

Ecological Assessment Report



DPI Group / Everleigh Solar Park Pty Ltd

Everleigh Solar Park

Kogan

BE220017.01

26 August 2022

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DOCUMENT CONTROL

Revision	Revision date	Revision details	Author	Editorial review	Technical review	Approver
Rev0	16/05/2022	Final for Issue	B Taylor	M Breitfuss	M Breitfuss	M Breitfuss
Rev0.1	26/08/2022	Final revised	B Taylor			B Taylor

DISTRIBUTION

Revision	Revision date	Issued to
Rev0	16/05/2022	Client
Rev02	26/08/2022	Client

DOCUMENT INFORMATION

Printed:	26 August 2022
Last saved:	26 August 2022 12:30 PM
File name:	BE220017.01-DPI-Kogan-EcologyReport
Author:	Brett Taylor
Project manager:	Brett Taylor
Client:	DPI Group / Everleigh Solar Park Pty Ltd
Document title:	Environmental Assessment Report
Project number:	BE220017.01

EXECUTIVE SUMMARY

Everleigh Solar Park Pty Ltd is proposing to construct and operate a greenfield solar park and utility corridor at a site 22 km south of Chinchilla located in southern Queensland and within the Western Downs Regional Council area. The Project involves a greenfield solar park and utility corridor connecting to existing power infrastructure. The Project will have a projected generation capacity of 139 megawatts (MW) over a projected minimum lifespan of 30 years.

The solar park is located within a portion (202 ha) of freehold lands identified as Lot 8RP190982. The utility corridor is currently designed as an underground 33kv solution with an approximate width of 9.2 m and 7.5 km in length. The utility corridor runs north from the solar park through Lot 4 on ROG3414 before entering the road reserve running parallel to the Kogan-Condamine Road. The final portion of the utility, 1.5 km in length, is located in largely cleared lands along the southern boundary of Lot 3 on RG569. Almost all of the solar park area has been previously cleared for domestic livestock grazing. The proposed utility corridor alignment has been designed to avoid vegetated areas. Currently only 4.3 km of the 7.5 km is located within a road reserve which remains vegetated. Ecological surveys of the Project area and surrounds have been carried out in August 2018 and March 2022.

The Project is located within the Condamine River catchment and is situated within an area of flat topography with elevation remaining almost unchanged from north to south. Four mapped watercourses intersect the Project area however, all appear to be highly ephemeral with little to no bank definition. At the time of the March 2022 survey water was present in a single watercourse intersected by the utility corridor to the north of Kogan-Condamine Road.

Almost the entire Solar park site is mapped as non-remnant vegetation excepting narrow fragments mapped as high value regrowth (Least Concern RE under the VM Act) along the eastern boundary. The site survey confirmed the vegetation mapping as largely correct. The majority of the site comprises grassland with scattered small regrowth and scattered large paddock trees. The site survey identified small unmapped patches of vegetation in the north of the property that may be considered as high value regrowth communities comprising Poplar Box as the dominant canopy species (RE 11.5.1/a and 11.3.18). Two small linear patches or remnant River Red Gum habitat (RE 11.3.25) were also identified in the north-east of the Solar Park.

The utility corridor and much of the vegetation on the Solar park site is mapped as comprising remnant or regrowth woodlands dominated by Poplar Box with a White Cypress Pine understorey (RE 11.5.1/a). Site surveys observed the vegetation present as often disturbed with a weedy ground layer and few large hollow bearing trees. Vegetation mapping was largely correct although a small area of Brigalow regrowth (RE 11.3.1) located adjacent to the utility corridor was observed.

No vegetation comprising a TEC listed under the EPBC Act was recorded. No threatened flora species was observed during site surveys. One species is considered as having a minor potential to be present: Belson's Panic (Vulnerable – EPBC Act and Endangered – NC Act).

Habitat values within the Solar park site are limited due to past tree clearing and support a range of widespread and common fauna species. The utility corridor provides relatively contiguous habitat for much of its length within the road reserve. In general, habitat elements such as large tree hollows or large woody debris were scarce due to past tree clearing. No threatened fauna species was observed during surveys for the Project area. Three threatened species are considered as possibly occurring based on database records from the surrounding area and the habitat values present: Koala (Endangered – EPBC Act and Vulnerable – NC Act), White-throated Needletail (Vulnerable – EPBC and NC acts), and Golden-tailed Gecko (Near Threatened – NC Act). Another two bird species listed as Migratory under the EPBC act may also possibly occur.

An assessment for significant impacts to ecological values listed as MSES and MNES was carried out for the Project with a focus on Koala, Dunmall's Snake and Belson's Panic. The assessments concluded it is very unlikely the Project would have significant residual impacts on any MSES or MNES as a result of the Project construction and operation activities.

1 INTRODUCTION

This Ecological Assessment Report has been prepared by Epic Environmental Pty Ltd (Epic) on behalf of Everleigh Solar Park Pty Ltd (Everleigh) (the Proponent) to support the Commonwealth environmental approvals process for the Everleigh Solar Park Project (the Project), located in southern Queensland. The Project involves a greenfield solar park and utility corridor connecting to existing power infrastructure. The Project will have a projected generation capacity of 139 megawatts (MW) over a projected minimum lifespan of 30 years.

1.1 Project Location

The Project is situated in southern Queensland approximately 22 kilometres (km) south of Chinchilla, 77 km north-west of Dalby and lies within the Western Downs Regional Council area. The solar park is located within a portion (202 hectares (ha)) of freehold lands identified as Lot 8RP190982. The Project is intersected by the Kogan-Condamine Road, which runs roughly south-east to north-west to the north of the solar park itself. The utility corridor runs north from the solar park through Lot 4 on ROG3414 before joining the road reserve running parallel to the Kogan-Condamine Road. The utility corridor exits the road corridor after crossing Avenue Road to continue along the southern boundary of Lot 3 on CP RG569 which is largely cleared land. (**Figure 1**). The overall Project incorporating the solar park area and the utility corridor is hereon referred to as the Project area.

1.2 Scope and Purpose

The purpose of this ecological assessment report is to document the ecological values of the Project area and recommend avoidance, mitigation and management measures to adequately address any potential impacts associated with the Project.

The description of baseline ecological values has been documented to support a Project referral to the Commonwealth Department of Climate Change, Environment, Energy and Water (DCCEEW) under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The assessment includes an analysis under relevant State and Commonwealth guidelines of the potential for significant impacts to the following:

- Matters of National Environmental Significance (MNES) as listed under the EPBC Act, and
- Matters of State Environmental Significance (MSES) as identified as Prescribed Environmental Matters under Schedule 2 of the Environmental Offsets Regulation 2014.

1.3 Project Description

The Project can be split into three key components:

- Solar park site (Lot 8 RP190982) comprising solar photovoltaic (PV) panels, inverter tracking systems and other ancillary infrastructure
- Electricity will be transported to the Project Substation via an electricity utility corridor (with the current proposed solution being a 33 kV underground installation of approximately 9.2 metres (m) width traversing across Lot 4 on ROG3414, then west along the northern inside boundary of the Kogan-Condamine Road corridor, before then entering Lot 3 on RG569 after crossing Avenue Road. The proponent has recently undertaken site investigations and has considered the existing soil conditions to upgrade the size and quality of electric cables, thereby reducing the number of cables from the original proposed design and realigning the design of the corridor to avoid more than 1.5km of the vegetated road corridor. As a result of these design optimizations, the width of the utility corridor for the current design solution has been narrowed from 15 m down to 9.2 m. Additionally, a change in the alignment has

allowed avoidance of 1.5 km of the well-vegetated road reserve. These two improvements have achieved a reduction of the utility corridor footprint and vegetation clearance requirements by close to 50%. Further design changes may result in a modification to the current technical solution including changes to the alignment and/or width of the corridor, voltage of powerlines, or the implementation of an overhead solution. While these design changes may occur, the final design solution will comply with the maximum vegetation clearing areas calculated in this report. The Proponent is committed to continue further optimisations through the design development process to minimise the environmental impact of the Project.

- Substation site comprising up to 2 ha on Lot 3 on RG569. It is noted the lands encompassing the substation infrastructure has been subject to previous ecological assessment and Commonwealth approval for the Edenvale Solar Park (EPBC Act referral number: 2020-8663). As such, assessment and description of this area was not considered required as part of this report or referral under the EPBC Act.

The Solar park site is anticipated to include approximately 215,000 PV panels installed on the site. The exact number of panels will be determined at the time of detailed design when selection of PV panels is confirmed. The panels will be mounted on single-axis tracking structures that will track the sun from east to west throughout the day to maximise electricity generation and minimise the Project footprint. Panel rows will be spaced to allow a minimum gap of 3.12 m between rows when panels are horizontal. Additional infrastructure will include the construction of internal roads, an operations and maintenance depot, equipment and vehicle storage, administration building, control room/site offices and a car park with a minimum space for five vehicles. Given the flat topography of the site, no major earthworks are necessary, only minor earthworks will be required for establishing foundations for project buildings and minor trenching for cabling along the utility corridor (where an underground solution is chosen).

The Substation will host a step-up transformer and associated facilities to elevate the voltage of the electricity from 33 kV to 275 kV. An overhead transmission line will connect Substation to Orana Substation (owned and operated by Powerlink).

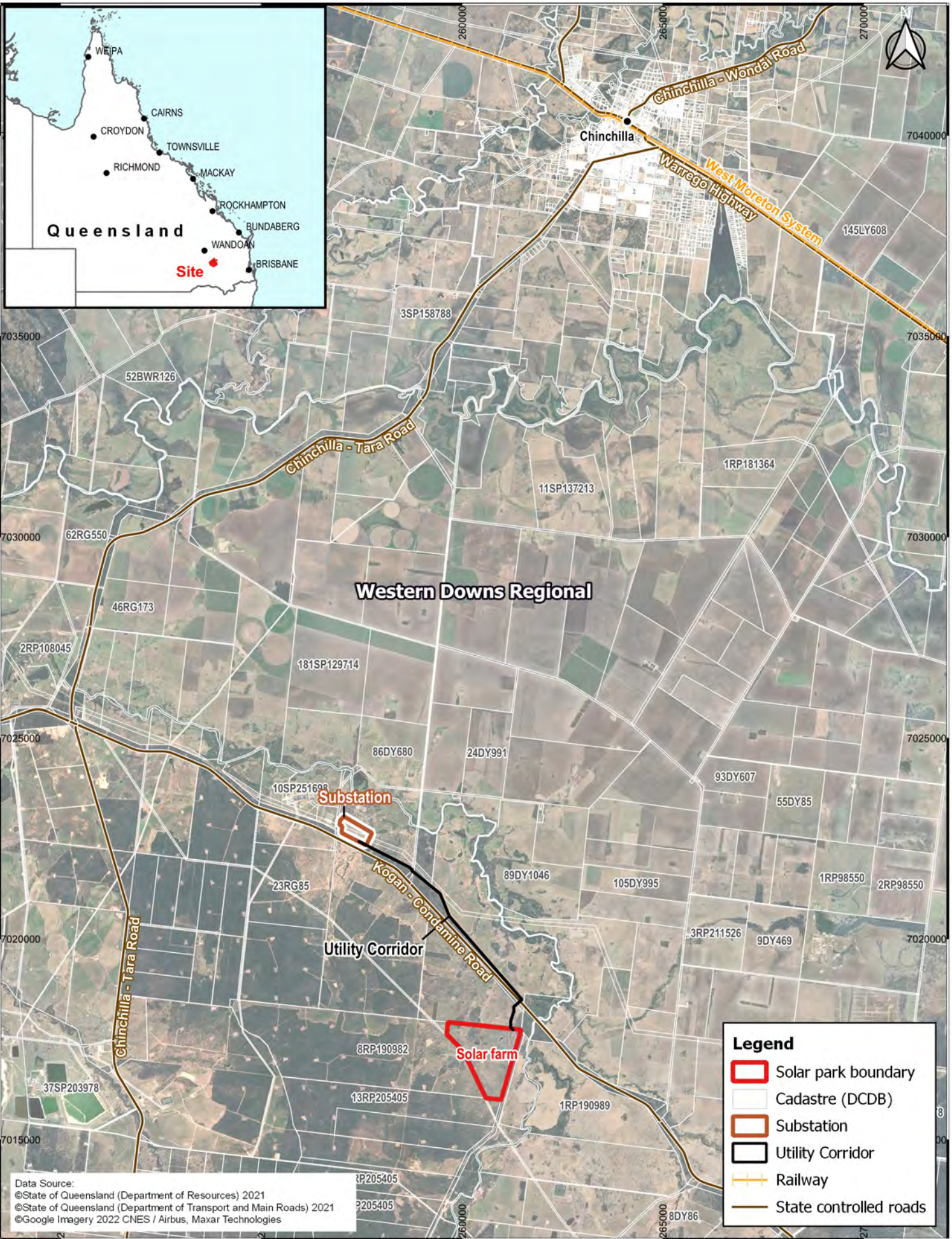
The Project is anticipated to take approximately one and a half years to construct and at the end of the operational period all infrastructure will be removed from the site. The Project is 'contained' as there is no downstream construction or operational works (apart from general maintenance of the facility). All required external infrastructure is already in place.

It is expected that during the life of the Project, it will support:

- Up to 200 construction jobs
- Between 4 and 7 full time jobs during operation
- Flow-on benefits for local businesses (i.e. local services, materials and contracting)
- Diversification of rural income streams
- Delivery of solar energy to the national electricity grid equivalent to powering 80,000 homes

The environmental benefits associated with the Project include a reduction in greenhouse gas emissions and reduced reliance on fossil fuel sources of energy, as well as positive outcomes for the local community. It is not expected that the Project will have any negative impacts to the character, amenity and land use values of the site and surrounding area.

©GIS 2019 I:\Projects\2022\IBEBE220017.01 Dream Project Incubators Everleigh Solar Farm Ecological Services\Workspaces\Ecology Assessment Report\Rev 0\Figure 1 Site location and Project area.ggz



Data Source:
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Scale: 1: 120,000@A4

Datum: GDA2020 Projection: MGA zone 56

**Dream Project Incubators
 Everleigh Solar Park Project
 Ecological Assessment Report**

**Figure 1
 Site location and Project area**

2 LEGISLATIVE CONTEXT

An overview of the legislative context for the Project is provided in the following sections.

2.1 Commonwealth Legislation

2.1.1 Environment Protection and Biodiversity Conservation Act 1999

The EPBC Act is the key piece of Commonwealth legislation governing environmental protection in Australia. Administered by the Commonwealth DCCEEW, the EPBC Act defines and protects nine MNES including:

- World heritage properties
- National heritage places
- Wetlands of international importance (listed under the Ramsar Convention)
- Listed threatened species and ecological communities
- Migratory species protected under international agreements
- Commonwealth marine areas
- The Great Barrier Reef Marine Park
- Nuclear actions (including uranium mines)
- A water resource in relation to coal seam gas development and large coal mining development.

Under Part 3 of the EPBC Act, a person must not undertake an action (e.g. a project, a development, an undertaking, an activity or a series of activities, or an alteration of any of these things) that will have, or is likely to have, a significant impact on a protected matter, without approval from the Minister.

2.2 State Legislation

2.2.1 Nature Conservation Act 1992

The *Nature Conservation Act 1992* (NC Act) and subordinate legislation (the *Nature Conservation (Animals) Regulation 2020* and *Nature Conservation (Plants) Regulation 2020*) regulate the environmental impacts of development through the requirement for vegetation clearing permits, species management programs and other permits.

A clearing permit is required to clear protected plants unless an exemption applies. In general, clearing of Critically Endangered, Endangered, Vulnerable or Near Threatened protected plants will require a clearing permit. Clearing permit applications are assessed on a case-by-case basis and approvals will be subject to conditions.

Where activities involve tampering with animal breeding places, the tampering may be authorised by application to the Queensland Department of Environment and Science (DES) through an approved species management program.

2.2.2 Vegetation Management Act 1999

The *Vegetation Management Act 1999* (VM Act) regulates clearing of vegetation in Queensland. The VM Act aims to conserve Queensland's biodiversity through vegetation management.

2.2.3 Biosecurity Act 2014

The *Biosecurity Act 2014* (Biosecurity Act) ensures a consistent, modern, risk-based and less prescriptive approach to biosecurity in Queensland. The Biosecurity Act provides comprehensive biosecurity measures to

safeguard the economy, agricultural and tourism industries, environment, and way of life from pests, diseases, and contaminants. Decisions made under the Biosecurity Act will depend on the likelihood and consequences of risk, allowing for more appropriate management of risks.

2.3 Local Legislation

The Project is located within the Western Downs Regional Council Local Government Area (LGA). Triggers for environmental assessment under the *Western Downs Planning Scheme 2017* (the Planning Scheme) include impacts to values mapped within the Project site under the Biodiversity Areas, Waterway Corridors and Wetlands overlay mapping. The Project area comprises no environmental values as mapped under the Planning Scheme.

3 ASSESSMENT METHOD

3.1 Desktop Assessment

3.1.1 Information sources

Prior to commencing the field survey, desktop assessments were carried out to identify threatened flora and fauna species and ecological communities of conservation significance that potentially occur within, or adjacent to the Project area. Database and information sources utilised in the desktop assessment include the following:

- Protected Matters Search Tool (EPBC Act) administered by DCCEEW (search based on a 5 km radius centred on -26.945 and 150.59)
- Wildlife Online database administered by DES (search based on a 10 km radius centred on -26.945 and 150.59)
- Queensland Government Matters of State Environmental Significance reporting
- Regional Ecosystem vegetation mapping (V12.0) administered by the Queensland Department of Resources (DoR)
- Atlas of Living Australia (ALA) database

Database search results are provided in **Appendix A**.

3.1.2 Previous surveys

This assessment also includes information derived from the *Edenvale Ecological Assessment Report* (Epic 2018). This assessment encompassed fauna and flora survey activities carried out in August 2018 within the Project area, the adjacent property to the immediate north of the Project as well as the Kogan-Condamine Road corridor and property to the north of the road. The survey comprised fauna and flora assessments which included activities within and adjacent to the current Project area. The results of this report are referred to where it is considered relevant to the current assessment.

3.1.3 Nomenclature and taxonomy

The common names of many flora and fauna species frequently vary between regions, and many species lack them altogether. Taxonomy of flora presented in this report follows that currently endorsed by the Queensland Herbarium in the *Census of Queensland Flora 2020*. The taxonomy of fauna follows the *Australian Faunal Directory* (DAWE 2022a). For common and scientific names of flora, refer to **Appendix B** and for fauna species, refer to **Appendix C**.

In this report, flora and fauna species are referred to initially by both their common and scientific names and then for ease of reading, only by their common name (where the species has a common name).

3.2 Field Survey Method

3.2.1 Survey timing and conditions

The Chinchilla region predominantly experiences summer rainfall with high summer temperatures, and long periods during winter with little or no rain. Such notable seasonality of rainfall and extreme temperatures underlies extensive variability in the presence or, more importantly, detectability of flora and fauna. The survey took place from 29 to 31 March 2022. The local area had experienced above average rainfall in the month of February (143 mm recorded at Brigalow Bridge rain gauge – 20 km east of the site) prior to the field survey with a further 62 mm recorded in the days immediately prior to the survey (BoM 2022).

At the time of the survey there was local flooding in the region due to heavy rainfall mostly to the east of the Project area. Conditions on the site were relatively dry with a minimum of 15.3°C and a maximum of 28.8°C. Localised flooding associated with the Condamine River restricted survey activities to daytime observations.

3.2.2 Survey methods

Flora survey method

The validity of Queensland Government vegetation community (RE) mapping was assessed using quaternary assessments, as defined in the *Methodology for surveying and mapping regional ecosystems and vegetation communities in Queensland, Version 5.1* (Neldner et al. 2020). Dominance of species within the ecologically dominant layer used in combination with surface soil type, landscape position and surficial geology was used to determine the RE, with reference to the Queensland Herbarium's RE description database (Version 12). The flora survey site locations are shown in **Figure 2** and site data sheets are located in **Appendix B**. **Figure 2** also shows relevant flora survey site locations associated with the 2018 survey carried out by Epic.

An overall list of flora species present within the Project area was derived from the flora assessment (refer **Appendix B**). General searches for threatened flora species derived from the desktop review were carried out where suitable habitat was observed at the quaternary flora sites.

Fauna survey method

The fauna survey employed the following methods:

- Habitat suitability assessments were carried out to assess the presence of habitat resources suitable to support threatened species including tree hollows, large fallen timber and water sources
- Bird species were recorded at selected sites throughout the Project area. Birds were identified by sight or call for a period of 20 minutes over an approximate 2 ha area
- Searches of potential shelter sites (e.g. fallen timber, woody debris, peeling bark or leaf litter) were carried out during the day to search for herpetofauna (focused on Dunmall's Snake (*Furina dunmalli*))
- Searches for signs of Koala presence (scats and tree scratches) where suitable habitat was deemed to occur (particularly along watercourses and/or where River Red Gum (*Eucalyptus camaldulensis*) occurs)
- Microbat echolocation call recording for a single night using an Anabat Swift
- Opportunistic records of fauna were ongoing throughout the survey period and included records areas located outside the immediate boundary of the Project area.

Fauna survey data was collected throughout the Project area including at the flora survey sites. Fauna survey locations, including relevant sites from the 2018 surveys are identified on **Figure 2**.

3.2.3 Likelihood of occurrence assessment

Following the field survey a likelihood of occurrence assessment was carried out to categorise the potential for threatened flora and fauna to occur based on the habitat observed within the Project area and surrounds. The assessment provides the following criteria:

- Known to occur
 - Observed onsite during surveys
- Likely to occur
 - Observed close to site during surveys and suitable habitat occurs within site, or
 - Database records occurring close to site (within 5 km) and suitable habitat occurs within site
- Potential to occur
 - Database records occurring in wider area (> 5 km) and marginally suitable habitat occurs within site, or
 - Database records occurring close to site (within 5 km) and marginally suitable habitat occurs although remains relatively isolated (due to vegetation clearing)
- Unlikely to occur
 - No database records in wider area, habitat present is generally unsuitable
 - Site generally outside of known distribution of species

3.2.4 Suitably qualified personnel

3.2.4.1 Brett Taylor

Brett completed his Honours (1st Class) degree (BSc in Ecology and Conservation Biology) in 2006 and has extensive fauna survey experience in Queensland, New South Wales and Papua New Guinea. Brett has conducted fauna work in habitats throughout Queensland for over 13 years including targeted survey techniques for a wide variety of conservation significant fauna. He has substantial experience carrying out ecological impact assessments and EPBC Act referrals. He has participated as a fauna expert on the expert panel review of the Biodiversity Planning Assessment for the North-west Highlands Bioregion in 2019.

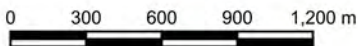
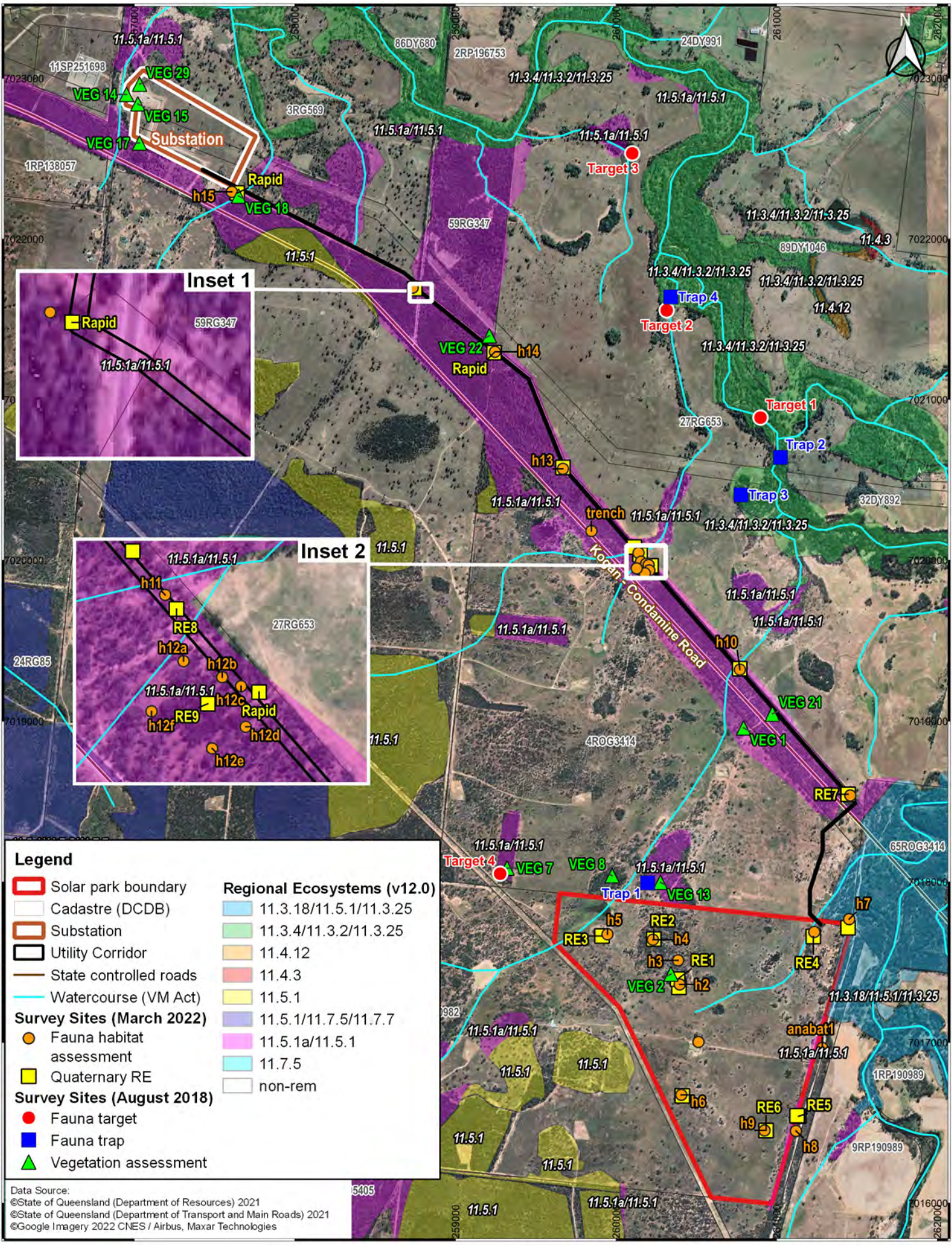
3.2.4.2 Dr Oliver Robertson

Oliver has over 8 years of industry experience in ecological consulting and 8 years' experience as a research scientist in Queensland, New South Wales and Victoria. Oliver has extensive experience in undertaking surveys for threatened species management plans and environmental monitoring programs pertaining to both flora and fauna in the terrestrial environment. He has carried out training in the assessment of Regional Ecosystems and BioCondition assessments. Oliver has been involved in environmental compliance assessments for a broad range of industries and government sectors including road and rail transport, energy, communications, and defence. He is familiar with environmental legislative requirements in Queensland and is also familiar with the nuances of the *Biodiversity Conservation Act 2016* in NSW.

3.2.5 Scientific permits and ethics personnel

Surveys were conducted under the following permits:

- Scientific Use Registration Certificate (Department of Agriculture and Fisheries) – (Registration No. SUR001535)
- Research Permit (Department of Environment and Science) – (Permit Number – WA0027840)
- Animal Ethics Approval (Department of Agriculture and Fisheries) – (Reference No. CA 2020/06/1377)



Scale: 1: 30,000@ A4

Datum: GDA2020 Projection: MGA zone 56

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Figure 2

Survey site locations (March 2022 and August 2018) and current vegetation and watercourse mapping (DoR)

4 ECOLOGY ASSESSMENT RESULTS

E

4.1 Existing Environment

The Project is located within the Brigalow Belt South Bioregion (BBSB). Within the BBSB the Project area intersects the Inglewood Sandstones subregion. Large areas of the Brigalow Belt have been cleared of remnant native vegetation for grazing, agriculture and mining. Remaining vegetation is often confined to rockier hilly areas, linear strips of roadside vegetation, riparian vegetation and relatively small isolated remnants. Nevertheless, substantial tracts of woodlands in the BBSB are located in State Forests, although are subject to periodic timber harvesting.

The Project area encompasses approximately 202 ha for the solar park. Almost all of the solar park area has been previously cleared for domestic livestock grazing. The proposed transmission line corridor is approximately 7.5 km long with approximately 4.3 km located within a road reserve and which remains vegetated. The Proponent has recently undertaken site visits and has improved the Project design by reducing the footprint of the utility corridor within the road reserve to clearing of no more than 4.285 ha, representing a reduction of the environmental footprint by close to 50% and avoiding 4.145 ha of the original 8.43 ha proposed for tree clearing.

The Project is situated within an area of flat topography with elevation remaining almost unchanged from north to south (approximately 314 m above sea level (asl)). The western boundary of the Project sits at approximately 318 m asl and marginally declines to a low point of 310 m asl in the north-east corner of the solar park area.

The Project area is located within the Condamine River catchment. Three mapped 1st order and one 2nd order watercourse intersect the Project area draining towards the north into Wambo Creek (**Figure 2**). Wambo Creek drains into the Condamine River approximately 18.3 km west-north-west of the Project. The majority of the mapped watercourses intersecting the Project area appear to be highly ephemeral and with little to no bank definition. At the time of the survey water was present in a single watercourse intersected by the utility corridor to the north of Kogan-Condamine Road.

4.2 Desktop Assessment

4.2.1 Matters of National Environmental Significance

The DCCEEW Protected Matters Report (PMR) identifies MNES protected under the EPBC Act considered as potentially occurring within the Project area and surrounds. The PMR identified four categories of MNES potentially present in the Project area or surrounds (as summarised in **Table 1**). A copy of the PMR is provided in Appendix A.

Table 1. EPBC Act PMR summary

MNES	PMR search result and relevance to Project
World heritage properties	Not applicable
National heritage places	Not applicable
Wetlands of International Importance	Four Ramsar listed wetlands identified. The nearest of these is located over 400 km downstream of the Project (Narran Lake Nature Reserve). It is inconceivable the Project will impact any of these wetlands and they are not referred to further in this report
Great Barrier Reef Marine Park	Not applicable
Commonwealth Marine Area	Not applicable

MNES	PMR search result and relevance to Project
Listed Threatened Ecological Communities	Five communities predicted as present, refer Section 4.2.4.1 for further discussion
Listed threatened species:	Twenty-seven threatened species predicted to be present, comprising six flora species (refer Section 4.3.1.2) and 21 fauna species (refer Section 4.3.2.2)
Listed migratory species	Eleven species listed as Migratory predicted to be present (refer Section 4.3.2.2)

4.2.2 Matters of State Environmental Significance

The Queensland Government Environmental Reports Online portal identified a single MSES as present within the Project area: regulated vegetation (remnant) located within a defined distance from the defining banks of a relevant watercourse identified on the VM Act watercourse and drainage feature map. A copy of the MSES Report is provided in **Appendix A**.

4.2.3 Matters of Local Environmental Significance

The 'Biodiversity areas overlay map (OM-002)' from the Western Downs Regional Council Planning Scheme 2017 was examined to assess whether any potential Matters of Local Environmental Significance (MLES), outside of MSES, have been identified for the Project area. The overlay only identifies areas that are considered as MSES. As such, MLES are not applicable to the Project.

4.2.4 Vegetation community mapping

State vegetation mapping indicates the majority of the Project area is considered as Category X areas (non-remnant vegetation) and is exempt from vegetation clearing assessment under the VM Act. Three REs are currently mapped as present under DoR vegetation mapping (refer **Figure 2**). These communities occur as dominant (single RE present) or codominant polygons (more than one RE present) and include mapped remnant and high-value regrowth (HVR). **Table 2** describes the State mapped vegetation communities mapped as present within the Project area.

Table 2. Regional Ecosystems mapped within Project area (DoR)

RE	Status (VM Act)	Description (Qld Herbarium 2021)
11.3.18	Least Concern	<i>Eucalyptus populnea</i> , <i>Callitris glaucophylla</i> , <i>Allocasuarina luehmannii</i> shrubby woodland on alluvium. Occurs within mixed polygons as remnant and high-value regrowth vegetation.
11.3.25	Least Concern	<i>Eucalyptus tereticornis</i> or <i>E. camaldulensis</i> woodland fringing drainage lines. Largely associated mixed with vegetation polygons along Juandah Creek. Includes remnant, HVR and GBR riverine regrowth polygons. Occurs within mixed polygons as remnant and high-value regrowth vegetation.
11.5.1	Least Concern	<i>Eucalyptus crebra</i> and/or <i>E. populnea</i> , <i>Callitris glaucophylla</i> , <i>Angophora leiocarpa</i> , <i>Allocasuarina luehmannii</i> woodland on Cainozoic sand plains and/or remnant surfaces. Occupies a number of mixed polygons (remnant and HVR) in south-east portion of Project area. Occurs as remnant and high-value regrowth vegetation.

4.2.4.1 Threatened Ecological Communities

The DCCEEW PMR predicted five Threatened Ecological Communities (TECs) listed as threatened under the EPBC Act as occurring within 50 km of the Project area including:

- Brigalow (*Acacia harpophylla* and co-dominant) – Endangered
- Coolibah – Black Box Woodlands of the Darling Riverine Plains and the Brigalow South Bioregions – Endangered
- Natural grasslands on basalt and fine-textured alluvial plains of northern New South Wales and Southern Queensland – Critically Endangered
- Poplar Box Grassy Woodland on Alluvial Plains – Endangered
- Weeping Myall Woodlands – Endangered.

None of the REs mapped as occurring within the Project area under the Current DoR vegetation mapping are analogous with any of the TECs listed above. Although RE 11.3.18 comprises Poplar Box (*Eucalyptus populnea*) this is a shrubby woodland that is not considered analogous to the Poplar Box TEC.

4.2.5 Conservation significant flora

Review of the Queensland DES Protected Plants Survey Trigger mapping no area mapped as ‘high-risk’ for the presence of protected plants occurs within the Project area.

It is noted no threatened flora species were identified during the 2018 survey on the adjacent properties (Epic 2018). The desktop review identified seven flora species listed as threatened under the NC Act and/or EPBC Act as potentially occurring within the wider area surrounding the Project area (refer **Section 4.3.1.2** and **Appendix A** for database search results). The PMR report predicted six flora species listed as Vulnerable or Endangered under the EPBC Act. All are considered as ‘species or species habitat may occur’ (rather than likely to occur). The Wildlife Online database search results identified a single threatened flora species as previously recorded within 10 km of the Project area:

- Kogan Waxflower (*Philothea sporadica*) (Near Threatened – NC Act and Vulnerable – EPBC Act) - there is a single 2012 record located 4.3 km west of the Project. There are a large number of records (>13 km from the Project) to the east and south-east in the Kogan area where a well known population of the species occurs.

4.2.6 Conservation significant fauna

Review of the essential habitat mapping for threatened species (mapped under the VM Act) and threatened wildlife habitat mapping indicates there are no areas of threatened wildlife habitat mapped within the Project area.

Two threatened fauna species were recorded during the Epic 2018 survey on the adjacent properties:

- Golden-tailed Gecko (*Strophurus taenicaudus*) (Near Threatened – NC Act) was recorded (single individual) in non-remnant vegetation on the adjacent property to the north of the Project
- Greater Glider (*Petauroides volans*) (Vulnerable – NC Act and EPBC Act) was recorded in vegetation along Wambo Creek to the north of the Kogan-Condamine Road

The desktop review identified 23 fauna species listed as threatened under the NC Act and/or EPBC Act, and a further 12 species listed as Migratory (under the EPBC Act) and Special Least Concern (under the NC Act) as potentially occurring within the wider area surrounding the Project area (refer **Section 4.3.2.2** and **Appendix A** for database search results). The PMR report predicted the potential presence of 21 fauna species listed as Vulnerable, Endangered or Critically Endangered under the EPBC Act.

The Wildlife Online search results identified three threatened fauna species including two species listed only under the NC Act. The search also identified two species listed as Special Least Concern under the NC Act, including Short-beaked echidna (*Tachyglossus aculeatus*) and a single bird species also listed as Migratory (under the EPBC Act).

Three threatened species have been recorded within a 10 km radius of the Project area (ALA 2022):

- Pale Imperial Hairstreak (*Jalmenus eubulus*) (Vulnerable – NC Act) – two 1998 records located 5 km – 6 km east of the Project along Kogan-Condamine Road
- Golden-tailed Gecko (Near Threatened – NC Act) – several 2008 records located 3.3 km – 6.4 km south-west of the Project area. Evidently recorded during surveys associated with gas infrastructure
- Koala (*Phascolarctos cinereus*) (Vulnerable – NC Act and Endangered – EPBC Act) – there is a single Wildlife Online record within the 10 km search area. There are no corresponding records on the ALA database. The nearest ALA record is from 1982 and located 15.7 km from the Project (ALA 2022)

4.3 Field Assessment

4.3.1 Flora survey Results

The flora survey recorded 108 species of vascular plant (**Appendix B**). Of these, 12 species are listed as introduced species. No flora species listed as Endangered, Vulnerable or Near Threatened under the EPBC Act and/or NC Act was recorded.

4.3.1.1 Field-verified vegetation communities

Vegetation communities were verified in the field and assigned an RE type through Quaternary RE assessments and rapid RE assessments. A total of nine Quaternary RE assessments and 11 rapid RE assessments were completed (refer **Figure 2**). Quaternary RE assessment data is provided in **Appendix B**.




In general, the field verified vegetation communities were consistent with the RE mapping for the Project area with the exception of several small patches of regrowth vegetation within the solar park site. Much of the site retains non-remnant open grassland with scattered trees and shrubs. There are small areas of short regrowth often supporting stands of Beefwood (*Grevillea striata*). In the north of the solar park site there are patches of vegetation comprising high-value regrowth (HVR) woodland and a stand of remnant woodland fringing a drainage line in the north-east corner of the site.




Road corridor vegetation within the proposed transmission line corridor is comprised predominately of remnant Poplar Box woodland with a small patch of HVR low closed-forest dominated by Brigalow (*Acacia harpophylla*) also identified. Field-verified vegetation communities recorded within the Project area are described below in **Table 3** and depicted in **Figure 3**.


4.3.1.2 Potential TECs

A single RE identified within the road corridor, 11.3.1 (*Acacia harpophylla* and/or *Casuarina cristata* open forest on alluvial plains), is potentially analogous to an EPBC listed TEC: Brigalow (*Acacia harpophylla* dominant and co-dominant). The patch of RE 11.3.1 occurs directly adjacent to the proposed utility corridor and has an estimated area of 0.35 ha. This area is below the minimum threshold of 0.5 ha (as described in DotE 2013). As such, the field-verified RE 11.3.1 is not considered a TEC and not considered further in this report.

Table 1: Table 3. Vegetation communities recorded in Project area

RE type and state	Description	Representative photo
11.3.1 HVR	<p><i>Acacia harpophylla</i> dominated regrowth low open-forest on alluvial flat. Small patch of 0.35 ha patch within road reserve and embedded with RE 11.5.1 and 11.3.18.</p> <p>Canopy cover 75% with a median height of 9.6 m. A mid-dense shrub layer included <i>Geijera parviflora</i>, <i>Santalum lanceolatum</i> and <i>Capparis lasiantha</i>. A sparse ground layer was dominated by grasses and forbs including <i>Sclerolaena bicornis</i>, <i>Entolasia stricta</i>, <i>Paspalidium distans</i>, <i>Bothriochloa decipens</i>, <i>Enteropogon acicularis</i>, and <i>Einada nutans</i>. On alluvial high texture-contrast soils with minor gilgai formation. Weed cover was generally <5% and comprised <i>Megathyrsus maximus</i> and <i>Opuntia stricta</i>.</p> <p>VM Act status: Endangered.</p>	
11.3.18 remnant and HVR	<p><i>Eucalyptus populnea</i> remnant woodland on alluvium. Occurs in road corridor along a single drainage line and as a small 0.63 ha HVR patch within the Solar park site.</p> <p>Canopy cover ranged between 20% and 25% with a median canopy height of 13.6-16 m. Secondary tree layer comprised of <i>Callitris glaucophylla</i>, <i>Eucalyptus populnea</i>, <i>Canthium oleifolium</i>, <i>Eremophila mitchellii</i>, <i>Casuarina cristata</i>, <i>Alectryon oleifolius</i>. A patchy but dense shrub layer included <i>Geijera parviflora</i>, <i>Alstonia constricta</i>, <i>Acacia salicina</i> and <i>Eremophila deserti</i>. A dense layer of tussock grasses dominated the ground layer including <i>Bothriochloa bladhii</i>, <i>Bothriochloa decipens</i>, and <i>Eragrostis brownii</i>. On alluvial high texture-contrast soils with a sandy surface within natural depressions and creek flats. Suitable habitat for <i>Homopholis belsonii</i>. Weed cover ranged from 5% to 100% and included <i>Eragrostis curvula</i>, <i>Megathyrsus maximus</i>, <i>Bryophyllum delagoense</i> and <i>Opuntia</i> spp.</p> <p>VM Act status: Least concern.</p>	
11.3.25 remnant	<p><i>Eucalyptus camaldulensis</i> dominated woodland with associated <i>Eucalyptus populnea</i> and <i>Callitris glaucophylla</i>. Mature regrowth fringing a drainage depression in the north-east of the solar park site.</p> <p>Canopy cover of 20% and 16 m median height. A secondary tree layer included <i>Callitris glaucophylla</i> and <i>Allocasuarina luehmannii</i>. A dense shrub layer comprised <i>Callitris glaucophylla</i>, <i>Eremophila mitchellii</i> and <i>Allocasuarina luehmannii</i>. A mid-dense ground layer comprised of tussock grasses and forbs included <i>Glycine tomentella</i>, <i>Chrysopogon fallax</i>, <i>Aristida calycina</i>, <i>Sida rohlenae</i>, <i>Panicum decompositum</i>, <i>Dianella revoluta</i> and <i>Lomandra leucocephala</i>. Occurs in alluvial clays fringing drainage lines. Invasive grasses dominate the ground layer including <i>Megathyrsus maximus</i> and <i>Melinis repens</i>.</p> <p>VM Act status: Least concern.</p>	

RE type and state	Description	Representative photo
11.5.1 HVR	<p><i>Eucalyptus populnea</i> dominated regrowth open woodland with associated <i>E. crebra</i> and <i>E. siderophloia</i>. Occurs as scrappy regrowth patch in north of Solar park site. Very few tall canopy trees present.</p> <p>Canopy cover of 5% and 11 m median height. A secondary tree layer comprised <i>Allocasuarina luehmannii</i>, <i>Callitris glaucophylla</i>, <i>Petalostigma pubescens</i> and <i>Eucalyptus siderophloia</i>. A very sparse shrub layer included <i>Acacia crassa</i> and <i>A. leiocalyx</i>. A sparse ground layer was dominated by tussock grasses including <i>Aristida calycina</i>, <i>Aristida caput-medusae</i>, <i>Paspalidium distans</i>, <i>Panicum decompositum</i> and <i>Eragrostis brownii</i>. Occurs on Cainozoic sand plains derived from weathered sandstone on duplex soils with a sandy surface. Invasive grasses dominate the ground layer including <i>Eragrostis curvula</i> and <i>Melinis repens</i>.</p> <p>VM Act status: Least concern.</p>	
11.5.1a HVR	<p><i>Eucalyptus populnea</i> dominated regrowth woodland with associated <i>Eucalyptus woollsiana</i>. Small patch (1.33 ha) located in north of Solar park site. Less disturbed than community described above.</p> <p>Canopy cover of 10% and median canopy height of 11 m to 12.5 m. A secondary tree layer comprised <i>Allocasuarina luehmannii</i>, <i>Callitris glaucophylla</i> and <i>Eucalyptus populnea</i>. A very sparse shrub layer included <i>Acacia crassa</i>, <i>A. leiocalyx</i>, <i>A. conferta</i>, <i>A. stenophylla</i>, <i>Allocasuarina luehmannii</i> and <i>Callitris glaucophylla</i>. A sparse ground layer was dominated by tussock grasses including <i>Aristida calycina</i>, <i>Aristida caput-medusae</i>, and <i>Panicum decompositum</i>. Occurs on Cainozoic sand plains derived from weathered sandstone on duplex soils with a sandy surface. Invasive grasses occurred in low density and comprised <i>Eragrostis curvula</i> and <i>Melinis repens</i>.</p> <p>VM Act status: Least concern.</p>	
11.5.1a remnant	<p><i>Eucalyptus populnea</i> dominated woodland adjacent to east boundary of solar park site and along much of road corridor.</p> <p>Canopy cover of 15-25% and median canopy height of 15.5 m to 18 m. A secondary tree layer comprised <i>Allocasuarina luehmannii</i>, <i>Callitris glaucophylla</i>, <i>Eucalyptus populnea</i>, <i>Alectryon oleifolius</i>, <i>Casuarina cristata</i>, <i>Eremophila mitchellii</i>, <i>Citrus glauca</i> and <i>Canthium oleifolium</i>. A very sparse shrub layer included <i>Acacia conferta</i>, <i>Geijera parviflora</i> and <i>Eremophila mitchellii</i>. A dense ground layer was dominated by tussock grasses and forbs including <i>Enteropogon acicularis</i>, <i>Aristida calycina</i>, <i>Heteropogon contortus</i>, <i>Themeda triandra</i>, <i>Paspalidium distans</i>, <i>Panicum decompositum</i>, <i>Alternanthera micrantha</i> and <i>Salsola australis</i>. Occurs on Cainozoic sand plains derived from weathered sandstone on duplex soils with a sandy surface. Invasive grasses occurred at mid to high density and comprised <i>Eragrostis curvula</i>, <i>Megathyrsus maximus</i>, <i>Bryophyllum delagoense</i>, <i>Opuntia</i> spp., and <i>Melinis repens</i>.</p> <p>VM Act status: Least concern.</p>	

RE type and state	Description	Representative photo
Non-remnant	<p>Non-remnant grassland dominated by native and exotic pasture grasses cleared of woody vegetation for agriculture. Dominates solar park site.</p> <p>Emergent shrubs with a median height of 3 m occur sporadically across the vegetation community. Shrubs included <i>Grevillea striata</i> and <i>Allocasuarina luehmannii</i>. Ground cover included tussock grasses and forbs comprising <i>Eragrostis lacunaria</i>, <i>Panicum decompositum</i>, <i>Paspalidium distans</i>, <i>Eragrostis brownii</i>, <i>Epaltes australis</i>, <i>Chrysocephalum apicularis</i>, <i>Chloris divaricata</i>, <i>Aristida caput-medusae</i> and <i>Phyllanthus virgatus</i>. Weed cover was generally less than 30% but high density infestations occurred sporadically, including <i>Eragrostis curvula</i>. Other common weeds comprised <i>Sida cordifolia</i>, <i>Melinis repens</i>, <i>Megathyrsus maximus</i> and <i>Opuntia</i> spp.</p> <p>VM Act status: not applicable.</p>	

4.3.1.3 Conservation significant flora species

No conservation significant flora species were detected during the March 2022 site survey. Due to the nature of ecological surveys, scarce or cryptic flora species may go undetected, due to seasonality (e.g. dry conditions) and time of flowering. The presence of such species was inferred if there are nearby records of the species in databases, and suitable habitat was observed as present in the Project area. A likelihood of occurrence assessment (refer **Table 4**) was carried out to identify those species that require further consideration for potential significant residual impacts from the Project's activities (refer **Section 3.2.3** for method). A single threatened flora species, Belson's panic (*Homopholis belsonii*), is considered a possible occurrence given the habitat values observed to be present.

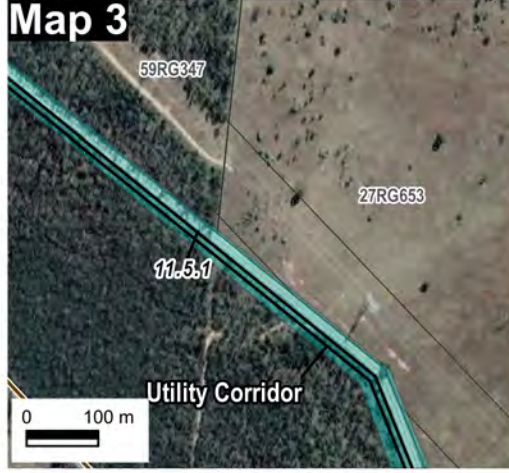
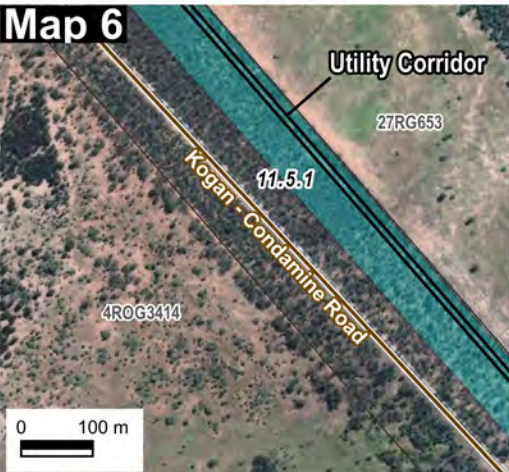
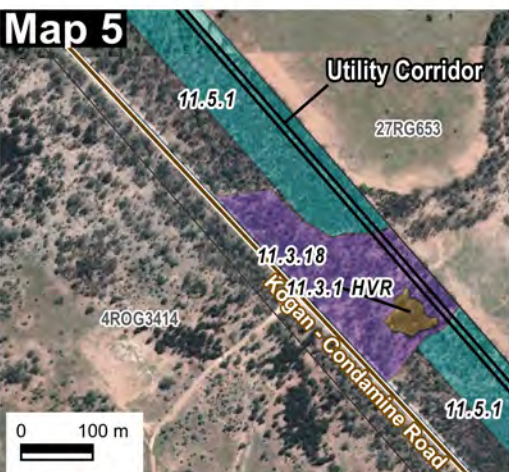
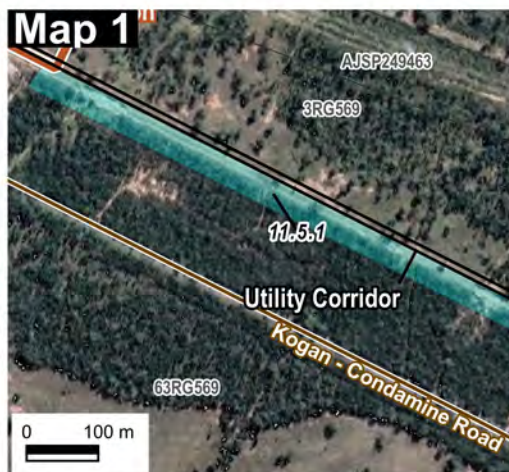
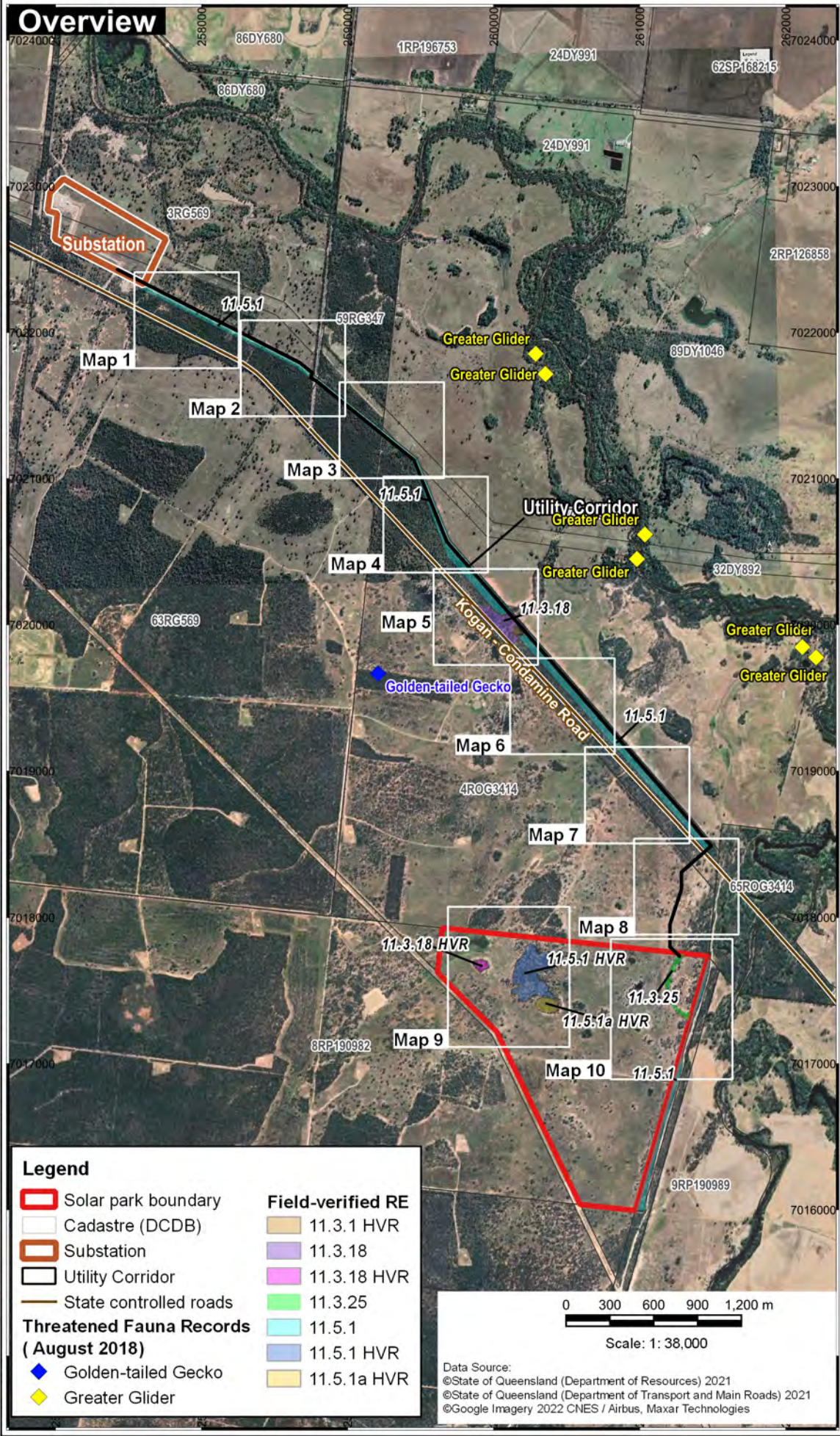
Table 4. Likelihood of occurrence of conservation significant flora species

Species & Status	Source ¹	Nearby Records and Habitat Requirements
Tara Wattle (<i>Acacia lauta</i>) EPBC Act: V NC Act: V	PMR	Unlikely. Occurs in a small region of the Darling Downs between Inglewood and Tara. Nearest records are 24 km south of the Project. Grows in open forest to low woodland on flat terrain with a dense/moderately dense shrub layer on land zone 7. Often associated with White Cypress Pine (<i>Callitris glaucophylla</i>) and Buloke (<i>Allocasuarina luehmannii</i>) (DEWHA 2008a). Although marginal habitat may occur within the Project area targeted searches did not identify the species. Project area located north of known distribution and no vegetation on land zone 7 occurs in the area.
Ooline (<i>Cadellia pentastylis</i>) EPBC Act: V NC Act: V	PMR	Unlikely. Nearest occurrence is a 1984 record 54 km south-west of the Project (ALA 2022). Species occurs in semi-evergreen vine thickets and sclerophyll vegetation on undulating terrain of various geology, including sandstone, conglomerate and claystone. Normally associated with upper and mid-slopes. Forms a closed or open canopy (DEWHA 2008b). The Project area is flat and there is no suitable habitat present.

Species & Status	Source ¹	Nearby Records and Habitat Requirements
<i>Dicanthium setosum</i> EPBC Act: V NC Act: LC	PMR	Unlikely. Nearest records are from the Toowoomba area (over 150 km south-east) (ALA 2022). The species is associated with heavy basaltic black soils and red-brown loams with clay subsoil (mainly land zone 4). The Project area does not comprise these soils and has been heavily modified by cattle grazing. No suitable habitat likely present and no evidence the species occurs in the area.
Belson's Panic (<i>Homopholis belsonii</i>) EPBC Act: V NC Act: E	PMR	Potential. Sparse occurrences in the wider area surrounding the Project. Nearest record is from 2015 and located in a disturbed open woodland approximately 11.5 km west of the Project (ALA 2022). Occurs in dry woodlands on poor soils, such as those derived from basalt. Associated with Brigalow, Belah (<i>Casuarina cristata</i>), Poplar Box woodlands, and communities dominated by <i>Eucalyptus orgadophila</i> or <i>E. albens</i> (DEWHA 2008c). Although suitable Poplar Box woodland habitat on alluvial soils does occur within the Project area targeted searches did not identify the species.
Winged Pepper-cress (<i>Lepidium monoplocoides</i>) EPBC Act: E NC Act: LC	PMR	Unlikely. Nearest records are over 170 km south of the Project (ALA 2022). Largely occurs in mallee scrub in semi-arid areas and is associated with areas subject to seasonal wetting to water-logging on heavy fertile soils. No suitable habitat present and no indication the species occurs in the region.
Kogan Waxflower (<i>Philotheca sporadica</i>) NC act: NT	WO	Unlikely. There is a single 2012 record located 4.3 km west of the Project. There are a large number of records (>13 km from the Project) to the east and south-east in the Kogan area where a well known population of the species occurs. Found on residual hills which are remnants of laterised sandstones (land zone 7), where the soils are shallow, uniform sandy loams to clay loams of extremely low fertility and poor condition. Although the species occurs relatively nearby there is no suitable habitat (i.e. land zone 7) within the Project area.
<i>Xerothamnella herbacea</i> EPBC Act: E NC Act: E	PMR	Unlikely. Known from north-east of Chinchilla with nearest record approximately 41 km from the Project area (ALA 2022). Occurs in Brigalow dominated communities in shaded situations, often in leaf litter and is associated with gilgais (shallow ground depressions). This habitat does not occur in or near the Project area.

4.3.1.4 Weed species

The March 2022 site survey identified 12 weed species as present within the Project area (refer **Appendix B** for flora species list), which is similar to that recorded in the Epic 2018 survey (five species recorded). Of these, three species are listed as Category 3 weed species under the Biosecurity Act: Mother-of-millions (*Bryophyllum delagoense*); Common Pest Pear (*Opuntia stricta*) and Velvety Tree Pear (*Opuntia tomentosa*). Mother-of-millions Common Pest Pear and Velvety Tree Pear are listed as 'high-priority' species in the Western Downs Regional Council biosecurity plan (WDRC 2017). Three other species recorded are identified as 'low-priority' weed species in the Biosecurity plan; Common Pest Pear (*Opuntia stricta*), Noogoora Burr (*Xanthium pungens*); and African Lovegrass (*Eragrostis curvula*). In addition, *Opuntia* species are also listed as Weeds of National Significance (WoNS).



Datum: GDA2020 Projection: MGA zone 56



Dream Project Incubators
 Everleigh Solar Park Project
 Ecological Assessment Report

Figure 3
 Field-verified vegetation mapping and threatened fauna records(August 2018 only)

4.3.3 Fauna survey results

The March 2022 site survey recorded a total of 57 fauna species including three reptile, 40 bird and 14 mammal species within and in the immediate surrounds of the Project area (**Appendix C**). This includes 12 microbat species recorded along Clyne Road (adjacent to but outside the Solar park site) during microbat call recording. No threatened fauna species were recorded. Surveys in 2018 included the property immediately north of the Solar park site and recorded three reptiles, 20 birds and eight mammals. The 2018 survey recorded two threatened species:

- Golden-tailed Gecko (*Strophurus taenicauda*) (Near Threatened – NC Act) was recorded in a woodland patch on the property adjacent to the north of the Project
- Greater Glider (*Petauroides volans*) (Endangered – EPBC Act and NC Act) was recorded in woodlands connected to Wambo Creek to the north of the utility corridor. These woodlands are isolated from the current Project area.

4.3.3.1 Fauna habitat values

In general, habitat quality on the Solar park site was limited due to past disturbance and tree clearing for cattle grazing. No livestock were present at the time of the survey and it appears the site is no longer used for cattle grazing. As such, areas with small scattered regrowth were common across the Solar park site with scattered larger trees and limited patches of older regrowth. The road corridor provides a largely continuous tract of dry sclerophyll vegetation which has also been subject to degrading practices with relatively few mature hollow-bearing canopy trees present and an often weedy ground layer. The following sections describe the habitat value for terrestrial fauna observed during the March 2022 survey.

Eucalypt woodland

The road corridor comprises dry woodland/open forest as does the areas of taller vegetation within the north of the Solar park site. The dominant canopy species throughout was Poplar Box (*Eucalyptus populnea*) with occasional occurrences of other eucalypt species. There is a distinct lower storey dominated by White Cypress Pine (*Callitris glaucophylla*) and Buloke (*Allocasuarina luehmannii*), Acacia species and immature canopy trees. In some areas past clearing has removed many of the large eucalypts and the canopy is dominated by White Cypress Pine. The shrub and ground layer was generally sparse, excepting damp areas where weedy grasses were often prevalent. Previous tree clearing has limited the availability of some habitat features useful to fauna. Large tree hollows provide shelter/nest sites for a range of arboreal fauna (such as large gliders, possums owls and parrots) but were uncommon throughout due to the lack of old growth trees. Similarly large woody debris, which provides shelter for a range of ground dwelling fauna species was generally uncommon.

Nevertheless, the woodland habitat in the Project provides seasonal food resources for nectivorous bird species (honeyeaters and lorikeets), year-round prey resources for smaller insectivorous bird species and microbats, and small tree hollows suitable as shelter sites for microbats and small gliders. In general, the bird assemblage recorded during the site surveys were restricted to widespread and commonly occurring species.

A narrow corridor featuring tall but immature River Red Gum was also observed along a mapped watercourse in the north-east corner of the Solar Park site. Koala is known to prefer this species for foraging, although no evidence of the species occurring was observed during the survey.

Cleared grassland/regrowth

The Solar park site is dominated by non-remnant grassland with scattered areas of large eucalypts and areas of small regrowth, often dominated by Beefwood (*Grevillea striata*). These areas are dominated by a ground layer of introduced and native grasses. With limited structural and floristic diversity, grassland dominated habitats support limited fauna diversity in comparison to the adjacent woodlands but provide habitat for

certain common and widespread species that depend on grasslands and open habitats for foraging such as Eastern Grey Kangaroo (*Macropus giganteus*), pigeons and finches. Areas with patches of regrowth and large pasture trees provide habitat for a limited subset of the faunal assemblage occurring elsewhere.

Wetlands

The only notable sources of water in the Project area were two small farm dams (on the Solar park site) and a single eroded watercourse along the road corridor. Although artificial in nature and impacted by cattle access, farm dams constitute wetlands that may provide suitable habitat for wetland bird species and amphibians and a valuable source of permanent water for a range of terrestrial vertebrate species that need access to water (such as parrots, pigeons and finches).

4.3.3.2 Conservation significant fauna species

The March 2022 site survey did not record any species listed as threatened or migratory under the EPBC Act and/or NC Act. Given the limited habitat values present in the Project area this is not considered a surprising outcome.

Of the species identified during the desktop review, only some are considered relevant to the Project. A likelihood of occurrence assessment was carried out based on the observed habitat values and results of the desktop review (refer **Section 3.2.3** for method). Four species listed as threatened are considered to have some potential to occur in the Project area, although none are considered likely to occur based on the limited habitat values observed within the Project area. A further two species listed as Migratory (under the EPBC Act) and one listed as Special Least Concern (under the NC Act) are also considered to have potential to occur (refer **Table 5**).

Table 5. Likelihood of occurrence of conservation significant fauna species

Species & Status	Source ¹	Nearby Records and Habitat Requirements
<i>Threatened species</i>		
Short-beaked Echidna (<i>Tachyglossus aculeatus</i>) NC Act: SLC	WO	Potential. There nine WO records from the wider area. The species is widespread and can occur in both remnant and heavily disturbed habitats. Given the majority of the site is cleared the Project area provides only limited value for the species.
Northern Quoll (<i>Dasyurus hallucatus</i>) EPBC Act: E NC Act: LC	PMR	Unlikely. The nearest records are from the Bunya Mountains area, approximately 100 km to the east and recorded in 1990 and 1993 (ALA 2022). There are no records to the south or west of the Project. To the north the species is known to occur in the Canarvon Ranges. Habitat values to the species is very poor given the Project area is largely devoid of woody vegetation and there is no evidence the species has ever occurred in the area.
Koala (<i>Phascolarctos cinereus</i>) EPBC Act: V NC Act: V	WO PMR	Potential. Not recorded, despite targeted surveys, during the March 2022 survey or the 2018 surveys (Epic 2022). There is a single WO record within the 10 km search radius. There are several records in the surrounding area, particularly in the State Forests to the east and south-east between the Project area and Dalby. The nearest record is from 1992 and is 14.6 km east of the Project. The nearest recent record is from 2012 and located in Condamine State Forest, 28 km to the west (ALA 2022). Eucalypt habitat is dominated by Poplar Box in the Project area. The species may forage on a range of eucalypt species but in inland habitats is known to prefer River Red Gum. A small strip of River Red Gum in the north-east of the Solar park site was searched but no sign of the species occurring was observed. There is a minor potential for the species to occur.

Species & Status	Source ¹	Nearby Records and Habitat Requirements
Greater Glider <i>(Petauroides volans)</i> EPBC Act: E NC Act: E	PMR	<p>Unlikely. Not recorded during the March 2022 survey but recorded during the 2018 surveys along Wambo Creek within 1 km of the utility corridor associated with the current Project. There are no WO records within the 10 km search radius. There are sparsely scattered records in the surrounding area. The nearest record is from 2010 and is located in Braemar State Forest (36 km to the south-east) (ALA 2022). Poplar Box dominates almost all of the Project area. The species is not associated with inland box woodlands and prefers the higher productivity areas associated with moist, tall forests (i.e. riparian areas) which have higher plant growth and nutrients (Eyre 2006) and higher propensity for large tree hollows to remain in a heavily impacted landscape. A small strip of River Red Gum in the north-east of the Solar park site features tall but immature trees with no large hollows. There is little if any suitable habitat for the species present within the Project area.</p>
Yellow-bellied Glider <i>(Petaurus australis australis)</i> EPBC act: V NC Act: V	PMR	<p>Unlikely. There are no WO records within the 10 km search radius. The nearest records are from 2008 and located in Braemar State Forest, 31 km south-east of the Project (DES 2022). This species prefers large patches of old growth eucalypt forest (with large hollows for shelter) with a clear preference for smooth-barked eucalypts and winter-flowering species (DAWE 2022b). Given the cleared nature of the surrounding landscape and the lack of smooth-barked eucalypts present it is very unlikely the species would occur.</p>
Grey-headed Flying-fox <i>(Pteropus poliocephalus)</i> EPBC Act: V NC Act: LC	PMR	<p>Unlikely. Not recorded during the March 2022 survey or the 2018 surveys (Epic 2022). There are no WO records within the 10 km search radius. The closest known record is a 2011 record for Chinchilla, approximately 20 km to the north. The same year there was a record from Dalby, 70 km to the south-east. The species usually occurs within 50 km of the coast or at less than 65 m above sea level (asl) (Eby & Roberts 2012). Dalby is 175 km from the coast, the other records are even further and all 3 records are over 300 m asl. They may be misidentifications, though the Chinchilla record is apparently part of the <i>southern region flying-fox roost monitoring program</i> (ALA 2022) and is presumably reliable. As such it would best be regarded as a vagrant individual. There is no roost habitat in close vicinity to the Project and only very limited seasonal foraging habitat (flowering eucalypts) available.</p>
Large-eared Pied Bat <i>(Chalinolobus dwyeri)</i> EPBC Act: V NC Act: V	PMR	<p>Unlikely. The closest known record is from Western Creek State Forest in 1997, approximately 98 km to the south of the Project area. Otherwise there are a number of records in the general area of Expedition National Park (over 200 km north-west) (ALA 2022). The species is heavily associated with sandstone cliffs/ranges and there is no suitable habitat close to the Project area.</p>
Corben's Long-eared Bat <i>Nyctophilus corbeni</i> EPBC Act: V NC Act: V	PMR	<p>Unlikely. There are no WO records within the 10 km search radius. The closest records are from Condamine State Forest (spanning 2001 to 2012) located 23 km - 34 km to the west (ALA 2022). Surveys suggest the species requires large tracts of forest to occur (Turbill et al. 2008). It occurs in a range of woodlands but the preferred habitat is mallee and <i>Callitris</i> woodlands and habitats that have a distinct canopy with a dense, cluttered understorey (Pennay et al 2011; Turbill and Ellis 2006). The Solar park site is mostly cleared with only small patches of mature or regrowth woodlands. The road corridor is narrow and surrounded by cleared lands. It is unlikely the species would occur.</p>
Squatter Pigeon (southern subspecies) <i>(Geophaps scripta scripta)</i> EPBC Act: V NC Act: V	PMR	<p>Unlikely. Not recorded during the March 2022 survey or the 2018 surveys (Epic 2022). There are no WO records within the 10 km search radius. There are scattered records in the surrounding area including within 25 km to the west and north but all of these are older records (<1984) (ALA 2022). The subspecies occurs mainly in dry grassy eucalypt woodlands and open forests and also inhabits cypress pine (<i>Callitris</i> spp.) and acacia woodlands (Frith 1982). It mostly occurs on sandy sites near permanent water (Blakers et al. 1984). Given the cleared nature of the Project area, there is no suitable habitat present and it is also likely the species has been extirpated from the region. It is not expected to occur.</p>

Species & Status	Source ¹	Nearby Records and Habitat Requirements
Grey Falcon <i>(Falco hypoleucos)</i> EPBC Act: V NC Act: V	PMR	<p>Unlikely. Species occurs in arid and semi-arid inland Australia where annual rainfall is less than 500 mm. Mean annual rainfall in the Miles area is 641 mm (BoM 2022). Younger individuals may disperse outside of this habitat in drought years that follow wet years in inland Australia. Habitat includes sparsely timbered lowland plains, particularly acacia shrublands that are crossed by tree-lined water courses. The species has been observed hunting in treeless areas and frequents tussock grassland and open woodland, especially in winter (Schoenjahn 2018; TSSC 2020). There are four records clustered in the Chinchilla area (approximately 20 km north of the Project), none of which are more recent than 1982. There are no recent records close to the Project and available habitat is unsuitable for the species.</p>
Red Goshawk <i>(Erythrotriorchis radiatus)</i> EPBC Act: V NC Act: E	PMR	<p>Unlikely. There are two undated <i>Birds Australia Atlas</i> records (ALA 2022) from near Chinchilla. The closest is approximately 15 km north of the Project area. The records are from the period 1977-81. The reliability of these records is unknown. The co-ordinates provided are of coarse resolution and there is a 9 km spatial uncertainty for each record. The next closest known record is 72 km to the south-east and is older (<1977). It is from 1994 (ALA 2021). There are no records to the south or west of the Project. The species prefers sites with permanent water, particularly riverine forests (Marchant & Higgins 1993). In partly cleared habitats in eastern Australia it occurs in areas with gorges and escarpments (Garnett et al 2011). There is no suitable habitat present.</p>
Australian Painted Snipe <i>(Rostratula australis)</i> EPBC Act: E NC Act: V	PMR	<p>Unlikely. The two closest known records are both historical <i>Birdlife Australia</i> records (i.e. <1977) (ALA 2022). One is a record from north of Chinchilla and the co-ordinates provided would place it 25 km north of the Project area. It has a spatial uncertainty of 9 km. The co-ordinates of the other record place it in Condamine State Forest (30 km west). Both records have a spatial uncertainty of 10 km. (ALA 2022). Breeding only occurs in swamps with temporary water regimes and complex shorelines forming islands, shallow water, exposed wet mud and dense low fringing vegetation (Rogers et al. 2005; Geering et al. 2007). The closest known location likely to support the species on a regular basis is Lake Broadwater Conservation Park, southwest of Dalby (70 km from the Project area). However, during non-breeding periods the species may be found in dams, waterlogged grasslands and roadside drains (Marchant & Higgins 1993). The only wetland habitat present in the Project area are two farm dams with no vegetative cover present. The species potential use of these sites would be temporary and very sporadic, if it occurs at all.</p>
Curlew Sandpiper <i>(Calidris ferruginea)</i> EPBC Act: CE, M NC Act: E	PMR	<p>Unlikely. The closest known record is from Lake Broadwater Conservation Park, southwest of Dalby and approximately 70 km from the Project area (ALA 2022). The species prefers large waterbodies with shallow muddy edges for foraging. The waterbodies in the Project area are relatively small farm dams and are not suitable for the species.</p>
Glossy Black-cockatoo (south-eastern) <i>(Calyptorhynchus lathami lathami)</i> EPBC Act: V NC Act: V	PMR	<p>Unlikely. No individuals or feeding signs (orts) recorded during the March 2022 survey or the 2018 surveys (Epic 2022). There are no WO records within the 10 km search radius. Several records from the wider area although most are older (<1994). Nearest recent records (2012) are from Condamine State Forest and located 28 km west of the Project (ALA 2022). Typically encountered in small family parties, Glossy Black-Cockatoos are dietary specialists, feeding exclusively on the seeds of <i>Allocasuarina</i> and <i>Casuarina</i> species. In the Project region they are known to feed in Belah (<i>Casuarina cristata</i>) and to a lesser extent on the smaller cones of Buloke (<i>Allocasuarina luehmanni</i>) (GBC 2010). In the Surat region the species tends to occur where there are large areas of continuous forest (Pavey et al. 2016). Belah has a very minor presence in the local landscape with a few individuals observed in the road reserve. These were inspected for feeding signs. The woodlands associated with the Project have been heavily impacted by past clearing and remain fragmented and minor in extent. Species not expected to occur.</p>

Species & Status	Source ¹	Nearby Records and Habitat Requirements
White-throated Needletail <i>(Hirundapus caudacutus)</i> EPBC Act: V NC Act: V	PMR	Potential. Not recorded during the March 2022 survey or the 2018 surveys (Epic 2022). Numerous records in the wider area surrounding the Project (ALA 2022). The nearest record is from 1977-1984 and located within 2.5 km of the Project, although has a 9 km spatial uncertainty applied to it. The species is almost wholly aerial in habits in Australia and occurs over forested and disturbed (cleared) habitats.
Painted Honeyeater <i>(Grantiella picta)</i> EPBC Act: V NC Act: V	PMR	Unlikely. Not recorded during the March 2022 survey or the 2018 surveys (Epic 2022). There are a number of records scattered in the surrounding area although most of these are older (<1984). More recent records include 2001 records from Condamine State Forest (23 km west), 2005 records located 25 km north-west, and a 2015 record 22 km north-east (ALA 2022). The species is associated with the presence of mistletoes (particularly Brigalow <i>(Acacia harpophylla)</i> and other Acacia species but also Buloke). Mistletoes were observed to be scarce in the Project area during the 2022 survey. It is considered unlikely the species would occur.
Golden-tailed Gecko <i>(Strophurus taenicauda)</i> NC Act: NT	WO	Potential. Not recorded during the March 2022 survey but recorded during the 2018 surveys in non-remnant vegetation on the property to the immediate north of the current Project. There are 29 WO records within the 10 km search radius. The species occurs in dry forests and woodlands, particularly ironbark, cypress pine (<i>Callitris</i> spp.) and Brigalow woodlands. It shelters under loose bark and in hollow limbs (Wilson & Knowles 1988) and will also sit in exposed locations during the day (Ehmann 1992; Wilson 2015). Golden-tailed Geckos can be very common in some areas of suitable habitat (EPA 2008). There is some suitable habitat for the species in the Project area (particularly where White Cypress Pine occurs).
Collared Delma <i>(Delma torquata)</i> EPBC Act: V NC Act: V	PMR	Unlikely. The closest known records are from the Bunya Mountains, the closest of which is approximately 94 km to the east. There are no records to the south, north or west within 200 km (ALA 2022). The species is typically associated with west-facing ridgelines with dry open sclerophyll and acacia woodlands with an open midstorey and a ground cover of native grasses, thick leaf litter and abundant loose rocks (Peck 2012). Surface rocks are a significant habitat feature. There is no suitable habitat present and no evidence the species occurs in the area.
Long-legged Worm-Skink <i>(Anomalopus mackayi)</i> EPBC Act: V NC Act: E	PMR	Unlikely. The closest known record is from north of Dalby, 61 km to the east of the Project area. All records are located to the east of the Project area (ALA 2022). The species is mostly found in open grasslands on heavy cracking soil (Wilson 2015) in areas with closely spaced tussock grass that may be prone to inundation (Ehmann 1992). Scattered eucalypts may be present or adjacent (Ehmann 1992; Cogger et al. 1993). In Queensland the species is now largely confined to relict roadside verges (Wilson 2015). Queensland records in the past 20 years have come only from Oakey and the Dalby regions. There is no suitable cracking clay soil present within the Project area. At this stage there is no reason to assume that the species is found in the local area and it is not expected to occur.
Yakka Skink <i>(Egernia rugosa)</i> EPBC Act: V NC Act: V	PMR	Unlikely. The species was not observed during the March 2022 survey or the 2018 surveys. There is an undated Queensland Museum (QM) record located 18 km west of the Project area, although there is a 10 km spatial uncertainty placed on the record. There is a 2019 record near Glenmorgan (87 km south-west) although this has a 30 km spatial uncertainty placed on the record (ALA 2022). The species occurs in a wide variety of habitat types, particularly eucalypt/acacia woodlands and open forests. Yakka skinks usually occur on well-drained, coarse, gritty soils in the vicinity of low ranges, foothills and undulating terrain (Ehmann 1992; Brigalow Belt Reptiles Workshop 2010) but are also found on loam and clay soils (Eddie 2012). The majority of the Project area is cleared. The only wooded vegetation is located along a road reserve associated with the Kogan-Condamine Road. Given the vicinity to a major road this habitat would be marginal for the species at best. Considered unlikely to occur.

Species & Status	Source ¹	Nearby Records and Habitat Requirements
Dunmall's Snake <i>(Furina dunmalli)</i> EPBC Act: V NC Act: V	PMR	<p>Potential. The closest known record is in a 2000 QM specimen from the Old Condamine Highway, approximately 7 km to the west of the Project area (ALA 2022). Recent records exist only from a restricted area of inland south-eastern Queensland between Chinchilla and Morven (Chapple et al. 2019). Preferred habitat appears to be brigalow growing on cracking black clay and clay loams (Cogger et al. 1993). The species has also been found in a wide range of other habitats, including forests and woodlands dominated by other acacias, <i>Callitris</i> spp. and Buloke on dark clay soils and dry sclerophyll open forests and woodlands on sandstone-derived soils (Brigalow Belt Reptiles Workshop 2010). This species is very poorly documented and an absence of records should not be interpreted as a record of absence. Found sheltering under fallen timber and ground litter (Brigalow Belt Reptiles Workshop 2010) and may use cracks in alluvial clay soils (Ehmann 1992). Nocturnal, cryptic, secretive species that is possibly genuinely scarce and very rarely encountered (Wilson 2015; Hobson 2012). Nevertheless, the species is known to occur in forested areas. The Project area is largely cleared of vegetation and the little woody remnant vegetation present is restricted to a road corridor along Kogan-Condamine Road. It is noted preferred habitat (Brigalow or other species on dark clay soils) does not occur within the Project area and is scarce in the surrounds.</p>
Murray Cod <i>(Maccullochella peelii)</i> EPBC Act: V	PMR	<p>Unlikely. There are scattered records from the Condamine River to the north, east and west of the Project. The closest record is from 1972 and located 22 km north of the Project (from the Chinchilla Weir) (ALA 2022). There is no suitable riverine habitat present within or near the Project area.</p>
Pale Imperial Hairstreak <i>(Jalmenus eubulus)</i> NC Act: V	WO	<p>Unlikely. There are two 1998 records located 5 km – 6 km east of the Project along the Kogan-Condamine Road (ALA 2022). This species occurs in stands of mature Brigalow. Despite the close proximity of the records there is no Brigalow present within the Project area. The small patch located adjacent to the Project is considered regrowth and likely unsuitable.</p>
Brigalow Woodland Snail <i>(Adclarkia cameroni)</i> EPBC Act: E NC Act: V	WO PMR	<p>Unlikely. All known records of this species are associated with the Condamine River Floodplain. The nearest record is from 2007 and 14 km north-west of the Project area. There are a number of other records to the north and east. The species is associated with Brigalow on alluvial soils and prefers habitats with a relatively dense canopy cover, fallen timber and stable ground moisture conditions (Stanisic 2011). There is almost no Brigalow habitat associated with the Project area or immediate surrounds and the Project area is largely cleared of woody vegetation. Almost the entire area occurs on soils associated with land zone 5 rather than alluvial soils (land zone 3). The habitat present is unsuitable.</p>
Dulacca Woodland Snail <i>(Adclarkia dulacca)</i> EPBC Act: E NC Act: E	PMR	<p>Unlikely. The nearest records are two 2010 QM records from 38 km to the west of the Project area (ALA 2022). All other records are located further west. The Dulacca Woodland Snail occurs in vine thicket/woodland on rocky outcrops, living under rocks and logs (Stanisic et al. 2010). There is no suitable habitat in the Project area.</p>
<i>Migratory species (EPBC Act: M)</i>		
Fork-tailed Swift <i>(Apus pacificus)</i>	PMR	<p>Potential. There are scattered records in the region surrounding the Project area. The nearest record is from the 1980s and is located 17 km west of the Project (ALA 2022). The species habits are almost exclusively aerial when in Australia and it may occur over forested and heavily disturbed habitats.</p>

Species & Status	Source ¹	Nearby Records and Habitat Requirements
Latham's Snipe (<i>Gallinago hardwickii</i>)	PMR	Unlikely. There are scattered records in the region surrounding the Project area. The nearest record is from 2017 and is located 14.5 km north of the Project (ALA 2022). The species may occur around open waterbodies (including farm dams) where there is available vegetative cover adjacent to the water's edge. Nevertheless, Lake Broadwater, southwest of Dalby and 70 km from the Project area is the nearest location likely to provide habitat suitable for regular occurrence of the species. The farm dams present in the Project area do not have suitable cover for the species.
Double-banded Plover (<i>Charadrius bicinctus</i>)	WO	Unlikely. Of these species there is only a single WO record of Double-banded Plover within the 10 km search area. All of these species largely occur on coastal wetland habitats, although they may also occur on inland wetlands, particularly during migrations to the southern Australian coast. Lake Broadwater, south-west of Dalby and 70 km from the Project area, is the nearest location likely to provide habitat suitable for regular occurrence of these species. The waterbodies in the Project area are relatively small farm dams and are not suitable.
Common Sandpiper (<i>Actitis hypoleucos</i>)	PMR	
Sharp-tailed Sandpiper (<i>Calidris acuminata</i>)	PMR	
Pectoral Sandpiper (<i>Calidris melanotos</i>)	PMR	
Oriental Cuckoo (<i>Cuculus optatus</i>)	PMR	Unlikely. The closest known record is from near Chinchilla, 23 km to the north. The record is from between 1968-1976 and has a spatial uncertainty of 9 km. There is only one other record within 50 km of the Project (to the north-east) and the majority of records are located to the east and associated with the coast and ranges. The species occurs in a range of woodland/open forest habitats. Nevertheless, there is little wooded habitat within the Project area and the Project area is outside the species general range of occurrence. Records of the species only become at all frequent as far east as Toowoomba (ALA 2022).
Satin Flycatcher (<i>Myiagra cyanoleuca</i>)	PMR	Unlikely. There are sparse records in the region surrounding the Project area. The nearest record is from 1970 and is located 21 km west of the Project (ALA 2022). There are numerous records east of the Project area though the reliability of many of these is uncertain given confusion with the much more common Leadbeater Flycatcher (<i>M. rubecula</i>). Satin Flycatcher avoids dry habitats and is virtually confined to the east of the Great Dividing Range (Boles 1988).
Rufous Fantail (<i>Rhipidura rufifrons</i>)	PMR	Potential. There are sparse records in the region surrounding the Project area. The nearest record is from the 1980s and is located 17 km west of the Project (ALA 2022). Rufous Fantail becomes more common east of Chinchilla though there are records further west, most notably in Carnarvon National Park. It would be mostly confined to well-vegetated creek lines, which are absent from the Project area. May occur in the remnant and regrowth woodlands associated the Project area.
Yellow Wagtail (<i>Motacilla flava</i>)	PMR	Unlikely. The closest known record is from Bribie Island, approximately 250 km east of the Project area (ALA 2022). The species occurrence in Australia is almost entirely coastal.

CE = Critically Endangered, E = Endangered, M = Migratory, SLC = Special Least Concern, V = Vulnerable.

4.3.3.3 Pest animals

No feral pest species was recorded in the March 2022 survey. Nine species of feral animal were recorded during the 2018 field survey, two of which were recorded on the property adjacent to the immediate north of the current Project: European Rabbit (*Oryctolagus cuniculus*) and Goat (*Capra hircus*).

5 PROJECT IMPACTS AND RECOMMENDED MITIGATIONS

5.1 Potential Project Impacts

The major predicted impact to environmental values associated with the Project is from vegetation clearing. Given the flat topography of the site, no major earthworks are necessary, with only minor earthworks being required for establishing foundations for project buildings and minor trenching for cabling along the utility corridor (if that option is chosen during the final design phase).

Minor impacts associated only with the Project construction phase may include increased traffic in the local area, potential noise and dust settlement. Nevertheless, given the already heavily impacted landscape associated with the Project surrounds these impacts are considered to be very minor and temporary (during construction). The following sections address potential impacts from the Project.

5.1.1 Vegetation clearing

The clearing of vegetation is the most significant and direct impact of the Project on ecological values of the Project area. Land clearance is listed as a key threatening process under the EPBC Act. The removal of habitat reduces the size of local populations of flora and fauna dependent on that habitat. These impacts are immediate and significant in the short-term. Impacts may persist in the long-term if habitat created during rehabilitation does not closely resemble pre-disturbance ecosystems.

The layout of the Project currently encompasses a total of approximately 168 ha for the Solar park (including access roads) and an additional 6.36 ha within the utility corridor. This assumes much of the Solar park site will be cleared for PV panels (refer **Figure 4**).

It is noted the alignment of the utility corridor has changed since the site survey was carried out in March 2022. The revised section located within Lot 3 on RG569 was not surveyed. The alignment passes through 0.86 ha of vegetation mapped (under current State mapping) as RE 11.5.1 within Lot 3 on RG569. An analysis of aerial imagery shows that much of the mapped area appears to be cleared of vegetation (refer examples in **Plate 1** below). A conservative approach identified approximately 0.55 ha of cleared habitat with a resulting estimated impact to 0.33 ha of RE 11.5.1 within Lot 3 on RG569.



Plate 1. Examples of cleared habitat within mapped vegetation on Lot 3 on RG569

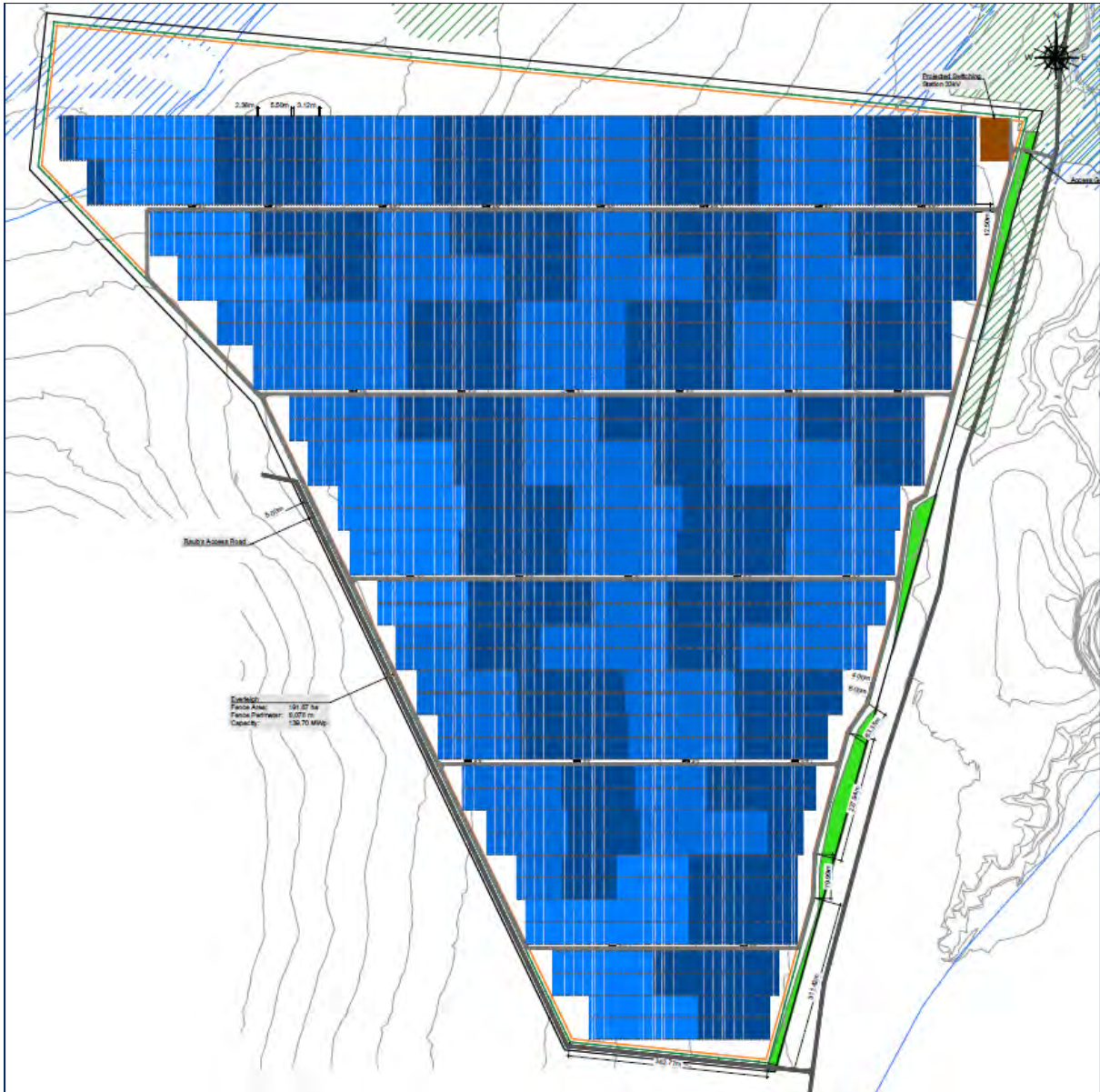
Clearing of field-verified vegetation comprises 5.595 ha of remnant and 8.33 ha of regrowth vegetation communities. Clearing of remnant vegetation is largely associated with the Project utility corridor within the road reserve. The extent of clearing within the road reserve has been reduced by close to 50% (avoiding 4.145 ha from the originally proposed 8.43) through refinement of the final Project design. Clearing of regrowth

woodland vegetation is associated with the Solar park footprint. Where possible, Project infrastructure has been located away from sensitive ecological values (identified in **Table 5**) is provided in **Table 6**.

Table 6. Predicted field-verified vegetation clearing for Project infrastructure

RE	VM Act status	Potential threatened species habitat	Proposed impact area
11.3.18 (remnant and HVR)	Least concern	<i>Homopholis belsonii</i> Koala (secondary foraging habitat) Dunmall's Snake (remnant only – low quality habitat)	0.145 ha (remnant) (decrease of 950 m ² on the original Project design) 0.63 ha (HVR)
11.3.25 (remnant)	Least concern	Koala (primary foraging habitat)	1.31 ha
11.5.1a (HVR)	Least concern	Golden-tailed Gecko Koala (secondary foraging habitat)	6.37 ha
11.5.1 (remnant and HVR)	Least concern	Golden-tailed Gecko Koala (secondary foraging habitat) Dunmall's Snake (remnant only – low quality habitat)	4.14 ha (remnant) (decrease of 4.05 ha on the original Project design) 1.33 ha (HVR)

Figure 4. Indicative layout of PV panels within Solar park site



5.1.2 Habitat fragmentation and connectivity

Highly fragmented habitats support fewer species than connected blocks of habitat of the same size. This is because fragmentation restricts dispersal of fauna and plant seeds between available habitat. The impacts of habitat fragmentation depend on the degree to which dispersal is inhibited by habitat gaps, the size of the remaining habitat fragments, and ecological attributes of the species.

The Project infrastructure has been situated on a property which is already largely cleared of vegetation. The majority of the Solar park infrastructure intersects cleared grazing land with some small, patchy areas of regrowth vegetation communities. As such, the Solar park does not contribute to local habitat fragmentation. Only the utility corridor impacts remnant vegetation.

The utility corridor runs along the northern edge of existing vegetation within the Kogan-Condamine Road corridor. As such, the clearing of this vegetation will not lead to increased fragmentation. The Kogan-Condamine Road already fragments habitat in the area.

5.1.3 Fauna mortality

Clearing of vegetation for the Project presents a risk of direct mortality or injury to fauna. Fauna of low mobility are at risk of injury or death from heavy machinery and vehicular movements during the construction of the Project and to a lesser extent during operations. Additional impacts include the trapping of fauna in trenches during installation of the utility corridor (if trenching is required following the final Project design). Given the small scale of clearing of woody vegetation required for the Project these risks are considered minimal and manageable through basic mitigation measures.

5.1.4 Airborne dust

Earthworks and vehicular traffic associated with Project construction and operation can generate substantial amounts of dust during dry weather. Increased dust can result in respiratory issues in fauna, adverse impacts on plant photosynthesis and productivity (Chaston and Doley 2006) and changes in soil properties ultimately impacting plant species assemblages (Farmer 1993). Evidence of potential impacts on entire vegetation communities is scarce. Many studies focus on specific impacts to single species. Research on a threatened flora species in a semi-arid environment in Western Australia found negative impacts on plant health (mortality) as a result of a range of dust accumulation loads caused by mining activity (Williams and Yates 2018).

The pronounced wet and dry seasons associated with the Project area (inland southern Brigalow Belt) may make vegetation in the area less susceptible to the impacts of dust. This is because most or all annual growth occurs during a period of the year when rainfall is highest. This coincides with the time of year when dust is least problematic, as rain inhibits the dispersal of dust in the air, and washes dust from leaves.

Watering of tracks and exposed soil is expected to be undertaken during the construction phase, as required to reduce dust levels, particularly in the dry season.

5.1.5 Fire

The Project is located within a mosaic of cleared grazing lands and patchy tracts of sclerophyll woodlands, which have potential to be impacted by accidental high-intensity fires caused by Project activities. Fire hazard mapping for Queensland indicates remnant and regrowth woodlands associated with the Project area as having a 'medium potential bushfire intensity'.

As a requirement of the Project, the outbreak of fire will be managed to protect Project infrastructure and personnel. Fire breaks will be implemented and maintained around the site perimeter. Fire has historically been managed in the area as part of grazing pasture management. The Project is not expected to greatly alter current fire regimes.

5.1.6 Changes to surface water hydrology and quality

Stormwater runoff and changes to drainage flow paths have the potential to impact on vegetation health and wildlife. The solar park area is flat and is intersected by two ill-defined drainage lines, one of which is dammed. As the solar panels will be mounted on steel poles in rows such that the panels are elevated above the existing ground level, no major changes to ground contours and drainage flow paths are planned. In addition, after construction the site will be planted with selected pasture grasses to provide groundcover (increased infiltration) to reduce overland flow. Some reshaping of contour banks and catch drains will be undertaken to ensure contingency during major runoff events and stop soil erosion. Due to the minimal earthworks and

natural pervious ground surface, there will be no material increase in stormwater discharge and no adverse impact on stormwater characteristics are expected onsite or on adjacent properties.

Potential sources of contaminants may include runoff from chemical and fuel/oil storage areas and general wastewater from vehicle/machinery washdown areas during the construction phase of the Project. The extent of any impact will of course be dependent on the size of the spill and the volume of water (if any) in the waterway at the time, thereby influencing the length of stream potentially impacted. Nevertheless, despite the potential impacts broadly described, it is noted the drainage lines in the Project area are highly ephemeral and are considered to be of low value.

5.1.7 Weeds and pest animals

Introduced weeds have the potential to impact on terrestrial and aquatic ecological values as native flora can become displaced through competition with weed species, and adversely affected by browsing and soil trampling caused by feral herbivores. Native fauna populations, particularly small to medium sized species, may be impacted by predation from introduced carnivores such as feral cats (*Felis catus*) and Red Fox (*Vulpes vulpes*). These are indirect impacts which may not manifest themselves in the short-term and are likely to be exacerbated by existing activities on adjacent lands (such as agriculture). Introduced weed species are already present to some extent throughout the Project area. Introduced grass species were dominant in some areas on both the Solar park site and in the utility corridor. Mother-of Millions and Prickly pear species are listed as a WoNS and under the State's Biosecurity Act and were recorded within the Project area.

The following activities associated with the Project have the potential to promote the proliferation of weeds and pests within the Project area, or introduce new weeds and pests from surrounding areas:

- the use of construction machinery, plant and materials sourced from outside the region and increased vehicular traffic in general may introduce and spread weed seeds if biosecurity hygiene measures are not in place
- inappropriate disposal and storage of putrescible wastes may attract feral animals.

The pests and weeds currently occurring within the Project area are not expected to significantly proliferate in response to the Project activities. The main threat is the introduction of new weeds to the area via contaminated vehicles or soils. Impacts will be managed by implementing biosecurity hygiene and control measures during Project activities.

5.2 Recommended Mitigation Measures

The proponent commits to a range of measures to avoid and/or minimise impacts to the ecological values associated with Project area. In the first instance, the final design process for the Project will reduce the area of impact to avoid areas representing habitat for threatened species as much as is feasible for the construction of infrastructure.

Following discussions with DCCEEW regarding the footprint of the Project the Proponent has already implemented a number of design optimisation opportunities including the following:

- Realignment of the utility corridor design has relocated the eastern portion of the utility corridor further west avoiding any tree clearing of better quality habitat associated with a creek line to the immediate north-east of the solar park (east of Clynes Road). The utility corridor now traverses directly north from the Solar park site through non-remnant lands.
- Realignment of the utility corridor design to exit the road reserve after crossing Avenue Road avoiding any tree clearing of better quality habitat associated with the road reserve. The utility corridor now runs to the north from the road reserve through lands which are largely cleared.

- The utility corridor footprint has been reduced from an original width of 15 m down to 9.2 m wide. The proponent has recently undertaken further site visits and has considered onsite soil conditions to reduce the number of conduits required to export the electricity.

These optimizations will improve the environmental outcome by reducing the utility corridor footprint by more than 50%. The proponent is further developing the detailed design and will ensure the final design will comply with the environmental outcomes expressed in this report and is committed to further reducing the environmental impact throughout the detailed design development process as much as possible by pursuing the additional mitigation opportunities such as:

- Designing the utility corridor at different voltages, alignment, width and/or technical solution (i.e. overhead vs underground) so that the project meets, or better the environmental outcomes and objectives expressed in this ecology report.

Where avoidance is not possible, a range of mitigation strategies will be implemented under an overarching Project Environmental Management Plan (EMP). The majority of any potential impacts will be associated with the Project construction phase. Operational impacts are considered unlikely with most activities associated with routine maintenance of the PV array installation.

The Project EMP will comprise a range of measures that will mitigate potential impacts to ecological values. A number of recommended mitigation measures are provided in **Table 7**.

Table 7. Recommended environmental mitigation measures for Project

Impact	Recommended management measure	Timing
Vegetation clearing	Where possible the overall Project footprint will be refined and minimised further during the final design process	Pre-construction
	The Project will develop an EMP prior to works being carried out. Vegetation clearing protocols will be established within the EMP.	Pre-construction
	Project employees and contractors should be made aware of environmental obligations and compliance requirements through a site induction	Project induction
	Vegetation clearing extents will be clearly demarcated with flagging or bunting prior to clearing to limited the area safely and reasonably required for permanent and temporary works	Prior to clearing
	Fauna spotter-catchers will carry out a pre-clearing survey of mature (woody) vegetation to check for fauna 'breeding places' and potential Koala (bird nests and tree hollows). Measures will be in place within the EMP to allow for the safe removal of any fauna potentially present.	Prior to clearing
	Fauna spotter-catchers will be present during clearing of mature vegetation and monitor vegetation clearing extents to ensure clearing does not extend beyond demarcated area and complies with EMP	During clearing
	Disturbed areas that are no longer required post-construction will be immediately reinstated to a non-polluting and stable landform.	Following construction
Fauna mortality	Fauna spotter-catchers will inspect mature (woody) vegetation prior to vegetation clearing. Fauna habitat shelter features (large hollows and large woody debris) will be checked and/or clearly marked where they are unable to be accessed/inspected prior to tree felling.	Prior to clearing
	EMP will incorporate procedures for tree felling that will minimise potential impacts on resident fauna where habitat shelter features are identified.	Prior to clearing
	Fauna spotter-catchers will inspect identified shelter features following clearing for resident fauna	Prior to clearing

Impact	Recommended management measure	Timing
	Should a Koala be identified within the clearing area works will cease until the individual has been allowed to leave the area of its own volition. The fauna spotter-catcher will monitor the location of the individual.	During clearing
	Procedures will be in place where injured fauna are encountered during clearing works. Local wildlife carer and/or veterinarian will be identified prior to works being carried out and be notified that clearing works are being carried out (prior to clearing)	Ongoing
	Onsite speed limits will be established throughout Project area to limit the potential for road collisions	Ongoing
Airborne dust	Monitoring of weather conditions will be carried out to inform Project activities and planning during high-wind weather conditions.	Ongoing
	Ensure employees made aware of potential dust generating activities and mitigation and management measures to prevent nuisance	Ongoing
	Onsite speed limits will be established to minimise dust caused by vehicle movements	Ongoing
	Dust from areas likely to be a source of airborne dust (such as tracks) will be suppressed during construction using water trucks/wetting to keep dust related impacts to a minimum	During construction - as required
Weeds and pests	The EMP will detail all required management measures and monitoring procedures for potential weed species. Weed control strategies will be developed in line with <i>Western Downs Regional Council biosecurity plan (WDRC 2017)</i>	Pre-construction
	Vehicle wash-downs to be required for all new vehicles (including earthmoving and other construction machinery) entering the Project area	Ongoing
	Disposal and storage of putrescible wastes must be undertaken appropriately to ensure feral animals aren't attracted to the Project area	Ongoing
	Storage of construction/operation materials carried out in a manner so as to not encourage the establishment of resident pest fauna	Ongoing
	Regular monitoring of weed and pest occurrence in association with Project works areas and in response to complaints from adjacent landowners	Ongoing
Fire	Monitoring of weather conditions will be carried out to inform Project activities and planning during high fire-risk weather conditions	Ongoing
	The Project will maintain communications with local representatives for the Queensland Fire and Emergency Services (QFES) regarding Project activities and bushfire hazard conditions	Ongoing
	Appropriate fire breaks will be maintained around above ground Project infrastructure	Ongoing
	Site will include designated smoking areas	Ongoing
	Onsite fire-fighting equipment will be regularly maintained	Ongoing
Surface water	An Erosion and Sediment Control Plan (ESCP) will be developed and implemented prior to construction commencing. The ESCP will be developed by a Certified Professional in Erosion and Sediment Control and be in accordance with the International Erosion Control Association Best Practice Erosion and Sediment Control (2008).	Pre-construction
	Spill response equipment (e.g.s booms and absorbent materials) will be available at refuelling areas and other sites (where relevant). Staff will be trained in the appropriate use of spill response equipment.	Ongoing
	Dust accumulated on PV arrays will be cleaned with water only wherever possible	Operations

Significant Impact Assessment - MSES and MNES

This section provides an assessment of the potential for significant impacts from the Project on relevant MSES and MNES as identified in **Section 4**.

5.2.1 Matters of State Environmental Significance

With regard to MSES there is a single matter present within the Project footprint: regulated vegetation (remnant) located within a defined distance from the defining banks of a relevant watercourse identified on the VM Act watercourse and drainage feature map.

The relevant guideline for assessing significant residual impacts is the *Significant residual impact guideline for MSES and prescribed activities assessable under the Sustainable Planning Act 2009* (MSES Guideline) (DSDIP 2014). The current Project layout will require clearing of Least Concern remnant vegetation across three 1st order drainage lines and one 2nd order drainage line for the 9.2 m wide utility corridor. For the region the 'defined distance' from these watercourses is 25 m (as per the Queensland offsets policy). The total clearing of this MSES for the Project would require clearing of 0.2 ha. The MSES Guideline states "clearing of 'least concern' RE not containing essential habitat up to 1 ha for lineal infrastructure" does not constitute a likely significant residual impact on this MSES.

It is noted that although Golden-tailed Gecko has some potential to occur, the species is only listed as Near Threatened under the NC Act. Under the Environmental Offsets regulation 2014 a species is only listed as a MSES when 'essential habitat' for the species has been mapped for the area of interest.

5.2.2 Matters of National Environmental Significance

The EPBC Act defines and protects nine matters considered to be of MNES. Under Part 3 of the EPBC Act, a person must not undertake an action that will have, or is likely to have, a significant impact on a protected matter, without approval from the Minister. An assessment of the potential for significant impacts (SI) resulting from the Project activities was carried out on MNES considered as possibly occurring within the Project area (refer **Table 4** and **Table 5**). It is noted no species was identified as known or likely to occur. Fauna and flora species deemed as only possibly occurring have potential habitat which is limited in value present within the Project area and no record of occurrence within close vicinity to the Project. Any Project impacts on these species are considered to be minor in extent and managed under the general mitigation measures outlined in **Section 5.2**. Nevertheless, a comprehensive approach has been taken and an assessment of the potential impact on these species has been carried out.

The SI assessments have been carried out in accordance with the following DCCEEW guidelines:

- *MNES significant impact guidelines 1.1* (MNES Guidelines) (DotE 2013a)
- Referral guideline for 14 birds listed as migratory species under the EPBC Act (DotE 2015)

Five threatened or migratory fauna species and one flora species listed under the EPBC Act (and NC Act) have some potential to occur in the Project area comprising the following species:

- Potential to occur:
 - Koala – Endangered
 - Dunmall's Snake - Vulnerable
 - White-throated Needletail - Vulnerable and Migratory
 - Fork-tailed Swift – Migratory
 - Rufous Fantail – Migratory
 - Belson's Panic (*Homopholis belsonii*)

Both White-throated Needletail and Fork-tailed Swift are almost entirely aerial in their foraging and resting habits when in Australia (i.e. they are rarely recorded roosting). Both are found over a wide variety of habitat, including open areas, modified land and the ocean but most often over wooded areas (Higgins 1999). Foraging for invertebrates occurs at heights from less than 1 m (Higgins 1999) and at least as high as 1,700 m (Tarburton 2015). Both are widespread in eastern Australia in the warmer months and some may over-winter (Higgins 1999). The airspace above the Project area will only comprise ephemeral foraging habitat. The Project requires only very minor clearing of mature woodlands and there is abundant woodland habitat in the surrounding area. The Project activities are not considered to be of a nature that would result in more than a very minor impact (if any) on either species. As such, an assessment for SI on White-throated Needletail or Fork-tailed Swift under the MNES Guideline has been deemed unnecessary.

The potential impact on MNES species would be from vegetation clearing for construction of the Project. Indirect impacts to threatened species or potential habitat, particularly following the completion of construction, are expected to be very minor (at worst) and manageable with the implementation of simple mitigation measures.

The SI assessments including species profiles are collated in the following sections.

5.2.2.1 Koala – Endangered

Ecology

Koalas have a distinct association with eucalypt woodland and forest habitats comprising suitable food trees, mainly of the following genus: *Eucalyptus*, *Corymbia*, *Angophora* and *Melaleuca* (Moore and Foley, 2000; and Martin et al. 2008). They are not necessarily restricted to bushland areas and are known to occur and breed where suitable tree species occur within farmland and the urban environment (Dique et al. 2004). Similarly, movement is not confined to vegetated corridors, as they also move across cleared rural land and through suburbs (Martin et al. 2008). They may use a variety of trees, including many non-eucalypts, for feeding, shelter and breeding purposes (Dique et al. 2004; Martin et al. 2008).

They are known to have localised and variable preferences throughout their range, favouring some tree species over others (Pahl and Hume 1990). At the local level they are known to prefer individual trees. It has been suggested this could be a response to a number of factors such as high leaf moisture and/or nitrogen content, and low levels of toxic chemical compounds which are expressed by eucalypts as a result of herbivory (Pahl and Hume 1990; Hume and Esson 1993; and Moore and Foley 2000).

Breeding occurs in spring / summer when males become territorial. Young permanently leave the pouch after seven months but may continue to ride on the mothers back until approximately 12 months. After this time adolescent females may remain in the natal habitat. Males generally disperse to new territories from one to three years of age (Dique et al. 2003; and Martin et al. 2008).

Association with Project area

Koalas, or signs of presence (scats or tree scratches), have not been recorded within or near the Project area during the Epic survey in August 2018 or the current survey in March 2022. There is a single WO record within the 10 km database search radius, although the location of this record is unknown. There are several ALA database records in the surrounding area, particularly in the State Forests to the east and south-east between the Project area and Dalby. The nearest record is from 1992 and is 14.6 km east of the Project. The nearest recent record is from 2012 and located in Condamine State Forest, 28 km to the west (ALA 2022).

In the region of the Project area River Red Gum is a primary, or preferred, forage tree species of Koala (AKF 2015). Remnant eucalypt woodlands occur along the utility corridor. The canopy of this habitat is dominated by Poplar Box. Poplar Box is also a forage tree species for Koala, although is less preferred. The only habitat featuring the preferred forage tree species from the region (River Red Gum) within the Project area is a narrow

strip of tall regrowth in the north-east corner of the Solar park site. No evidence of the species presence (individuals, scats or scratches) was observed during a targeted search of this area, or during searches elsewhere throughout the Project area.

DCCEEW approved species documents

The *National recovery plan for the Koala Phascolarctos cinereus combined populations of Queensland, New South Wales and the Australian Capital Territory* (the Recovery plan) (DAWE 2022c) was recently approved by DAWE on 8th April 2022. The Recovery plan notes the following threats to the species:

- Habitat loss, fragmentation and modification including the impact of native forestry activities
- Drought, extreme heat events including associated with climate change
- Altered fire regimes
- Mortality from dog attack and vehicle collisions
- Diseases including Chlamydia and Koala retrovirus
- Plant pathogens impacting Koala habitat such as Myrtle Rust

The *Conservation Advice for Phascolarctos cinereus (Koala) combined populations of Queensland, New South Wales and the Australian Capital Territory* (DAWE 2022d) does not identify important populations but notes (with relevance to Queensland) the priority management actions associated with the south-east Queensland population and that sub-populations on the western edge of the species range may be ‘climate-sensitive’ and comprise genes adapted to environmental extremes which may prove critical to populations elsewhere in the future through translocation programs.

The Recovery plan does not specifically identify any areas comprising ‘valued populations’ of Koala but does note an imperative to conserve populations:

- That may act as source populations to adjacent areas
- Occur in areas of climatic refugia (specifically from droughts and heat waves)
- Genetically diverse
- Contain adaptive genes to potential environmental stressors or
- Are geographical or environmental outliers

Koalas have not been observed in or near the Project area either currently or recently. The woodlands associated with the area comprise widespread communities much of which is disturbed regrowth and located within a heavily cleared landscape. There is no reason to believe this habitat would serve as a climate refuge or that a population (should one occur) would be part of a valued population.

Similarly, the Recovery plan does not provide a clear description of ‘habitat critical to the survival’ of Koala. It does note that in order to halt the decline and promote recovery of the species the following activities should be avoided:

- Clearing of habitat used by Koalas
- Reducing connectivity between patches used by Koala
- Clearing habitat used during extreme events
- Avoiding activities that will expose Koalas to additional threats

The Project area is largely heavily disturbed by past vegetation clearing and there is no evidence that Koala uses habitat within the Project area or surrounds. The Project will not erect structures that will provide an impermeable barrier to movement across the landscape, although it is noted that habitat to the east and north of the Project has already been heavily cleared of woody vegetation. The Project will not increase additional threats to the species in the area. The species has not been observed in the Project area and there is no reason to believe the habitat present would be used during an extreme heat event, or that there would be habitat critical to the survival of the Koala present within the Project area or the immediate surrounds.

Table 8 provides an assessment of the potential for significant impacts on Koala from the Project activities using the assessment criteria for Endangered species outlined in the MNES Guidelines.

Table 8. Significant impact criteria assessment: Koala

Criteria	Endangered species assessment
Lead to a long-term decrease in the size of a population of the species	<p>The species (including any signs of presence) was not recorded within the Project area or surrounds despite targeted surveys (including spotlighting and habitat searches) being carried out in 2018 and 2022. The closest known database record to the Project area is 14.7 km away from the site. The Project area is largely cleared of remnant vegetation which may support the species. There is no evidence the small area of remnant vegetation associated with the Project area would support all or part of a population of Koala. There is extensive habitat in better condition in the wider area, particularly to the west of the Project where contiguous woodlands remain in and surrounding Condamine State Forest.</p> <p>Preferred forage tree species in inland Queensland includes habitat supporting River Red Gum. The Project proposes to clear 1.31 ha of such habitat within the Solar park site. The remaining habitat that will be cleared is comprises Poplar Box as a canopy species. Poplar Box occurs in varying density in these areas with some patches dominated by lower storey species such as <i>Callitris glaucophylla</i> and <i>Allocasuarina luehmanii</i>. Polar Boxes is less preferred for foraging in the region although Koala is known to feed on it. The Project proposes to clear 4.285 ha of remnant Poplar Box woodland and a further 8.33 ha of regrowth vegetation communities. The main vegetation present (RE11.5.1/a) is widespread in the surrounding area and region. The clearing within the utility corridor will be linear (9.2 m wide clearing area) and will leave identical habitat adjacent to the Project. The clearing will be carried out along the existing edge of the road corridor vegetation (i.e. fragmentation will not occur). There is abundant similar habitat in the surrounding area that will remain undisturbed. Vegetation clearing within the Solar park site will remove scattered patches of potential forage trees (Poplar Box, River Red Gum and other eucalypts), although much of the regrowth tree species within the area are not Koala forage trees (being dominated by <i>Callitris glaucophylla</i> and <i>Allocasuarina luehmanii</i>). Nevertheless, this habitat is widespread in the region and considered marginal to the species presence in the area.</p> <p>A fauna spotter is recommended to be present during vegetation clearing within suitable habitat for Koala to eliminate any potential impact on Koala individuals (should any be located at the time). Indirect impacts to Koala habitat from Project activities (such as noise, lighting and dust settlement) will be temporary and have a very minor impact at worst. The project is considered highly unlikely to lead to a long-term decrease in the size of a population of Koala.</p>
Reduce the area of occupancy of a population	<p>The species is not known from the local area associated with the Project. There is no evidence the small area of remnant vegetation associated with the Project area would support all or part of a local population of Koala. The Project area is largely cleared of remnant vegetation which may support the species. The Project proposes to clear 4.285 ha of low potential habitat for Koala within the utility corridor, as well as scattered patches and individual potential forage trees within the Solar park site. The project is considered highly unlikely to reduce the area of occupancy of a population of Koala.</p>
Fragment an existing population into two or more populations	<p>There is no evidence the minor area of remnant vegetation associated with the Project area would support all or part of a local population of Koala. The Project area is largely cleared of remnant vegetation which may support the species. The Kogan Condamine Road already intersects the Project area. The Project will not fragment an existing population of Koala.</p>
Adversely affect habitat critical to the survival of the species	<p>Critical habitat for Koala is not considered to be present. The Project proposes to clear 4.285 ha of low potential habitat for Koala within the utility corridor, as well as scattered patches and individual potential forage trees within the Solar park site. There is abundant identical habitat in the surrounds. The Project will not adversely affect habitat considered critical to the survival of Koala.</p>

Criteria	Endangered species assessment
Disrupt the breeding cycle of a population	There is no evidence the small area of remnant vegetation associated with the Project area would support all or even part of a local population of Koala. It is considered unlikely the Project will disrupt the breeding cycle of an important population of Koala.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	It is not known if the species occurs within the Project area. There may be suitable foraging habitat for Koala along the utility corridor within the Project area. The Project proposes to clear 4.285 ha of low potential habitat for Koala within the utility corridor, as well as scattered patches and individual potential forage trees within the Solar park site. The Project will not impact the availability or quality of habitat to the extent that the species is likely to decline.
Result in invasive species that are harmful to an endangered species becoming established in the endangered species habitat	Weed invasion is not considered a threat to the species. Feral and domestic dogs are a known threat to the species and are likely present to some degree in the landscape. Myrtle rust and <i>Phytophthora cinnamomi</i> may impacts a range of eucalypt species and may be a potential threat to habitat for Koala (DotE 2014). Weed and pest management measures will be developed for the construction and operational phases of the Project. Project activities do not require the importation of soils or other biological matters into the Project area. The Project will not result in the introduction of a novel invasive species, disease/pathogen, or proliferation of an existing invasive species in the Project area or surrounds.
Introduce disease that may cause the species to decline	
Interfere substantially with the recovery of the species	<p>The Recovery plan outlines a number of recovery strategies and actions for the species including the following:</p> <ul style="list-style-type: none"> • Identify nationally important populations and strategic areas for restoration, climate/fire refugia and movement corridors • Coordinate research programs including implementing a national monitoring program • Increase the area of protected Koala habitat through incorporation into State protected areas and on private lands and improve land management practises • Ensure koala conservation is integrated into policy, and statutory and land-use plans • Develop and implement strategic restoration of habitat including through NRM and landcare groups and develop revegetation and restoration guidelines • Develop a strategy of active management practices Koala metapopulations including monitoring population health, fire management, and guidelines for managing Koala translocations and post-care release of individuals (DAWE 2022b) <p>It is uncertain to what extent the species actually occurs in the local area (if at all). The majority of the Project area has been heavily impacted by previous grazing practices. Should the species occur within or near Project works any impact will be very minor, and is considered unlikely to interfere substantially with the management actions identified above or the recovery of the species.</p>
Assessment result	Based on the MNES Guideline assessment criteria outlined above it is considered very unlikely the minor vegetation clearing associated with the Project (in an area where the species has not been identified as occurring) will cause a significant impact on Koala (should it occur in the Project area).

5.2.2.2 Dunmall's Snake – Vulnerable

Ecology

Dunmall's Snake is a nocturnal, cryptic, secretive species that is very rarely encountered (Wilson 2015; Hobson 2012). The species has been found sheltering under fallen timber and ground litter (Cogger et al. 1993; Brigalow Belt Reptiles Workshop 2010) and may use cracks in alluvial clay soils (Ehmann 1992). Little is known of its ecology, but it reportedly preys on skinks and geckos (Shine 1981; Wilson & Swan 2017).

The species is confined to the Brigalow Belt bioregion of southern Queensland and north-east New South Wales. Most records are from the Dalby-Tara area of the Darling Downs (Hobson 2012). The species has been found in a wide range of habitats, including forests and woodlands dominated by Brigalow or other acacias (*A. burowii*, *A. deanii*, *A. leiocalyx*), *Callitris* spp. or Buloke (*Allocasuarina luehmannii*) on black alluvial cracking clay and clay loams (Covacevich et al. 1988; Stephenson & Schmida 2008; Brigalow Belt Reptiles Workshop

2010; Hobson 2012). It also occurs in *Corymbia citriodora*, *Eucalyptus crebra* and *E. melanophloia*, White Cypress Pine (*Callitris glaucophylla*) and Buloke open forest and woodland on sandstone-derived soils and there is a record from the edge of dry vine scrub (Stephenson & Schmida 2008, Brigalow Belt Reptiles Workshop 2010). However, preferred habitat appears to be Brigalow growing on cracking black clay and clay loams (Cogger et al. 1993), with the majority of records from between 200 to 500 m above sea level (Hobson 2012). Recent records exist only from a restricted area of inland south-east Queensland between Chinchilla and Morven and all records in the past 20 years have been from remnant vegetation (Chapple et al. 2019).

Association with Project area

Dunmall's Snake was not recorded within or near the Project area during the Epic survey in August 2018 or the current survey in March 2022. Not recorded during spotlighting surveys (2018 only) or daylight habitat searches throughout the Project area. There is a single ALA record located approximately 7 km west of the Project area, labelled as collected from the 'Old Condamine Highway'. Further afield there is a 1978 Queensland Museum record from Miles (46 km north-west of the Project) and a 2009 record located 56 km west. There is a cluster of records from the Glenmorgan area (over 90 km south west of the Project). The species is mapped as 'likely to occur' in the Project area based on species mapping within the *Draft referral guidelines for the nationally listed Brigalow Belt reptiles* (Referral guidelines) (DSEWPaC 2011).

Remnant eucalypt woodlands occur along the utility corridor. There is no Brigalow within the Project footprint but White Cypress Pine and Buloke do occur. There is none of the preferred cracking clay soils or sandstone derived soils in either the Solar park site or the utility corridor. The entire area is dominated by vegetation on land zone 5 (loamy and sandy plains and plateaus). Shelter elements (i.e. fallen woody debris) in much of the Project area is scarce or non-existent due to previous tree clearing. A conservative approach has been taken to the assessment. While the species possibly occurs, the habitat present is considered to be of low quality.

DCCEEW approved species documents

There is no Commonwealth adopted recovery plan or threat abatement plans applicable to this species. The Approved Conservation Advice (DotE 2014) for the species notes the following potentially threatening processes considered relevant to Dunmall's snake:

- Habitat loss and fragmentation due to land clearing in core areas of the Darling Downs
- Habitat degradation from overgrazing and loss of fallen timber
- Predation by feral animals such as foxes, cats and pigs

There are no identified important populations or definitions of habitat critical to the survival of the species. The Referral guidelines considers the presence of important habitat for this species a surrogate for an important population of the species. Important habitat is described as 'suitable habitat' within the species mapped known or likely distribution. The Project is mapped as occurring within the known/likely distribution. Nevertheless, the presence of suitable habitat within the Project is questionable given preferred habitats are not present (i.e. habitats on dark cracking clay soils or sandstone derived soils) and fallen timber was observed to be scarce within the Project area. The Project area is not considered to comprise important habitat for the species.

Table 9 provides an assessment of the potential for significant impacts on Dunmall's Snake from the Project activities using the assessment criteria for Vulnerable species outlined in the MNES Guidelines.

Table 9. Significant impact criteria assessment: Dunmall's Snake

Criteria	Vulnerable species assessment
<p>Lead to a long-term decrease in the size of an important population of the species</p>	<p>The species was not recorded within the Project area or surrounds despite targeted surveys (including trapping, spotlighting and habitat searches) being carried out in 2018 and 2022. The closest database record to the Project area is 7 km west of the site. The Project is located within an area in which the species is considered likely or known to occur, however important habitat for the species is not considered to be present. Nevertheless, the Solar park site is almost entirely cleared of remnant vegetation which may support the species. Remnant vegetation occurs within the utility corridor although not on the species preferred soil type (dark cracking clays or sandstone-derived soils). Due to previous tree clearing fallen timber is relatively scarce throughout.</p> <p>The Project proposes to clear 4.285 ha of low-value potential remnant habitat for Dunmall's Snake within the utility corridor and access entrances to the Project. This habitat is dominated by Poplar Box on sandy soils. The clearing for the utility corridor will be linear (9.2 m wide clearing area) and will leave identical habitat adjacent to the Project. The clearing will be carried out along the existing edge of the road corridor vegetation (i.e. habitat fragmentation will not occur). There is abundant similar habitat in the surrounding area that will remain undisturbed. Vegetation clearing within the Solar park site will remove scattered patches of regrowth vegetation on sandy soils which are very unlikely to support the species. There is extensive similar habitat in better condition in the wider area, particularly to the west of the Project where contiguous woodlands remain in and surrounding Condamine State Forest.</p> <p>A fauna spotter is recommended to be present during vegetation clearing within remnant habitat. Pre-clearing surveys to be carried out to check potential refuge sites for the species (large woody debris) and ensure no harm to any individuals (should the species be present). Indirect impacts from Project activities (such as noise, lighting and dust settlement) will be temporary and have a very minor impact at worst. The project is considered unlikely to lead to a long-term decrease in the size of an important population of Dunmall's Snake.</p>
<p>Reduce the area of occupancy of an important population</p>	<p>The species is not known from the local area associated with the Project. Important habitat for the Dunmall's Snake is not considered to be present. The Project proposes to clear 4.285 ha of low-value potential remnant habitat for Dunmall's Snake within the utility corridor and access entrances to the Project. This habitat is dominated by Poplar Box on sandy soils. The clearing for the utility corridor will be linear (9.2 m wide clearing area) and will leave identical habitat adjacent to the Project. The clearing will be carried out along the existing edge of the road corridor vegetation (i.e. habitat fragmentation will not occur). There is abundant similar habitat in the surrounding area that will remain undisturbed. The project is considered unlikely to reduce the area of occupancy of an important population of Dunmall's Snake.</p>
<p>Fragment an existing important population into two or more important populations</p>	<p>The species is not known from the local area associated with the Project. Important habitat for the Dunmall's Snake is not considered to be present. Remnant habitat in the Project area is dominated by Poplar Box on sandy soils with scarce fallen woody debris which is not preferred habitat. Vegetation clearing will be linear (9.2 m wide clearing area) and will leave identical habitat adjacent to the Project. The clearing will be carried out along the existing edge of the road corridor vegetation (i.e. habitat fragmentation will not occur). The Kogan-Condamine Road already intersects the Project area. The Project will not fragment an important population of Dunmall's Snake.</p>
<p>Adversely affect habitat critical to the survival of the species</p>	<p>Critical habitat for Dunmall's Snake is not considered to be present. Remnant habitat in the Project area is dominated by Poplar Box on sandy soils with scarce fallen woody debris which is not preferred habitat. The Solar park site is almost entirely cleared of remnant vegetation which may support the species. The Project proposes to clear 4.285 ha of low-value potential remnant habitat for Dunmall's Snake within the utility corridor and access entrances to the Project. There is abundant identical habitat in the surrounds. The Project will not adversely affect habitat considered critical to the survival of Dunmall's Snake.</p>

Criteria	Vulnerable species assessment
Disrupt the breeding cycle of an important population	It is not known if the species occurs within the Project area. There is little evidence the small area of remnant vegetation associated with the Project area would support an important habitat for Dunmall's Snake. A qualified fauna spotter will be present during vegetation clearing within remnant habitat. Pre-clearing surveys will be carried out to check potential refuge sites for the species (large woody debris) and ensure no harm to any individuals (should the species be present). It is considered unlikely the Project will disrupt the breeding cycle of an important population of Dunmall's Snake.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	It is not known if the species occurs within the Project area. Remnant habitat in the Project area is dominated by Poplar Box on sandy soils with scarce fallen woody debris which is not preferred habitat. The Solar park site is almost entirely cleared of remnant vegetation which may support the species. The Project proposes to clear 5.39 ha of low-value potential remnant habitat for Dunmall's Snake within the utility corridor and access entrances to the Project. There is abundant identical habitat in the surrounds. The Project is very unlikely to impact the availability or quality of habitat to the extent that the species is likely to decline.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species habitat	Weed invasion is not a known threat to the species. Feral predators may be a threat to the species and are likely present to some degree in the landscape. Weed and pest management measures will be developed for the construction and operational phases of the Project. Project activities do not require the importation of soils or other biological matters into the Project area. The Project will not result in the introduction of a novel invasive species, disease/pathogen, or proliferation of an existing invasive species in the Project area or surrounds.
Introduce disease that may cause the species to decline	
Interfere substantially with the recovery of the species	The Approved conservation advice notes the following priority actions applicable to the species (DotE 2014): <ul style="list-style-type: none"> • Protect and monitor known populations and identify threats • Develop a fire management strategy for known populations and habitat • Minimise adverse impacts from land use including road widening and maintenance • Identify and control threatening weeds in Dunmall's snake habitat. The Project will contribute to minor impacts from land use with regard to the utility corridor. Nevertheless, this impact is considered unlikely to substantially interfere with the recovery of the species. Should Dunmall's snake be identified during Project activities this will contribute to current information on the species in the region.
Assessment result	Based on the MNES Guideline assessment criteria outlined above it is considered very unlikely the minor clearing of low-value habitat associated with the Project (in an area where the species has not been identified as occurring) will cause a significant impact on Dunmall's Snake.

5.2.2.3 Belson's Panic – Vulnerable

Ecology

Belson's Panic is a perennial grass that spreads by the stolons and typically reaches 0.5 m in height. This species is known to occur in dry woodland habitats on poor soils, such as those derived from basalt. It occurs on rocky hills supporting *Eucalyptus albens* and in *Geijera parviflora* woodland; flat to gently undulating alluvial areas supporting *Casuarina cristata* forest; and soils and plant communities of *Eucalyptus populnea* woodlands. It may also be associated with shadier areas of *Acacia harpophylla*, *Acacia melvillei* and *Acacia pendula* communities; in *Eucalyptus orgadophila* communities; and on roadsides. The species is shade tolerant and is generally found among fallen timber at the base of trees or shrubs, among branches and leaves of trees hanging to ground level or along the bottom of netting fences. It occurs at elevations ranging from 200 m to 520 m above sea level (DEWHA 2008c).

This species is known to occur within the southern Brigalow belt, namely the Darling Downs area west of Toowoomba, near Oakey, Jondaryan, Bowenville, Dalby, Acland, Sabine, Quinalow, Goombungee, Gurulmundi and Millmerran, and further west between Miles and Roma (DEWHA 2008c).

Association with Project area

Historical records of the species occur in several scattered locations in the wider area surrounding the Project. The nearest record is from 2015 and situated in disturbed open woodland approximately 11.5 km west of the Project (ALA 2022). The species was not observed within the Project area during the site investigation although the entire Project area was not searched. Small patches of RE 11.3.1 and RE 11.3.18 within the Project area provide suitable habitat for Belson’s Panic. The remainder of the habitat within the Project area is located on less suitable sandy soils (on land zone 5). A regrowth patch of RE 11.3.18 (Poplar Box woodland on alluvium) is approximately 0.63 ha and located in the north-west of the Solar park area. An area of remnant RE 11.3.18 is located within the utility corridor (0.15 ha within the Project footprint). This patch was disturbed with a heavy coverage of weedy grasses in the ground layer. An associated patch of RE 11.3.1 (Brigalow low closed forest) is approximately 0.35 ha and is not intersected by the proposed transmission corridor.

DCCEW approved species documents

There is no Commonwealth adopted recovery plan or threat abatement plans applicable to this species. The Approved conservation advice identifies the following threats to the species (DEWHA 2008):

- Habitat loss due to agricultural development and mining projects
- Overgrazing by livestock
- Weed invasion, particularly by Green Panic Grass (*Panicum maximum*), Coolatai Grass (*Hyparrhenia hirta*) and Tiger Pear (*Opuntia aurantica*).

Important populations or habitat critical to the species are not identified in the species literature. The species occurs as far south as Gunnedah (in NSW) and west to Miles/Roma. The Project area is not on the edge of the species distribution. Suitable habitat within the Project area is restricted to isolated small patches within the overall footprint. There is no evidence an important population would potentially occur.

Table 10 provides an assessment of the potential for significant impacts on Belson’s Panic from the Project activities using the assessment criteria for Vulnerable species outlined in the MNES Guidelines.

Table 10. Significant impact criteria assessment: Belson’s Panic

Criteria	Endangered species assessment
Lead to a long-term decrease in the size of an important population of the species	<p>The species was not recorded within the Project area or surrounds despite targeted surveys of portions of the Project area (flora surveys) being carried out in 2018 and 2022. The closest database record to the Project area is 11.5 km away from the site. The Project area is largely cleared of remnant vegetation which may have provided suitable habitat for the species. Small areas of remaining suitable habitat have been extensively searched for Belson’s Panic during surveys for the Project. It is considered unlikely an important population of Belson’s Panic exists within the Project area.</p> <p>Potential habitat within the Project area occurs as small and isolated remnant patches. The Project proposes to clear 0.63 ha of potential regrowth habitat for Belson’s Panic within the Solar park area and 0.15 ha of potential habitat (impacted by weedy grasses) within the utility corridor. Vegetation clearing of the utility corridor will be linear (9.2 m wide clearing area) and will leave identical habitat adjacent to the Project. The clearing will be carried out along the existing edge of the road corridor vegetation (i.e. habitat fragmentation will not occur).</p> <p>The Project is considered unlikely to lead to a long-term decrease in the size of an important population of Belson’s Panic.</p>
Reduce the area of occupancy of an important population	<p>It is considered unlikely an important population of Belson’s Panic exists within the Project area. The species was not recorded within the Project area or surrounds despite targeted surveys of portions of the Project area (flora surveys) being carried out in 2018 and 2022. The Project area is largely cleared of remnant vegetation which may have</p>

Criteria	Endangered species assessment
	<p>provided suitable habitat for the species. Potential habitat within the Project area occurs as small and isolated remnant patches. The Project proposes to clear 0.63 ha of potential regrowth habitat for Belson's Panic within the Solar park area and 0.15 ha of potential habitat (impacted by weedy grasses) within the utility corridor. These have been extensively searched for Belson's Panic during surveys for the Project.</p> <p>The project is considered unlikely to reduce the area of occupancy of an important population of Belson's Panic.</p>
<p>Fragment an existing important population into two or more populations</p>	<p>It is considered unlikely an important population of Belson's Panic exists within the Project area. The species was not recorded within the Project area or surrounds despite targeted surveys of portions of the Project area (flora surveys) being carried out in 2018 and 2022. The Project area is largely cleared of remnant vegetation which may have provided suitable habitat for the species. Potential habitat within the Project area occurs as small and isolated remnant patches.</p> <p>The Project proposes to clear 0.63 ha of potential regrowth habitat for Belson's Panic within the Solar park area and 0.15 ha of potential habitat (impacted by weedy grasses) within the utility corridor. Vegetation clearing of the utility corridor will be linear (9.2 m wide clearing area) and will leave identical habitat adjacent to the Project. The clearing will be carried out along the existing edge of the road corridor vegetation (i.e. habitat fragmentation will not occur).</p> <p>The project is considered unlikely to fragment an existing important population into two or more populations of Belson's Panic.</p>
<p>Adversely affect habitat critical to the survival of the species</p>	<p>Critical habitat has not been identified for the species. Due to their small size, patches of suitable habitat for Belson's Panic within the Project area are unlikely to be critical to the survival of the species. These areas of remaining suitable habitat have been extensively searched for Belson's Panic. There is abundant identical habitat in the surrounding region. The Project will not adversely affect habitat considered critical to the survival of Belson's Panic.</p>
<p>Disrupt the breeding cycle of an important population</p>	<p>It is considered unlikely an important population of Belson's Panic exists within the Project area. The species was not recorded within the Project area or surrounds despite targeted surveys of portions of the Project area (flora surveys) being carried out in 2018 and 2022. The Project area is largely cleared of remnant vegetation which may have provided suitable habitat for the species. It is uncertain what the breeding requirements are for the species. However, the species is known to recolonise modified habitats and has been identified in road reserves within its distribution. It is considered unlikely the Project will disrupt the breeding cycle of an important population of Belson's Panic.</p>
<p>Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline</p>	<p>It is not known if the species occurs within the Project area. The Project area is largely cleared of remnant vegetation which may have provided suitable habitat for the species. Small areas of remaining suitable habitat have been extensively searched for Belson's Panic. The species has not been identified within the Project area. Potential habitat within the Project area occurs as small and isolated remnant patches. The Project proposes to clear 0.63 ha of potential regrowth habitat for Belson's Panic within the Solar park area and 0.15 ha of potential habitat (impacted by weedy grasses) within the utility corridor. The Project will not impact the availability or quality of habitat to the extent that the species is likely to decline.</p>
<p>Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species habitat</p>	<p>Competition from invasive weeds such as Green Panic Grass (<i>Megathyrsus maximus</i>) is a known threat to Belson's Panic (DEWHA 2008). Green Panic Grass infestation is already common across the Project area. Weed and pest management measures will be developed for the construction and operational phases of the Project. Project activities do not require the importation of soils or other biological matters into the Project area. The Project will not result in the introduction of a novel invasive species,</p>
<p>Introduce disease that may cause the species to decline</p>	<p>disease/pathogen, or proliferation of an existing invasive species in the Project area or surrounds.</p>
<p>Interfere substantially with the recovery of the species</p>	<p>The Approved Conservation Advice for the species (DEWHA 2008) outlines a number of recovery and threat abatement actions including the following:</p> <ul style="list-style-type: none"> • Monitor known populations to identify key threats

Criteria	Endangered species assessment
	<ul style="list-style-type: none"> • Monitor the progress of recovery, including the effectiveness of management actions and the need to adapt them if necessary • Identify populations of high conservation priority • Manage any other known, potential or emerging threats • Ensure fertilisers used in agriculture, and chemicals or other mechanisms used to eradicate weeds, do not have a significant adverse impact on <i>Homopholis belsonii</i> • Ensure road widening and maintenance and mining activities (or other infrastructure or development activities) involving substrate or vegetation disturbance in areas where <i>H. belsonii</i> occurs do not adversely impact on known populations. • Develop and implement a management plan for the control of invasive weeds such as Green Panic Grass (<i>Panicum maximum</i> var. <i>trichoglume</i>), Coolatai Grass (<i>Hyparrhenia hirta</i>) and Tiger Pear (<i>Opuntia aurantiaca</i>) in the local region • Develop and implement a stock management plan for roadside verges and travelling stock routes • Raise awareness of <i>H. belsonii</i> within the local community • Undertake appropriate seed collection and storage. • Investigate options for linking, enhancing or establishing additional populations • Implement national translocation protocols if establishing additional populations is considered necessary and feasible <p>The species has not been identified within the Project area. The majority of the Project area has been heavily impacted by previous grazing practices. Should the species occur within or near Project works any impact will be very minor, and is considered unlikely to interfere substantially with the management actions identified above or the recovery of the species.</p>
Assessment result	Based on the MNES Guideline assessment criteria outlined above it is considered the minor vegetation clearing associated with the Project (in an area where the species has not been identified as occurring) will not cause a significant impact on Belson's Panic.

5.2.2.4 Rufous Fantail - Migratory

There is a single species listed as Migratory under the EPBC Act that potentially occurs in the vegetation associated with the Project area: Rufous Fantail. The MNES Guideline criteria for Migratory species requires an assessment of the potential for 'important habitat' to be present within or near the project area or that an 'ecologically significant proportion of the population' may be disrupted by the Project. Important habitat is defined as the following:

- Habitat utilised by a migratory species occasionally or periodically within a region that supports an ecologically significant proportion of the population of the species
- Habitat that is of critical importance to the species at particular life-cycle stages
- Habitat utilised by a migratory species which is at the limit of the species range and/or
- Habitat within an area where the species is declining

Rufous Fantail occurs in moist habitats, including closed forests, coastal scrubs, mangroves and along watercourses and gullies, and urban/rural areas during mid-year migration (Higgins et al. 2006). The species migrates north in early autumn and returns to southern Australia in early spring to breed, wintering on Cape York Peninsula, the Torres Strait and New Guinea (Higgins et al. 2006; Menkhorst et al. 2017). Rufous Fantail is common in suitable habitat along the eastern seaboard (Menkhorst et al. 2017).

Rufous Fantail becomes more common to the east of Chinchilla though there are records further west, most notably in Carnarvon National Park. Within the local region it would be mostly confined to well-vegetated creek lines, which are absent from the Project area. Nevertheless, it may occur in the remnant and regrowth woodlands associated the Project area.

It is not known if Rufous Fantail actually occurs in the area. The species remains widespread across eastern Australia. The Proposed Action area is not at the limit of the range of Rufous Fantail, nor is it within an area where the species is declining. The majority of the Project area is cleared of vegetation. The remnant vegetation present remains common in the wider area.

The region is not known to support an ecologically significant proportion of the population, 1,500 individuals are required for the location to be nationally important (DE 2015). There is no reason to believe the small area of potential habitat within the Project area would be of critical importance to the species or support an 'ecologically significant proportion of the population'. As such, an SRI assessment under the MNES Guideline criteria is deemed unnecessary.

6 CONCLUSION

The proponent is proposing to construct and operate a greenfield solar park and utility corridor at a site 22 km south of Chinchilla located in southern Queensland. The Project will connect to existing power infrastructure and have a projected generation capacity of 139 megawatts (MW) over a projected minimum lifespan of 30 years.

The solar park encompasses approximately 202 ha and the utility corridor is 7.5 km long. The footprint of the utility corridor has been reduced from an original footprint of 10 ha down to 6.9 ha by refining the Project design to a reduction in the width of the corridor from 15 m to 9.2 m. Almost all of the solar park area has been previously cleared for domestic livestock grazing. Approximately 4.3 km of the proposed transmission line corridor is located within a road easement which remains vegetated. The Proponent is committed to continue mitigating the environmental footprint of the Project by further optimising the Project design throughout the detail design development process.

The Project area is located within the Condamine River catchment. The majority of the mapped watercourses intersecting the Project area appear to be highly ephemeral and with little to no bank definition. At the time of the survey water was present in a single watercourse intersected by the utility corridor to the north of Kogan-Condamine Road.

Almost the entire Solar park site is mapped as non-remnant vegetation excepting narrow fragments mapped as high value regrowth (Least Concern RE under the VM Act) along the eastern boundary. The site survey confirmed the vegetation mapping as largely correct. The site survey identified small unmapped patches of vegetation in the north of the property that may be considered as high value regrowth communities and a single small patch of Poplar Box (RE 11.3.18). The utility corridor and much of the vegetation on the Solar park site is mapped as comprising remnant or regrowth woodlands dominated by Poplar Box with a White Cypress Pine understorey (RE 11.5.1/a). No vegetation comprising a TEC listed under the EPBC Act was recorded. No threatened flora species was observed during site surveys. One species is considered as having some potential to be present: Belson's Panic (Vulnerable – EPBC Act and Endangered – NC Act).

Habitat values within the Solar park site are limited due to past tree clearing and support a range of widespread and common fauna species. The utility corridor provides relatively contiguous habitat for much of its length. In general, habitat elements such as large tree hollows or large woody debris were scarce. No threatened fauna species was observed or is considered likely to occur. Three threatened species are considered as possibly occurring within the Project area: Koala (Endangered – EPBC Act and Vulnerable – NC Act), White-throated Needletail (Vulnerable – EPBC and NC acts), and Golden-tailed Gecko (Near Threatened – NC Act). Another two bird species listed as Migratory under the EPBC act may also possibly occur.

An assessment for significant impacts to ecological values listed as MSES and MNES was carried out for the Project with a focus on Koala, Dunmall's Snake and Belson's Panic. The assessments concluded it is very unlikely the Project would have significant residual impacts on any MSES or MNES as a result of the Project construction and operation activities.

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8 LIMITATIONS AND DISCLAIMER

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APPENDIX A – DESKTOP REVIEW SEARCH RESULTS



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.

Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information is available about [Environment Assessments](#) and the EPBC Act including significance guidelines, forms and application process details.

Report created: 23/08/22 14:40:24

[Summary](#)

[Details](#)

[Matters of NES](#)

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

[Extra Information](#)

[Caveat](#)

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**No Image
Available**

This map may contain data which are
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[Coordinates](#)

[Buffer: 5.0Km](#)

No Image
Available

Summary

Matters of National Environmental 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:	4
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	5
Listed Threatened Species:	28
Listed Migratory Species:	11

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 <http://www.environment.gov.au/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 Land:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	16
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None

Extra Information

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

State and Territory Reserves:	None
Regional Forest Agreements:	None
Invasive Species:	18
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar)	[Resource Information]
Name	Proximity
Banrock station wetland complex	1200 - 1300km
Narran lake nature reserve	400 - 500km upstream
Riverland	1100 - 1200km
The coorong, and lakes alexandrina and albert wetland	1400 - 1500km

Listed Threatened Ecological Communities [Resource Information]

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

Name	Status	Type of Presence
Brigalow (Acacia harpophylla dominant and co-dominant)	Endangered	Community known to occur within area
Coolibah - Black Box Woodlands of the Darling Riverine Plains and the Brigalow Belt South Bioregions	Endangered	Community may occur within area
Natural grasslands on basalt and fine-textured alluvial plains of northern New South Wales and southern Queensland	Critically Endangered	Community likely to occur within area
Poplar Box Grassy Woodland on Alluvial Plains	Endangered	Community likely to occur within area
Weeping Myall Woodlands	Endangered	Community likely to occur within area

Listed Threatened Species [Resource Information]

Name	Status	Type of Presence
Birds		
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calyptorhynchus lathami lathami South-eastern Glossy Black-Cockatoo [67036]	Vulnerable	Species or species habitat may occur within area
Erythrotriorchis radiatus Red Goshawk [942]	Vulnerable	Species or species habitat may occur within area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat may occur within area
Geophaps scripta scripta Squatter Pigeon (southern) [64440]	Vulnerable	Species or species habitat may occur within area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat likely to occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat may occur within

Name	Status	Type of Presence area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area
Fish		
Maccullochella peelii Murray Cod [66633]	Vulnerable	Species or species habitat may occur within area
Mammals		
Chalinolobus dwyeri Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat may occur within area
Dasyurus hallucatus Northern Quoll, Digul [Gogo-Yimidir], Wijingadda [Dambimangari], Wiminji [Martu] [331]	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 likely to occur within area
Petauroides volans Greater Glider (southern and central) [254]	Endangered	Species or species habitat known to occur within area
Petaurus australis australis Yellow-bellied Glider (south-eastern) [87600]	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 may occur within area
Other		
Adclarkia cameroni Brigalow Woodland Snail [83886]	Endangered	Species or species habitat may occur within area
Adclarkia dulacca Dulacca Woodland Snail [83885]	Endangered	Species or species habitat likely to occur within area
Plants		
Acacia lauta Tara Wattle [4165]	Vulnerable	Species or species habitat may occur within area
Cadellia pentastylis Ooline [9828]	Vulnerable	Species or species habitat may occur within area
Dichanthium setosum bluegrass [14159]	Vulnerable	Species or species habitat may occur within area
Homopholis belsonii Belson's Panic [2406]	Vulnerable	Species or species habitat may occur within area
Lepidium monoplocoides Winged Pepper-cress [9190]	Endangered	Species or species habitat may occur within area
Xerothamnella herbacea [4146]	Endangered	Species or species habitat may occur within area

Name	Status	Type of Presence
Reptiles		
Anomalopus mackayi Five-clawed Worm-skink, Long-legged Worm-skink [25934]	Vulnerable	Species or species habitat may occur within area
Delma torquata Adorned Delma, Collared Delma [1656]	Vulnerable	Species or species habitat may occur within area
Egernia rugosa Yakka Skink [1420]	Vulnerable	Species or species habitat likely to occur within area
Furina dunmali Dunmall's Snake [59254]	Vulnerable	Species or species habitat likely to occur within area

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

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Migratory Marine Birds		
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Migratory Terrestrial Species		
Cuculus optatus Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat may occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat likely to occur within area
Rhipidura rufifrons Rufous Fantail [592]		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]		Species or species habitat may occur within area
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]		Species or species habitat may occur within area

Other Matters Protected by the EPBC Act

Listed Marine Species [[Resource Information](#)]

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Birds		
Actitis hypoleucos		
Common Sandpiper [59309]		Species or species habitat may occur within area
Anseranas semipalmata		
Magpie Goose [978]		Species or species habitat may occur within area
Apus pacificus		
Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea ibis		
Cattle Egret [59542]		Species or species habitat may occur within area
Calidris acuminata		
Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
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
Chrysococcyx osculans		
Black-eared Cuckoo [705]		Species or species habitat likely to occur within area
Gallinago hardwickii		
Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within 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 may occur within area
Merops ornatus		
Rainbow Bee-eater [670]		Species or species habitat may occur within area
Motacilla flava		
Yellow Wagtail [644]		Species or species habitat may occur within area
Myiagra cyanoleuca		
Satin Flycatcher [612]		Species or species habitat likely to occur within area
Rhipidura rufifrons		
Rufous Fantail [592]		Species or species habitat may occur within area
Rostratula benghalensis (sensu lato)		
Painted Snipe [889]	Endangered*	Species or species habitat likely to occur

Name	Threatened	Type of Presence within area
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Extra Information

Invasive Species [\[Resource Information \]](#)

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resources Audit, 2001.

Name	Status	Type of Presence
Birds		
Acridotheres tristis Common Myna, Indian Myna [387]		Species or species habitat likely to occur within area
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Lonchura punctulata Nutmeg Mannikin [399]		Species or species habitat likely to occur within area
Passer domesticus House Sparrow [405]		Species or species habitat likely to occur within area
Streptopelia chinensis Spotted Turtle-Dove, Spotted Dove [780]		Species or species habitat likely to occur within area
Sturnus vulgaris Common Starling [389]		Species or species habitat likely to occur within area
Frogs		
Rhinella marina Cane Toad [83218]		Species or species habitat known to occur within area
Mammals		
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Lepus capensis Brown Hare [127]		Species or species habitat likely to occur

Name	Status	Type of Presence within area
<p>Mus musculus House Mouse [120]</p>		<p>Species or species habitat likely to occur within area</p>
<p>Oryctolagus cuniculus Rabbit, European Rabbit [128]</p>		<p>Species or species habitat likely to occur within area</p>
<p>Sus scrofa Pig [6]</p>		<p>Species or species habitat likely to occur within area</p>
<p>Vulpes vulpes Red Fox, Fox [18]</p>		<p>Species or species habitat likely to occur within area</p>
<p>Plants</p>		
<p>Lycium ferocissimum African Boxthorn, Boxthorn [19235]</p>		<p>Species or species habitat likely to occur within area</p>
<p>Parthenium hysterophorus Parthenium Weed, Bitter Weed, Carrot Grass, False Ragweed [19566]</p>		<p>Species or species habitat likely to occur within area</p>
<p>Pinus radiata Radiata Pine Monterey Pine, Insignis Pine, Wilding Pine [20780]</p>		<p>Species or species habitat may occur within area</p>
<p>Salix spp. except S.babylonica, S.x calodendron & S.x reichardtii Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow [68497]</p>		<p>Species or species habitat likely to occur within area</p>

Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World and National Heritage properties, Wetlands of International and National Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

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.

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

Where very little information is available for 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 reliable distribution mapping methods are used to update these distributions as time permits.

Only selected species covered by the following provisions of the EPBC Act have been mapped:

- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers

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

- non-threatened seabirds which have only been mapped for recorded breeding sites
- seals which have only been mapped for breeding sites near the Australian continent

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

Coordinates

-26.945 150.59

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](#)
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- [-Reef Life Survey Australia](#)
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- [-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 Agriculture Water and the Environment

GPO Box 858

Canberra City ACT 2601 Australia

+61 2 6274 1111



Queensland Government

WildNet species list

Search Criteria: Species List for a Specified Point
Species: All
Type: All
Queensland status: All
Records: All
Date: Since 1980
Latitude: -26.945
Longitude: 150.59
Distance: 10
Email: btaylor@epicenvironmental.com.au
Date submitted: Friday 11 Mar 2022 16:37:08
Date extracted: Friday 11 Mar 2022 16:40:05

The number of records retrieved = 510

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The information provided should be appropriately acknowledged as being derived from WildNet database when it is used. As the WildNet Program is still in a process of collating and vetting data, it is possible the information given is not complete. Go to the WildNet database webpage (<https://www.qld.gov.au/environment/plants-animals/species-information/wildnet>) to find out more about WildNet and where to access other WildNet information products approved for publication. Feedback about WildNet species lists should be emailed to wildlife.online@des.qld.gov.au.

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	amphibians	Bufo	<i>Rhinella marina</i>	cane toad	Y			7
animals	amphibians	Hylidae	<i>Cyclorana alboguttata</i>	greenstripe frog		C		80
animals	amphibians	Hylidae	<i>Cyclorana brevipes</i>	superb collared frog		C		19
animals	amphibians	Hylidae	<i>Cyclorana cultripes</i>	grassland collared frog		C		1
animals	amphibians	Hylidae	<i>Cyclorana novaehollandiae</i>	eastern snapping frog		C		9
animals	amphibians	Hylidae	<i>Cyclorana platycephala</i>	water holding frog		C		30
animals	amphibians	Hylidae	<i>Cyclorana verrucosa</i>	rough collared frog		C		9
animals	amphibians	Hylidae	<i>Litoria caerulea</i>	common green treefrog		C		42
animals	amphibians	Hylidae	<i>Litoria fallax</i>	eastern sedgefrog		C		4
animals	amphibians	Hylidae	<i>Litoria latopalmata</i>	broad palmed rocketfrog		C		22
animals	amphibians	Hylidae	<i>Litoria nasuta</i>	striped rocketfrog		C		1
animals	amphibians	Hylidae	<i>Litoria peronii</i>	emerald spotted treefrog		C		2
animals	amphibians	Hylidae	<i>Litoria rubella</i>	ruddy treefrog		C		7
animals	amphibians	Limnodynastidae	<i>Limnodynastes dumerilii</i>	grey bellied pobblebonk		C		2
animals	amphibians	Limnodynastidae	<i>Limnodynastes salmini</i>	salmon striped frog		C		29
animals	amphibians	Limnodynastidae	<i>Limnodynastes tasmaniensis</i>	spotted grassfrog		C		38
animals	amphibians	Limnodynastidae	<i>Limnodynastes terraereginae</i>	scarlet sided pobblebonk		C		17
animals	amphibians	Limnodynastidae	<i>Neobatrachus sudellae</i>	meeowing frog		C		7
animals	amphibians	Limnodynastidae	<i>Notaden bennettii</i>	holy cross frog		C		2
animals	amphibians	Limnodynastidae	<i>Platyplectrum ornatum</i>	ornate burrowing frog		C		58
animals	amphibians	Myobatrachidae	<i>Crinia parinsignifera</i>	beeping froglet		C		1
animals	amphibians	Myobatrachidae	<i>Uperoleia laevigata</i>	eastern gungan		C		3
animals	amphibians	Myobatrachidae	<i>Uperoleia rugosa</i>	chubby gungan		C		14
animals	birds	Acanthizidae	<i>Acanthiza apicalis</i>	inland thornbill		C		5
animals	birds	Acanthizidae	<i>Acanthiza chrysorrhoa</i>	yellow-rumped thornbill		C		4
animals	birds	Acanthizidae	<i>Acanthiza nana</i>	yellow thornbill		C		6
animals	birds	Acanthizidae	<i>Acanthiza pusilla</i>	brown thornbill		C		5
animals	birds	Acanthizidae	<i>Acanthiza reguloides</i>	buff-rumped thornbill		C		4
animals	birds	Acanthizidae	<i>Acanthiza uropygialis</i>	chestnut-rumped thornbill		C		2
animals	birds	Acanthizidae	<i>Gerygone fusca</i>	western gerygone		C		2
animals	birds	Acanthizidae	<i>Gerygone olivacea</i>	white-throated gerygone		C		5
animals	birds	Acanthizidae	<i>Pyrrholaemus sagittatus</i>	speckled warbler		C		9
animals	birds	Acanthizidae	<i>Smicronis brevirostris</i>	weebill		C		19
animals	birds	Accipitridae	<i>Aquila audax</i>	wedge-tailed eagle		C		6
animals	birds	Accipitridae	<i>Elanus axillaris</i>	black-shouldered kite		C		4
animals	birds	Accipitridae	<i>Haliastur sphenurus</i>	whistling kite		C		2
animals	birds	Accipitridae	<i>Milvus migrans</i>	black kite		C		4
animals	birds	Anatidae	<i>Anas superciliosa</i>	Pacific black duck		C		3
animals	birds	Anatidae	<i>Chenonetta jubata</i>	Australian wood duck		C		2
animals	birds	Anseranatidae	<i>Anseranas semipalmata</i>	magpie goose		C		4
animals	birds	Ardeidae	<i>Ardea intermedia</i>	intermediate egret		C		2
animals	birds	Ardeidae	<i>Ardea pacifica</i>	white-necked heron		C		4
animals	birds	Ardeidae	<i>Egretta novaehollandiae</i>	white-faced heron		C		2
animals	birds	Artamidae	<i>Artamus personatus</i>	masked woodswallow		C		1
animals	birds	Artamidae	<i>Cracticus nigrogularis</i>	piebald butcherbird		C		9
animals	birds	Artamidae	<i>Cracticus torquatus</i>	grey butcherbird		C		11

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	birds	Artamidae	<i>Gymnorhina tibicen</i>	Australian magpie		C		15
animals	birds	Artamidae	<i>Strepera graculina</i>	pied currawong		C		4
animals	birds	Artamidae	<i>Strepera graculina graculina</i>	pied currawong (eastern Australia)		C		1
animals	birds	Cacatuidae	<i>Cacatua galerita</i>	sulphur-crested cockatoo		C		19
animals	birds	Cacatuidae	<i>Cacatua sanguinea</i>	little corella		C		2
animals	birds	Cacatuidae	<i>Eolophus roseicapilla</i>	galah		C		20
animals	birds	Cacatuidae	<i>Nymphicus hollandicus</i>	cockatiel		C		1
animals	birds	Campephagidae	<i>Coracina novaehollandiae</i>	black-faced cuckoo-shrike		C		9
animals	birds	Campephagidae	<i>Coracina papuensis</i>	white-bellied cuckoo-shrike		C		2
animals	birds	Campephagidae	<i>Lalage tricolor</i>	white-winged triller		C		2
animals	birds	Casuariidae	<i>Dromaius novaehollandiae</i>	emu		C		6
animals	birds	Charadriidae	<i>Charadrius bicinctus</i>	double-banded plover		SL		1
animals	birds	Charadriidae	<i>Elseyornis melanops</i>	black-fronted dotterel		C		1
animals	birds	Charadriidae	<i>Vanellus miles</i>	masked lapwing		C		2
animals	birds	Charadriidae	<i>Vanellus miles novaehollandiae</i>	masked lapwing (southern subspecies)		C		2
animals	birds	Charadriidae	<i>Vanellus tricolor</i>	banded lapwing		C		1
animals	birds	Columbidae	<i>Geopelia humeralis</i>	bar-shouldered dove		C		8
animals	birds	Columbidae	<i>Geopelia placida</i>	peaceful dove		C		7
animals	birds	Columbidae	<i>Ocyphaps lophotes</i>	crested pigeon		C		7
animals	birds	Columbidae	<i>Ptilinopus regina</i>	rose-crowned fruit-dove		C		3
animals	birds	Coraciidae	<i>Eurystomus orientalis</i>	dollarbird		C		3
animals	birds	Corcoracidae	<i>Corcorax melanorhamphos</i>	white-winged chough		C		3
animals	birds	Corcoracidae	<i>Struthidea cinerea</i>	apostlebird		C		7
animals	birds	Corvidae	<i>Corvus coronoides</i>	Australian raven		C		1
animals	birds	Corvidae	<i>Corvus orru</i>	Torresian crow		C		29
animals	birds	Corvidae	<i>Corvus sp.</i>			C		4
animals	birds	Cuculidae	<i>Cacomantis pallidus</i>	pallid cuckoo		C		1
animals	birds	Cuculidae	<i>Centropus phasianinus</i>	pheasant coucal		C		1
animals	birds	Cuculidae	<i>Chalcites basalis</i>	Horsfield's bronze-cuckoo		C		1
animals	birds	Cuculidae	<i>Chalcites lucidus</i>	shining bronze-cuckoo		C		2
animals	birds	Cuculidae	<i>Eudynamys orientalis</i>	eastern koel		C		1
animals	birds	Estrildidae	<i>Taeniopygia bichenovii</i>	double-barred finch		C		6
animals	birds	Falconidae	<i>Falco berigora</i>	brown falcon		C		1
animals	birds	Falconidae	<i>Falco cenchroides</i>	nankeen kestrel		C		3
animals	birds	Halcyonidae	<i>Dacelo novaeguineae</i>	laughing kookaburra		C		13
animals	birds	Halcyonidae	<i>Todiramphus macleayii</i>	forest kingfisher		C		2
animals	birds	Halcyonidae	<i>Todiramphus sanctus</i>	sacred kingfisher		C		7
animals	birds	Hirundinidae	<i>Hirundo neoxena</i>	welcome swallow		C		1
animals	birds	Hirundinidae	<i>Petrochelidon nigricans</i>	tree martin		C		1
animals	birds	Maluridae	<i>Malurus cyaneus</i>	superb fairy-wren		C		4
animals	birds	Maluridae	<i>Malurus lamberti sensu lato</i>	variegated fairy-wren		C		3
animals	birds	Maluridae	<i>Malurus melanocephalus</i>	red-backed fairy-wren		C		3
animals	birds	Maluridae	<i>Malurus splendens</i>	splendid fairy-wren		C		2
animals	birds	Meliphagidae	<i>Acanthagenys rufogularis</i>	spiny-cheeked honeyeater		C		6
animals	birds	Meliphagidae	<i>Caligavis chrysops</i>	yellow-faced honeyeater		C		16
animals	birds	Meliphagidae	<i>Entomyzon cyanotis</i>	blue-faced honeyeater		C		4

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	birds	Meliphagidae	<i>Gavicalis virescens</i>	singing honeyeater		C		1
animals	birds	Meliphagidae	<i>Lichmera indistincta</i>	brown honeyeater		C		7
animals	birds	Meliphagidae	<i>Manorina flavigula</i>	yellow-throated miner		C		1
animals	birds	Meliphagidae	<i>Manorina melanocephala</i>	noisy miner		C		18
animals	birds	Meliphagidae	<i>Melithreptus albogularis</i>	white-throated honeyeater		C		1
animals	birds	Meliphagidae	<i>Melithreptus brevirostris</i>	brown-headed honeyeater		C		1
animals	birds	Meliphagidae	<i>Nesoptilotis leucotis</i>	white-eared honeyeater		C		6
animals	birds	Meliphagidae	<i>Philemon citreogularis</i>	little friarbird		C		4
animals	birds	Meliphagidae	<i>Philemon corniculatus</i>	noisy friarbird		C		16
animals	birds	Meliphagidae	<i>Phylidonyris niger</i>	white-cheeked honeyeater		C		2
animals	birds	Meliphagidae	<i>Plectorhyncha lanceolata</i>	striped honeyeater		C		5
animals	birds	Meliphagidae	<i>Ptilotula penicillata</i>	white-plumed honeyeater		C		2
animals	birds	Meropidae	<i>Merops ornatus</i>	rainbow bee-eater		C		6
animals	birds	Monarchidae	<i>Grallina cyanoleuca</i>	magpie-lark		C		9
animals	birds	Monarchidae	<i>Myiagra inquieta</i>	restless flycatcher		C		8
animals	birds	Monarchidae	<i>Myiagra rubecula</i>	leaden flycatcher		C		4
animals	birds	Motacillidae	<i>Anthus novaeseelandiae</i>	Australasian pipit		C		2
animals	birds	Nectariniidae	<i>Dicaeum hirundinaceum</i>	mistletoebird		C		18
animals	birds	Neosittidae	<i>Daphoenositta chrysoptera</i>	varied sittella		C		1
animals	birds	Oriolidae	<i>Oriolus sagittatus</i>	olive-backed oriole		C		1
animals	birds	Pachycephalidae	<i>Colluricincla harmonica</i>	grey shrike-thrush		C		8
animals	birds	Pachycephalidae	<i>Pachycephala pectoralis</i>	golden whistler		C		2
animals	birds	Pachycephalidae	<i>Pachycephala rufiventris</i>	rufous whistler		C		40
animals	birds	Pardalotidae	<i>Pardalotus punctatus</i>	spotted pardalote		C		6
animals	birds	Pardalotidae	<i>Pardalotus striatus</i>	striated pardalote		C		12
animals	birds	Pelecanidae	<i>Pelecanus conspicillatus</i>	Australian pelican		C		1
animals	birds	Petroicidae	<i>Eopsaltria australis</i>	eastern yellow robin		C		10
animals	birds	Petroicidae	<i>Microeca fascinans</i>	jacky winter		C		4
animals	birds	Petroicidae	<i>Petroica goodenovii</i>	red-capped robin		C		6
animals	birds	Phalacrocoracidae	<i>Microcarbo melanoleucos</i>	little pied cormorant		C		1
animals	birds	Phalacrocoracidae	<i>Phalacrocorax sulcirostris</i>	little black cormorant		C		1
animals	birds	Phasianidae	<i>Synoicus ypsilophorus</i>	brown quail		C		1
animals	birds	Podargidae	<i>Podargus strigoides</i>	tawny frogmouth		C		1
animals	birds	Pomatostomidae	<i>Pomatostomus temporalis</i>	grey-crowned babbler		C		16
animals	birds	Pomatostomidae	<i>Pomatostomus temporalis temporalis</i>	grey-crowned babbler (eastern)		C		3
animals	birds	Psittacidae	<i>Aprosmictus erythropterus</i>	red-winged parrot		C		3
animals	birds	Psittacidae	<i>Northiella haematogaster</i>	blue bonnet		C		1
animals	birds	Psittacidae	<i>Parvipsitta pusilla</i>	little lorikeet		C		1
animals	birds	Psittacidae	<i>Platycercus adscitus</i>	pale-headed rosella		C		8
animals	birds	Psittacidae	<i>Psephotus haematonotus</i>	red-rumped parrot		C		2
animals	birds	Psittacidae	<i>Trichoglossus chlorolepidotus</i>	scaly-breasted lorikeet		C		3
animals	birds	Psittacidae	<i>Trichoglossus moluccanus</i>	rainbow lorikeet		C		1
animals	birds	Rhipiduridae	<i>Rhipidura albiscapa</i>	grey fantail		C		28
animals	birds	Rhipiduridae	<i>Rhipidura leucophrys</i>	willie wagtail		C		11
animals	birds	Strigidae	<i>Ninox boobook</i>	southern boobook		C		1
animals	birds	Sturnidae	<i>Sturnus vulgaris</i>	common starling	Y			1

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animals	birds	Threskiornithidae	<i>Platalea flavipes</i>	yellow-billed spoonbill		C		1	
animals	birds	Threskiornithidae	<i>Platalea regia</i>	royal spoonbill		C		1	
animals	birds	Threskiornithidae	<i>Threskiornis molucca</i>	Australian white ibis		C		1	
animals	birds	Timaliidae	<i>Zosterops lateralis</i>	silveryeye		C		1	
animals	insects	Lycaenidae	<i>Jalmenus eubulus</i>	pale imperial hairstreak		V		4	
animals	malacostracans	Parastacidae	<i>Cherax destructor</i>	common yabby				2	
animals	mammals	Bovidae	<i>Bos sp.</i>	cattle	Y			1	
animals	mammals	Canidae	<i>Canis sp.</i>		Y			1	
animals	mammals	Canidae	<i>Vulpes vulpes</i>	red fox	Y			3	
animals	mammals	Dasyuridae	<i>Antechinus flavipes flavipes</i>	yellow-footed antechinus (south-east Queensland)			C	1	
animals	mammals	Dasyuridae	<i>Planigale tenuirostris</i>	narrow-nosed planigale			C	1	
animals	mammals	Dasyuridae	<i>Sminthopsis macroura</i>	stripe-faced dunnart			C	6	
animals	mammals	Dasyuridae	<i>Sminthopsis murina</i>	common dunnart			C	5	
animals	mammals	Emballonuridae	<i>Saccolaimus flaviventris</i>	yellow-bellied sheath-tail bat			C	7	
animals	mammals	Felidae	<i>Felis catus</i>	cat	Y			1	
animals	mammals	Leporidae	<i>Lepus europaeus</i>	European brown hare	Y			2	
animals	mammals	Leporidae	<i>Oryctolagus cuniculus</i>	rabbit	Y			4	
animals	mammals	Macropodidae	<i>Macropus giganteus</i>	eastern grey kangaroo			C	24	
animals	mammals	Macropodidae	<i>Macropus sp.</i>				C	1	
animals	mammals	Macropodidae	<i>Notamacropus dorsalis</i>	black-striped wallaby			C	4	
animals	mammals	Macropodidae	<i>Notamacropus parryi</i>	whiptail wallaby			C	1	
animals	mammals	Macropodidae	<i>Notamacropus rufogriseus</i>	red-necked wallaby			C	31	
animals	mammals	Macropodidae	<i>Wallabia bicolor</i>	swamp wallaby			C	4	
animals	mammals	Molossidae	<i>Austronomus australis</i>	white-striped freetail bat			C	1	
animals	mammals	Molossidae	<i>Mormopterus ridei</i>	eastern free-tailed bat			C	1	
animals	mammals	Muridae	<i>Mus musculus</i>	house mouse	Y			6	
animals	mammals	Peramelidae	<i>Isoodon macrourus</i>	northern brown bandicoot			C	1	
animals	mammals	Peramelidae	<i>Perameles nasuta</i>	long-nosed bandicoot			C	1	
animals	mammals	Petauridae	<i>Petaurus notatus</i>	Kreff's glider			C	2	
animals	mammals	Phalangeridae	<i>Trichosurus vulpecula</i>	common brushtail possum			C	6	
animals	mammals	Phascolarctidae	<i>Phascolarctos cinereus</i>	koala			V	E	1
animals	mammals	Suidae	<i>Sus scrofa</i>	pig	Y			2	
animals	mammals	Tachyglossidae	<i>Tachyglossus aculeatus</i>	short-beaked echidna			SL	9	
animals	mammals	Vespertilionidae	<i>Chalinolobus gouldii</i>	Gould's wattled bat			C	1	
animals	mammals	Vespertilionidae	<i>Scotorepens greyii</i>	little broad-nosed bat			C	2	
animals	mammals	Vespertilionidae	<i>Vespadelus vulturnus</i>	little forest bat			C	1	
animals	ray-finned fishes	Poeciliidae	<i>Gambusia holbrooki</i>	mosquitofish	Y			2	
animals	reptiles	Agamidae	<i>Amphibolurus burnsi</i>	Burns's dragon			C	11	
animals	reptiles	Agamidae	<i>Amphibolurus muricatus</i>	jacky lizard			C	3	
animals	reptiles	Agamidae	<i>Diporiphora australis</i>	tommy roundhead			C	3	
animals	reptiles	Agamidae	<i>Diporiphora nobbi</i>	nobbi			C	2	
animals	reptiles	Agamidae	<i>Intellagama lesueurii</i>	eastern water dragon			C	1	
animals	reptiles	Agamidae	<i>Pogona barbata</i>	bearded dragon			C	25	
animals	reptiles	Boidae	<i>Antaresia maculosa</i>	spotted python			C	3	
animals	reptiles	Boidae	<i>Morelia spilota</i>	carpet python			C	1	

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animals	reptiles	Chelidae	<i>Chelodina longicollis</i>	eastern snake-necked turtle		C		2
animals	reptiles	Colubridae	<i>Boiga irregularis</i>	brown tree snake		C		3
animals	reptiles	Colubridae	<i>Dendrelaphis punctulatus</i>	green tree snake		C		4
animals	reptiles	Colubridae	<i>Tropidonophis mairii</i>	freshwater snake		C		2
animals	reptiles	Diplodactylidae	<i>Amalosia rhombifer</i>	zig-zag gecko		C		1
animals	reptiles	Diplodactylidae	<i>Diplodactylus vittatus</i>	wood gecko		C		15
animals	reptiles	Diplodactylidae	<i>Lucasium steindachneri</i>	Steindachner's gecko		C		5
animals	reptiles	Diplodactylidae	<i>Nebulifera robusta</i>	robust velvet gecko		C		6
animals	reptiles	Diplodactylidae	<i>Strophurus taenicauda</i>	golden-tailed gecko		NT		29
animals	reptiles	Elapidae	<i>Brachyuropsis australis</i>	coral snake		C		1
animals	reptiles	Elapidae	<i>Cryptophis boschmai</i>	Carpentaria whip snake		C		4
animals	reptiles	Elapidae	<i>Cryptophis nigrescens</i>	eastern small-eyed snake		C		2
animals	reptiles	Elapidae	<i>Demansia psammophis</i>	yellow-faced whipsnake		C		6
animals	reptiles	Elapidae	<i>Denisonia devisi</i>	De Vis' banded snake		C		9
animals	reptiles	Elapidae	<i>Emydocephalus annulatus</i>	turtle-headed sea snake		C		1
animals	reptiles	Elapidae	<i>Furina diadema</i>	red-naped snake		C		4
animals	reptiles	Elapidae	<i>Hemiaspis damelii</i>	grey snake		E		7
animals	reptiles	Elapidae	<i>Hoplocephalus bitorquatus</i>	pale-headed snake		C		7
animals	reptiles	Elapidae	<i>Pseudechis guttatus</i>	spotted black snake		C		4
animals	reptiles	Elapidae	<i>Pseudechis porphyriacus</i>	red-bellied black snake		C		10
animals	reptiles	Elapidae	<i>Pseudonaja textilis</i>	eastern brown snake		C		4
animals	reptiles	Elapidae	<i>Suta dwyeri</i>	Dwyer's snake		C		6
animals	reptiles	Elapidae	<i>Suta suta</i>	myall snake		C		1
animals	reptiles	Elapidae	<i>Vermicella annulata</i>	bandy-bandy		C		1
animals	reptiles	Gekkonidae	<i>Gehyra catenata</i>	chain-backed dtella		C		2
animals	reptiles	Gekkonidae	<i>Gehyra dubia</i>	dubious dtella		C		87
animals	reptiles	Gekkonidae	<i>Gehyra sp.</i>			C		5
animals	reptiles	Gekkonidae	<i>Gehyra versicolor</i>			C		11
animals	reptiles	Gekkonidae	<i>Heteronotia binoei</i>	Bynoe's gecko		C		51
animals	reptiles	Pygopodidae	<i>Delma plebeia</i>	common delma		C		3
animals	reptiles	Pygopodidae	<i>Lialis burtonis</i>	Burton's legless lizard		C		6
animals	reptiles	Pygopodidae	<i>Paradelma orientalis</i>	brigalow scaly-foot		C		1
animals	reptiles	Pygopodidae	<i>Pygopus schraderi</i>	eastern hooded scaly-foot		C		3
animals	reptiles	Scincidae	<i>Carlia munda</i>	shaded-litter rainbow-skink		C		5
animals	reptiles	Scincidae	<i>Carlia pectoralis</i>	open-litter rainbow skink		C		20
animals	reptiles	Scincidae	<i>Carlia pectoralis sensu lato</i>			C		7
animals	reptiles	Scincidae	<i>Carlia rubigo</i>	orange-flanked rainbow skink		C		2
animals	reptiles	Scincidae	<i>Carlia sp.</i>			C		2
animals	reptiles	Scincidae	<i>Carlia vivax</i>	tussock rainbow-skink		C		3
animals	reptiles	Scincidae	<i>Cryptoblepharus pulcher pulcher</i>	elegant snake-eyed skink		C		30
animals	reptiles	Scincidae	<i>Ctenotus regius</i>	pale-rumped ctenotus		C		1
animals	reptiles	Scincidae	<i>Ctenotus sp.</i>			C		1
animals	reptiles	Scincidae	<i>Ctenotus spaldingi</i>	straight-browed ctenotus		C		12
animals	reptiles	Scincidae	<i>Ctenotus taeniolatus</i>	copper-tailed skink		C		1
animals	reptiles	Scincidae	<i>Egernia striolata</i>	tree skink		C		3
animals	reptiles	Scincidae	<i>Lerista fragilis</i>	eastern mulch slider		C		2

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animals	reptiles	Scincidae	<i>Lerista punctatovittata</i>	eastern robust slider		C		3
animals	reptiles	Scincidae	<i>Lerista timida</i>	timid slider		C		3
animals	reptiles	Scincidae	<i>Liopholis modesta</i>	eastern ranges rock-skink		C		2
animals	reptiles	Scincidae	<i>Lygisaurus foliorum</i>	tree-base litter-skink		C		12
animals	reptiles	Scincidae	<i>Menetia greyii</i>	common dwarf skink		C		3
animals	reptiles	Scincidae	<i>Morethia boulengeri</i>	south-eastern morethia skink		C		8
animals	reptiles	Scincidae	<i>Morethia sp.</i>			C		1
animals	reptiles	Scincidae	<i>Pygmaeascincus timlowi</i>	dwarf litter-skink		C		3
animals	reptiles	Scincidae	<i>Tiliqua rugosa</i>	shingle-back		C		1
animals	reptiles	Scincidae	<i>Tiliqua scincoides</i>	eastern blue-tongued lizard		C		9
animals	reptiles	Typhlopidae	<i>Anilius affinis</i>	small-headed blind snake		C		2
animals	reptiles	Typhlopidae	<i>Anilius ligatus</i>	robust blind snake		C		1
animals	reptiles	Typhlopidae	<i>Anilius proximus</i>	proximus blind snake		C		3
animals	reptiles	Typhlopidae	<i>Anilius sp.</i>			C		1/1
animals	reptiles	Varanidae	<i>Varanus gouldii</i>	sand monitor		C		3
animals	reptiles	Varanidae	<i>Varanus panoptes</i>	yellow-spotted monitor		C		7
animals	reptiles	Varanidae	<i>Varanus sp.</i>	goanna		C		1
animals	reptiles	Varanidae	<i>Varanus tristis</i>	black-tailed monitor		C		10
animals	reptiles	Varanidae	<i>Varanus varius</i>	lace monitor		C		8
animals	uncertain	Indeterminate	<i>Indeterminate</i>	Unknown or Code Pending				1
plants	land plants	Acanthaceae	<i>Brunoniella australis</i>	blue trumpet		C		1
plants	land plants	Acanthaceae	<i>Pseuderanthemum variabile</i>	pastel flower		C		1
plants	land plants	Acanthaceae	<i>Rostellularia adscendens</i>			C		3
plants	land plants	Aizoaceae	<i>Tetragonia tetragonoides</i>	New Zealand spinach		C		2
plants	land plants	Amaranthaceae	<i>Gomphrena celosioides</i>	gomphrena weed	Y			1
plants	land plants	Amaranthaceae	<i>Nyssanthes erecta</i>			C		1
plants	land plants	Amaranthaceae	<i>Ptilotus semilanatus</i>			C		4
plants	land plants	Apocynaceae	<i>Alstonia constricta</i>	bitterbark		C		6
plants	land plants	Apocynaceae	<i>Carissa ovata</i>	currantbush		C		1
plants	land plants	Apocynaceae	<i>Hoya australis subsp. australis</i>			C		1
plants	land plants	Apocynaceae	<i>Leichhardtia viridiflora subsp. viridiflora</i>			C		3
plants	land plants	Apocynaceae	<i>Parsonsia eucalyptophylla</i>	gargaloo		C		5
plants	land plants	Asteraceae	<i>Bidens pilosa</i>		Y			2
plants	land plants	Asteraceae	<i>Brachyscome multifida</i>			C		1/1
plants	land plants	Asteraceae	<i>Calotis cuneata</i>			C		1
plants	land plants	Asteraceae	<i>Calotis cuneifolia</i>	burr daisy		C		1
plants	land plants	Asteraceae	<i>Calotis lappulacea</i>	yellow burr daisy		C		1
plants	land plants	Asteraceae	<i>Centipeda minima subsp. minima</i>			C		2
plants	land plants	Asteraceae	<i>Chrysocephalum apiculatum</i>	yellow buttons		C		6
plants	land plants	Asteraceae	<i>Cirsium vulgare</i>	spear thistle	Y			2
plants	land plants	Asteraceae	<i>Erigeron bonariensis</i>		Y			2
plants	land plants	Asteraceae	<i>Ozothamnus diosmifolius</i>	white dogwood		C		1
plants	land plants	Asteraceae	<i>Ozothamnus diotophyllus</i>			C		3/2
plants	land plants	Asteraceae	<i>Podolepis longipedata</i>	tall copper-wire daisy		C		1
plants	land plants	Asteraceae	<i>Senecio pinnatifolius var. pinnatifolius</i>			C		5
plants	land plants	Asteraceae	<i>Sonchus oleraceus</i>	common sowthistle	Y			1

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	land plants	Asteraceae	<i>Verbesina encelioides</i> var. <i>encelioides</i>		Y			1
plants	land plants	Asteraceae	<i>Xanthium occidentale</i>		Y			2
plants	land plants	Bignoniaceae	<i>Dolichandra unguis-cati</i>	cat's claw creeper	Y			2
plants	land plants	Boraginaceae	<i>Cynoglossum australe</i>				C	1
plants	land plants	Boraginaceae	<i>Ehretia membranifolia</i>	weeping koda			C	1
plants	land plants	Cactaceae	<i>Cereus uruguayanus</i>		Y			4/1
plants	land plants	Cactaceae	<i>Opuntia stricta</i>		Y			15
plants	land plants	Cactaceae	<i>Opuntia tomentosa</i>	velvety tree pear	Y			47
plants	land plants	Campanulaceae	<i>Lobelia stenophylla</i>				C	1/1
plants	land plants	Campanulaceae	<i>Wahlenbergia capillaris</i>				C	2/1
plants	land plants	Capparaceae	<i>Capparis anomala</i>				C	2
plants	land plants	Capparaceae	<i>Capparis canescens</i>				C	1
plants	land plants	Capparaceae	<i>Capparis lasiantha</i>	nipan			C	2
plants	land plants	Capparaceae	<i>Capparis mitchellii</i>				C	3
plants	land plants	Caryophyllaceae	<i>Polycarpon tetraphyllum</i>		Y			1/1
plants	land plants	Casuarinaceae	<i>Allocasuarina inophloia</i>				C	13/1
plants	land plants	Casuarinaceae	<i>Allocasuarina luehmannii</i>	bull oak			C	41
plants	land plants	Casuarinaceae	<i>Casuarina cristata</i>	belah			C	5
plants	land plants	Celastraceae	<i>Denhamia celastroides</i>	broad-leaved boxwood			C	1
plants	land plants	Celastraceae	<i>Denhamia oleaster</i>				C	1
plants	land plants	Celastraceae	<i>Denhamia pittosporoides</i> subsp. <i>pittosporoides</i>				C	1
plants	land plants	Celastraceae	<i>Elaeodendron australe</i> var. <i>integrifolium</i>				C	2
plants	land plants	Chenopodiaceae	<i>Atriplex muelleri</i>	lagoon saltbush			C	1
plants	land plants	Chenopodiaceae	<i>Einadia nutans</i>				C	3
plants	land plants	Chenopodiaceae	<i>Enchylaena tomentosa</i>				C	5
plants	land plants	Chenopodiaceae	<i>Maireana microphylla</i>				C	3
plants	land plants	Chenopodiaceae	<i>Rhagodia spinescens</i>	thorny saltbush			C	4
plants	land plants	Chenopodiaceae	<i>Salsola australis</i>				C	1
plants	land plants	Chenopodiaceae	<i>Sclerolaena birchii</i>	galvanised burr			C	4
plants	land plants	Chenopodiaceae	<i>Sclerolaena muricata</i>				C	2
plants	land plants	Crassulaceae	<i>Bryophyllum delagoense</i>		Y			31
plants	land plants	Cupressaceae	<i>Callitris endlicheri</i>	black cypress pine			C	3
plants	land plants	Cupressaceae	<i>Callitris glaucophylla</i>	white cypress pine			C	56
plants	land plants	Cyperaceae	<i>Bulbostylis pyriformis</i>				C	2/1
plants	land plants	Cyperaceae	<i>Carex</i>					1
plants	land plants	Cyperaceae	<i>Carex appressa</i>				C	2/1
plants	land plants	Cyperaceae	<i>Cyperus bifax</i>	western nutgrass			C	1
plants	land plants	Cyperaceae	<i>Cyperus castaneus</i>				C	1
plants	land plants	Cyperaceae	<i>Cyperus gracilis</i>				C	1
plants	land plants	Cyperaceae	<i>Cyperus isabellinus</i>				C	1/1
plants	land plants	Cyperaceae	<i>Cyperus polystachyos</i> var. <i>polystachyos</i>				C	1/1
plants	land plants	Cyperaceae	<i>Eleocharis blakeana</i>				C	7/6
plants	land plants	Cyperaceae	<i>Eleocharis plana</i>	ribbed spikerush			C	1
plants	land plants	Cyperaceae	<i>Fuirena incrassata</i>				C	1/1
plants	land plants	Cyperaceae	<i>Gahnia aspera</i>				C	11
plants	land plants	Cyperaceae	<i>Schoenus kennyi</i>				C	3

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	land plants	Cyperaceae	<i>Scleria sphacelata</i>			C		1
plants	land plants	Droseraceae	<i>Drosera burmanni</i>			C		2/2
plants	land plants	Elatinaceae	<i>Elatine gratioloides</i>	waterwort		C		2/2
plants	land plants	Ericaceae	<i>Melichrus sp. (Isla Gorge P.Sharpe+ 601)</i>			C		1/1
plants	land plants	Ericaceae	<i>Melichrus urceolatus</i>	honey gorse		C		1
plants	land plants	Erythroxylaceae	<i>Erythroxylum australe</i>	cocaine tree		C		1
plants	land plants	Euphorbiaceae	<i>Croton</i>					1
plants	land plants	Goodeniaceae	<i>Brunonia australis</i>	blue pincushion		C		1
plants	land plants	Goodeniaceae	<i>Goodenia delicata</i>			C		1/1
plants	land plants	Goodeniaceae	<i>Goodenia glabra</i>			C		1
plants	land plants	Haloragaceae	<i>Gonocarpus urceolatus</i>			C		1
plants	land plants	Hemerocallidaceae	<i>Dianella brevipedunculata</i>			C		1/1
plants	land plants	Hemerocallidaceae	<i>Dianella longifolia</i>			C		2
plants	land plants	Hemerocallidaceae	<i>Dianella revoluta</i>			C		1/1
plants	land plants	Juncaceae	<i>Juncus psammophilus</i>			C		1
plants	land plants	Lauraceae	<i>Cassytha glabella forma glabella</i>			C		4
plants	land plants	Laxmanniaceae	<i>Laxmannia gracilis</i>	slender wire lily		C		2
plants	land plants	Laxmanniaceae	<i>Lomandra</i>					2/1
plants	land plants	Laxmanniaceae	<i>Lomandra filiformis</i>			C		1/1
plants	land plants	Laxmanniaceae	<i>Lomandra leucocephala subsp. leucocephala</i>			C		3
plants	land plants	Laxmanniaceae	<i>Lomandra longifolia</i>			C		5/1
plants	land plants	Laxmanniaceae	<i>Lomandra multiflora subsp. multiflora</i>			C		7
plants	land plants	Leguminosae	<i>Acacia</i>					3/2
plants	land plants	Leguminosae	<i>Acacia amblygona</i>	fan-leaf wattle		C		1/1
plants	land plants	Leguminosae	<i>Acacia burrowii</i>			C		9
plants	land plants	Leguminosae	<i>Acacia chinchillensis</i>			C		2/2
plants	land plants	Leguminosae	<i>Acacia conferta</i>			C		5
plants	land plants	Leguminosae	<i>Acacia crassa</i>			C		33
plants	land plants	Leguminosae	<i>Acacia deanei</i>			C		4
plants	land plants	Leguminosae	<i>Acacia debilis</i>			C		2
plants	land plants	Leguminosae	<i>Acacia decora</i>	pretty wattle		C		1
plants	land plants	Leguminosae	<i>Acacia excelsa</i>			C		2
plants	land plants	Leguminosae	<i>Acacia hakeoides</i>	hakea wattle		C		1/1
plants	land plants	Leguminosae	<i>Acacia harpophylla</i>	brigalow		C		7
plants	land plants	Leguminosae	<i>Acacia implexa</i>	lightwood		C		1
plants	land plants	Leguminosae	<i>Acacia ixiophylla</i>			C		4
plants	land plants	Leguminosae	<i>Acacia leiocalyx subsp. leiocalyx</i>			C		3
plants	land plants	Leguminosae	<i>Acacia melvillei</i>			C		2
plants	land plants	Leguminosae	<i>Acacia neriifolia</i>	pechey wattle		C		1/1
plants	land plants	Leguminosae	<i>Acacia salicina</i>	doolan		C		1
plants	land plants	Leguminosae	<i>Acacia semirigida</i>			C		1/1
plants	land plants	Leguminosae	<i>Acacia sparsiflora</i>			C		2/1
plants	land plants	Leguminosae	<i>Acacia spectabilis</i>	pilliga wattle		C		2
plants	land plants	Leguminosae	<i>Acacia tenuinervis</i>			C		11/9
plants	land plants	Leguminosae	<i>Glycine tomentella</i>	woolly glycine		C		1
plants	land plants	Leguminosae	<i>Macroptilium lathyroides</i>		Y			1/1

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plants	land plants	Leguminosae	<i>Mirbelia pungens</i>			C		2/2
plants	land plants	Leguminosae	<i>Senna artemisioides</i>			C		1
plants	land plants	Leguminosae	<i>Vicia sativa subsp. nigra</i>		Y			2
plants	land plants	Loranthaceae	<i>Amyema congener</i>			C		6
plants	land plants	Loranthaceae	<i>Amyema miquelii</i>			C		1/1
plants	land plants	Loranthaceae	<i>Amyema quandang</i>			C		1
plants	land plants	Loranthaceae	<i>Lysiana</i>					4
plants	land plants	Loranthaceae	<i>Lysiana exocarpi</i>			C		3
plants	land plants	Loranthaceae	<i>Lysiana exocarpi subsp. tenuis</i>			C		1
plants	land plants	Loranthaceae	<i>Lysiana subfalcata</i>			C		1
plants	land plants	Malvaceae	<i>Abutilon oxycarpum</i>			C		1
plants	land plants	Malvaceae	<i>Hibiscus sturtii var. sturtii</i>			C		1
plants	land plants	Malvaceae	<i>Malvastrum americanum</i>		Y			1
plants	land plants	Meliaceae	<i>Owenia acidula</i>	emu apple		C		2
plants	land plants	Meliaceae	<i>Turraea pubescens</i>	native honeysuckle		C		1
plants	land plants	Myrtaceae	<i>Angophora floribunda</i>	rough-barked apple		C		5
plants	land plants	Myrtaceae	<i>Angophora leiocarpa</i>	rusty gum		C		6
plants	land plants	Myrtaceae	<i>Corymbia</i>					1
plants	land plants	Myrtaceae	<i>Corymbia clarksoniana</i>			C		4/1
plants	land plants	Myrtaceae	<i>Corymbia tessellaris</i>	Moreton Bay ash		C		2
plants	land plants	Myrtaceae	<i>Corymbia trachyphloia subsp. trachyphloia</i>			C		13
plants	land plants	Myrtaceae	<i>Eucalyptus chloroclada</i>	Baradine red gum		C		5
plants	land plants	Myrtaceae	<i>Eucalyptus crebra</i>	narrow-leaved red ironbark		C		22/2
plants	land plants	Myrtaceae	<i>Eucalyptus exserta</i>	Queensland peppermint		C		4
plants	land plants	Myrtaceae	<i>Eucalyptus fibrosa</i>			C		4
plants	land plants	Myrtaceae	<i>Eucalyptus fibrosa subsp. nubilis</i>			C		6
plants	land plants	Myrtaceae	<i>Eucalyptus microcarpa</i>	inland grey box		C		5
plants	land plants	Myrtaceae	<i>Eucalyptus populnea</i>	poplar box		C		17/1
plants	land plants	Myrtaceae	<i>Eucalyptus tereticornis</i>			C		5
plants	land plants	Myrtaceae	<i>Homoranthus melanostictus</i>			C		6/2
plants	land plants	Myrtaceae	<i>Leptospermum polygalifolium</i>	tantoon		C		5
plants	land plants	Myrtaceae	<i>Lysicarpus angustifolius</i>	budgeroo		C		11
plants	land plants	Myrtaceae	<i>Melaleuca decora</i>			C		10/1
plants	land plants	Myrtaceae	<i>Melaleuca lanceolata</i>			C		1
plants	land plants	Myrtaceae	<i>Melaleuca nodosa</i>			C		3
plants	land plants	Myrtaceae	<i>Melaleuca pallescens</i>			C		2
plants	land plants	Myrtaceae	<i>Melaleuca uncinata</i>			C		7
plants	land plants	Myrtaceae	<i>Micromyrtus sessilis</i>			C		4
plants	land plants	Oleaceae	<i>Jasminum didymum</i>			C		1
plants	land plants	Oleaceae	<i>Jasminum didymum subsp. didymum</i>			C		2
plants	land plants	Oleaceae	<i>Jasminum didymum subsp. lineare</i>			C		1
plants	land plants	Orchidaceae	<i>Cyanicula caerulea</i>			C		1/1
plants	land plants	Orchidaceae	<i>Cymbidium canaliculatum</i>			C		7
plants	land plants	Orchidaceae	<i>Pterostylis bicolor</i>			C		1/1
plants	land plants	Orchidaceae	<i>Pterostylis cobarensis</i>			C		2/2
plants	land plants	Orchidaceae	<i>Pterostylis mitchellii</i>			C		1/1

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plants	land plants	Oxalidaceae	<i>Oxalis perennans</i>			C		3
plants	land plants	Papaveraceae	<i>Argemone ochroleuca subsp. ochroleuca</i>	Mexican poppy	Y			1
plants	land plants	Pedaliaceae	<i>Josephinia eugeniae</i>	josephinia burr		C		1/1
plants	land plants	Phyllanthaceae	<i>Phyllanthus virgatus</i>			C		1
plants	land plants	Phyllanthaceae	<i>Poranthera microphylla</i>	small poranthera		C		2/2
plants	land plants	Picrodendraceae	<i>Petalostigma pubescens</i>	quinine tree		C		9/1
plants	land plants	Pittosporaceae	<i>Bursaria spinosa subsp. spinosa</i>			C		1
plants	land plants	Pittosporaceae	<i>Pittosporum angustifolium</i>			C		1
plants	land plants	Poaceae	<i>Ancistrachne uncinulata</i>	hooky grass		C		7
plants	land plants	Poaceae	<i>Aristida caput-medusae</i>			C		27
plants	land plants	Poaceae	<i>Aristida echinata</i>			C		1/1
plants	land plants	Poaceae	<i>Aristida jerichoensis</i>			C		5
plants	land plants	Poaceae	<i>Aristida leichhardtiana</i>			C		3
plants	land plants	Poaceae	<i>Aristida personata</i>			C		1
plants	land plants	Poaceae	<i>Aristida queenslandica</i>			C		5
plants	land plants	Poaceae	<i>Aristida queenslandica var. queenslandica</i>			C		1
plants	land plants	Poaceae	<i>Aristida ramosa</i>	purple wiregrass		C		10
plants	land plants	Poaceae	<i>Arundinella nepalensis</i>	reedgrass		C		5
plants	land plants	Poaceae	<i>Arundo donax</i>		Y			1
plants	land plants	Poaceae	<i>Austrostipa verticillata</i>	slender bamboo grass		C		3
plants	land plants	Poaceae	<i>Bothriochloa bladhii</i>			C		1
plants	land plants	Poaceae	<i>Bothriochloa ewartiana</i>	desert bluegrass		C		1
plants	land plants	Poaceae	<i>Cenchrus ciliaris</i>		Y			5/1
plants	land plants	Poaceae	<i>Chloris gayana</i>	rhodes grass	Y			1
plants	land plants	Poaceae	<i>Chrysopogon fallax</i>			C		3
plants	land plants	Poaceae	<i>Cleistochloa subjuncea</i>			C		5
plants	land plants	Poaceae	<i>Cymbopogon refractus</i>	barbed-wire grass		C		1
plants	land plants	Poaceae	<i>Cynodon dactylon var. dactylon</i>		Y			3
plants	land plants	Poaceae	<i>Dactyloctenium radulans</i>	button grass		C		1
plants	land plants	Poaceae	<i>Dichanthium sericeum</i>			C		1
plants	land plants	Poaceae	<i>Echinochloa</i>					1
plants	land plants	Poaceae	<i>Echinochloa colona</i>	awnless barnyard grass	Y			2
plants	land plants	Poaceae	<i>Enteropogon acicularis</i>	curly windmill grass		C		4
plants	land plants	Poaceae	<i>Enteropogon ramosus</i>			C		9
plants	land plants	Poaceae	<i>Entolasia marginata</i>	bordered panic		C		5
plants	land plants	Poaceae	<i>Eragrostis brownii</i>	Brown's lovegrass		C		1/1
plants	land plants	Poaceae	<i>Eragrostis curvula</i>		Y			2
plants	land plants	Poaceae	<i>Eragrostis lacunaria</i>	purple lovegrass		C		10/1
plants	land plants	Poaceae	<i>Eragrostis sororia</i>			C		4
plants	land plants	Poaceae	<i>Eriachne mucronata</i>			C		11
plants	land plants	Poaceae	<i>Lachnagrostis filiformis</i>			C		1
plants	land plants	Poaceae	<i>Megathyrsus maximus</i>		Y			3
plants	land plants	Poaceae	<i>Melinis repens</i>	red natal grass	Y			1
plants	land plants	Poaceae	<i>Monachather paradoxus</i>	bandicoot grass		C		1
plants	land plants	Poaceae	<i>Paspalidium caespitosum</i>	brigalow grass		C		2
plants	land plants	Poaceae	<i>Paspalidium constrictum</i>			C		1

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	land plants	Poaceae	<i>Paspalidium distans</i>	shotgrass		C		1
plants	land plants	Poaceae	<i>Paspalum distichum</i>	water couch	Y			1
plants	land plants	Poaceae	<i>Sorghum halepense</i>	Johnson grass	Y			1
plants	land plants	Poaceae	<i>Sporobolus caroli</i>	fairy grass		C		3
plants	land plants	Poaceae	<i>Sporobolus creber</i>			C		2
plants	land plants	Poaceae	<i>Sporobolus scabridus</i>			C		1
plants	land plants	Poaceae	<i>Tragus australianus</i>	small burr grass		C		1
plants	land plants	Poaceae	<i>Walwhalleya subxerophila</i>			C		3/1
plants	land plants	Portulacaceae	<i>Calandrinia</i> sp. (Nerriga I.R.H.Telford 8677)			C		1/1
plants	land plants	Portulacaceae	<i>Portulaca oleracea</i>	pigweed	Y			1
plants	land plants	Proteaceae	<i>Grevillea striata</i>	beefwood		C		3
plants	land plants	Proteaceae	<i>Hakea lorea</i> subsp. <i>lorea</i>			C		8
plants	land plants	Proteaceae	<i>Hakea purpurea</i>			C		7/1
plants	land plants	Pteridaceae	<i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>			C		9
plants	land plants	Rhamnaceae	<i>Alphitonia excelsa</i>	soap tree		C		9
plants	land plants	Rubiaceae	<i>Everistia vacciniifolia</i>			C		1
plants	land plants	Rubiaceae	<i>Psydrax odorata</i>			C		2
plants	land plants	Rubiaceae	<i>Psydrax oleifolia</i>			C		3
plants	land plants	Rutaceae	<i>Citrus glauca</i>			C		7
plants	land plants	Rutaceae	<i>Cyanothamnus bipinnatus</i>			C		6
plants	land plants	Rutaceae	<i>Cyanothamnus occidentalis</i>			C		1/1
plants	land plants	Rutaceae	<i>Flindersia australis</i>	crow's ash		C		1
plants	land plants	Rutaceae	<i>Geijera parviflora</i>	wilga		C		14
plants	land plants	Rutaceae	<i>Philotheca difformis</i> subsp. <i>difformis</i>			C		2/2
plants	land plants	Rutaceae	<i>Philotheca sporadica</i>			NT	V	2/1
plants	land plants	Rutaceae	<i>Zieria aspalathoides</i> subsp. <i>aspalathoides</i>			C		1/1
plants	land plants	Santalaceae	<i>Santalum lanceolatum</i>			C		3
plants	land plants	Sapindaceae	<i>Alectryon diversifolius</i>	scrub boonaree		C		4
plants	land plants	Sapindaceae	<i>Alectryon oleifolius</i> subsp. <i>elongatus</i>			C		5
plants	land plants	Sapindaceae	<i>Atalaya hemiglauca</i>			C		1
plants	land plants	Sapindaceae	<i>Dodonaea macrossanii</i>			C		4/1
plants	land plants	Sapindaceae	<i>Dodonaea peduncularis</i>			C		1/1
plants	land plants	Sapindaceae	<i>Dodonaea triangularis</i>			C		2/2
plants	land plants	Sapindaceae	<i>Dodonaea viscosa</i>			C		2
plants	land plants	Sapotaceae	<i>Planchonella cotinifolia</i> var. <i>pubescens</i>			C		1
plants	land plants	Scrophulariaceae	<i>Eremophila debilis</i>	winter apple		C		2
plants	land plants	Scrophulariaceae	<i>Eremophila mitchellii</i>			C		9
plants	land plants	Scrophulariaceae	<i>Myoporum</i>					1
plants	land plants	Solanaceae	<i>Solanum ferocissimum</i>			C		2
plants	land plants	Solanaceae	<i>Solanum nemophilum</i>			C		5/1
plants	land plants	Solanaceae	<i>Solanum parvifolium</i> subsp. <i>parvifolium</i>			C		1
plants	land plants	Sterculiaceae	<i>Brachychiton populneus</i>			C		1
plants	land plants	Sterculiaceae	<i>Brachychiton populneus</i> subsp. <i>trilobus</i>			C		1
plants	land plants	Sterculiaceae	<i>Brachychiton rupestris</i>			C		2
plants	land plants	Thymelaeaceae	<i>Pimelea neoanglica</i>	poison pimelea		C		1
plants	land plants	Thymelaeaceae	<i>Pimelea trichostachya</i>	flaxweed		C		3/1

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	land plants	Verbenaceae	<i>Glandularia aristigera</i>		Y			8
plants	land plants	Viscaceae	<i>Viscum articulatum</i>	flat mistletoe		C		1/1
plants	land plants	Viscaceae	<i>Viscum whitei subsp. whitei</i>			C		1/1
plants	land plants	Xanthorrhoeaceae	<i>Xanthorrhoea johnsonii</i>			C		33
plants	land plants	Zygophyllaceae	<i>Tribulus micrococcus</i>	yellow vine		C		1

CODES

I - Y indicates that the taxon is introduced to Queensland and has naturalised.

Q - Indicates the Queensland conservation status of each taxon under the *Nature Conservation Act 1992*.

The codes are Extinct (EX), Extinct in the Wild (PE), Critically Endangered (CR), Endangered (E), Vulnerable (V), Near Threatened (NT), Special Least Concern (SL) and Least Concern (C).

A - Indicates the Australian conservation status of each taxon under the *Environment Protection and Biodiversity Conservation Act 1999*.

The values of EPBC are Extinct (EX), Extinct in the Wild (XW), Critically Endangered (CE), Endangered (E), Vulnerable (V) and Conservation Dependent (CD).

Records - The first number indicates the total number of records of the taxon (wildlife records and species listings for selected areas).

This number is output as 99999 if it equals or exceeds this value. A second number located after a / indicates the number of specimen records for the taxon.

This number is output as 999 if it equals or exceeds this value.



Queensland Government

Department of Environment and Science

Environmental Reports

Matters of State Environmental Significance

For the selected area of interest
Lot: 8 Plan: RP190982

Environmental Reports - General Information

The Environmental Reports portal provides for the assessment of selected matters of interest relevant to a user specified location, or area of interest (AOI). All area and derivative figures are relevant to the extent of matters of interest contained within the AOI unless otherwise stated. Please note, if a user selects an AOI via the "central coordinates" option, the resulting assessment area encompasses an area extending for a 2km radius from the point of interest.

All area and area derived figures included in this report have been calculated via reprojecting relevant spatial features to Albers equal-area conic projection (central meridian = 146, datum Geocentric Datum of Australia 1994). As a result, area figures may differ slightly if calculated for the same features using a different co-ordinate system.

Figures in tables may be affected by rounding.

The matters of interest reported on in this document are based upon available state mapped datasets. Where the report indicates that a matter of interest is not present within the AOI (e.g. where area related calculations are equal to zero, or no values are listed), this may be due either to the fact that state mapping has not been undertaken for the AOI, that state mapping is incomplete for the AOI, or that no values have been identified within the site.

The information presented in this report should be considered as a guide only and field survey may be required to validate values on the ground.

Please direct queries about these reports to: Planning.Support@des.qld.gov.au

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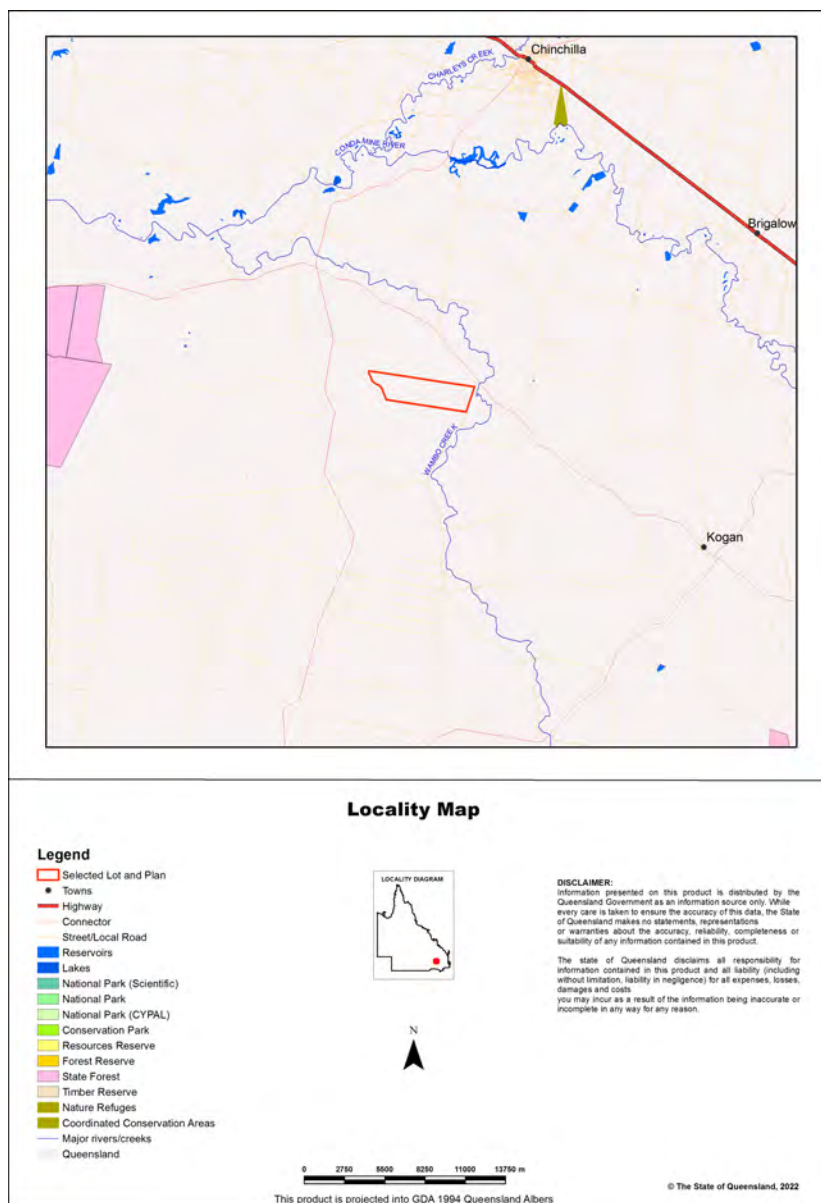
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Assessment Area Details

The following table provides an overview of the area of interest (AOI) with respect to selected topographic and environmental values.

Table 1: Summary table, details for AOI Lot: 8 Plan: RP190982

Size (ha)	1,141.15
Local Government(s)	Western Downs Regional
Bioregion(s)	Brigalow Belt
Subregion(s)	Inglewood Sandstones
Catchment(s)	Balonne-Condamine



Matters of State Environmental Significance (MSES)

MSES Categories

Queensland's State Planning Policy (SPP) includes a biodiversity State interest that states:

'The sustainable, long-term conservation of biodiversity is supported. Significant impacts on matters of national or state environmental significance are avoided, or where this cannot be reasonably achieved; impacts are minimised and residual impacts offset.'

The MSES mapping product is a guide to assist planning and development assessment decision-making. Its primary purpose is to support implementation of the SPP biodiversity policy. While it supports the SPP, the mapping does not replace the regulatory mapping or environmental values specifically called up under other laws or regulations. Similarly, the SPP biodiversity policy does not override or replace specific requirements of other Acts or regulations.

The SPP defines matters of state environmental significance as:

- Protected areas (including all classes of protected area except coordinated conservation areas) under the *Nature Conservation Act 1992* ;
- Marine parks and land within a 'marine national park', 'conservation park', 'scientific research', 'preservation' or 'buffer' zone under the *Marine Parks Act 2004* ;
- Areas within declared fish habitat areas that are management A areas or management B areas under the Fisheries Regulation 2008;
- Threatened wildlife under the *Nature Conservation Act 1992* and special least concern animals under the Nature Conservation (Wildlife) Regulation 2006;
- Regulated vegetation under the *Vegetation Management Act 1999* that is:
 - Category B areas on the regulated vegetation management map, that are 'endangered' or 'of concern' regional ecosystems;
 - Category C areas on the regulated vegetation management map that are 'endangered' or 'of concern' regional ecosystems;
 - Category R areas on the regulated vegetation management map;
 - Regional ecosystems that intersect with watercourses identified on the vegetation management watercourse and drainage feature map;
 - Regional ecosystems that intersect with wetlands identified on the vegetation management wetlands map;
- Strategic Environmental Areas under the *Regional Planning Interests Act 2014* ;
- Wetlands in a wetland protection area of wetlands of high ecological significance shown on the Map of Queensland Wetland Environmental Values under the Environment Protection Regulation 2019;
- Wetlands and watercourses in high ecological value waters defined in the Environmental Protection (Water) Policy 2009, schedule 2;
- Legally secured offset areas.

MSES Values Present

The MSES values that are present in the area of interest are summarised in the table below:

Table 2: Summary of MSES present within the AOI

1a Protected Areas- estates	0.0 ha	0.0 %
1b Protected Areas- nature refuges	0.0 ha	0.0 %
1c Protected Areas- special wildlife reserves	0.0 ha	0.0 %
2 State Marine Parks- highly protected zones	0.0 ha	0.0 %
3 Fish habitat areas (A and B areas)	0.0 ha	0.0 %
4 Strategic Environmental Areas (SEA)	0.0 ha	0.0 %
5 High Ecological Significance wetlands on the map of Referable Wetlands	0.0 ha	0.0 %
6a High Ecological Value (HEV) wetlands	0.0 ha	0.0 %
6b High Ecological Value (HEV) waterways **	0.0 km	Not applicable
7a Threatened (endangered or vulnerable) wildlife	0.0 ha	0.0 %
7b Special least concern animals	11.51 ha	1.0%
7c i Koala habitat area - core (SEQ)	0.0 ha	0.0 %
7c ii Koala habitat area - locally refined (SEQ)	0.0 ha	0.0 %
8a Regulated Vegetation - Endangered/Of concern in Category B (remnant)	32.94 ha	2.9%
8b Regulated Vegetation - Endangered/Of concern in Category C (regrowth)	2.37 ha	0.2%
8c Regulated Vegetation - Category R (GBR riverine regrowth)	0.0 ha	0.0 %
8d Regulated Vegetation - Essential habitat	419.99 ha	36.8%
8e Regulated Vegetation - intersecting a watercourse **	9.6 km	Not applicable
8f Regulated Vegetation - within 100m of a Vegetation Management Wetland	0.0 ha	0.0 %
9a Legally secured offset areas- offset register areas	0.0 ha	0.0 %
9b Legally secured offset areas- vegetation offsets through a Property Map of Assessable Vegetation	0.0 ha	0.0 %

Additional Information with Respect to MSES Values Present

MSES - State Conservation Areas

1a. Protected Areas - estates

(no results)

1b. Protected Areas - nature refuges

(no results)

1c. Protected Areas - special wildlife reserves

(no results)

2. State Marine Parks - highly protected zones

(no results)

3. Fish habitat areas (A and B areas)

(no results)

Refer to **Map 1 - MSES - State Conservation Areas** for an overview of the relevant MSES.

MSES - Wetlands and Waterways

4. Strategic Environmental Areas (SEA)

(no results)

5. High Ecological Significance wetlands on the Map of Queensland Wetland Environmental Values

(no results)

6a. Wetlands in High Ecological Value (HEV) waters

(no results)

6b. Waterways in High Ecological Value (HEV) waters

(no results)

Refer to **Map 2 - MSES - Wetlands and Waterways** for an overview of the relevant MSES.

MSES - Species

7a. Threatened (endangered or vulnerable) wildlife

Not applicable

7b. Special least concern animals

Values are present

7c i. Koala habitat area - core (SEQ)

Not applicable

7c ii. Koala habitat area - locally refined (SEQ)

Not applicable

Threatened (endangered or vulnerable) wildlife habitat suitability models

Species	Common name	NCA status	Presence
<i>Boronia keysii</i>		V	None
<i>Calyptorhynchus lathamii</i>	Glossy black cockatoo	V	None
<i>Casuarus casuaris johnsonii</i>	Sthn population cassowary	E	None
<i>Crinia tinnula</i>	Wallum froglet	V	None
<i>Denisonia maculata</i>	Ornamental snake	V	None
<i>Litoria freycineti</i>	Wallum rocketfrog	V	None
<i>Litoria olongburensis</i>	Wallum sedgefrog	V	None
<i>Melaleuca irbyana</i>		E	None
<i>Petaurus gracilis</i>	Mahogany Glider	E	None
<i>Petrogale persephone</i>	Proserpine rock-wallaby	E	None
<i>Phascolarctos cinereus</i>	Koala - outside SEQ*	V	None
<i>Pezoporus wallicus wallicus</i>	Eastern ground parrot	V	None
<i>Taudactylus pleione</i>	Kroombit tinkerfrog	E	None
<i>Xeromys myoides</i>	Water Mouse	V	None

*For koala model, this includes areas outside SEQ. Check 7c SEQ koala habitat for presence/absence.

Threatened (endangered or vulnerable) wildlife species records

(no results)

Special least concern animal species records

Scientific name	Common name	Migratory status
<i>Tachyglossus aculeatus</i>	short-beaked echidna	

*Nature Conservation Act 1992 (NCA) Status- Endangered (E), Vulnerable (V) or Special Least Concern Animal (SL).
Environment Protection and Biodiversity Conservation Act 1999 (EPBC) status: Critically Endangered (CE) Endangered (E), Vulnerable (V)

Migratory status (M) - China and Australia Migratory Bird Agreement (C), Japan and Australia Migratory Bird Agreement (J), Republic of Korea and Australia Migratory Bird Agreement (R), Bonn Migratory Convention (B), Eastern Flyway (E)

To request a species list for an area, or search for a species profile, access Wildlife Online at:

<https://www.qld.gov.au/environment/plants-animals/species-list/>

Refer to **Map 3a - MSES - Species - Threatened (endangered or vulnerable) wildlife and special least concern animals** and **Map 3b - MSES - Species - Koala habitat area (SEQ)** for an overview of the relevant MSES.

MSES - Regulated Vegetation

For further information relating to regional ecosystems in general, go to:

<https://www.qld.gov.au/environment/plants-animals/plants/ecosystems/>

For a more detailed description of a particular regional ecosystem, access the regional ecosystem search page at:

<https://environment.ehp.qld.gov.au/regional-ecosystems/>

8a. Regulated Vegetation - Endangered/Of concern in Category B (remnant)

Regional ecosystem	Vegetation management polygon	Vegetation management status
11.5.1/11.5.20/11.3.2	O-subdom	rem_oc

8b. Regulated Vegetation - Endangered/Of concern in Category C (regrowth)

Regional ecosystem	Vegetation management polygon	Vegetation management status
11.5.1/11.5.20/11.3.2	O-subdom	hvr_oc

8c. Regulated Vegetation - Category R (GBR riverine regrowth)

Not applicable

8d. Regulated Vegetation - Essential habitat

Values are present

8e. Regulated Vegetation - intersecting a watercourse**

A vegetation management watercourse is mapped as present

8f. Regulated Vegetation - within 100m of a Vegetation Management wetland

Not applicable

Refer to **Map 4 - MSES - Regulated Vegetation** for an overview of the relevant MSES.

MSES - Offsets

9a. Legally secured offset areas - offset register areas

(no results)

9b. Legally secured offset areas - vegetation offsets through a Property Map of Assessable Vegetation

(no results)






Refer to **Map 5 - MSES - Offset Areas** for an overview of the relevant MSES.

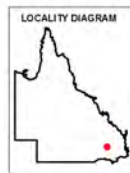
Map 1 - MSES - State Conservation Areas



MSES - State Conservation Areas

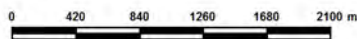
Area of Interest

-  Selected Lot and Plan
-  Towns
-  Freeways/Highways
-  Secondary roads
-  Major rivers/creeks
-  Protected area (estates, nature refuges, special wildlife reserves)
-  Declared fish habitat area (A and B areas)
-  Marine park (highly protected)



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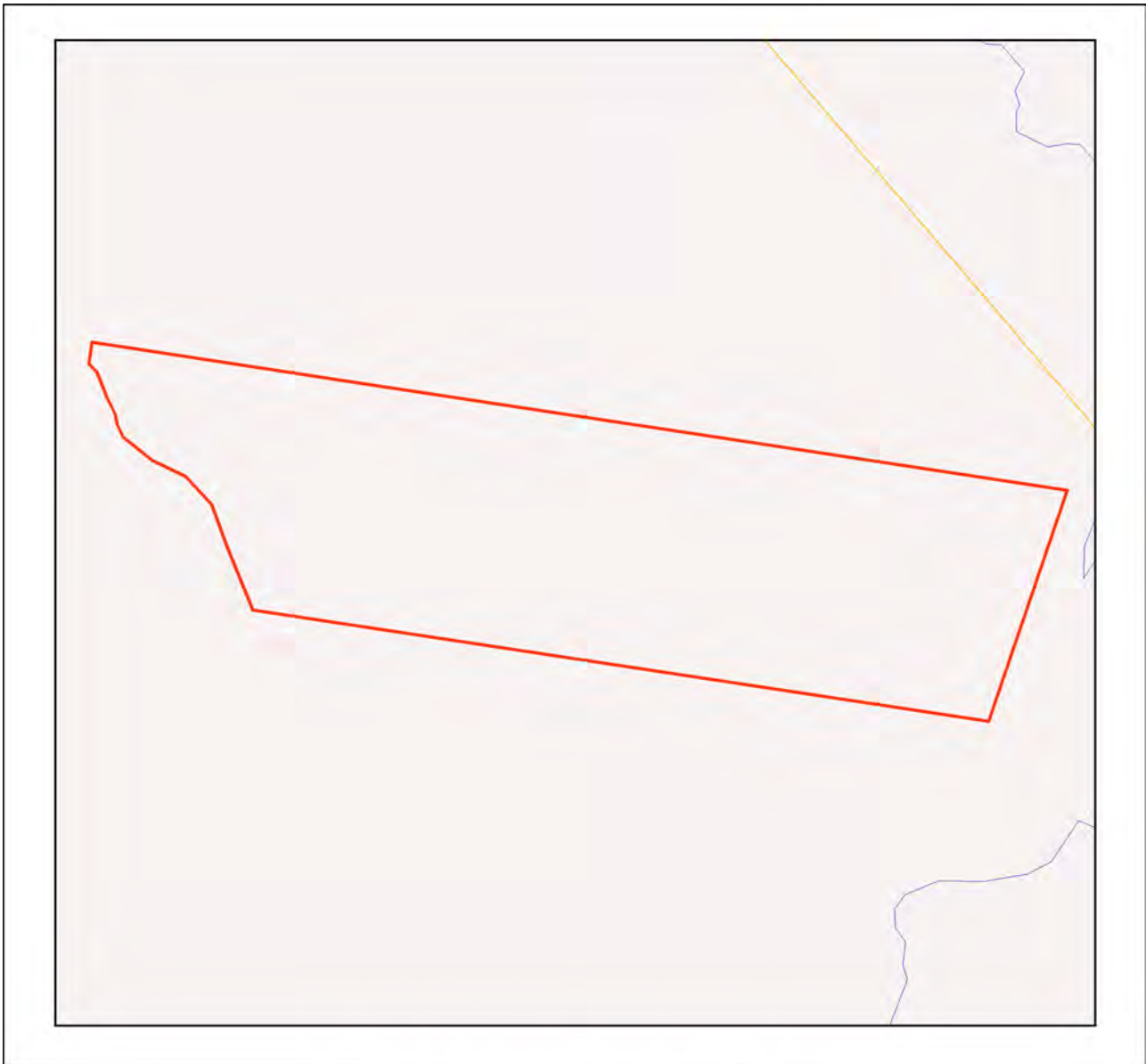
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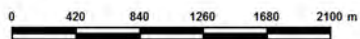
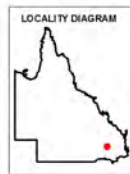
Map 2 - MSES - Wetlands and Waterways



MSES - Wetlands and Waterways

Area of Interest

-  Selected Lot and Plan
-  Towns
-  Freeways/Highways
-  Secondary roads
-  Major rivers/creeks
-  Declared high ecological value waters (watercourse)
-  Strategic environmental area (designated precinct)
-  Declared high ecological value waters (wetland)
-  High ecological significance wetlands



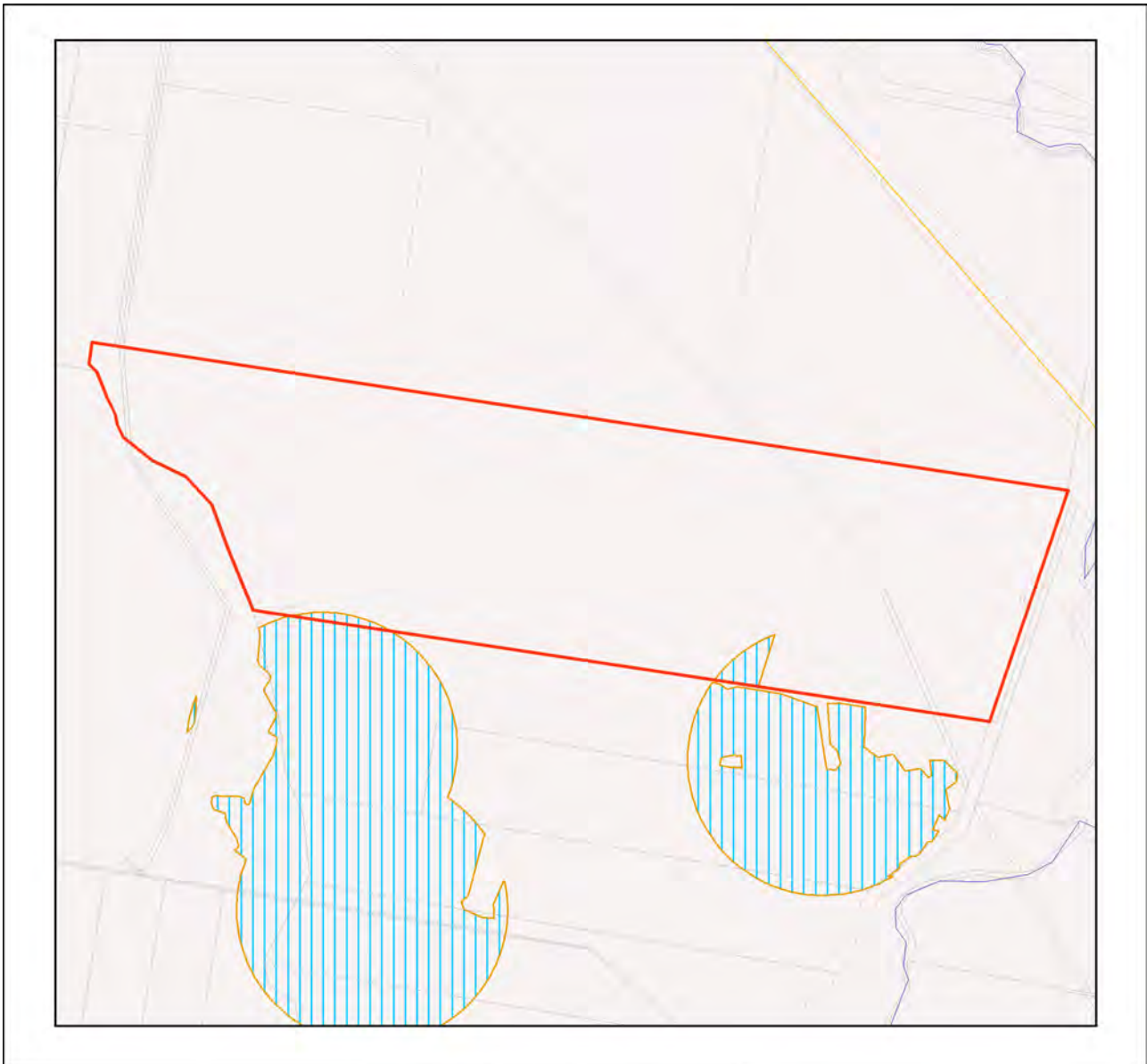
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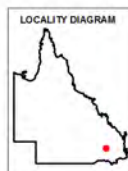
Map 3a - MSES - Species - Threatened (endangered or vulnerable) wildlife and special least concern animals



MSES - Species Threatened (endangered or vulnerable) wildlife and special least concern animals

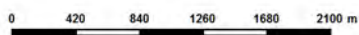
Area of Interest

- Selected Lot and Plan
- Towns
- Freeways/Highways
- Secondary roads
- Major rivers/creeks
- Wildlife habitat (special least concern)
- Wildlife habitat (endangered or vulnerable)



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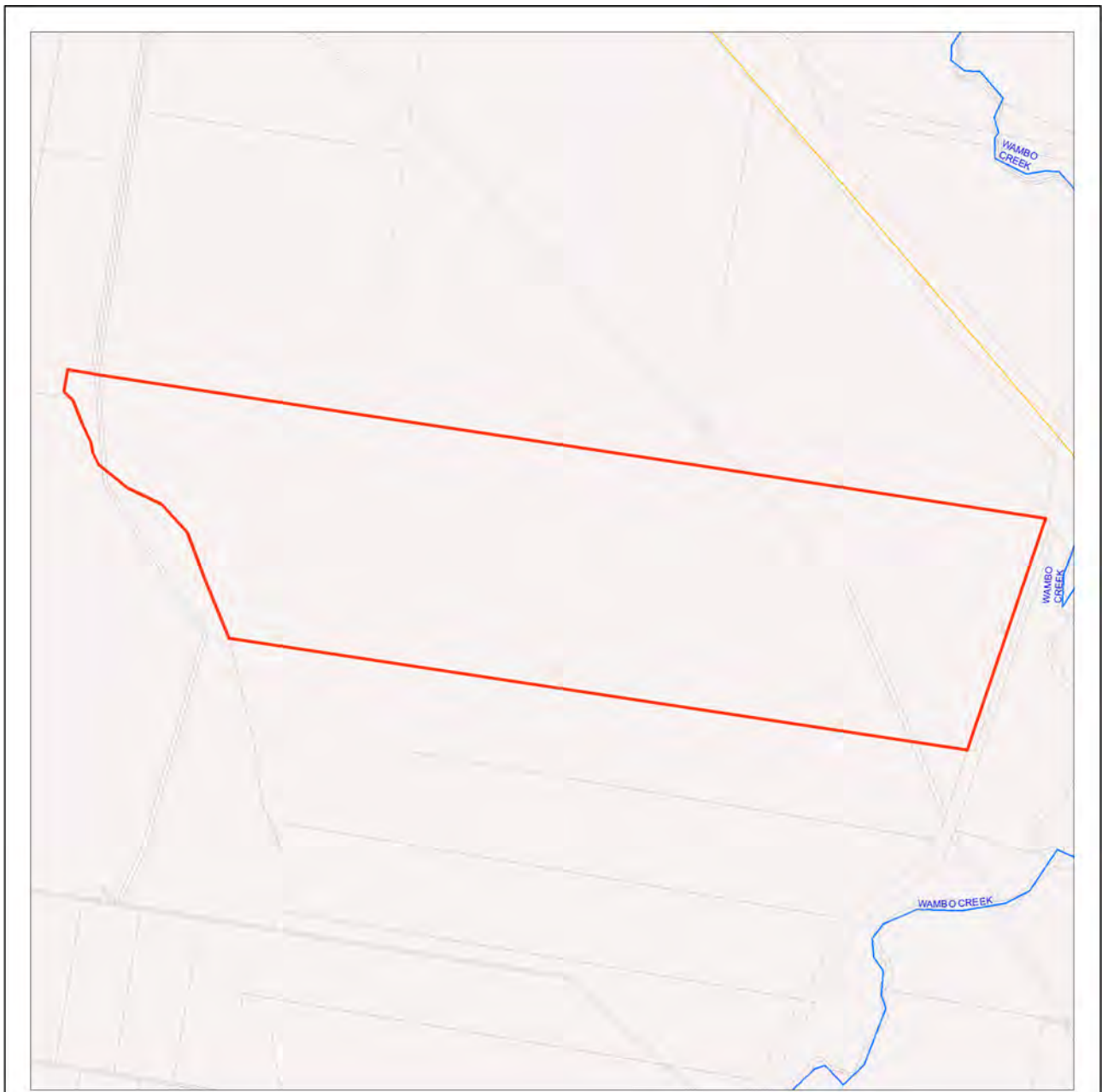
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Map 3b - MSES - Species - Koala habitat area (SEQ)



MSES - Species Koala habitat area (SEQ)

Area of Interest

- Selected Lot and Plan
- Towns
- Freeways/Highways
- Secondary roads
- Major rivers/creeks
- Koala habitat area (core)
- Koala habitat area (locally refined)



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The represented layers for SEQ 'koala habitat area-core' and 'koala habitat area- locally refined' in MSES are sourced directly from the regulatory mapping under the Nature Conservation (Koala) Conservation Plan 2017. Whilst every effort is made to ensure the information remains current, there may be delays between updating versions. Please refer to the original mapping for the most recent version. See <https://environment.des.qld.gov.au/wildlife/animals/living-with/koalas/mapping>

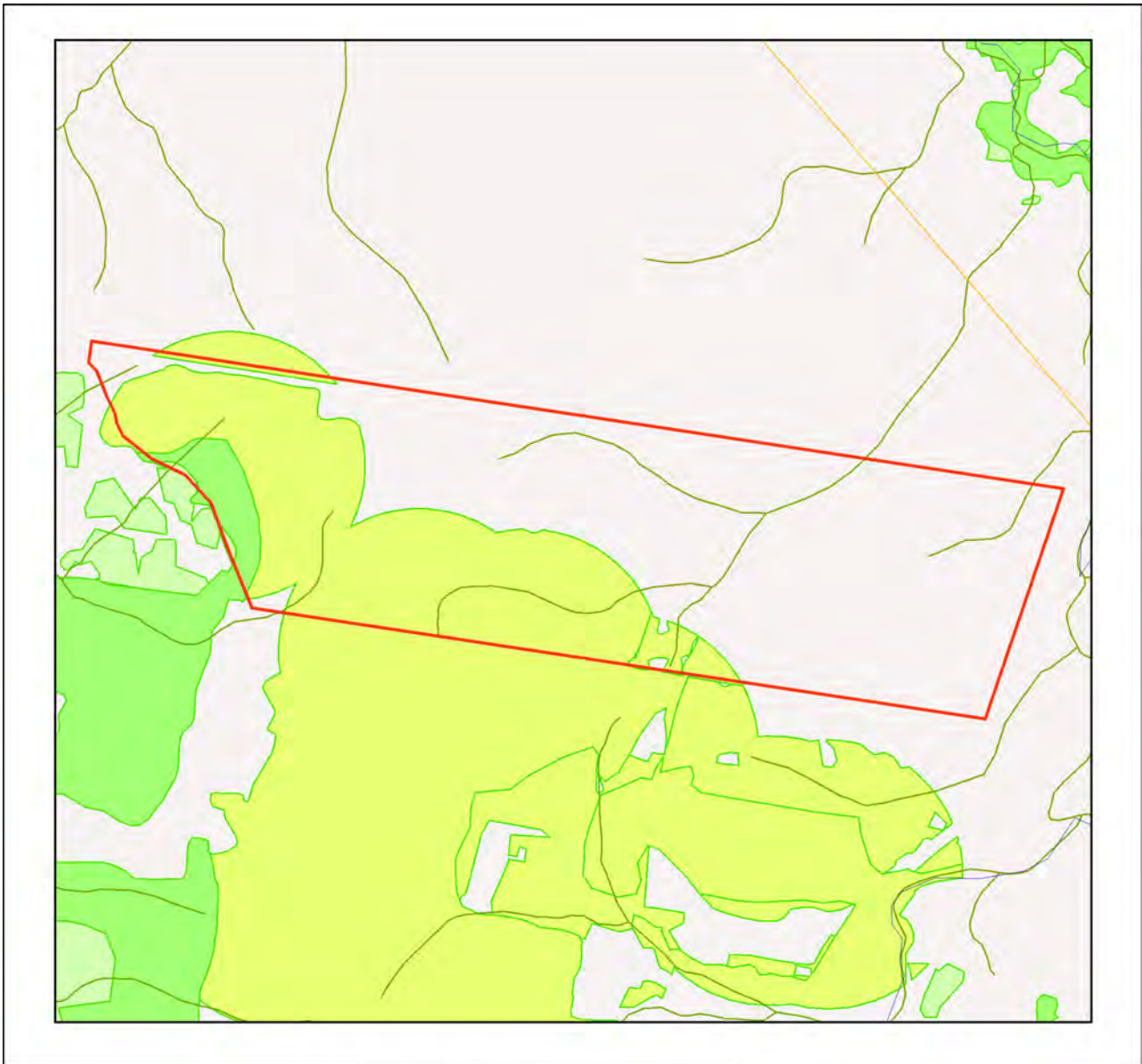
The koala habitat mapping within South East Queensland uses regional ecosystem linework compiled at a scale varying from 1:25,000 to 1:100,000. Linework should be used as a guide only. The positional accuracy of regional ecosystem data mapped at a scale of 1:100,000 is +/- 100 metres.



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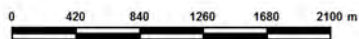
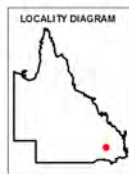
Map 4 - MSES - Regulated Vegetation



MSES - Regulated Vegetation

Area of Interest

- Selected Lot and Plan
- Towns
- Freeways/Highways
- Secondary roads
- Major rivers/creeks
- Regulated vegetation (intersecting a watercourse)
- Regulated vegetation (100m from wetland)
- Regulated vegetation (category B - endangered or of concern)
- Regulated vegetation (category C - endangered or of concern)
- Regulated vegetation (category R - GBR riverine)
- Regulated vegetation (essential habitat)



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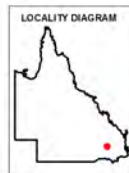
Map 5 - MSES - Offset Areas



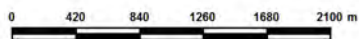
MSES - Offsets

Area of Interest

-  Selected Lot and Plan
-  Towns
-  Freeways/Highways
-  Secondary roads
-  Major rivers/creeks
-  Legally secured offset area (offset register)
-  Legally secured offset area (vegetation offsets)



N



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Appendices

Appendix 1 - Matters of State Environmental Significance (MSES) methodology

MSES mapping is a regional-scale representation of the definition for MSES under the State Planning Policy (SPP). The compiled MSES mapping product is a guide to assist planning and development assessment decision-making. Its primary purpose is to support implementation of the SPP biodiversity policy. While it supports the SPP, the mapping does not replace the regulatory mapping or environmental values specifically called up under other laws or regulations. Similarly, the SPP biodiversity policy does not override or replace specific requirements of other Acts or regulations.

The Queensland Government's "Method for mapping - matters of state environmental significance for use in land use planning and development assessment" can be downloaded from:

<http://www.ehp.qld.gov.au/land/natural-resource/method-mapping-mses.html> .

Appendix 2 - Source Data

The datasets listed below are available on request from:

<http://qldspatial.information.qld.gov.au/catalogue/custom/index.page>

- Matters of State environmental significance

Note: MSES mapping is not based on new or unique data. The primary mapping product draws data from a number of underlying environment databases and geo-referenced information sources. MSES mapping is a versioned product that is updated generally on a twice-yearly basis to incorporate the changes to underlying data sources. Several components of MSES mapping made for the current version may differ from the current underlying data sources. To ensure accuracy, or proper representation of MSES values, it is strongly recommended that users refer to the underlying data sources and review the current definition of MSES in the State Planning Policy, before applying the MSES mapping.

Individual MSES layers can be attributed to the following source data available at QSpatial:

MSES layers	current QSpatial data (http://qspatial.information.qld.gov.au)
Protected Areas-Estates, Nature Refuges, Special Wildlife Reserves	- Protected areas of Queensland - Nature Refuges - Queensland - Special Wildlife Reserves- Queensland
Marine Park-Highly Protected Zones	Moreton Bay marine park zoning 2008
Fish Habitat Areas	Queensland fish habitat areas
Strategic Environmental Areas-designated	Regional Planning Interests Act - Strategic Environmental Areas
HES wetlands	Map of Queensland Wetland Environmental Values
Wetlands in HEV waters	HEV waters: - EPP Water intent for waters Source Wetlands: - Queensland Wetland Mapping (Current version 5) Source Watercourses: - Vegetation management watercourse and drainage feature map (1:100000 and 1:250000)
Wildlife habitat (threatened and special least concern)	-WildNet database species records - habitat suitability models (various) - SEQ koala habitat areas under the Koala Conservation Plan 2019
VMA regulated regional ecosystems	Vegetation management regional ecosystem and remnant map
VMA Essential Habitat	Vegetation management - essential habitat map
VMA Wetlands	Vegetation management wetlands map
Legally secured offsets	Vegetation Management Act property maps of assessable vegetation. For offset register data-contact DES
Regulated Vegetation Map	Vegetation management - regulated vegetation management map

Appendix 3 - Acronyms and Abbreviations

AOI	- Area of Interest
DES	- Department of Environment and Science
EP Act	- <i>Environmental Protection Act 1994</i>
EPP	- Environmental Protection Policy
GDA94	- Geocentric Datum of Australia 1994
GEM	- General Environmental Matters
GIS	- Geographic Information System
MSES	- Matters of State Environmental Significance
NCA	- <i>Nature Conservation Act 1992</i>
RE	- Regional Ecosystem
SPP	- State Planning Policy
VMA	- <i>Vegetation Management Act 1999</i>

APPENDIX B – FLORA SURVEY SPECIES LIST AND SITE DATA

Species recorded
<i>Abelmoschus moschatus</i> subsp. <i>moschatus</i>
<i>Acacia conferta</i>
<i>Acacia crassa</i> subsp. <i>crassa</i>
<i>Acacia harpophylla</i>
<i>Acacia leiocalyx</i>
<i>Acacia rigens</i>
<i>Acacia salicina</i>
<i>Acacia</i> sp.
<i>Acacia stenophylla</i>
<i>Alectryon oleifolius</i> subsp. <i>canescens</i>
<i>Allocasuarina luehmannii</i>
<i>Alphitonia excelsa</i>
<i>Alstonia constricta</i>
<i>Alternanthera micrantha</i>
<i>Alternanthera pungens</i>
<i>Amaranthus macrocarpus</i>
<i>Angophora leiocarpa</i>
<i>Aristida calycina</i>
<i>Aristida caput-medusae</i>
<i>Aristida holathera</i>
<i>Atriplex leptocarpa</i>
<i>Bidens pilosa</i> *
<i>Boerhavia domini</i>
<i>Borhriochloa decipens</i>
<i>Bothriochloa bladhii</i>
<i>Bothriochloa decipiens</i> var. <i>decipiens</i>
<i>Brunoniella australis</i>
<i>Bryophyllum delagoense</i> *
<i>Callitris glaucophylla</i>
<i>Calotis cuneifolia</i>
<i>Calotis lappulacea</i>
<i>Canthium oleifolium</i>
<i>Casuarina cristata</i>
<i>Cenchrus ciliaris</i>
<i>Chenopodium desertorum</i>
<i>Chloris gayana</i> *
<i>Chloris truncate</i>
<i>Chloris ventricose</i>
<i>Chrysocephalum apiculatum</i>
<i>Chrysopogon fallax</i>
<i>Citrus glauca</i>
<i>Commelina diffusa</i>
<i>Conyza bonariensis</i>
<i>Cymbidium canaliculatum</i>

Species recorded
<i>Cymbopogon refractus</i>
<i>Cyperus haspan</i>
<i>Dianella revoluta</i>
<i>Dichanthium sericeum</i>
<i>Dodonea viscosa</i>
<i>Einadia nutans subsp. nutans</i>
<i>Enchylaena tomenstosa</i>
<i>Enteropogon acicularis</i>
<i>Entolasia stricta</i>
<i>Epaltes australis</i>
<i>Eragrostis brownii</i>
<i>Eragrostis curvula*</i>
<i>Eragrostis lacunaria</i>
<i>Eremophila desertii</i>
<i>Eremophila mitchellii</i>
<i>Eucalyptus camaldulensis</i>
<i>Eucalyptus crebra</i>
<i>Eucalyptus populnea</i>
<i>Eucalyptus siderophloia</i>
<i>Eucalyptus woollsiana</i>
<i>Euclayptus crebra</i>
<i>Euphorbia tannensis subsp. tannensis</i>
<i>Evolvulus alsinoides</i>
<i>Fimbristylis dichotoma</i>
<i>Gahnia aspera</i>
<i>Geijera parviflora</i>
<i>Glycine tomentella</i>
<i>Gomphrena celosioides*</i>
<i>Goodenia glabra</i>
<i>Goodenia gracilis</i>
<i>Grevillea striata</i>
<i>Heteropogon contortus</i>
<i>Hibiscus sturtii var. sturtii</i>
<i>Lomandra leucocephala</i>
<i>Lomandra longifolia</i>
<i>Megathyrsus maximus</i>
<i>Melinis repens*</i>
<i>Opuntia stricta *</i>
<i>Opuntia tomentosa*</i>
<i>Panicum decompositum</i>
<i>Paspalidium distans</i>
<i>Perotis rara</i>
<i>Petalostigma pubescens</i>
<i>Pterocaulon redolens*</i>
<i>Pimelea linifolia</i>
<i>Pimelea neoanglica</i>
<i>Ptilotus exaltation var. semilanatus</i>
<i>Rostellularia adscendens var. hispida</i>

Species recorded
<i>Salsola australis</i>
<i>Santalum lanceolatum</i>
<i>Scerolaena bicornis</i>
<i>Scleolaena sp.</i>
<i>Sida cordifolia</i> *
<i>Sida cunninghamii</i>
<i>Sida rhombifolia</i>
<i>Sida rohlanae</i>
<i>Solanum coactiliferum</i>
<i>Solanum ferocissimum</i>
<i>Sporobolus creber</i>
<i>Swainsona greyana</i>
<i>Themeda triandra</i>
<i>Urochloa mosambicensis</i> *
<i>Verbena aristigera</i> *
<i>Wahlenbergia gracilis</i>
<i>Xanthium pungens</i> *

Site ID	RE1
Survey date	30/03/2022
RE herbarium	Non-remnant
GT RE	11.5.1a
GT land zone	5
Landform	Sandy plain
Status	HVR
EDL cover	10
Height	10-30
EDL % cover range	10-30
Structural form	Woodland
TEC potential	No
EDL	T1
EDL median height	12.5
EDL height range	11.5-13.5
T1 median height	12.5
T1 species	Eucalyptus populnea, Eucalyptus woollsiana,
T2 median height	9.5
T2 species	Allocasuarina luehmannii, Callitris glaucophylla, Eucalyptus populnea
S1 median height	1.8
S1 species	Acacia leiocalyx, Acacia crassa subsp. crassa, Acacia conferta, Acacia stenophylla,
S2 median height	1
S2 species	Swainsona greyana
G median height	0.4
G species	Paspalidium distans, Aristida caput-medusae, Aristida calycina, Panicum decompositum
Additional species	Epaltes australis, Alternanthera micrantha, Cheilanthes sieberi, Sida rhombifolia, Euphorbia tannensis subsp. tannensis, Atriplex leptocarpa, Acacia conferta, Angophora leiocarpa, Aristida holathera, Atriplex leptocarpa, Brunoniella australis, Calotis lappulacea, Cymbopogon refractus, Cyperus haspan, Enteropogon acicularis, Fimbristylis dichotoma, Goodenia glabra, Goodenia gracilis, Hibiscus sturtii var. sturtii
Weed cover	0-5
Weed species	Eragrostis curvula, Bidens pilosa
Disturbance	Kangaroos

Site ID	RE2
Survey date	30/03/2022
RE herbarium	Non-remnant
GT RE	11.5.1
GT land zone	5
Landform	Sandy plain
Status	HVR
EDL cover	5
Height	10-30
EDL % cover range	<10
Structural form	Open woodland
TEC potential	No
EDL	T1
EDL median height	11
EDL height range	9-15
T1 median height	11
T1 species	Eucalyptus populnea, Eucalyptus crebra, Eucalyptus siderophloia
T2 median height	8.5
T2 species	Allocasuarina luehmannii, Callitris glaucophylla, Eucalyptus siderophloia, Petalostigma pubescens
S1 median height	1.2
S1 species	Acacia leiocalyx, Acacia crassa subsp. crassa

Site ID	RE2
S2 median height	0.9
S2 species	<i>Sida rhombifolia</i>
G median height	0.3
G species	<i>Paspalidium distans</i> , <i>Aristida caput-medusae</i> , <i>Aristida calycina</i> , <i>Panicum decompositum</i> , <i>Eragrostis brownii</i>
Additional species	<i>Fimbristylis dichotoma</i> , <i>Epaltes australis</i> , <i>Verbena officinalis</i> , <i>Solanum ferocissimum</i> , <i>Sclerolaena birchii</i> , <i>Gahnia aspera</i> , <i>Lomandra longifolia</i> , <i>Bothriochloa bladhii</i> , <i>Amaranthus macrocarpus</i> , <i>Sida rohlanae</i>
Weed cover	70-100
Weed species	<i>Eragrostis curvula</i> , <i>Opuntia stricta</i> , <i>Melinis repens</i> , <i>Gomphrena celosioides</i>
Disturbance	Historical land clearing

Site ID	RE3
Survey date	30/03/2022
RE herbarium	Non-remnant
GT RE	11.3.18
GT land zone	3
Landform	Floodplain depression
Status	HVR
EDL cover	20
Height	10-30
EDL % cover range	10-30
Structural form	Woodland
TEC potential	No
EDL	T1
EDL median height	13.6
EDL height range	11.6-13.7
T1 median height	13.6
T1 species	<i>Eucalyptus populnea</i>
T2 median height	7
T2 species	<i>Callitris glaucophylla</i> , <i>populnea</i> , <i>Canthium oleifolium</i> , <i>Eremophila mitchellii</i>
S1 median height	2.4
S1 species	<i>Eremophila mitchellii</i> , <i>Geijera parviflora</i> , <i>Acacia salicina</i>
S2 median height	
S2 species	
G median height	1.2
G species	<i>Aristida calycina</i> , <i>Panicum decompositum</i> , <i>Eragrostis brownii</i> , <i>Dichanthium sericeum</i> , <i>Chloris ventricosa</i> , <i>Dianella revoluta</i>
Additional species	<i>Eremophila debilis</i> , <i>Cheilanthes sieberi</i> , <i>Entolasia stricta</i> , <i>Panicum effusum</i> , <i>Cymbopogon refractus</i> , <i>Portulacca oleracea</i> , <i>Pimealea neoanglica</i> , <i>Aristida calycina</i> , <i>Brunoniella australis</i> , <i>Bothriochloa decipens</i> , <i>Rostellularia adscendens</i> var. <i>hispida</i> , <i>Bothriochloa bladhii</i> , <i>Chrysocephalum apiculatum</i> , <i>Pimelea linifolia</i> , <i>Alectryon oleifolius</i> , <i>Sclerolaena</i> sp., <i>Boerhavia dominii</i>
Weed cover	0-5
Weed species	<i>Eragrostis curvula</i> , <i>Opuntia stricta</i>
Disturbance	Historical land clearing

Site ID	RE4
Survey date	30/03/2022
RE herbarium	Non-remnant
GT RE	11.3.25
GT land zone	3
Landform	Drainage line
Status	Remnant
EDL cover	20
Height	10-30

Site ID	RE4
EDL % cover range	10-30
Structural form	Woodland
TEC potential	No
EDL	T1
EDL median height	16
EDL height range	11-19
T1 median height	16
T1 species	Eucalyptus camaldulensis, Callitris glaucophylla, Eucalyptus populnea
T2 median height	8
T2 species	Callitris glaucophylla, Allocasuarina luehmannii
S1 median height	2
S1 species	Callitris glaucophylla, Eremophila mitchellii, Allocasuarina luehmannii
S2 median height	
S2 species	
G median height	1.5
G species	Paspalidium decompositum, Chrysopogon fallax, Aristida calycina, Sida rohlenae, Glycine tomentella
Additional species	Xanthorhoea glauca, Lomandra leucocephala, Dianella revoluta, Cheilanthes sieberi, Acacia salicina
Weed cover	70-100
Weed species	Melinis repens, Bidens pilosa
Disturbance	None

Site ID	RE5
Survey date	31/03/2022
RE herbarium	Non-remnant
GT RE	11.5.1a
GT land zone	5
Landform	Sandy plain
Status	Remnant
EDL cover	15
Height	10-30
EDL % cover range	10-30
Structural form	Woodland
TEC potential	No
EDL	T1
EDL median height	18
EDL height range	17-22
T1 median height	18
T1 species	Eucalyptus populnea, Callitris glaucophylla
T2 median height	8
T2 species	Allocasuarina luehmannii, Callitris glaucophylla, Canthium oleifolium
S1 median height	2.5
S1 species	Geijera parviflora
S2 median height	
S2 species	
G median height	0.5
G species	Chrysopogon fallax, Bothriochloa decipens, Paspalidium distans, Panicum decompositum, Abolmoschus moschatus subsp. moschatus
Additional species	Cyperus haspan, Dianella revoluta, Panicum effusum, Epaltes australis, Commelina diffusa, Chloris ventricola, Eragrostis lucanaria, Brunoniella australis
Weed cover	0-5
Weed species	Megathyrsus maximus
Disturbance	Historical land clearing

Site ID	RE6
Survey date	31/03/2022
RE herbarium	Non-remnant
GT RE	Non-remnant
GT land zone	5
Landform	Sandy plain
Status	Non-remnant
EDL cover	95
Height	0-2
EDL % cover range	70-100
Structural form	Grassland
TEC potential	No
EDL	G
EDL median height	0.4
EDL height range	17-22
E median height	3
E species	Grevillea striata
T1 median height	
T1 species	
T2 median height	
T2 species	
S1 median height	3
S1 species	Allocasuarina luehmannii, Grevillea striata
S2 median height	
S2 species	
G median height	0.4
G species	Eragrostis lacunaria, Panicum decompositum, Paspalidium distans, Eragrostis brownie, Epaltes australis
Additional species	Phyllanthus virgatus, Aristida caput-medusae, Chloris divaricata, Chrysocephalum apicularis
Weed cover	5-30
Weed species	Eragrostis curvula
Disturbance	Historical land clearing

Site ID	RE7
Survey date	31/03/2022
RE herbarium	Non-remnant
GT RE	11.5.1a
GT land zone	5
Landform	Sandy plain
Status	Remnant
EDL cover	25
Height	10-30
EDL % cover range	10-30
Structural form	Woodland
TEC potential	No
EDL	T1
EDL median height	15.5
EDL height range	13-18
T1 median height	15.5
T1 species	Eucalyptus populnea
T2 median height	9
T2 species	Allocasuarina luehmannii, Eremophila mitchellii, Eucalyptus populnea
S1 median height	3.5
S1 species	Geijera parviflora, Eremophila mitchellii
S2 median height	
S2 species	
G median height	1.2

Site ID	RE7
G species	Enteropogon acicularis, Heteropogon contortus, Paspalidium distans, Cyperus haspan, Alternanthera micrantha
Additional species	Commelina diffusa, Heyeropogon refractus, Eragrostis brownii, Gomphrena celioides, Citrus glauca
Weed cover	70-100
Weed species	Eragrostis curvula, Megathyrsus maximus, Bryophyllum delagoense, Opuntia tomentosa
Disturbance	Historical land clearing

Site ID	RE8
Survey date	31/03/2022
RE herbarium	11.5.1a/11.5.1
GT RE	11.3.18
GT land zone	3
Landform	Alluvial flat
Status	Remnant
EDL cover	25
Height	10-30
EDL % cover range	10-30
Structural form	Woodland
TEC potential	No
EDL	T1
EDL median height	16
EDL height range	15-17
T1 median height	16
T1 species	Eucalyptus populnea
T2 median height	9
T2 species	Casuarina cristata, Eremophila mitchellii, Eucalyptus populnea, Alectryon oleifolius
S1 median height	3.5
S1 species	Geijera parviflora, Eremophila mitchellii, Alstonia constricta
S2 median height	1.4
S2 species	Einadia nutans subsp. nutans, Sclerolaena birchii
G median height	1.3
G species	Bothriochloa decipiens var. decipiens, Bothriochloa bladhii, Enteropogon acicularis, Cymbopogon refractus, Panicum decompositum
Additional species	Cheilanthes sieberi, Brunoniella australis, Enchylaena tomentosa, Alternanthera denticulata, Phyllanthus virginatum, Paspalidium distans, Gomphrena celosioides, Brunonellia australis, Sida rohlenae, Aristida calycina
Weed cover	70-100
Weed species	Megathyrsus maximus, Bryophyllum delagoense, Eragrostis curvula, Opuntia stricta
Disturbance	Erosion

Site ID	RE9
Survey date	31/03/2022
RE herbarium	11.5.1a/11.5.1
GT RE	11.3.1
GT land zone	3
Landform	Alluvial flat
Status	HVR
EDL cover	70
Height	5-10
EDL % cover range	30-70
Structural form	Low closed forest
TEC potential	Brigalow
EDL	T1
EDL median height	9

Site ID	RE9
EDL height range.7	8.3-9.7
T1 median height	9
T1 species	Acacia harpophylla
T2 median height	
T2 species	
S1 median height	1.8
S1 species	Geijera parviflora, Santalum lanceolatum, Capparis lasiantha
S2 median height	0.6
S2 species	Sclerolaena bicornis
G median height	0.7
G species	Entolasia stricta, Paspalidium distans, Bothriochloa decipens, Enteropogon acicularis, Einada nutans
Additional species	
Weed cover	0-5
Weed species	Megathyrsus maximus, Opuntia stricta
Disturbance	

APPENDIX C – FAUNA SPECIES LIST

Fauna species list collected by Epic personnel in March 2022 for current Project area and collected on the adjacent property to the north (Edenvale) in 2018. No species listed under the EPBC Act (threatened or migratory) was recorded in either survey.

Table C1. Fauna species recorded

Species name	Common name	Status* (NC Act)	Epic March 2022	Epic 2018 (Edenvale)
REPTILES				
<i>Heteronotia binoei</i>	Bynoe's Gecko	LC	X	
<i>Strophurus taenicauda</i>	Golden-tailed Gecko	NT		X
<i>Cryptoblepharus pulcher</i>	Elegant Snake-eyed Skink	LC	X	X
<i>Morethia boulengeri</i>	South-eastern Morethia Skink	LC	X	X
BIRDS				
<i>Coturnix sp.</i>	Quail species	LC	X	
<i>Ardea pacifica</i>	White-necked Heron	LC	X	
<i>Aquila audax</i>	Wedge-tailed Eagle	LC	X	
<i>Ocyphaps lophotes</i>	Crested Pigeon	LC	X	X
<i>Geopelia striata</i>	Peaceful Dove	LC	X	
<i>Falco berigora</i>	Brown Falcon	LC	X	
<i>Nymphicus hollandicus</i>	Cockatiel	LC	X	X
<i>Eolophus roseicapilla</i>	Galah	LC	X	
<i>Cacatua galerita</i>	Sulphur-crested Cockatoo	LC	X	
<i>Platycercus adscitus</i>	Pale-headed Rosella	LC	X	
<i>Dacelo novaeguineae</i>	Laughing Kookaburra	LC		X
<i>Malurus cyaneus</i>	Superb Fairy-wren	LC	X	
<i>Lichmera indistincta</i>	Brown Honeyeater	LC	X	
<i>Plectorhyncha lanceolata</i>	Striped Honeyeater	LC	X	X
<i>Philemon citreogularis</i>	Little Friarbird	LC	X	
<i>Philemon corniculatus</i>	Noisy Friarbird	LC		X
<i>Entomyzon cyanotis</i>	Blue-faced Honeyeater	LC	X	
<i>Melithreptus brevirostris</i>	Brown-headed Honeyeater	LC	X	
<i>Nesoptilotis leucotis</i>	White-eared Honeyeater	LC	X	
<i>Acanthagenys rufogularis</i>	Spiny-cheeked Honeyeater	LC	X	X
<i>Calligavis chrysops</i>	Yellow-faced Honeyeater	LC	X	
<i>Manorina flavigula</i>	Yellow-throated Miner	LC	X	X
<i>Manorina melanocephala</i>	Noisy Miner	LC		X
<i>Gavicalis virescens</i>	Singing Honeyeater	LC	X	X
<i>Pardalotus punctatus</i>	Spotted Pardalote	LC	X	
<i>Pardalotus striatus</i>	Striated Pardalote	LC	X	X

Species name	Common name	Status* (NC Act)	Epic March 2022	Epic 2018 (Edenvale)
<i>Smicrornis brevirostris</i>	Weebill	LC	X	X
<i>Pyrrholaemus sagittatus</i>	Speckled Warbler	LC	X	
<i>Gerygone sp.</i> (likely <i>G. olivacea</i>)	gerygone species	LC		X
<i>Acanthiza chrysorrhoa</i>	Yellow-rumped Thornbill	LC	X	
<i>Acanthiza reguloides</i>	Buff-rumped Thornbill	LC	X	
<i>Acanthiza apicalis</i>	Inland Thornbill	LC	X	
<i>Pomatostomus temporalis</i>	Grey-crowned Babbler	LC	X	X
<i>Cracticus torquatus</i>	Grey Butcherbird	LC	X	X
<i>Cracticus nigrogularis</i>	Pied Butcherbird	LC	X	
<i>Gymnorhina tibicen</i>	Australian Magpie	LC	X	X
<i>Coracina novaehollandiae</i>	Black-faced Cuckoo-shrike	LC		X
<i>Pachycephala rufiventris</i>	Rufous Whistler	LC	X	X
<i>Rhipidura albiscapa</i>	Grey Fantail	LC	X	
<i>Rhipidura leucophrys</i>	Willie Wagtail	LC	X	X
<i>Grallina cyanoleuca</i>	Magpie-Lark	LC	X	
<i>Petroica goodenovii</i>	Red-capped Robin	LC		X
<i>Myiagra rubecula</i>	Leaden Flycatcher	LC	X	
<i>Corvus orru</i>	Torresian Crow	LC	X	X
<i>Struthidea cinerea</i>	Apostlebird	LC	X	
<i>Dicaeum hirundinaceum</i>	Mistletoebird	LC	X	
<i>Taeniopygia bichenovii</i>	Double-barred Finch	LC	X	
MAMMALS				
<i>Macropus giganteus</i>	Eastern Grey Kangaroo	LC	X	X
<i>Wallabia bicolor</i>	Swamp Wallaby	LC	X	
<i>Tadarida australis</i>	White-striped Freetail-bat	LC	X	X
<i>Saccolaimus flaviventris</i>	Yellow-bellied Sheath-tail Bat	LC	X	
<i>Setirostris eleryi</i>	Hairy-nosed Freetail-bat	LC	X	
<i>Ozimops lumsdenae</i>	Northern Free-tailed Bat	LC	?	
<i>Ozimops ridei</i>	Ride's Free-tailed Bat	LC	X	
<i>Miniopterus schreibersii oriana</i>	Northern Bentwing-bat	LC	X	
<i>Chalinolobus gouldii</i>	Gould's Wattled Bat	LC	X	
<i>Chalinolobus picatus</i>	Little Pied Bat	LC	X	X
<i>Nyctophilus sp.</i>	Long-eared Bat species	LC	X	
<i>Scotorepens balstoni</i>	Inland Broad-nosed Bat	LC	X	

Species name	Common name	Status* (NC Act)	Epic March 2022	Epic 2018 (Edenvale)
<i>Scotorepens greyii</i>	Little Broad-nosed Bat	LC	X	X
<i>Vespadelus vulturnus</i>	Little Forest Bat	LC	?	X
<i>Oryctolagus cuniculus</i>	Rabbit	I		X
<i>Capra hircus</i>	Goat	I		X

*Abbreviations: LC = Least Concern, I = Introduced

Table C2. Habitat assessment site data collected for Everleigh Solar Park Project (March 2022)


Site ID	Lat	Long	Grass cover	Tree cover	Koala trees	Hollows	Woody debris	Gilgais	Cracking clays	Rocky habitat	Water presence	Fire evidence	Cattle disturb
H1	-26.9483	150.5876	Dense >40%	Sparse	regrowth E. populnea	none	No	no	no	no	small dam	None	None
Note	sparse scrappy regrowth - poplar box												
H2	-26.9450	150.5865	Moderate <40%	Moderate	E. populnea - tall regrowth	none	Sparse	no	no	no	dam 200m away	none	None
Note	mainly small Callitris, macropod tracks and scats present												
H3	-26.9437	150.5865	Dense >40%	Sparse	Eucalyptus woosiana - scattered regrowth	none	Not	no	no	no		none	None
Note	mainly small Callitris, macropod tracks and scats present												
H4	-26.9425	150.5850	Moderate <40%	Moderate	E. populnea , ironbark regrowth	none	Sparse	no	no	no		none	None
Note	all regrowth gums, Callitris dominant, macropod tracks and scats present												
H5	-26.9422	150.5821	Dense >40%	Sparse	E. populnea	small hollows	Sparse	no	no	no	dam 50 m away		None
Note	Tall regrowth												
H6	-26.9513	150.5866	Dense >40%	Sparse	E. crebra, poplar box, E. pilligaensis	small hollows	Sparse	no	no	no	dam 200m	none	None
Note	sparsely scattered large trees surrounded by grassland, regrowth beefwood common, macropod tracks and scats present												
H7	-26.9416	150.5973	Moderate <40%	Moderate	None	small hollows	Common	no	no	no		none	None
Note	large regrowth Callitris on sand, good habitat for golden-tailed gecko although peeling bark uncommon												


Site ID	Lat	Long	Grass cover	Tree cover	Koala trees	Hollows	Woody debris	Gilgais	Cracking clays	Rocky habitat	Water presence	Fire evidence	Cattle disturb
H8	-26.9423	150.5951	Sparse <10%	Riparian	Eucalyptus camaldulensis	small hollows	Common	no	no	no		none	None
Note	moderate size red gums, dense red natal grass cover, narrow line along mapped drainage no creek, no sign of Koala despite thorough search												
H9	-26.9534	150.5937	Moderate <40%	Moderate	E. populnea	large hollows present	Common	no	no	no		none	None
Note	road corridor beside site - tall regrowth with some mature trees present, mapped regrowth on other side of fence non existent												
H10	-26.9534	150.5917	Dense >40%	Not	None	none	Not	no	no	no			None
Note	grassland with sparse regrowth mainly of beefwood												
H11	-26.9346	150.5975	Dense >40%	Moderate	E. populnea	some large hollows	Sparse	no	no	no		none	None
Note	road corridor, dense weedy grass cover, Buloke and callitris lower storey												
H12	-26.9275	150.5907	Dense >40%	Moderate	E. populnea	some large hollows	Sparse	no	no	no		none	None
Note	mix of native and weedy grass layer, lower storey of false sandalwood, wilga												
H13	-26.9208	150.5845	Dense >40%	Moderate	E. populnea	small hollows	Common	no	no	no	water present in gully	none	None
Note	dense weedy ground cover, large regrowth poplar box, dense callitris and Buloke to west												
H14	-26.9213	150.5847	Dense >40%	Moderate	None	none	Sparse	no	no	no		none	None
Note	tall regrowth Brigalow present, some belah and small poplar box												
H15	-26.9160	150.5799	Dense >40%	Moderate	E. populnea	none	Common	no	no	no		none	None
Note	tall poplar box regrowth, groundcover a mix of native and weeds												


Site ID	Lat	Long	Grass cover	Tree cover	Koala trees	Hollows	Woody debris	Gilgais	Cracking clays	Rocky habitat	Water presence	Fire evidence	Cattle disturb
H16	-26.9094	150.5758	Dense >40%	Moderate	E. populnea	small hollows	Common	no	no	no		none	None
Note	tall regrowth but odd larger tree with hollows												
H17	-26.9057	150.5707	Moderate <40%	Moderate	E. populnea	very few small hollows	Sparse	no	no	no		none	None
Note	tall regrowth with Buloke and Callitris lower storey												
H18	-26.9001	150.5595	Dense >40%	Moderate	E. populnea	none	Sparse	no	no	no		none	None
Note	tall regrowth poplar box with callitris and casuarina, groundcover a mix of weeds and native												

CONTACT US

 www.epicenvironmental.com.au

 <https://www.linkedin.com/company/epic-environmental-pty-ltd/>

 1800 779 363

 enquiries@epicenvironmental.com.au

