ltd c/o Gransolar Development Australia

SLR Project No.: 620.041088.00002

16 June 2026

Table F1: Vegetation survey and data – plot info

Plot	PCT	Area	Patch size	Condition class	Zone	Easting	Northing	Bearing	Plot-based vegetation surveys	Vegetation integrity surveys
BAM02	277	1.75	200	Mod	55	491737	6024510	87	Yes	Yes
BAM03	277	1.75	200	Mod	55	491913	6024437	216	Yes	Yes
BAM04	277	1.75	200	Mod	55	491678	6024151	122	Yes	Yes
BAM05	277	1.13	200	Low	55	491691	6024641	40	Yes	Yes
BAM06	277	1.13	200	Low	55	491670	6024758	180	Yes	Yes

Table F2: Vegetation survey and data – composition

Plot	Tree	Shrub	Grass	Forb	Fern	Other
BAM02	2	0	6	4	0	0
BAM03	1	0	6	3	0	0
BAM04	1	1	6	2	0	0
BAM05	1	0	4	1	0	0
BAM06	1	0	1	0	0	0

Table F3: Vegetation survey and data – structure

Plot	Tree	Shrub	Grass	Forb	Fern	Other
BAM02	25	0	27.5	0.5	0	0
BAM03	20	0	12.1	0.3	0	0
BAM04	20	0.1	29	3	0	0
BAM05	25	0	15.2	0.1	0	0
BAM06	20	0	15	0	0	0

Table F4: Vegetation survey and data – function

Plot	Large Trees	Hollows trees	Litter cover	Length of fallen logs	Tree stem 5-9	Tree stem 10-19	Tree stem 20-29	Tree stem 30-49	Tree stem 50-79	Tree regen	High threat exotics
BAM02	5	1	61	15	Present	Present	Present	Present	Present	Present	1.1
BAM03	1	1	30	0	Absent	Present	Present	Present	Present	Absent	30
BAM04	2	1	47	12	Absent	Absent	Present	Present	Present	Absent	32.1
BAM05	0	1	32	1	Present	Present	Present	Absent	Absent	Present	25
BAM06	0	1	50	2	Present	Present	Present	Absent	Absent	Present	25.1

Table F5: Vegetation survey and data – function

GF Code	Species Name	N, HTW, or Non-HTW	BAM02-Cover	BAM03-Cover	BAM04-Cover	BAM05-Cover	BAM06-Cover
SG	<i>Acacia baileyana</i>	N	0	0	0.1	0	0
n/a	<i>Arctotheca calendula</i>	Non-HTW	0	1	5	0	2
FG	<i>Arthropodium fimbriatum</i>	N	0.2	0	0	0	0
GG	<i>Austrostipa scabra</i>	N	0	0	5	5	15



GF Code	Species Name	N, HTW, or Non-HTW	BAM02-Cover	BAM03-Cover	BAM04-Cover	BAM05-Cover	BAM06-Cover
n/a	<i>Avena fatua</i>	Non-HTW	0	0	1	0	0
n/a	<i>Bromus diandrus</i>	HTW	0.1	20	30	15	5
n/a	<i>Bromus hordeaceus</i>	Non-HTW	0	0.1	2	0	0
n/a	<i>Bromus molliformis</i>	Non-HTW	0	0	0	0	0.1
GG	<i>Carex appressa</i>	N	5	0	0	0	0
GG	<i>Carex inversa</i>	N	15	5	0	0	0
n/a	<i>Cerastium glomeratum</i>	Non-HTW	10	0	0.2	0	0
n/a	<i>Cirsium vulgare</i>	Non-HTW	5	0.1	0	0	0
n/a	<i>Conyza bonariensis</i>	Non-HTW	0.1	0	0	0	0
GG	<i>Cymbopogon refractus</i>	N	0	0	0	0	0
n/a	<i>Dactylis glomerata</i>	Non-HTW	1	0	1	0	0
FG	<i>Dichondra repens</i>	N	0.1	0.1	0	0	0
n/a	<i>Ehrharta longiflora</i>	Non-HTW	0	0	0	0	0.1
GG	<i>Eleocharis acuta</i>	N	0	0	0	0	0
GG	<i>Eragrostis sp.</i>	N	0	1	0	0	0
TG	<i>Eucalyptus blakelyi</i>	N	15	20	20	25	20
TG	<i>Eucalyptus melliodora</i>	N	10	0	0	0	0
FG	<i>Euchiton involucratus</i>	N	0	0	0	0	0
n/a	<i>Galium aparine</i>	Non-HTW	0.2	0	0	0	0
FG	<i>Goodenia gracilis</i>	N	0	0	0	0	0
n/a	<i>Hordeum leporinum</i>	Non-HTW	1	3	3	0	0
FG	<i>Hypericum gramineum</i>	N	0	0	0	0.1	0
n/a	<i>Hypericum perforatum</i>	HTW	0	0	0	5	15
n/a	<i>Hypochaeris radicata</i>	Non-HTW	1	0	1	2	2
GG	<i>Juncus continuus</i>	N	5	2	5	0	0
GG	<i>Juncus planifolius</i>	N	0	0	0	0	0
GG	<i>Lachnagrostis filiformis</i>	N	0	0	0	0.2	0
FG	<i>Leptorhynchus squamatus</i>	N	0	0	0	0	0
n/a	<i>Lolium perenne</i>	Non-HTW	15	15	10	0	0
GG	<i>Microlaena stipoides</i>	N	1	0	3	0	0
FG	<i>Myriophyllum crispatum</i>	N	0	0	0	0	0
GG	<i>Panicum sp.</i>	N	0.5	0	0	0	0
n/a	<i>Phalaris aquatica</i>	Non-HTW	2	0	0	0	25
n/a	<i>Plantago coronopus</i>	Non-HTW	0	0	0	0	0
n/a	<i>Plantago lanceolata</i>	Non-HTW	0	0	0.1	0	0.1
n/a	<i>Poa annua</i>	Non-HTW	0	0	0	0	0
GG	<i>Poa sieberiana</i>	N	0	0	1	0	0
FG	<i>Ranunculus sessiliflorus</i>	N	0.1	0.1	0	0	0
n/a	<i>Romulea rosea</i>	HTW	1	10	2	5	5
n/a	<i>Rumex acetosella</i>	HTW	0	0	0.1	0	0.1
FG	<i>Rumex brownii</i>	N	0.1	0.1	2	0	0



GF Code	Species Name	N, HTW, or Non-HTW	BAM02-Cover	BAM03-Cover	BAM04-Cover	BAM05-Cover	BAM06-Cover
GG	<i>Rytidosperma bipartitum</i>	N	0	0	0	5	0
GG	<i>Rytidosperma fulvum</i>	N	0	1	10	0	0
GG	<i>Rytidosperma setaceum</i>	N	0	0.1	5	0	0
GG	<i>Rytidosperma sp.</i>	N	1	3	0	5	0
FG	<i>Stellaria angustifolia</i>	N	0	0	1	0	0
n/a	<i>Sonchus asper</i>	Non-HTW	0.1	0.1	0	0	0
n/a	<i>Trifolium sp.</i>	Non-HTW	0.1	0	1	0	0
n/a	<i>Trifolium subterraneum</i>	Non-HTW	0	0	0	0	0.1
n/a	<i>Vulpia bromoides</i>	Non-HTW	0	0	20	0	10

Photo F1: BAM02 Start of transect in winter 2024



Photo F2: BAM02 Start of transect in spring 2024



Photo F3: BAM02 End of transect in winter 2024



Photo F4: BAM03 Start of transect in winter 2024



Photo F5: BAM03 Start of transect in spring 2024



Photo F6: BAM03 End of transect in winter 2024



Photo F7: BAM04 Start of transect in winter 2024



Photo F8: BAM04 Start of transect in spring 2024



Photo F9: BAM04 End of transect in winter 2024



Photo F10: BAM05 Start of transect in winter 2024



Photo F11: BAM05 Start of transect in spring 2024



Photo F12: BAM05 End of transect in winter 2024



Photo F13: BAM06 Start of transect in spring 2024



Photo F14: BAM06 End of transect in spring 2024



Arroundcore check 10/10/2024 FI

Numbers 1- 8 on this page correlate with the numbers and explanatory notes on page 3									
Site sheet #	1 of	Date	03 07 24	Survey Name	Jinibera BESS	Plot Identifier	P1 (Garn di)		
Recorders	Bo D, Vander B			IBRA region	NSW SW slopes Lower slopes	Veg zone ID	Z1		
Datum	5556	Co-ordinate system		MGA Zone	4	X coordinates	411885	Y coordinates	6024532
Location description		Descriptive notes to locate site without grid reference							
Plot dimensions	20 x 50 m			Orientation of midline from 0m line	298°	Photo #	P1.1-P1.2		

Datum: AG5000, WGS84, GDA94, GDA2020 or Other (specify) MGA Zone (for Projected coordinate system only) 55 (Central NSW), 55 (Central NSW) or 54 (Western NSW) X,Y coordinate: Long/Lat (for Projected coordinate system), Easting/Northing (for geographic coordinate system)

Vegetation integrity									
Composition and structure sum values may be contrasted after entering data into available tools. If not required while in the field									
Composition (400 m² plot)			Structure (400 m² plot)			Function (1000 m² plot)			
		Sum values			Sum values (%) (may sum to >100%)	Tree stem size class (DBH)		If data are to be used as more appropriate local data i.e. to generate local benchmarks, stems must be counted	
Total count of native plant species (richness) in each growth form group (not individual plants within each growth form)	Trees (TG)	0	Sum of foliage cover of native species by growth form group	Trees (TG)	0	80+ cm		Count (best practice) if 8 large tree benchmark size > 250 cm count	
	Shrubs (SG)	0		Shrubs (SG)	0	50-79 cm		Count (best practice) if 8 large tree benchmark size > 250 cm count	
	Grasses (GG)	79		Grasses (GG)	68.881	30-49 cm		Count (best practice) if 8 large tree benchmark size > 250 cm count	
	Forbs (FG)	16		Forbs (FG)	0.135	20-29 cm		Count (best practice) if 8 large tree benchmark size > 250 cm count	
	Ferns (EG)	0		Ferns (EG)	0	10-19 cm		Count (best practice) if 8 large tree benchmark size > 250 cm count	
	Other (OG)	0		Other (OG)	0	5-9 cm		Count (best practice) if 8 large tree benchmark size > 250 cm count	
Total high threat weed cover					0.1	Tree regeneration <5cm		Tick X	
						Length of fallen logs		Total space 0 Total 0	
						Hollow-bearing trees		Tick NONE	
Vegetation integrity - function cont. (five 1m² plots)		Litter cover (%)		Bare ground cover (%)		Cryptogam cover (%)		Rock cover (%)	
Subplot scores		25 20 40 45 20		0 25 10 25 60		0 5 10 0 0		5 0 0 0 0	
Average of 5 subplots		28		24		5		1	

Vegetation class		Large tree benchmark size		20/ 30/ 50/ 80 DBH	Confidence	H/ M/ L
Plant community type (PCT)		277 (degraded by powerline)		EEC	Tick	Confidence H/ M/ L

Morphological type		Landform element		Landform pattern		Microrelief	
Lithology		Soil surface texture		Soil colour		Soil depth	
Slope		Aspect		Site drainage		Distance to nearest water type	
Disturbance	Severity code	Age code	Brief site description or other notes				
Clearing (inc. logging)	3	NR	Appears to be come temporarily mossy light brown soil				
Cultivation (inc. pasture)	1	NR					
Soil erosion	1	NR					
Firewood / CWD removal	3	NR					
Grazing (id native/stock)	1	NR					
Fire damage	0	NR					
Storm damage	0	NR	Emergent height				
Wettedness	1	NR	Upper stratum height				
Other			Middle stratum ht				
			Lower stratum ht				
			Tp Md Bt Tp Md Bt Tp Md Bt Tp Md Bt				

Severity: 0=very little, 1=light, 2=moderate, 3=heavy, 4=very heavy; NR=not recent (3-10yrs); 0=old (>10yrs)



400 m2 floristics plot:	Survey Name	Plot identifier	Recorders
Date 07 07 24	Jindera BESS	P1	Bo. D, Vander. B

GF code	Species name	N, HTW or non-HTW	Foliage cover	Abundance	Voucher
	Full species name, or a unique means of identifying separate taxa within a survey is mandatory. Data from here will be used to assign growth form richness and cover.				
	Sedge, long inflorescences, photo		30	60	
	Club sedge, spreading leaf, photo		10	50	
✓ GG	<i>Juncus</i> <i>continuos</i> ? (photo)	N	5	10	
✓ GG	<i>Rytidosperma</i> sp.	N	2	20	
FG	<i>Helianthus</i> sp. <i>Dichondra repens</i>	N	0.1	6	
✓ -	<i>Cinn</i> <i>vulgare</i>	E	0.1	6	
-	<i>Sorrelus</i> sp. <i>asper</i>	E	0.1	6	
GG	<i>Cymbopogon</i> <i>retrofractus</i>	N	1	6	
GG	<i>Eragrostis</i> sp.	N	10	50	
-	<i>Plantago</i> <i>coronopus</i>	E	2	100	
✓ -	<i>Hypochaeris</i> <i>radistia</i>	E	0.1	6	
GG	<i>Panicum</i> sp.	N	10	50	
✓ GG	<i>Carex</i> <i>appressa</i>	N	30	60	
GG	<i>Juncus</i> <i>lanifolius</i>	N	10	50	
GG	<i>Eleocharis</i> <i>acuta</i>	N	20		
16	<i>Sorichus</i> <i>asper</i>	E	0.1		
FG	17 <i>Catotis</i> ? (Hm P3) <i>Lanunculus sessiliflorus</i>	N	0.1		
GG	18 <i>Lachnagrostis</i> <i>filiformis</i>	N	0.1		
n/a	19 <i>Romulea</i> <i>rosea</i>	E	0.1		
FG	20 Mistle-like herb. <i>Myriophyllum crispatum</i>	N	0.1		
FG	21 <i>Bromus</i> <i>steptorhynchus</i> <i>scutellatus</i> Bottoms	N	0.1		
n/a	22 <i>Bromus</i> <i>diandrus</i>	HTE	1		
FG	23 Bright green thick leaf herb <i>Siadenia gracilis</i>	N	3		✓
FG	24 <i>Euphorbia</i> <i>amblyocaulis</i>	N	0.1		
n/a	25 <i>Poa</i> <i>annua</i>	E	0.1		
26					
27					
28					
29					
30					
31					
32					
33					
34					
35					



Groundcover check 10/10/24 FI

Numbers 1- 8 on this page correlate with the numbers and explanatory notes on page 3									
Site sheet #	1 of	Date	03 07 24	Survey Name	JINDERA BESS	Plot Identifier	P2 (BAMOL)		
Recorders	V.B. B.J.			IBRA region	NSW SW Slopes Lower slopes	Veg zone ID	2		
Datum	SS	Co-ordinate system	Projected or geographic	MGA Zone	H	X coordinates	491737	Y coordinates	6024510
Location description			Descriptive notes to locate site without grid reference						
Plot dimensions	20x50m			Orientation of midline from 0m line		87°		Photo #	P2.1- P2.2

Datum: AGD66, WGS84, GDA94, GDA2020 or Other (specify). MGA Zone (for Projected coordinate system only): 56 (Coastal NSW), 55 (Central NSW) or 54 (Western NSW). X/Y coordinate: Long/Lat (for Projected coordinate system), Easting/Northing (for geographic coordinate system).

Vegetation Integrity									
Composition and structure sum values may be completed after entering data into available tools. It is not required while in the field.									
Composition (400 m² plot)			Structure (400 m² plot)			Function (1000 m² plot)			
		Sum values			Sum values (%) (may sum to >100%)	³ Tree stem size class (DBH)	If data are to be used as more appropriate local data i.e. to generate local benchmarks, stems must be counted		
Total count of native plant species (richness) in each growth form group (not individual plants within each growth form)	Trees (TG)	2	Sum of foliage cover of native species by growth form group	Trees (TG)	25	80+ cm	Count ☒		
	Shrubs (SG)	0		Shrubs (SG)	0	50-79 cm	Best practice tick - If 80% tree benchmark size 2-3m, count		
	Grasses (GG)	56		Grasses (GG)	12.5 27.5	30-49 cm	Best practice tick - If 80% tree benchmark size 2-3m, count		
	Forbs (FG)	24		Forbs (FG)	0.2 0.3	20-29 cm	Best practice tick - If 80% tree benchmark size 2-3m, count		
	Ferns (EG)	0		Ferns (EG)	0	10-19 cm	Best practice tick		
	Other (OG)	0		Other (OG)	0	5-9 cm	Count (best practice tick)		
					Total high threat weed cover	1.1	⁵ Length of fallen logs		
							⁶ Hollow-bearing trees		
Vegetation integrity - function cont. (five 1m² plots)			⁷ Litter cover (%)		Bare ground cover (%)		Cryptogam cover (%)		Rock cover (%)
Subplot scores			80 75 50 50 50		0 0 0 0 0		0 0 0 5 0		0 0 0 0 0
Average of 5 subplots			61		0		1		0

These attributes require consideration of site observations and may be completed after field work

Vegetation class	⁸ Large tree benchmark size	20/ 30/ 50/ 80 DBH	Confidence	H/ M/ L
Plant community type (PCT)	EEC	Tick	Confidence	H/ M/ L

Physiography and site features that may help in determining PCT and management zone (optional) or for BioNet systematic flora survey purposes

Morphological type	Landform element	Landform pattern	Microrelief				
Lithology	Soil surface texture	Soil colour	Soil depth				
Slope	Aspect	Site drainage	Distance to nearest water type				
Disturbance	Severity code	Age code	Brief site description or other notes Appears to become temporarily bossy. Brown soil - Good litter and log cover.				
Clearing (inc. logging)	1	NR					
Cultivation (inc. pasture)	1	NR					
Soil erosion	1	R					
Firewood / CWD removal	1	NR					
Grazing (id native/stock)	1	R					
Fire damage	0	R					
Storm damage	1	R					
Weediness	1	R					
Other							
Emergent height		Upper stratum height		Middle stratum ht		Lower stratum ht	
Tp Md Bt		Tp Md Bt		Tp Md Bt		Tp Md Bt	
m m m		m m m		m m m		m m m	

Severity: 0=no evidence, 1=light, 2=moderate, 3=severe Age: R=recent (<10yrs), NR=not recent (3-10yrs), O=old (>10yrs)



400 m2 floristics plot:	Survey Name	Plot Identifier	Recorders
Date 030724	Jindera BESS	P2	Bo D, Vander B

GF code	Species name Full species name, or a unique means of identifying separate taxa within a survey is mandatory. Data from here will be used to assign growth form richness and cover.	N, HTW or non-HTW	Foliage cover	Abundance	Voucher
✓ TG	<i>Eucalyptus blakelyi</i>	N	15	6	
✓ TG	<i>Eucalyptus melliodora</i>	N	10	3	
✓ GG	<i>Juncus catenatus</i>	N	5	20	
✓ -	<i>Hypochaeris radiatus</i>	E	1	50	
GG	<i>Rhynchospora</i> sp.	N	1	50	
FG	<i>Eleocharis repens</i>	N	0.1	50	
GG	<i>Panicum</i> sp.	N	0.5	20	
✓ -	<i>Rumex rosea</i>	HTW	1	100	
✓ GG	Tall sedge (P1) <i>Carex appressa</i>	N	5	10	
✓ -	<i>Cicuta pulgorei</i>	E	0.5	20	
-	<i>Coryza boscianensis</i>	E	0.1	3	
GG	<i>Microleuca stipoides</i>	N	1	50	
-	<i>Dactylis glomerata</i>	E	1	20	
✓ FG	<i>Rumex brunneus</i>	N	0.1	6	
-	<i>Festuca</i> sp.	E	0.1	6	
✓ -	<i>Phalaris aquatica</i>	E	2	3	
FG	<i>Anthropodium fimbriatum</i>	N	0.2		
-	<i>Cerastium glomeratum</i>	E	10		
GG	<i>Carex inversa</i>	N	15		
-	<i>Hordeum leporinum</i>	E	1		
-	<i>Bromus diandra</i>	E	0.1		
-	<i>Helium perenne</i>	E	15		
FG	<i>Cacotis? Ranunculus sessiflorus</i> from earlier	N	0.1		
-	<i>Cedron aparinum</i>	E	0.2		
-	<i>Sorbus asper</i>	E	0.1		
26					
27					
28					
29					
30					
31					
32					
33					
34					
35					

Print note copies of this page to allow for higher species counts at a plot. All vascular plant species in a plot need to be recorded.

GF Code: see growth form definitions in BAI (2020) Appendix F (TG Tree, SH shrub, GG grass, FG forb, EG fern, OG other; N native, HTW: high threat weed)

Foliage cover: 0.1, 0.2, 0.5, 1, 2, 3, 4, 5, 10, 15, 20, 25, 100%; Note: 0.1% cover represents an area of approximately 63 x 63 cm or a circle about 71 cm across; 0.5% cover represents an area of approximately 1.4 x 1.4 m, and 1% = 2.0 x 2.0 m, 5% = 4 x 5 m, 25% = 10 x 10 m. Note the top 3 dominant native species within each GF group.

Abundance: Count 1, 2, 3... when <10; estimate when >10: 20, 30, 100, 200, 300, 1000, 2000, 3000 (as integer values)



Groundcover check 10/10/24 FI

Numbers 1- 8 on this page correlate with the numbers and explanatory notes on page 3									
Site sheet #	1 of	Date	0307 24	Survey Name	JINDAMBA	Plot Identifier	P3 (BAM03)		
Recorders	VB B.9.			IBRA region	NSW SW slopes Lower slopes	Veg zone ID			
Datum	55	Co-ordinate system	Projected or geographic	MGA Zone	H	1°X coordinates	492923	1°Y coordinates	6024437
Location description		Descriptive notes to locate site without grid reference							
Plot dimensions	20x50m structure (400m ²): 20 m x 20 m (function) (structure): 20 m x 50 m				Orientation of midline from 0m line	216	Photo #	P3.1- P3.2	

Datum: AGD66, WGS84, GDA94, GDA2020 or Other (specify) MGA Zone (for Projected coordinate system only); 56 (Coastal NSW), 55 (Central NSW) or 54 (Western NSW) X/Y coordinate: Long/Lat (for Projected coordinate system), Easting/Northing (for geographic coordinate system)

Vegetation integrity									
Composition and structure sum values may be completed after entering data into available tools. It is not required write in the field									
Composition (400 m ² plot)			Structure (400 m ² plot)			Function (1000 m ² plot)			
		Sum values			Sum values (%) (may sum to >100%)	³ Tree stem size class (DBH)	If data are to be used as more appropriate local data i.e. to generate local benchmarks, stems must be counted		
Total count of native plant species (richness) in each growth form group (not individual plants within each growth form)	Trees (TG)	1	Sum of ² foliage cover of native species by growth form group	Trees (TG)	20	80+ cm	Count X		
	Shrubs (SG)	0		Shrubs (SG)	0	50-79 cm	Count (best practice/tick: if large tree benchmark size ≥50 cm, count)		
	Grasses (GG)	46		Grasses (GG)	712.1	30-49 cm	Count (best practice/tick: if benchmark size ≥30 cm, count)		
	Forbs (FG)	13		Forbs (FG)	0.10.3	20-29 cm	Count (best practice/tick: if benchmark size ≥20 cm, count)		
	Ferns (EG)	0		Ferns (EG)	0	10-19 cm	Count (best practice/tick)		
	Other (OG)	0		Other (OG)	0	5-9 cm	Count (best practice/tick)		
			Total high threat weed cover	230	⁴ Tree regeneration <5cm	Tick X			
					⁵ Length of fallen logs	Tally X space X			
					⁶ Hollow-bearing trees	Tick V			
Vegetation integrity - function (five 1m ² plots)		⁷ Litter cover (%)		Bare ground cover (%)		Cryptogam cover (%)		Rock cover (%)	
Subplot scores		45 30 25 25 25		0 0 0 0 15		0 0 0 0 0		0 0 0 0 0	
Average of 5 subplots		30		3		0		0	

These attributes require consideration of site observations and may be completed after field work

Vegetation class		⁸ Large tree benchmark size	20/ 30/ 50/ 80 DBH	Confidence	H/ M/ L
Plant community type (PCT)	277	EEC	✓	Confidence	H/ M/ L

Physiography and site features that may help in determining PCT and management zone (optional) or for BioNet systematic flora survey purposes

Morphological type		Landform element		Landform pattern		Microrelief		
Lithology		Soil surface texture		Soil colour		Soil depth		
Slope		Aspect		Site drainage		Distance to nearest water type		
Disturbance	Severity code	Age code	Brief site description or other notes					
Clearing (inc. logging)	2	NR	appears to become temporarily boggy. brown soil. Plenty of litter.					
Cultivation (inc. pasture)	2	NR						
Soil erosion	1	R						
Firewood / CWD removal	1	R						
Grazing (id native/stock)	1	R						
Fire damage	0	R						
Storm damage	1	R	Emergent height					
Weediness	2	R	Upper stratum height					
Other			Middle stratum ht					
			Lower stratum ht					
			TP	Md	Bt	TP	Md	Bt
			m	m	m	m	m	m

Severity: 0=no evidence, 1=light, 2=moderate, 3=severe Age: R=recent (<3yrs), NR=not recent (3-10yrs), O=old (>10yrs)



400 m2 floristics plot:		Survey Name	Plot identifier	Recorders
Date	03 07 24	Jindera RESS	P3	Bo. P. Vander. B

GF code	Species name	N, HTW or non-HTW	² Foliage cover	Abundance	Voucher
	Full species name, or a unique means of identifying separate taxa within a survey is mandatory. Data from here will be used to assign growth form richness and cover.				
✓ TG	<i>Eucalyptus blakleyi</i>	N	20	10	
✓ GG	<i>Juniperus communis</i>	N	2	10	
✓ -	<i>Romulea rosea</i>	HTE	10	200	
GG	<i>Rytidosperma</i> sp.	N	3	50	
GG	<i>Eragrostis</i> sp.	N	1	20	
FG	<i>Dichondra repens</i>	N	0.1	20	
✓ GG	<i>Rytidosperma calvum</i>	N	1	30	
-	8 Small dark leaved star ball flower herb	E	1		✓ P
GH	9 <i>Carex inuasa</i>	N	5		
-	10 <i>Bromus diandrus</i>	HTE	20		
-	11 <i>Lolium perenne</i>	E	15		
FL	12 <i>Catopsis Ranunculus sessiflorus?</i>	N	0.1		✓ P
-	13 <i>Cirsium vulgare</i>	E	0.1		
-	14 <i>Bromus hordeaceus</i> soft Brome	E	0.1		
-	15 <i>Hordeum leporinum</i>	E	3		
GG	16 <i>Rytidosperma setaceum</i>	N	0.1		
	17 <i>Rumex brownii</i>	N	0.1		
	18 <i>Sonchum asper</i>	E	0.1		
	19				
	20				
	21				
	22				
	23				
	24				
	25				
	26				
	27				
	28				
	29				
	30				
	31				
	32				
	33				
	34				
	35				



Groundcover check 10/10/24 FI

Numbers 1- 8 on this page correlate with the numbers and explanatory notes on page 3									
Site sheet #	1 of	Date	04/07/24	Survey Name	JINDERA	Plot Identifier	P4 (Barney)		
Recorders	VB, BO			IBRA region	NSW SW Slopes Lower slopes	Veg zone ID			
Datum	SS	Co-ordinate system	Projected or geographic	MGA Zone	H	1°X coordinates	491678	1°Y coordinates	624151
Location description									
Descriptive notes to locate site without grid reference									
Plot dimensions	For composition & structure (400m ²): 20 m x 20 m For function (1000m ²): 20 m x 50 m				Orientation of midline from 0m line	222	Photo #	P4.1 - P4.2	

Datum: AGD66, WGS84, GDA94, GDA2020 or Other (specify) MGA Zone (for Projected coordinate system only): 56 (Coastal NSW), 55 (Central NSW) or 54 (Western NSW) X/Y coordinate: Long/Lat (for Projected coordinate system), Easting/Northing (for geographic coordinate system)

Vegetation integrity									
Composition and structure sum values may be completed after entering data into available tools. It is not required while in the field									
Composition (400 m ² plot)			Structure (400 m ² plot)			Function (1000 m ² plot)			
		Sum values			Sum values (%) (may sum to >100%)				If data are to be used as more appropriate local data i.e. to generate local benchmarks, stems must be counted
Total count of native plant species (richness) in each growth form group (not individual plants within each growth form)	Trees (TG)	1	Sum of 2 foliage cover of native species by growth form group	Trees (TG)	20	80 + cm		Count	X
	Shrubs (SG)	1		Shrubs (SG)	0.1	50-79 cm		Count (best practice)/tick. If large tree benchmark size = 20 cm, count	11
	Grasses (GG)	56		Grasses (GG)	21.29	30-49 cm		Count (best practice)/tick. If large tree benchmark size = 20 cm, count	111
	Forbs (FG)	12		Forbs (FG)	13	20-29 cm		Count (best practice)/tick. If large tree benchmark size = 20 cm, count	1
	Ferns (EG)	0		Ferns (EG)	0	10-19 cm		Count (best practice)/tick	X
	Other (OG)	0		Other (OG)	0	5-9 cm		Count (best practice)/tick	X
			Total high threat weed cover	232.1	5°Length of fallen logs	11111111	Total	12 m	
						6°Hollow-bearing trees	Tick	V	
Vegetation integrity - function cont. (five 1m ² plots)		7°Litter cover (%)		Bare ground cover (%)		Cryptogam cover (%)		Rock cover (%)	
Subplot scores		20 50 40 50 75		0 5 5 5 0		0 0 15 0 0		0 0 0 0 0	
Average of 5 subplots		47		3		3		0	

These attributes require consideration of site observations and may be completed after field work

Vegetation class		8°Large tree benchmark size	20/ 30/ 50/ 80 DBH	Confidence	H/ M/ L
Plant community type (PCT)		EEC	Tick	Confidence	H/ M/ L

Physiography and site features that may help in determining PCT and management zones (optional) or for BioNet systematic flora survey purposes

Morphological type		Landform element		Landform pattern		Microrelief		
Lithology		Soil surface texture		Soil colour		Soil depth		
Slope		Aspect		Site drainage		Distance to nearest water type		
Disturbance	Severity code	Age code	Brief site description or other notes					
Clearing (inc. logging)								
Cultivation (inc. pasture)								
Soil erosion								
Firewood / CWD removal								
Grazing (id native/stock)								
Fire damage								
Storm damage								
Weediness			Emergent height					
Other			Upper stratum height					
			Middle stratum ht					
			Lower stratum ht					
			TP	MD	BT	TP	MD	BT
			m	m	m	m	m	m

Severity: 0=no evidence, 1=light, 2=moderate, 3=severe Age: R=recent (<3yrs), NR=not recent (3-10yrs), O=old (>10yrs)



400 m2 floristics plot:	Survey Name	Plot Identifier	Recorders
Date	04 07 2014	Jinderra BESS	P4
			Bo. D, Vandler. B

GF code	Species name Full species name, or a unique means of identifying separate taxa within a survey is mandatory. Data from here will be used to assign growth form richness and cover.	N, HTW or non-HTW	Foliage cover	Abundance	Voucher
✓ TG	<i>Eucalyptus blakleyi</i>	N	20	3	
✓ GG	<i>Juncus continuus</i>	N	5	10	
✓ -	<i>Ronulus rocea</i>	HTW	2	300	
-	<i>Dactylis glomerata</i>	E	1	20	30
✓ GG	<i>Rytidosperma</i> sp. (hairs) <i>fulvum</i>	N	10	100	
FG	<i>Rumex brownii</i>	N	2	20	
-	<i>Trifolium</i> sp.	E	1	50	
-	<i>Hypochaeris radicata</i>	E	1	50	
GG	<i>Microlema stipoides</i>	N	3	50	
GG	<i>Rytidosperma setaceum</i>	N	5	50	
-	<i>Achillea millefolium</i>	E	5	50	
SG	<i>Acacia baileyana</i>	N	0.1	1	
GG	<i>Aster sp. Australis</i> sp. (<i>A. scabra</i>)	N	5	50	
14	<i>Juncus abietis</i>				
NA	<i>Bromus diandrus</i>	HTW E	30		55
NA	<i>holium perenne</i>	E	10		
NA	<i>Avena fatua</i>	E	1		
NA	<i>Bromus mollis</i> (Soft Brome) <i>hordeaceus</i>	E	2		
NA	<i>Plantago lanceolata</i>	E	0.1		
20	<i>Rumex brownii</i>	N	2	above	
NA	<i>Vulpia bromoides</i>	E	20		
NA	<i>Hordeum lupulinum</i>	E	3		
AG	<i>Poa sieberiana</i>	N	1		
NA	<i>Cerastium glomeratum</i>	E	0.2		
FG	<i>Stellaria angustifolia</i> <i>Stellaria</i> ?	N	1		✓ P
NA	<i>Rumex acetosella</i> (Sorrel)	HTW	0.1		

Height cover: 14 plants of this code to denote the higher species counts at a plot. All vascular plant species in a plot need to be recorded.

GF Code: see growth form definitions in BGL 2000 Appendix P (TG Tree, SG shrub, GG grass, FG forb, EG fern, OQ other. N: native, HTW: high plant wood).

Foliage cover: 0.1, 0.2, 0.5, 1, 2, 3, 4, 5, 10, 15, 20, 25, 100%. Note: 0.1% cover represents an area of approximately 63 x 63 cm or a circle about 7.1 cm radius. 1% cover represents an area of approximately 1.4 x 1.4 m, and 1% = 2.0 x 2.0 m. 5% = 4 x 5 rectangles = 16 x 10 m. Thus the top 5 dominant native species within each GF group.

Abundance: Count 1, 2, 3, 4, 5, 10, 20, 30, 100, 200, 300, 1000, 2000, 3000, (as integer values).



Ground cover check 10/10/24 FI

Numbers 1- 8 on this page correlate with the numbers and explanatory notes on page 3									
Site sheet #	1 of	Date	04/07/24	Survey Name	JINDERA	Plot Identifier	PS (Barnes)		
Recorders	VB, BB			IBRA region	NSW SW slopes Lower Slopes	Veg zone ID			
Datum	55	Co-ordinate system	Projected or geographic	MGA Zone	H	1°X coordinates	492691	1°Y coordinates	6024641
Location description		Descriptive notes to locate site without grid reference							
Plot dimensions	20x50m Composition & structure (400m ²): 20 m x 20 m or function (1000m ²): 20 m x 50 m				Orientation of midline from 0m line	Magnetic	40	Photo #	PS. 1- PS. 2

Datum: AGD66, WGS84, GDA94, GDA2020 or Other (specify); MGA Zone (for Projected coordinate system only); 56 (Coastal NSW); 55 (Central NSW or 54 (Western NSW); X/Y coordinate: Long/Lat (for Projected coordinate system); Easting/Northing (for geographic coordinate system)

Vegetation integrity									
Composition and structure sum values may be completed after entering data into available tools. It is not required while in the field									
Composition (400 m ² plot)			Structure (400 m ² plot)			Function (1000 m ² plot)			
		Sum values			Sum values (%) (may sum to >100%)	³ Tree stem size class (DBH)	If data are to be used as more appropriate local data i.e. to generate local benchmarks, stems must be counted		
Total count of native plant species (richness) in each growth form group (not individual plants within each growth form)	Trees (TG)	1	Sum of ² foliage cover of native species by growth form group	Trees (TG)	25	80+ cm	Count ☒		
	Shrubs (SG)	0		Shrubs (SG)	0	50-79 cm	Count (best practice)/tick: If 8 large tree benchmark size ≥ 50 cm, count ☒		
	Grasses (GG)	34		Grasses (GG)	15 15.2	30-49 cm	Count (best practice)/tick: If 8 large tree benchmark size ≥ 30 cm, count ☒		
	Forbs (FG)	1		Forbs (FG)	0.1	20-29 cm	Count (best practice)/tick: If 8 large tree benchmark size ≥ 20 cm, count ☒		
	Ferns (EG)	0		Ferns (EG)	0	10-19 cm	Count (best practice)/tick: If 8 large tree benchmark size ≥ 10 cm, count ☒		
	Other (OG)	0		Other (OG)	0	5-9 cm	Count (best practice)/tick: If 8 large tree benchmark size ≥ 5 cm, count ☒		
				Total high threat weed cover	225	⁵ Length of fallen logs	1 ally space	Total	7 m
						⁶ Hollow-bearing trees	Tick ☒		
Vegetation integrity - function cont. (five 1m ² plots)		⁷ Litter cover (%)		Bare ground cover (%)		Cryptogam cover (%)		Rock cover (%)	
Subplot scores		25 50 25 40 20		0 0 5 0 0		0 0 0 0 0		0 0 0 0 0	
Average of 5 subplots		32		1		0		0	

These attributes require consideration of site observations and may be completed after field work

Vegetation class	⁸ Large tree benchmark size	20/ 30/ 50/ 80 DBH	Confidence	H/ M/ L
Plant community type (PCT)	EEC	Tick	Confidence	H/ M/ L

Physiography and site features that may help in determining PCT and management zone (optional) or for BioNet systematic flora survey purposes

Morphological type	Landform element	Landform pattern	Microrelief		
Lithology	Soil surface texture	Soil colour	Soil depth		
Slope	Aspect	Site drainage	Distance to nearest water type		
Disturbance	Severity code	Age code	Brief site description or other notes Regrowth vegetation. Yellow brown soils.		
Clearing (inc. logging)	2-3	R/NR			
Cultivation (inc. pasture)	2	NR			
Soil erosion	0				
Firewood / CWD removal	2	R			
Grazing (id native/stock)	0				
Fire damage	0				
Storm damage	1	R			
Weediness	2	R			
Other					
Emergent height			Upper stratum height	Middle stratum ht	Lower stratum ht
Tp Md Bt			Tp Md Bt	Tp Md Bt	Tp Md Bt
m m m			m m m	m m m	m m m

Severity: 0=no evidence, 1=light, 2=moderate, 3=severe Age: R=recent (<3yrs), NR=not recent (3-10yrs), O=old (>10yrs)



400 m2 floristics plot:	Survey Name	Plot Identifier	Recorders
Date 04 07 24	Jindera BESS	P5	Bo. D, Vander. B

GF code	Species name Full species name, or a unique means of identifying separate taxa within a survey is mandatory. Data from here will be used to assign growth form richness and cover.	N, HTW or non-HTW	% Foliage cover	Abundance	Voucher
✓ T6	<i>Eucalyptus blakleyi</i>	N	25	37	
-	<i>Hypoxis radiata</i>	E	2	50	
✓ -	<i>Rumex rosea</i>	HTW	5	400	
GG	<i>Austrostipa</i> sp. (scabra)	N	5	50	
-	<i>Hypericum perforatum</i>	HTW	5	30	
EG	<i>Hypericum gramineum</i>	N	0.1	6	
✓ GG	<i>Rytidosperma bipartitum</i>	N	5	50	
GG	<i>Rytidosperma</i> sp.	N	5	50	
-	<i>Bromus diandrus</i>	HTW	15		
GG	<i>Lachnagrostis filiformis</i>	N	0.2		
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					
33					
34					
35					

Plant code: codes of the growth form for each species found in a plot. All vascular plant species in a plot need to be recorded

GF Code: tree/shrub/graminoid/fern/other (T6, S6, G6, F6, O6, L6, E6, HTW, N, HTW, high, low, etc.)

Foliage cover: 0.1, 0.2, 0.5, 1, 2, 3, 4, 5, 10, 15, 20, 25, 100%. Note: 0.1% cover represents an area of approximately 63 x 63 cm (a circle about 7.1 cm across). 1% cover represents an area of approximately 1.4 x 1.4 m, and 1% = 2.0 x 2.0 m, 5% = 4 x 4 m, 25% = 10 x 10 m. Note the top 20 most native species with each GF group.

Abundance: Count 1, 2, 3, ... when 310, estimate when >10, 30, 30, 100, 200, 300, 1000, 2000, 3000 (as integer values).



Numbers 1- 8 on this page correlate with the numbers and explanatory notes on page 3

Site sheet #	1 of	Date	19 Nov 24	Survey Name	JINDENA	Plot Identifier	P6
Recorders	V.B. , F.I.			IBRA region	NSW SW SLOPES	Veg zone ID	
Datum	SS	Co-ordinate system	Projected or geographic	MGA Zone	H	1°X coordinates	369245°Y coordinates
Location description		Descriptive notes to locate site without grid reference					
Plot dimensions	20 x 50 m			Orientation of midline from 0m line	180	Photo #	P6.1 P6.2

Datum: AGD66, WGS84, GDA94, GDA2020 or Other (specify); MGA Zone (for Projected coordinate system only): 56 (Coastal NSW), 55 (Central NSW) or 54 (Western NSW); X/Y coordinates: Long/Lat (for Projected coordinate system), Easting/Northing (for geographic coordinate system)

Vegetation integrity									
Composition and structure sum values may be completed after entering data into available tools. It is not required while in the field									
Composition (400 m ² plot)			Structure (400 m ² plot)			Function (1000 m ² plot)			
		Sum values			Sum values (%) (may sum to >100%)	³ Tree stem size class (DBH)	If data are to be used as more appropriate local data i.e. to generate local benchmarks, stems must be counted		
Total count of native plant species (richness) in each growth form group (not individual plants within each growth form)	Trees (TG)	1	Sum of ² foliage cover of native species by growth form group	Trees (TG)	20	80+ cm	Count ☒		
	Shrubs (SG)	0		Shrubs (SG)	0	50-79 cm	Count (best practice/tick, if 8 large tree benchmark size ≥ 50 cm, count) ☒		
	Grasses (GG)	1		Grasses (GG)	15	30-49 cm	Count (best practice/tick, if 8 large tree benchmark size ≥ 30 cm, count) ☒		
	Forbs (FG)	0		Forbs (FG)	0	20-29 cm	Count (best practice/tick, if 8 large tree benchmark size ≥ 20 cm, count) ☒		
	Ferns (EG)	0		Ferns (EG)	0	10-19 cm	Count (best practice/tick) ☒		
	Other (OG)	0		Other (OG)	0	5-9 cm	Count (best practice/tick) ☒		
				Total high threat weed cover	25.1	⁴ Tree regeneration <5cm	☒		
						⁵ Length of fallen logs	☒		
						⁶ Hollow-bearing trees	☒		
Vegetation integrity - function cont. (five 1m ² plots)		⁷ Litter cover (%)		Bare ground cover (%)		Cryptogam cover (%)		Rock cover (%)	
Subplot scores		40 50 30 35 50		0 5 0 5 0		0 0 0 0 0		0 0 0 0 0	
Average of 5 subplots		50		2		0		0	

These attributes require consideration of site observations and may be completed after field work.

Vegetation class	⁸ Large tree benchmark size	20/ 30/ 50/ 80 DBH	Confidence	H/ M/ L
Plant community type (PCT)	EEC	Tick	Confidence	H/ M/ L

Physiography and site features that may help in determining PCT and management zone (optional) or for BioNet systematic flora survey purposes:

Morphological type	Landform element	Landform pattern	Microrelief																																				
Lithology	Soil surface texture	Soil colour	Soil depth																																				
Slope	Aspect	Site drainage	Distance to nearest water type																																				
Disturbance	Severity code	Age code	Brief site description or other notes																																				
Clearing (inc. logging)			<table border="1"> <tr> <th colspan="3">Emergent height</th> <th colspan="3">Upper stratum height</th> <th colspan="3">Middle stratum ht</th> <th colspan="3">Lower stratum ht</th> </tr> <tr> <th>Tp</th> <th>Md</th> <th>Bt</th> <th>Tp</th> <th>Md</th> <th>Bt</th> <th>Tp</th> <th>Md</th> <th>Bt</th> <th>Tp</th> <th>Md</th> <th>Bt</th> </tr> <tr> <td>m</td> <td>m</td> <td>m</td> <td>m</td> <td>m</td> <td>m</td> <td>m</td> <td>m</td> <td>m</td> <td>m</td> <td>m</td> <td>m</td> </tr> </table>	Emergent height			Upper stratum height			Middle stratum ht			Lower stratum ht			Tp	Md	Bt	Tp	Md	Bt	Tp	Md	Bt	Tp	Md	Bt	m	m	m	m	m	m	m	m	m	m	m	m
Emergent height				Upper stratum height			Middle stratum ht			Lower stratum ht																													
Tp	Md	Bt		Tp	Md	Bt	Tp	Md	Bt	Tp	Md	Bt																											
m	m	m		m	m	m	m	m	m	m	m	m																											
Cultivation (inc. pasture)																																							
Soil erosion																																							
Firewood / CWD removal																																							
Grazing (id native/stock)																																							
Fire damage																																							
Storm damage																																							
Weediness																																							
Other																																							

Severity: 0=no evidence, 1=light, 2=moderate, 3=severe. Age: R=recent (<3yrs), NR=not recent (3-10yrs), O=old (>10yrs)

400 m2 floristics plot:	Survey Name	Plot identifier	Recorders
Date	9 10 2024 Jindiva Spring	PG	Fiona Iolini

GF code	Species name Full species name, or a unique means of identifying separate taxa within a survey is mandatory. Data from here will be used to assign growth form richness and cover.	N, HTW or non-HTW	² Foliage cover	Abundance	Voucher
1	<i>E. tetraetis</i> Makelyi	N	20		
2	<i>Bromus diandrus</i>	HTE	5		
3	<i>Romulea rosea</i>	ATE	5		
4	<i>Mentha sativoides</i> <i>Hypericum perforatum</i>	HTE	15		
5	<i>Austrostipa scabra</i>	N	15		
6	<i>Plantago lanceolata</i>	E	0.1		
7	<i>Hypochaeris radicata</i>	E	2		
8	<i>Aritrotheca calendula</i>	E	2		
9	<i>Lotus australis</i> <i>Trifolium subterraneum</i>	E	0.1		✓ P
10	<i>Phalaris aquatica</i>	E	25		
11	<i>Vulpia bromoides</i>	E	10		✓ A
12	<i>Rumex acetosella</i>	HTE	0.1		
13	<i>Bromus molliformis</i>	E	0.1		
14	<i>Ehrharta longiflora</i> <i>Awa grass?</i>	E	0.1		✓ P
15					
16					
17					
18					
19					
20					
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22					
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24					
25					
26					
27					
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33					
34					
35					

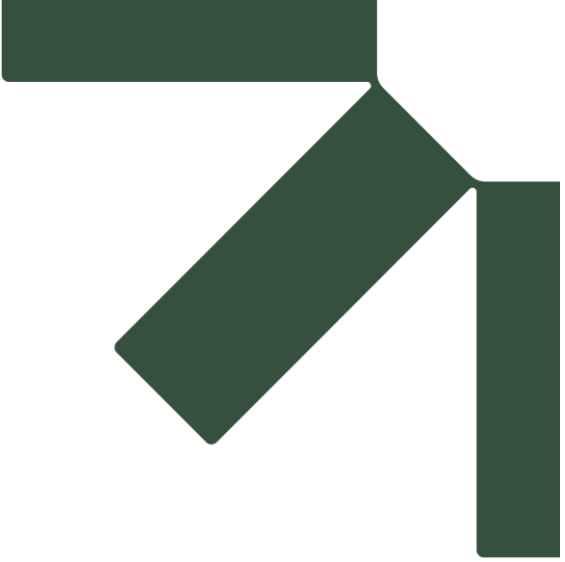
Print more copies of this page to allow for higher species counts at a plot. All vascular plant species in a plot need to be recorded.

GF Code: see growth form definitions in SAM 2020 Appendix F (TG Tree, SG shrub, GG grass, FG forb, EG fern, OG other). N: native, HTW: high threat weed.

² Foliage cover: 0.1, 0.2, 0.3, ..., 1, 2, 3, 4, 5, 10, 15, 20, 25, ..., 100%. Note: 0.1% cover represents an area of approximately 63 x 63 cm or a circle about 71 cm across; 0.5% cover represents an area of approximately 1.4 x 1.4 m, and 1% = 2.0 x 2.0 m, 5% = 4 x 5 m, 25% = 10 x 10 m. Note the top 3 dominant native species within each GF group.

Abundance: Count 1, 2, 3, ..., when ≤10, estimate when >10: 20, 30, 100, 200, 300, ..., 1000, 2000, 3000, ... (as integer values).





Appendix G Decision-maker Authorisation to Use More Appropriate Local Data (n/a)

Biodiversity Development Assessment Report

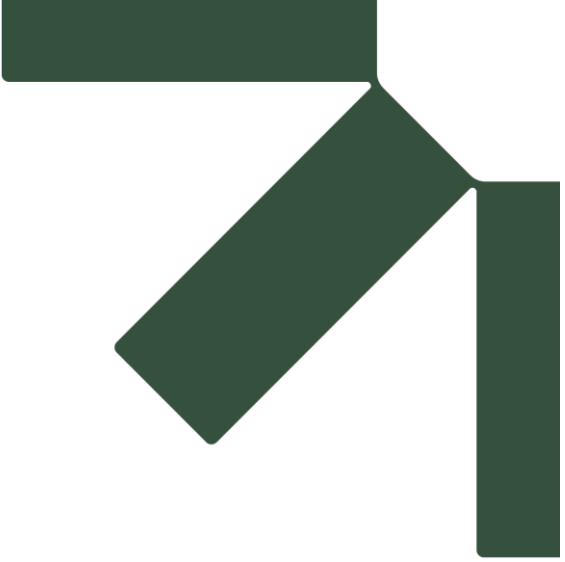
SSD-68815961: Proposed BESS Facility

140 Ortlipp Road, Jindera NSW / 204 Ortlipp Road, Glenellen, NSW

BESS Atlantic Pty Ltd c/o Gransolar Development Australia

SLR Project No.: 620.041088.00002

16 June 2026



Appendix H Credit Reports

Biodiversity Development Assessment Report

SSD-68815961: Proposed BESS Facility

140 Ortlipp Road, Jindera NSW / 204 Ortlipp Road, Glenellen, NSW

BESS Atlantic Pty Ltd c/o Gransolar Development Australia

SLR Project No.: 620.041088.00002

16 June 2026



BAM Biodiversity Credit Report (Like for like)

Proposal Details

Assessment Id	Proposal Name	BAM data last updated *
00047584/BAAS19042/24/00047585	Jindera BESS Facility	05/08/2025
Assessor Name	Assessor Number	BAM Data version *
Fiona Iolini	BAAS19042	Current classification (live - default) (82)
Proponent Names	Report Created	BAM Case Status
	18/02/2026	Finalised
Assessment Revision	BOS entry trigger	Assessment Type
3		Major Projects
Date Finalised	* Disclaimer: BAM data last updated may indicate either complete or partial update of the BAM calculator database. BAM calculator database may not be completely aligned with Bionet.	
18/02/2026		

Potential Serious and Irreversible Impacts

Name of threatened ecological community	Listing status	Name of Plant Community Type/ID
White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla	Critically Endangered Ecological Community	277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion



BAM Biodiversity Credit Report (Like for like)

Species
Nil

Additional Information for Approval

PCT Outside Ibra Added

None added

PCTs With Customized Benchmarks

PCT
No Changes

Predicted Threatened Species Not On Site

Name
No Changes

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

BAM Biodiversity Credit Report (Like for like)

Name of Plant Community Type/ID	Name of threatened ecological community	Area of impact	HBT Cr	No HBT Cr	Total credits to be retired
277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla	2.9	89	0	89

277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion	Like-for-like credit retirement options					
	Name of offset trading group	Trading group	Zone	HBT	Credits	IBRA region
	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla This includes PCT's: 74, 75, 83, 250, 266, 267, 268, 270, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 286, 298,	-	277_Mod	Yes	67	Lower Slopes, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

BAM Biodiversity Credit Report (Like for like)

302, 312, 341, 342, 347, 350, 352, 356, 367, 381, 382, 395, 401, 403, 421, 433, 434, 435, 436, 437, 451, 483, 484, 488, 492, 496, 508, 509, 510, 511, 516, 528, 538, 544, 563, 567, 571, 589, 590, 597, 599, 618, 619, 622, 633, 654, 702, 703, 704, 705, 710, 711, 796, 797, 799, 847, 851, 921, 1099, 1303, 1304, 1307, 1324, 1329, 1330, 1332, 1383, 1606, 1608, 1611, 1691, 1693, 1695, 1698, 3314, 3359, 3363, 3373, 3376, 3387, 3388, 3394, 3395, 3396, 3397, 3398, 3399, 3406, 3415, 3533, 4147, 4149, 4150					
White Box - Yellow Box - - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New		277_Low	Yes	22	Lower Slopes, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

BAM Biodiversity Credit Report (Like for like)

England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla This includes PCT's: 74, 75, 83, 250, 266, 267, 268, 270, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 286, 298, 302, 312, 341, 342, 347, 350, 352, 356, 367, 381, 382, 395, 401, 403, 421, 433, 434, 435, 436, 437, 451, 483, 484, 488, 492, 496, 508, 509, 510, 511, 516, 528, 538, 544, 563, 567, 571, 589, 590, 597, 599, 618, 619, 622, 633, 654, 702, 703, 704, 705, 710, 711, 796, 797, 799, 847, 851, 921, 1099, 1303, 1304, 1307, 1324, 1329, 1330, 1332, 1383, 1606, 1608, 1611, 1691, 1693, 1695, 1698, 3314, 3359, 3363, 3373, 3376, 3387, 3388, 3394, 3395,						
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BAM Biodiversity Credit Report (Like for like)

	3396, 3397, 3398, 3399, 3406, 3415, 3533, 4147, 4149, 4150					
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Species Credit Summary

Species	Vegetation Zone/s	Area / Count	Credits
Petaurus norfolcensis / Squirrel Glider	277_Low, 277_Mod	2.9	70.00
Swainsona recta / Small Purple-pea	277_Mod	0.1	2.00
Swainsona sericea / Silky Swainson-pea	277_Mod	0.1	2.00

Credit Retirement Options

Like-for-like credit retirement options

Petaurus norfolcensis / Squirrel Glider	Spp	IBRA subregion
	Petaurus norfolcensis / Squirrel Glider	Any in NSW
Swainsona recta / Small Purple-pea	Spp	IBRA subregion
	Swainsona recta / Small Purple-pea	Any in NSW
Swainsona sericea / Silky Swainson-pea	Spp	IBRA subregion
	Swainsona sericea / Silky Swainson-pea	Any in NSW

BAM Vegetation Zones Report

Proposal Details

Assessment Id	Assessment name	BAM data last updated *
00047584/BAAS19042/24/00047585	Jindera BESS Facility	05/08/2025
Assessor Name	Report Created	BAM Data version *
Fiona Iolini	18/02/2026	Current classification (live - default) (82)
Assessor Number	Assessment Type	BAM Case Status
BAAS19042	Major Projects	Finalised
Assessment Revision	BOS entry trigger	Date Finalised
3		18/02/2026

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Vegetation Zones

#	Name	PCT	Condition	Area	Minimum number of plots	Management zones
1	277_Mod	277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion	Mod	1.75	1	



BAM Vegetation Zones Report

2	277_Low	277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion	Low	1.13	1	
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BAM Predicted Species Report

Proposal Details

Assessment Id	Proposal Name	BAM data last updated *
00047584/BAAS19042/24/00047585	Jindera BESS Facility	05/08/2025
Assessor Name	Report Created	BAM Data version *
Fiona Iolini	18/02/2026	Current classification (live - default) (82)
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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	277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
Black-chinned Honeyeater (eastern subspecies)	Melithreptus gularis gularis	277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
Brown Treecreeper (eastern subspecies)	Climacteris picumnus victoriae	277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
Diamond Firetail	Stagonopleura guttata	277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
Dusky Woodswallow	Artamus cyanopterus cyanopterus	277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
Flame Robin	Petroica phoenicea	277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
Gang-gang Cockatoo	Callocephalon fimbriatum	277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
Grey-crowned Babbler (eastern subspecies)	Pomatostomus temporalis temporalis	277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion

BAM Predicted Species Report

Grey-headed Flying-fox	<i>Pteropus poliocephalus</i>	277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
Little Eagle	<i>Hieraaetus morphnoides</i>	277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
Little Lorikeet	<i>Glossopsitta pusilla</i>	277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
Painted Honeyeater	<i>Grantiella picta</i>	277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
Regent Honeyeater	<i>Anthochaera phrygia</i>	277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
Scarlet Robin	<i>Petroica boodang</i>	277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
South-eastern Hooded Robin	<i>Melanodryas cucullata cucullata</i>	277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
Southern Whiteface	<i>Aphelocephala leucopsis</i>	277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
Speckled Warbler	<i>Chthonicola sagittata</i>	277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
Spotted Harrier	<i>Circus assimilis</i>	277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
Spotted-tailed Quoll	<i>Dasyurus maculatus</i>	277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
Square-tailed Kite	<i>Lophoictinia isura</i>	277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
Superb Parrot	<i>Polytelis swainsonii</i>	277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
Swift Parrot	<i>Lathamus discolor</i>	277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
Turquoise Parrot	<i>Neophema pulchella</i>	277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
Varied Sittella	<i>Daphoenositta chrysoptera</i>	277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
White-bellied Sea-Eagle	<i>Haliaeetus leucogaster</i>	277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
White-throated Needle-tail	<i>Hirundapus caudacutus</i>	277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
Yellow-bellied Sheath-tail-bat	<i>Saccolaimus flaviventris</i>	277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion

Threatened species Manually Added

BAM Predicted Species Report

None added

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
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BAM Candidate Species Report

Proposal Details

Assessment Id	Proposal Name	BAM data last updated *
00047584/BAAS19042/24/00047585	Jindera BESS Facility	05/08/2025
Assessor Name	Report Created	BAM Data version *
Fiona Iolini	18/02/2026	Current classification (live - default) (82)
Assessor Number	Assessment Type	BAM Case Status
BAAS19042	Major Projects	Finalised
Assessment Revision	BOS entry trigger	Date Finalised
3		18/02/2026

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List of Species Requiring Survey

Name	Presence	Survey Months
<i>Burhinus grallarius</i> Bush Stone-curlew	No (surveyed)	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☒ Jul ☐ Aug ☐ Sep ☒ Oct ☒ Nov ☒ Dec ☐ Survey month outside the specified months?
<i>Callocephalon fimbriatum</i> Gang-gang Cockatoo	No (surveyed)	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☒ Oct ☒ Nov ☒ Dec ☐ Survey month outside the specified months?
<i>Cercartetus nanus</i> Eastern Pygmy-possum	No (surveyed)	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☒ Oct ☒ Nov ☒ Dec ☐ Survey month outside the specified months?

BAM Candidate Species Report

<i>Cullen parvum</i> Small Scurf-pea	No (surveyed)	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☒ Dec ☐ Survey month outside the specified months?
<i>Haliaeetus leucogaster</i> White-bellied Sea-Eagle	No (surveyed)	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☒ Jul ☐ Aug ☐ Sep ☒ Oct ☒ Nov ☒ Dec ☐ Survey month outside the specified months?
<i>Hieraaetus morphnoides</i> Little Eagle	No (surveyed)	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☒ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?
<i>Lophoictinia isura</i> Square-tailed Kite	No (surveyed)	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☒ Oct ☒ Nov ☒ Dec ☐ Survey month outside the specified months?
<i>Myotis macropus</i> Southern Myotis	No (surveyed)	☐ Jan ☐ Feb ☒ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?
<i>Ninox connivens</i> Barking Owl	No (surveyed)	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☒ Jul ☐ Aug ☐ Sep ☒ Oct ☒ Nov ☒ Dec ☐ Survey month outside the specified months?

BAM Candidate Species Report

<i>Petaurus norfolcensis</i> Squirrel Glider	Yes (surveyed)	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☒ Jul ☐ Aug ☐ Sep ☒ Oct ☐ Nov ☒ Dec ☐ Survey month outside the specified months?
<i>Phascolarctos cinereus</i> Koala	No (surveyed)	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☒ Jul ☐ Aug ☐ Sep ☒ Oct ☐ Nov ☒ Dec ☐ Survey month outside the specified months?
<i>Polytelis swainsonii</i> Superb Parrot	No (surveyed)	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☒ Oct ☒ Nov ☐ Dec ☐ Survey month outside the specified months?
<i>Pteropus poliocephalus</i> Grey-headed Flying-fox	No (surveyed)	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☒ Oct ☒ Nov ☒ Dec ☐ Survey month outside the specified months?
<i>Swainsona recta</i> Small Purple-pea	Yes (assumed present)	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?
<i>Swainsona sericea</i> Silky Swainson-pea	Yes (assumed present)	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?

BAM Candidate Species Report

<i>Tyto novaehollandiae</i> Masked Owl	No (surveyed)	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☒ Jul ☐ Aug ☐ Sep ☒ Oct ☒ Nov ☒ Dec
		☐ Survey month outside the specified months?

Threatened species Manually Added

Common Name	Scientific Name
Large Bent-winged Bat	Miniopterus orianae oceanensis

Threatened species assessed as not on site

Refer to BAR for detailed justification

Common name	Scientific name	Justification in the BAM-C
Large Bent-winged Bat	Miniopterus orianae oceanensis	Habitat constraints
Large-eared Pied Bat	Chalinolobus dwyeri	Habitat constraints
Pink-tailed Legless Lizard	Aprasia parapulchella	Habitat constraints
Regent Honeyeater	Anthochaera phrygia	Habitat constraints
Squirrel Glider in the Wagga Wagga Local Government Area	Petaurus norfolcensis - endangered population	Refer to BAR
Swift Parrot	Lathamus discolor	Habitat constraints

Proposal Details

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Fiona Iolini	18/02/2026	Current classification (live - default) (82)
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Assessment Revision	BOS entry trigger	Assessment Type
3		Major Projects

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

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

Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion

1	277_Mod	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla	60.9	60.9	1.8	Population size	High Sensitivity to Gain	Critically Endangered Ecological Community	Not Listed	2.50	True	67
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BAM Credit Summary Report

2	277_Low	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla	30.5	30.5	1.1	Population size	High Sensitivity to Gain	Critically Endangered Ecological Community	Not Listed	2.50	True	22
											Subtotal	89
											Total	89

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
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<i>Petaurus norfolcensis / Squirrel Glider (Fauna)</i>									
277_Low	30.5	30.5	1.1	Biodiversity Conservation Act listing status	Species dependent on habitat attributes	Vulnerable	Not Listed	False	17
277_Mod	60.9	60.9	1.8	Biodiversity Conservation Act listing status	Species dependent on habitat attributes	Vulnerable	Not Listed	False	53
								Subtotal	70
<i>Swainsona recta / Small Purple-pea (Flora)</i>									
277_Mod	60.9	60.9	0.06	Biodiversity Conservation Act listing status	Effectiveness of management in controlling threats	Endangered	Endangered	False	2
								Subtotal	2
<i>Swainsona sericea / Silky Swainson-pea (Flora)</i>									
277_Mod	60.9	60.9	0.06	Biodiversity Conservation Act listing status	Ability to colonise improved habitat	Vulnerable	Not Listed	False	2
								Subtotal	2

