Appendix E

Ecological Assessment Report

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Ecology Assessment Report

Mount Hopeful Battery Project

Final

September 2025

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Ecology Assessment Report

Mount Hopeful Battery Project

Final

Prepared by
Umwelt (Australia) Pty Limited

On behalf of
Neoen

Project Director: David Gatfield
Project Manager: Elliott Fairon
Report No.: 31912 /R07b
Date: September 2025

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Executive Summary

Neoen Australia Pty. Ltd. (the Proponent) has engaged Umwelt to seek a Development Approval for the Mount Hopeful Battery Project (the Project) on land at 1682 South Ulam Road, Bajool.

Field surveys were undertaken within the Study Area. This report summarises the ecological values occurring within the Study Area, which is dominated by non-remnant vegetation, providing marginal quality habitat for Matters of National Environmental Significance (MNES) listed under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and species listed as threatened under the *Nature Conservation Act 1992* (NC Act). One small patch of remnant RE 11.3.4 was ground-truthed in the very eastern extent of the Study Area.

One small patch of Category R vegetation occurs in the south-west of the Study Area, coinciding with a mapped stream order 1 watercourse. No essential habitat, protect plant trigger map, connectivity areas or Matters of Local Environmental Significance (MLES) occur within the Study Area.

Based on the results of the desktop assessment and field surveys, a total of 13 NC Act-listed species may occur within the Study Area, comprising one flora species (*Cycas megacarpa* which is present within the Study Area) and 12 fauna species.

Potential impacts to ecological values may arise throughout all phases of the Project; construction, operation and decommissioning, and may include both direct and indirect impacts, with vegetation clearing posing the biggest risk.

Where possible, the Project will avoid, mitigate and manage the impacts associated with construction, operation and decommissioning of the Project. Mitigation measures to be implemented to minimise unavoidable impacts will include, but not be limited to:

- Vegetation clearing measures.
- Fauna habitat removal measures.
- Noise, light, waste and dust management.
- Bushfire management.
- Measures to prevent modification to hydrology, erosion, contamination and sedimentation.
- Weed/animal pest monitoring and management.

Definitions and Abbreviations

Abbreviations	Descriptions
AHD	Australian Height Datum
ALA	Atlas of Living Australia
BBUS	Bird and Bat Utilisation Survey
BESS	Battery Energy Storage System
Biosecurity Act	*Biosecurity Act 2014*
BPAs	Biodiversity Planning Assessments
CCTV	Closed-circuit television
CEMP	Construction Environmental Management Plan
DA	Development application
DBH	Diameter at Breast Height
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DESI	Department of Environment, Science and Innovation
Disturbance Footprint	The maximum spatial extent of direct impacts as a result of the Project's proposed infrastructure
DoR	Department of Resources
DTMR	Department of Transport and Main Roads
EAR	Ecological Assessment Report
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
Fisheries Act	*The Fisheries Act 1994*
GBO	General biosecurity obligation
GES	General ecological significance
GPS	Global Positioning System
ha	hectares
HES	High ecological significance
HV	High voltage
km	kilometres
kV	kilovolt
LGA	Local Government Area
m	metres
mm	millimetres
MLES	Matters of Local Environmental Significance
MNES	Matters of National Environmental Significance

Abbreviations	Descriptions
Mount Hopeful Windfarm	Mount Hopeful Windfarm is a project approved under the EPBC Act (EPBC ref 2021/9137) that occurs immediately adjacent the Project. The battery was originally included as a component of the windfarm.
MSES	Matters of State Environmental Significance
MV	Medium voltage
MW	Megawatt/s
NC Act	*Nature Conservation Act 1992*
NEW	National Electricity Market
Neoen	Neoen Australia Pty Ltd
Planning Act	*Planning Act 2016*
Planning Regulation	Planning Regulation 2017
Planning Scheme	Rockhampton Regional Council Planning Scheme 2015
PMST	Protected Matters Search Tool
PO	Performance Outcomes
PVMP	Property Vegetation Management Plan
RE/s	Regional Ecosystem/s
RRC	Rockhampton Regional Council
SPP	State Planning Policy
SPRAT	Species Profile and Threats Database
Study Area	The proposed area of development the battery energy storage system, switchyard and ancillary infrastructure component of the Project that was subject to assessment in this report.
TEC	Threatened Ecological Communities
the Project	Mount Hopeful Battery Energy Storage System
Umwelt	Umwelt (Australia) Pty Ltd
VM Act	*Vegetation Management Act 1999*
WoNS	Weeds of National Environmental Significance

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1.0 Introduction

1.1 Project Background

Umwelt has been engaged by Neoen Australia Pty Ltd (Neoen) to seek a Development Approval (DA) for the Mount Hopeful Battery Project (the Project) on land at 1682 South Ulam Road, Bajool. The Study Area refers to the maximum extent in which the Project will be located and that was subject to field surveys for the Project. It comprises an area of 48.8 hectares (ha) and occurs across three land parcels (described as Lot 38 on DT40131, Lot 100 on SP289441, Lot 33 on DT40123) and an unnamed road reserve between Lot 38 DT40131 and Lot 100 SP289441) (the Study Area).

Umwelt has been engaged by Neoen to undertake an ecological assessment of the proposed BESS. The purpose of the assessment is to identify the ecological values known to, or likely to occur within the Study Area, and determine the extent of impact to Matters of State Environmental Significant (MSES) and Matters of Local Environmental Significance (MLES).

1.2 Project Description

The Project is a proposed grid-scale battery energy storage system (BESS) in Central Queensland. With a planned capacity of up to 600 megawatts (MW) of power for a duration of up to four hours, the Project will enhance the delivery of clean, reliable electricity to the National Electricity Market (NEM), while supporting grid stability and flexibility.

The Project is located near the rural town of Bajool, approximately 50 kilometres (km) south of Rockhampton and 70 km west of Gladstone, Queensland, within the Rockhampton Region Local Government Area (LGA). The Project is mapped within the Rural Zone of the Rockhampton Region Planning Scheme 2015 (planning scheme) and predominately used for low intensity agricultural activities, including cattle grazing. The Project is proposed to occur within the bounds of the Study Area which covers an area of 48.8 ha and occurs across three freehold land parcels and an unnamed road reserve. The Study Area also accommodates a Powerlink Queensland (PLQ) transmission easement that comprises an existing 275 kilovolt (kV) transmission line, of which the Project will connect into. The Study Area is sparsely vegetated with predominately non-remnant vegetation and is intersected by an unnamed tributary of Eight Mile Creek. The Project gains access via South Ulam Road to the east of the Study Area.

The Project is proposed to be delivered over two stages, which are indicatively described as follows:

- Stage 1 (indicative capacity of 430 MW): expected to commence mid-2026 and completed by end of 2028.
- Stage 2 (indicative additional capacity of 170 MW): expected to commence in 2028 and completed by end of 2029.

Key components of the Project include:

- Up to 650x Battery Modules.
- Up to 170x Medium Voltage (MV) Transformers.
- 2x High Voltage (HV) Transformers.

- a HV Switching Station.

The Project will also encompass associated ancillary infrastructure necessary to the operation of the BESS, including:

- Site access track.
- Overhead and underground electrical cables.
- Inverters.
- High voltage substation.
- Earthing and lightning protection.
- Security fencing, closed-circuit television (CCTV) and lighting.
- Operations and maintenance building.
- Water retention pond.
- Lay down areas.

1.3 Ecology Study Boundaries

1.3.1 Study Area

The Study Area refers to the maximum extent in which the Project will be located and that was subject to field surveys for the Project. It comprises an area of 48.8 ha and occurs across three freehold land parcels and an unnamed road reserve. The land parcels which the Study Area intersects are provided in **Table 1.1**.

Table 1.1 Study Area Land Parcels

Lot and Plan	Area of Study Area within Land Parcel (ha)	Tenure
38 DT40131	14.7	Freehold
33 DT40123	0.3	Freehold
100 SP289441	31.1	Freehold
Unnamed road reserve between Lot 38 DRT40131 and Lot 100 SP289441	2.6	Road

1.3.2 Disturbance Footprint

The Disturbance Footprint represents the maximum extent of direct impacts for the Project, associated with the placement of the proposed infrastructure (**Section 1.2**), as shown in **Figure 5.1.** The Disturbance Footprint comprises 42.0 ha.

1.3.3 Desktop Assessment Area

The desktop assessment area refers to a 20 km buffer of the Study Area which was assessed by desktop only (**Section 3.1**) and provides context for the ecological values which may occur within the Study Area.

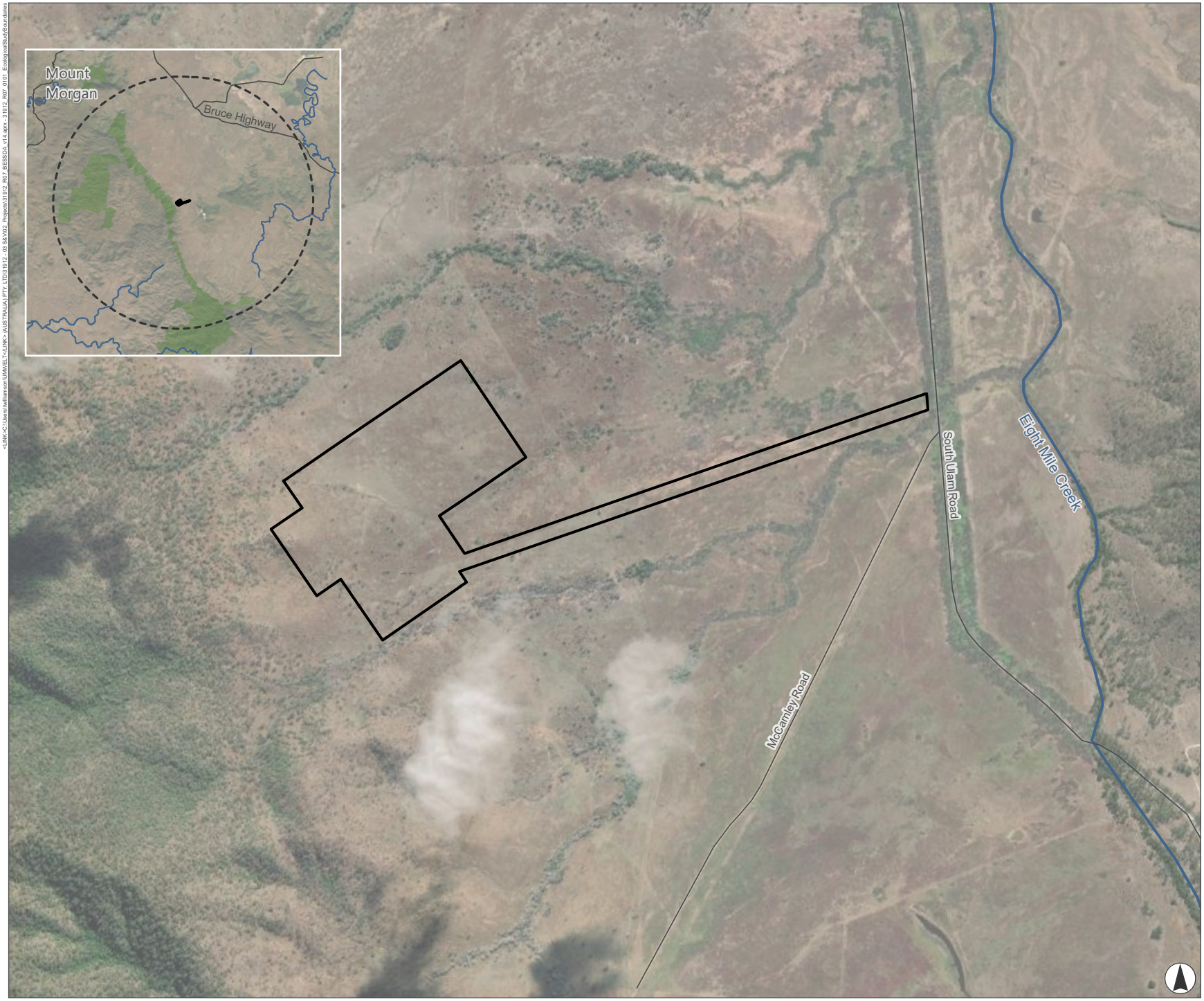
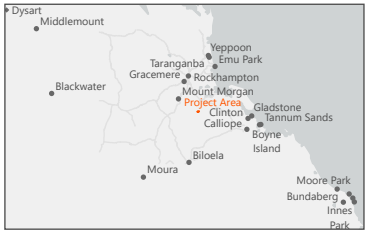


FIGURE 1.1

Ecological Study Boundaries

Legend

- Study Area
- Desktop Assessment Area
- Road
- Major Watercourse



0 0.25 0.5

Kilometres

Scale 1:17,500 at A4
GDA2020 MGA Zone 56

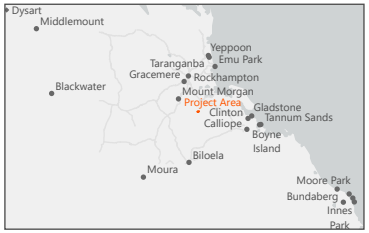
Image Source: ESRI Basemap (2025) | **Data Source:** Qld Spatial (2025)

FIGURE 1.2

Project Design

Legend

- Study Area
- Access road
- BESS area
- Overhead and underground line
- Substation area
- Switchyard area
- Road



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Kilometres

Scale 1:12,500 at A4
GDA2020 MGA Zone 56

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Image Source: ESRI Basemap (2025) | **Data Source:** Qld Spatial (2025)

1.4 Scope and Objectives

Primary objectives of this ecological assessment are to describe the existing ecological values of the Study Area and provide a characterisation of resulting impacts from the construction and operation of the BESS, switchyard and associated ancillary infrastructure. The following scope of work was completed to support these objectives:

- A desktop assessment of relevant background information and available environmental databases to identify ecological values that may occur within the Study Area.
- Ground-truthing the occurrence, extent and condition of Regional Ecosystems (REs) in accordance with Neldner et. al. (2024).
- Assessment of the likelihood of occurrence for threatened (Critically Endangered, Endangered and Vulnerable) and Near Threatened species listed under the *Nature Conservation Act 1992* (NC Act) and Matters of National Environmental Significant (MNES) listed under the EPBC Act.
- Verify the extent and suitability of habitat for threatened and near threatened species known to occur, or with a high or moderate likelihood of occurring.
- Provide an overview of avoidance strategies and mitigation measures.
- Characterise the potential impacts on ecological values.

1.5 Qualification of Report Authors

Table 1.2 provides the qualifications of the authors of this report.

Table 1.2 Qualifications of Report Authors

Personnel	Project Role
David Gatfield Principal Ecologist/ QLD Ecology Manager Technical Reviewer	David is a Principal Ecologist with over 15 years' experience in the planning and implementation of terrestrial ecology surveys, including threatened species monitoring and impact assessments in support of State and Commonwealth approvals for large infrastructure and renewable projects. David has carefully managed ecological aspects of a variety of projects through the State and Commonwealth approval processes. David holds a Bachelor of Science.
Jacinta Harrison Senior Ecologist Report Author	Jacinta is a botanist in Umwelt's Brisbane ecology team, and she has a degree in Applied Science (Environmental Management). In her 7 years of professional experience, she has gained experience in coordinating and undertaking ecological and native vegetation surveys throughout Queensland and Victoria. Jacinta has been working throughout Queensland for the past three years, having undertaken mine rehabilitation monitoring of north-west Queensland, Regional Ecosystem mapping in the Brigalow Belt and protected plant surveys in central Queensland. Jacinta has been strongly involved within the Project, including protected plants and access route ecology mapping.

2.0 Legislative Context

2.1 Commonwealth

2.1.1 Environment Protection and Biodiversity Conservation Act 1999

The EPBC Act is administered by the Commonwealth DCCEEW. Under the EPBC Act, if the Federal Minister for the Environment determines that an action is a 'controlled action' which would have or is likely to have a significant impact on MNES or Commonwealth land, then the action may not be undertaken without prior approval from the Minister. The EPBC Act identifies nine MNES:

- World Heritage properties.
- National Heritage places.
- Ramsar Wetlands of International Significance.
- Threatened species and ecological communities.
- Migratory species.
- Commonwealth marine areas.
- The Great Barrier Reef Marine Park.
- Nuclear actions (including uranium mining).
- Water resources (in relation to coal seam gas development and large coal mining development).

Under the EPBC Act, any action that is likely to have a significant impact on these matters may be deemed a controlled action.

The Project has been approved under the EPBC Act as a component of the Mount Hopeful Windfarm project (EPBC ref 2021/9137). Neoen are currently seeking an amendment to approval conditions.

2.1.1.1 EPBC Act Environmental Offsets Policy

The *EPBC Act Environmental Offsets Policy* (EPBC Offset Policy) (Department of Sustainability Environment Water Populations and Communities 2012) outlines the approach for the use of environmental offsets under the EPBC Act.

Offsets are measures that compensate for the significant impacts of an action on MNES, after avoidance and mitigation measures are taken. Where appropriate, offsets are considered during the assessment phase of an environmental impact assessment under the EPBC Act, only after the Project has implemented avoidance and mitigation steps of the offset mitigation hierarchy to the greatest extent possible. The suitability of a proposed offset is considered as part of the decision to approve or not approve a proposed action under the EPBC Act. The EPBC Offset Policy provides guidance on how suitable offsets are determined.

Offsets under the EPBC Act for the Project are proposed as part of the Mount Hopeful Windfarm project and will be secured through the Offset Area Management Plan (OAMP).

2.2 State

2.2.1 Nature Conservation Act 1992

The *Nature Conservation Act 1992* (NC Act) establishes a regulatory regime to manage flora and fauna within Queensland. Specifically, the NC Act regulates the 'take' (i.e. fell, remove, catch etc.) of flora and fauna and provides a permitting framework for such activities.

Under the NC Act, permits are required to:

- Tamper with an animal breeding place (i.e. a bower, burrow, cave, hollow, nest etc).
- Clear protected plants.

Threatened species are listed under the NC Act in the NC Act Animals Regulation and the NC Act Plants Regulation in the following categories:

- Least Concern/Special Least Concern.
- Near threatened.
- Vulnerable.
- Endangered.
- Critically endangered.
- Extinct in the wild / extinct.

Species listed under the NC Act may occur within the Study Area and have been considered in the likelihood of occurrence assessment (**Appendix B**). Where appropriate, mitigation measures will be implemented to minimise impacts on NC Act listed species (**Section 5.6**).

2.2.2 Vegetation Management Act 1999

The *Vegetation Management Act 1999* (VM Act) regulates the clearing of native vegetation in Queensland. Approval under the VM Act is required if remnant or certain types of regrowth vegetation is to be cleared, with applications for approval likely to be accompanied by a Property Vegetation Management Plan (PVMP).

Regrowth vegetation is mapped within the Study Area.

2.2.3 Biosecurity Act 2014

The *Biosecurity Act 2014* (Biosecurity Act) establishes a framework to regulate and control invasive plants and animals. Under the Biosecurity Act, landowners are responsible for taking all reasonable and practical steps to minimise the risks associated with invasive plants and animals under their control. This is known as the general biosecurity obligation (GBO).

The Biosecurity Act categorises restricted matters (restricted plants and animals) into the following:

- Category 1: must be reported to an inspector within 24 hours (includes Red Imported Fire Ants, amongst others) (call Biosecurity Queensland on 13 25 23).
- Category 2: must be reported within 24 hours to an inspector or authorised officer (call Biosecurity Queensland on 13 25 23).

- Category 3: must not be distributed either by sale or gift,or released into the environment.
- Category 4: must not be moved.
- Category 5: must not be kept.
- Category 6: must not be fed (animals).
- Category 7: must be euthanised (animals).

One Biosecurity Act-listed flora species is present within the Study Area, and listed fauna species are considered likely to occur.

2.2.4 Planning Act 2016

The *Planning Act 2016* (Planning Act) is Queensland's key piece of legislation pertaining to the strategic planning and development of the State. The Planning Act mandates the framework of planning instruments and process for development assessment whilst incorporating the regulatory requirements of other Queensland environmental statutory legislation, such as the VM Act.

Subordinate to the Planning Act, the Planning Regulation 2017 (Planning Regulation) details the mechanics for the operation of the Planning Act. This includes prescription of accepted, prohibited and assessable development, assessment benchmarks for assessable development and identification of the assessment manager (i.e. the chief executive or local government).

2.3 Local

2.3.1 Rockhampton Regional Council Planning Scheme

The Project is located within the Rockhampton Region LGA. Applicable projects within the LGA are assessable against the local planning instrument, being the Planning Scheme.

The Planning Scheme is Rockhampton Regional Council's (RRC) tool for guiding the region's future growth and development and provides a consistent approach to land use planning. RRC have the jurisdictional authority to manage development in the region.

An assessment against the Biodiversity Areas Overlay Code is required, to address biodiversity requirements for the Projects DA.

2.3.1.1 Biodiversity Overlay Code

The purpose of the biodiversity overlay code is to protect, rehabilitate and manage areas of environmental significance and the ecological processes and biodiversity values of terrestrial and aquatic being:

- Land mapped as containing MSES or MLES.
- A biodiversity corridor or wildlife habitat.
- A waterway and its buffer area.

3.0 Methodology

3.1 Desktop Assessment

3.1.1 Database Searches

The Project has been approved under the EPBC Act, and while it is undergoing a request to amend conditions of approval, the changes in EPBC Act listings since the approval date not apply to this assessment. However, for completeness and to support local government approvals, any updates from the desktop assessment has been included as part of this report.

A desktop search was undertaken to identify ecological matters likely to be present within the Study Area. All existing data was reviewed to identify the presence or potential presence of threatened species and communities within the Study Area. The results were used to undertake a likelihood of occurrence assessment (**Appendix B**), which identified the threatened species and communities which may occur within the Study Area.

The following resources and databases were used to assess the potential EPBC Act and NC Act listed species within the Study Area:

- The Protected Matters Search Tool (PMST) (desktop assessment area) (Department of Climate Change, Energy, the Environment and Water 2025) (**Appendix A**).
- Wildlife Online extract with a radius of 20 km from the approximate centre of the Study Area (Department of the Environment, Tourism, Science and Innovation 2025) (**Appendix A**).
- Vegetation Management Regional Ecosystem map (Version 13) (Department of Natural Resources and Mines, Manufacturing and Regional and Rural Development 2024b).
- Protected Plants Flora Survey Trigger Map (Department of the Environment, Tourism, Science and Innovation 2023).
- Regulated Vegetation Management Map (Department of Natural Resources and Mines, Manufacturing and Regional and Rural Development 2024c).
- Waterways for Waterway Barrier Works identified under the *Fisheries Act 1994* (Fisheries Act) (Department of Agriculture, Fisheries and Forestry 2025).
- Mapped wetlands under the Queensland Wetlands Program and the Environmental Protection (Water and Wetland Biodiversity) Policy 2019 (i.e. high ecological significance (HES) and general ecological significance (GES) wetlands) under the Environmental Protection Regulation 2019.
- VM watercourse/drainage feature - 1:100 000 and 1:250 000 (Department of Natural Resources and Mines, Manufacturing, and Regional and Rural Development 2024).
- Atlas of Living Australia (ALA) database records (desktop assessment area) (Atlas of Living Australia 2025).
- Latest Queensland Globe available aerial photography (Queensland Globe 2025).
- Qld Herbarium Regional Ecosystem Description Database (REDD) (Version 13) (Queensland Herbarium 2024).
- State Planning Policy (SPP) interactive mapping system.
- RRC Planning Scheme Online Mapping.

3.2 Likelihood of Occurrence Assessment

A likelihood of occurrence assessment was completed for threatened flora and fauna species, TECs and migratory species identified in the desktop assessment as potentially occurring. Each value was assessed against the categories outlined below in **Table 3.1.** The assessment considered known records, distribution mapping extents, preferred habitat and ecological requirements of the species or community as well as field-verified vegetation communities.

Table 3.1 Likelihood of Occurrence Definitions

Potential to Occur	Description
Known	The listed species has been recorded in the Study Area during the past decade (or during the Project survey period). The record is considered valid and is associated with a high spatial confidence.
High	Given the extent, quality and suitability of habitat in the Study Area, the location of the Study Area relative to existing contemporary records (past 20 years) of the species (with consideration of sampling effort in the region and the species' detectability (e.g. cryptic species) it is highly likely that the species occurs in the Study Area. Also includes species likely to regularly occur within the Study Area during migratory, short-distance season or nomadic movements (including cases for which likelihood of occurrence is high regardless of the nature of habitat present in the Study Area).
Moderate	Potential or suitable habitat is present in the Study Area, however, given the distribution of records in the surrounding region and/or the species' detectability a moderate rating for likelihood of occurrence is deemed more appropriate that a low or high rating. Includes species that may be present or may occasionally utilise the Study Area but for which there may be little information or those that are either cryptic or occur at low densities. Also includes species that may occasionally occur in the Study Area during migratory, short-distance season or nomadic movements.
Low	The Study Area either contains limited suitable habitat or only potential/marginal habitat. The species is either very scarce or absent in the surrounding region. The species is deemed unlikely to occur within the Study Area based on the aforementioned factors. The species may disperse through or near the Study Area infrequently.
Unlikely	The Study Area is fundamentally unsuitable for the species, or the species is presumed extinct or locally extinct. For example, this is usually applied to marine species or seabird for terrestrial sites.

3.3 Field Assessment

3.3.1 Previous Ecological Studies

A suite of flora and fauna assessments have been undertaken on land parcels adjacent to the Study Area for the Mount Hopeful Windfarm from 2019–2024 which provide context to the ecological values which may occur within the Study Area. The following surveys have been undertaken within the Study Area as part of the Mount Hopeful Windfarm scope:

- Baseline flora of vegetation within the reserve of South Ulam Road (immediately adjacent the Study Area) (summer 2024).

- *Cycas megacarpa* targeted surveys (2024).

Further details of these surveys are provided in **Table 3.2**.

The wider Project area (including windfarm properties) has been subject to over five years' worth of ecological surveys, including flora and fauna baselines surveys, bird and bat utilisation surveys (BBUS), BioCondition assessments, protected plant and pre-clearance flora surveys. Results of these surveys have been utilised to inform the likelihood of occurrence for the Study Area.

3.3.2 Field Survey Effort

The field survey details are provided in **Table 3.2** along with weather conditions. Due to the remoteness of the Study Area and the absence of a local weather station, field survey weather conditions have been extracted from the DES SILO weather model (Queensland Government 2025) using coordinates central to the Study Area (-23.80,150.60). Variation in weather data results reflect the seasonality of field surveys. The methods employed during the field surveys are detailed in **Section 3.3.3** and **Section 3.3.4**.

Table 3.2 Field Survey Timing and Weather Conditions

Field Survey	Survey Dates	Survey Length	Rainfall (mm)	Maximum temperature (^{0}C)	Season
***Cycas megacarpa* targeted surveys (Ausecology)**	4–5 September 2023	2 days	0.0	27.4	Spring
Flora and fauna baseline	22 January 2024	1 day	0.0	34.5	Summer
Flora and fauna baseline	24–25 June 2025	2 days	0.0	26.7	Winter

3.3.3 Flora

The flora and vegetation surveys were undertaken to identify and record vascular flora species as well as classify and map vegetation communities. These surveys were undertaken to comply with relevant Commonwealth and State Government survey guidelines.

3.3.3.1 Vegetation Communities

Ground-truthing and validation of State vegetation community mapping within the Study Area was undertaken in accordance with the *Methodology for Survey and Mapping of Regional Ecosystems and Vegetation Communities in Queensland Version 7.0* (Neldner et al., 2024). Vegetation sampling consisted of one secondary and ten quaternary surveys within representative examples of each RE observed within, and immediately adjacent to the Study Area, as shown in **Figure 3.1.**

Quaternary plots constitute rapid vegetation surveys which include marking the Global Positioning System (GPS) location and recording the dominant species in the characteristic layers, along with soil/landform and structural data. Secondary assessments incorporate environmental and overall structural information as well as a list of all species present, percentage cover and measures of abundance. To support data collected by secondary and quaternary sites, rapid flora and vegetation observation points were also made. These sites supplement quaternary and secondary flora assessment sites to achieve a detailed vegetation record/coverage of the Study Area. These points identified vegetation boundary change or dominant canopy species but didn't include height or cover observations at a location.

Additionally, one BioCondition assessment was undertaken within the Study Area. A BioCondition assessment measures various attributes against a benchmark condition to determine the ecological health and functionality of the habitat.

Vegetation within the Study Area was classified with reference to the RE Technical Descriptions within the *Regional Ecosystem Description Database version 13*, for Brigalow Belt bioregion (Queensland Herbarium 2024), and Specht's (Specht 1970) structural classification of structural land formations.

Vegetation within the Study Area was classified as 'remnant', 'regrowth' and 'non-remnant' according to the criteria below:

- Remnant – vegetation communities that conform within the definition under the VM Act and referenced by Neldner et al., (2024). Specifically, this comprises vegetation, part of which forms the predominant canopy of vegetation:
    - Covering more than 50% of the undisturbed predominant canopy.
    - Averaging more than 70% of the vegetation's undisturbed height.
    - Composed of species characteristics of the vegetation undisturbed predominant canopy.
- Regrowth – is non-remnant vegetation (>3 m height) that has a significant woody component but fails to meet the structural/floristic characteristics of remnant vegetation.
- Non-remnant – includes changes to vegetation caused by clearing or other extensive human disturbances and fails to meet the structural and/or floristic characteristics of remnant vegetation. It also includes cropping land.

3.3.3.2 Opportunistic Flora Observations

Incidental flora species observed during the survey were also recorded to provide a more comprehensive species list (**Appendix C**). Specimens of any plant taxa that could not be identified in the field were collected, pressed and dried in accordance with the requirements of the Queensland Herbarium (Queensland Herbarium and Bean 2016). Dried specimens were then identified through reference books and keys and through comparison with named species. Nomenclature used in this report follows that of the Census of the Flora of Australia (Brown and Bostock 2023). Introduced species are denoted by an asterisk in the text (*).

3.3.3.3 Targeted Threatened Flora Species Searches

With the exception of *Cycas megacarpa*, designated targeted flora searches were not undertaken during the field survey. Opportunistic searches for threatened flora species were completed throughout the field survey in areas of suitable habitat.

Cycas megacarpa Targeted Surveys

Targeted and opportunistic searches for *Cycas megacarpa*, listed as Endangered under the EPBC Act and the NC Act, were undertaken throughout the Mount Hopeful Windfarm survey program by Umwelt, and as part of preclearance surveys, in support of the *Mount Hopeful Windfarm Cycas megacarpa Translocation Management Plan* by Ausecology Pty Ltd (Ausecology) (Ausecology Unpublished) to assess the extent of its occurrence and densities within the Study Area.

Within the proposed Disturbance Footprint plus a 5 metre (m) buffer, Ausecology undertook individuals point counts (each individual was recorded with a GPS unit). This data, in conjunction with recent Umwelt field survey results, has been utilised to determine the extent of impacts on *Cycas megacarpa* individuals.

For all surveys the age class structure (e.g., development class) was recorded for each individual using the following classification:

- Juvenile (<50 centimetre (cm)).
- Sub-adult (0.5–1 m).
- Adult (>1–5 m).
- Large adult (>5 m).

3.3.3.4 Introduced Flora

Exotic flora species were recorded opportunistically within the Study Area, in conjunction with quaternary and secondary flora surveys. The survey focused on recording species listed as:

- Restricted matter flora species listed under the Biosecurity Act, Schedules 1 and 2.
- Weeds of National Environmental Significance (WoNS).

It is important to note that the data collected for weed species serves as an indicator and does not encompass all exotic flora within the Study Area. The primary aim of collecting the data was to gain insight into the dominant exotic flora and their threatening processes within the Study Area.

3.3.4 Fauna

A combination of field verification methodologies were employed to assess the likely occurrence of threatened fauna species identified during the desktop assessment and suitability of habitat. Survey methods employed during surveys were based on survey guidelines for threatened species published by the Commonwealth and State Government. As well as some targeted methods, the survey included undertaking habitat assessments, while simultaneously actively searching for species of interest.

While surveys within the Study Area were only undertaken across three days, results have been supplemented with data from the extensive survey effort undertaken within the Mount Hopeful Windfarm area (Umwelt 2024), adjacent to the Study Area. Ecological surveys in the adjacent windfarm area have occurred since 2019 and have included a variety of methods. The Study Area is highly modified and extremely limited suitable habitat is available for threatened fauna species, and therefore, the survey effort is considered adequate for this area.

Fauna field survey techniques are detailed in **Table 3.3** and displayed in **Figure 3.1.**

Table 3.3 Fauna Field Survey Techniques

Technique	Description	Effort
Methods undertaken within the Study Area		
Habitat assessments	Fauna habitat values were characterised using a comprehensive habitat assessment methodology within all accessible broad habitat types capturing variation in condition, vegetation types and disturbances. The presence and abundance of specific habitat resources was also assessed, including but not limited to: • Koala (*Phascolarctos cinereus*) food and potential shelter trees. • Hollow bearing trees and stags. • Fallen logs, woody debris and leaf litter. • Rocky features such as surface rocks, boulders, crevices, overhangs and caves. • Presence, abundance and type of mistletoe. • Presence/absence of wetland features, including gilgai formations. • Proximity to water and whether it is permanent or ephemeral. Habitat assessments were conducted and used to inform habitat mapping for each of the potentially occurring or known conservation significant species.	22 habitat assessments
Active diurnal searches	Active diurnal searches were conducted within all habitat types to identify the presence of fauna or signs of fauna activity including scats and scratches. Searches included scanning the trees and ground, searching beneath microhabitat such as rocks, fallen timber and peeling bark, digging through leaf litter and soil at tree bases and flushing birds from areas with a dense or grassy ground cover. Grass tussocks were gently disturbed to potentially flush ground-dwelling birds such as the threatened squatter pigeon (southern) (*Geophaps scripta scripta*). Disturbance to microhabitat features and reptiles was kept to a minimum. Active searches were completed opportunistically at Habitat Assessment sites.	Opportunistic at habitat assessments and whilst traversing the Study Area (12 hours).
Bird surveys	Roaming/meandering bird surveys using both visual and auditory identification were conducted within all habitat types. Active birding was also completed at watercourses where suitable.	All birds recorded over two days.
Opportunistic sightings	All fauna species observed incidentally throughout the Study Area were recorded.	All fauna recorded over two days.
Methods undertaken in neighbouring land parcels within the windfarm area		
Spotlighting and call playback	Spotlighting on foot was undertaken within all habitat types, though primarily targeting Eucalyptus woodlands to target species such as the koala, greater glider (southern and central) (*Petauroides volans*) and yellow-bellied glider (south-eastern) (*Petaurus australis australis*). Nocturnal spotlighting surveys were undertaken half-an-hour after sunset for a duration of approximately two hour per night.	Methods were undertaken within the adjacent land parcels as part of the Mount Hopeful Windfarm project (Umwelt 2024).

Technique	Description	Effort
	Call playback surveys were also undertaken targeting nocturnal bird species as well as koala within eucalypt woodland on hills and slopes.	
Bird survey (vantage point)	High points within the landscape with clear vantage of proposed turbines and adjacent valleys were surveyed for birds. All birds heard and observed were recorded along with flight heights and behaviours. Vantage point surveys were undertaken to characterise bird assemblages within the Study Area. The presence of threatened and migratory bird species was a key focus, including the white-throated needletail (*Hirundapus caudacutus*), fork-tailed swift (*Apus pacificus*), red goshawk (*Erythrotriorchis radiatus*) and squatter pigeon (southern).	
Elliott trapping	Type A aluminium Elliott traps targeting small mammals and reptiles were placed at approximately 10 m intervals along two transects. Traps were baited with a mixture of rolled oats, peanut butter, honey and vanilla essence, and checked each morning to identify and release captured fauna.	
Pitfall trapping	Pitfall trapping was undertaken using 20 litre (L) buckets dug into the ground until the top of the bucket was flush with the surface of the ground. Three buckets were used at each site separated by approximately 10 m. A drift fence, approximately 30 cm high, was erected between each bucket to direct small animals towards the pitfall traps.	
Camera trapping	Camera traps were deployed in strategic positions including fauna corridors and watering points such as dams and creek lines to record visitation by nocturnal and diurnal animals. Camera traps comprised baited set-ups using honey oat mix and/or sardines as an attractant.	
Acoustic bat call detection	Anabat Swift devices were deployed in representative microbat foraging and dispersal habitat including natural flyways, along watercourses and at bird survey vantage locations to record the presence of microbats. Data recorded on the bat recorders were analysed by a qualified specialist, Greg Ford of Balance! Environmental. The format and content of the analysis summary reports comply with nationally accepted standards for the interpretation and reporting of Anabat data. Anabat Swift devices were used in surveying for ghost bat (*Macroderma gigas*).	
Harp trapping	Single and double-bank harp traps were positioned in natural flyways associated with a creek line in locations of eucalypt woodlands to target microbat species. This method was used to target various microbat species including ghost bat.	
Koala SAT	Targeted searches for koala presence through identification of scats and scratched within all accessible broad habitat types (Phillips and Callaghan 2011).	

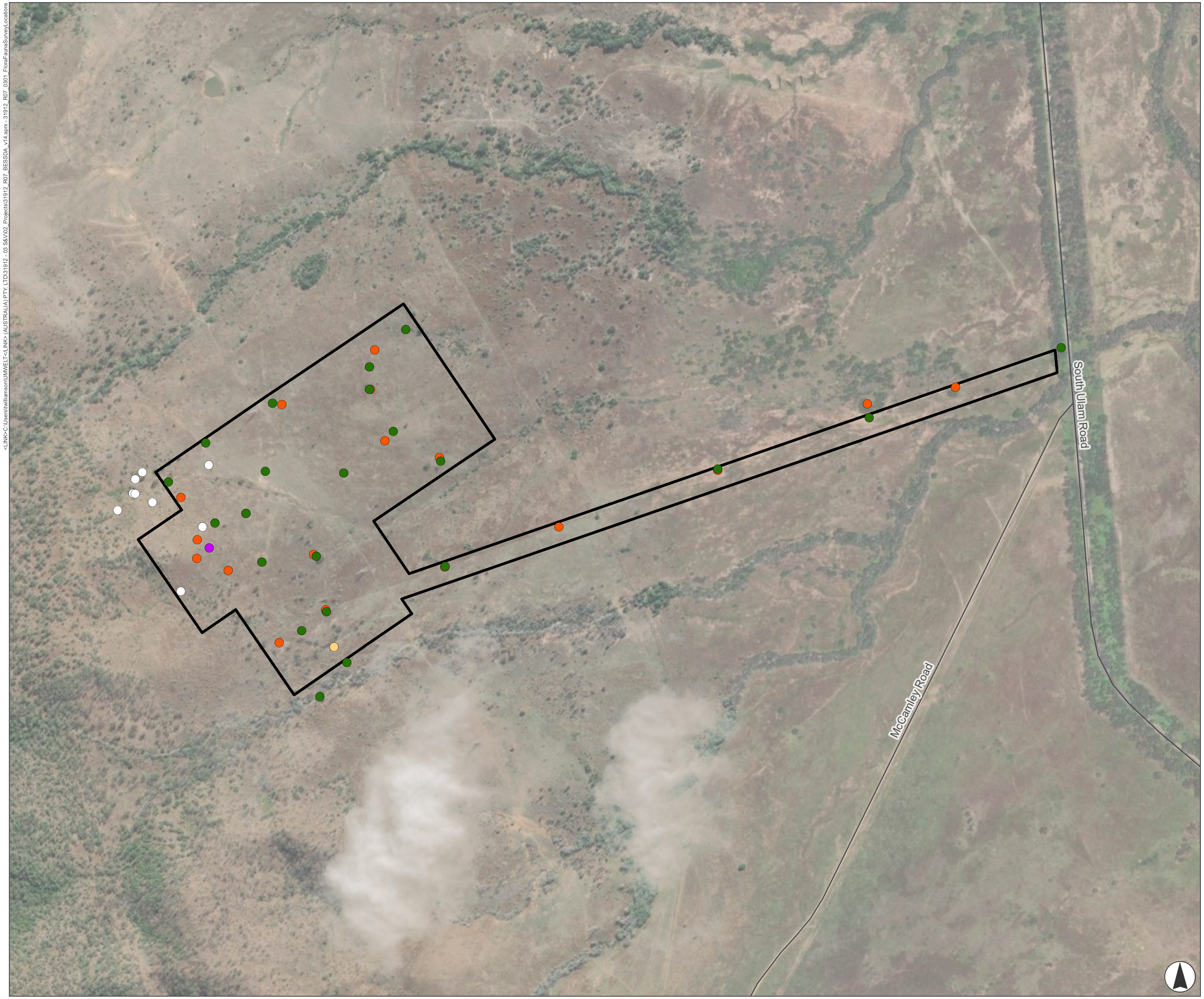
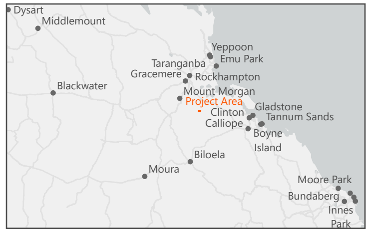


FIGURE 3.1

Flora and Fauna Survey Locations

Legend

- Study Area
- Road
- Flora Observation
- Habitat Assessment
- Quaternary
- Secondary
- Biocondition



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GDA2020 MGA Zone 56

umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Qld Spatial (2025)

3.4 Survey Limitations

This assessment has been completed using a combination of field-validated data, desktop information and reasonably extrapolated field survey results. As such, the results are subject to the level of accuracy and detail associated with this information.

A flora assessment has inherent limitations associated with the variability of vegetation communities across a survey location, and changes to the detectability and presence of species over time. It is recognised that field studies undertaken over just one season cannot always account for all potential floral diversity present across a survey location. Winter is considered a suboptimal time to undertake flora surveys as species tend to be dormant or not displaying reproductive material. The desktop assessment is undertaken to supplement the variability.

The detection of fauna species during habitat assessments is limited, given the cryptic and nocturnal nature of many fauna species. The species directly observed during the survey are opportunistic sightings only and not considered exhaustive. However, habitat assessment is an accepted method to identify the potentially occurring threatened and migratory species within the Study Area.

It should be noted that the objective of the survey was not to provide an exhaustive list of flora and fauna species present within in Study Area. The survey did however record common and dominant flora species as well as all fauna species observed. The results also consider the results of field surveys conducted within the wider Project area, particularly in consideration of highly-mobile species which are likely to traverse the landscape.

Despite the above, survey effort and coverage overall is considered appropriate as representative vegetation communities and habitat types were sampled, and an extensive suite of flora and fauna survey methodologies were employed. The limitations have been taken into consideration throughout this report.

4.0 Results

4.1 Environmental Context

4.1.1 Brigalow Belt Bioregion

The Study Area is located within the Brigalow Belt bioregion which encompasses approximately 216,000 km^2 of central Queensland, extending from Townsville, Qld in the north to Narrabri, New South Wales in the south (Sattler and Williams 1999). *Acacia harpophylla* (brigalow) forests and woodlands growing on clay soils are one of the major vegetation types that characterise the region (Sattler and Williams 1999). While historically *Acacia harpophylla* vegetation covered up to 6,000,000 ha of the bioregion in Queensland, extensive broad scale clearing, predominantly for agriculture, has greatly reduced the extent of this community throughout the bioregion (Sattler and Williams 1999). In addition to remnant *Acacia harpophylla* vegetation, other ecosystems that typify the bioregion include eucalypt forest and woodlands, grasslands, dry rainforest, cypress woodland and riparian communities (Sattler and Williams 1999).

4.1.2 Geology and Land Zones

The detailed surface geology mapping (Queensland Globe 2025) identified three surface geology types mapped within the Study Area (**Table 4.1**). Pre-clear land zone mapping indicates two land zones present within the Study Area.

Table 4.1 Geology and Land Zones within the Study Area

Geological Unit	Description	Land Zone
Qa	Qa-QLD (Clay, silt, sand and gravel; flood-plain alluvium)	3
PRgaj	Bajool Quartz Diorite	3
Dcr	Raspberry Creek Formation	3/12

4.1.3 Topography

The Study Area is located on a predominantly gently undulating to flat landscape, ranging from approximately 70–150 m Australian Height Datum (AHD). The surrounding landscape comprises a hilly range to the west and east, intermixed with gently undulating land to the north and south.

4.1.4 Hydrology

The Study Area is located within the Fitzroy River basin. The Fitzroy River basin encompasses an area greater than 156,000 km^2 and drains into the Great Barrier Reef Marine Park. The basin extends from Moranbah in the north, to Injune in the south. It includes the Nogoa River, Theresa Creek, Dawson River, Isaac River and Connors River.

One unnamed ephemeral drainage line intersects the Study Area (**Section 4.2.8**), which is a tributary of Eight Mile Creek, to the east of the Study Area. The drainage line will not be impacted by the Project. No dams or wetlands occur within the Study Area.

4.2 Ecological Values

4.2.1 Land Use and Study Area Characteristics

The Study Area is primarily utilised for agricultural purposes (grazing) and for utility services. The area has been heavily cleared and is near void of remnant vegetation. Treed vegetation is highly modified and sparse within the Study Area. A powerline easement intersects the western extent of the Study Area, running north-west to south-east. In the very east of the Study Area, adjacent the road reserve of South Ulam Road, a small patch of remnant vegetation has been ground-truthed.

There are no permanent residences, dwellings or infrastructure within the Study Area.

4.2.2 Regulated Vegetation

The Study Area is mapped on the Regulated Vegetation Management Map (Version 7.07) as primarily containing Category X (non-remnant) vegetation. A patch of Category R (reef-regrowth) vegetation occurs in the south-west corners of the Study Area (**Table 4.2** and **Figure 4.2**).

Table 4.2 Regulated Vegetation within the Study Area

Regulated Vegetation	Description	Extent (ha) within Study Area
Category R	An area which is a regrowth watercourse and drainage feature area located within 50 m of a watercourse located in the Burdekin, Burnett–Mary, Eastern Cape York, Fitzroy, Mackay–Whitsunday or Wet Tropics catchments. The vegetation management framework regulates clearing of native vegetation within this buffer area.	0.5
Category X	Non-remnant vegetation.	48.3

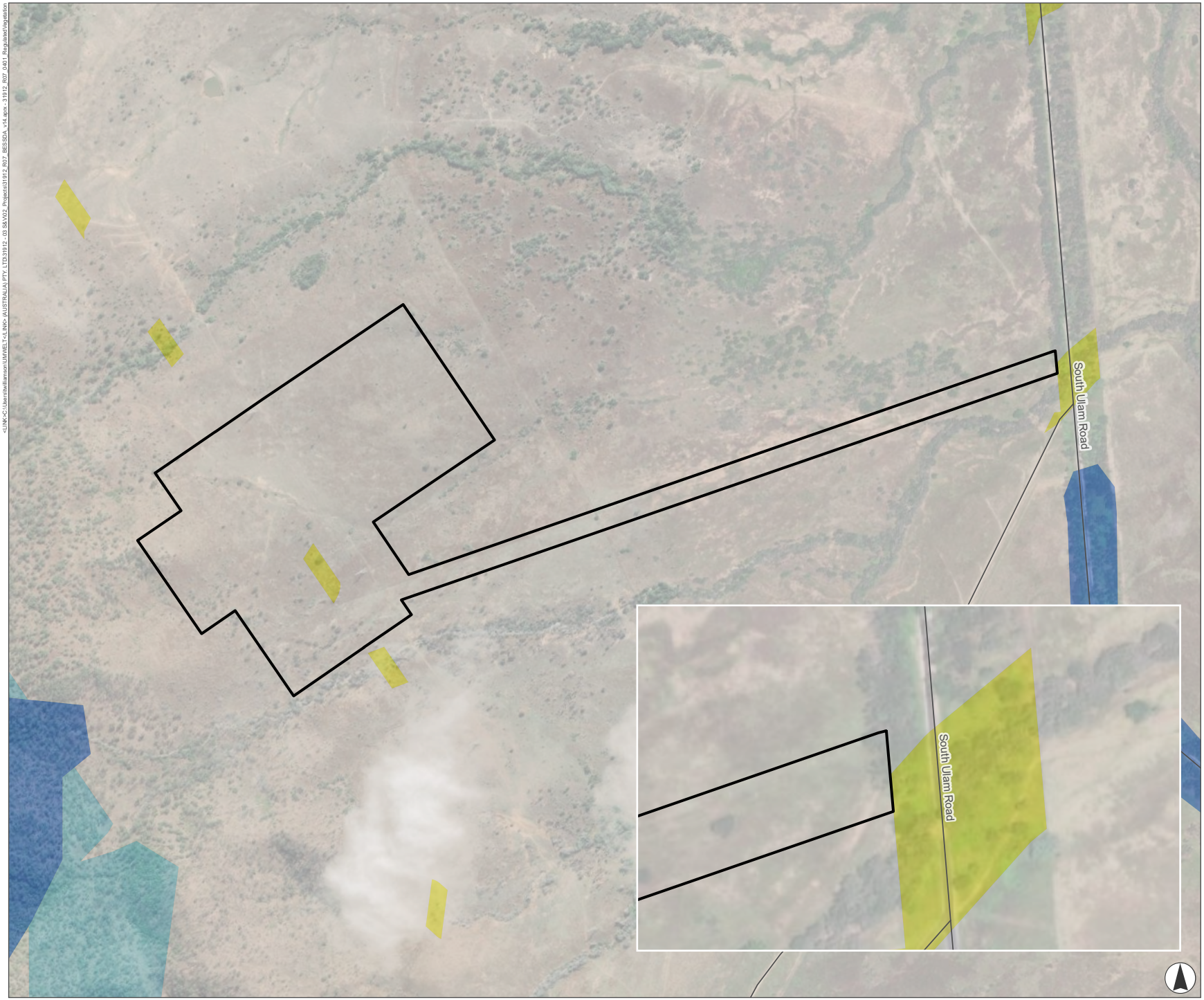


FIGURE 4.1

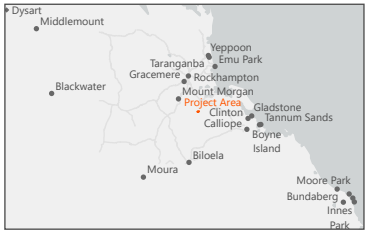
Regulated Vegetation

Legend

- Study Area
- Road

Regulated Vegetation Management Map

- Category B
- Category C
- Category R
- Category X



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Kilometres

Scale 1:12,500 at A4
GDA2020 MGA Zone 56

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Image Source: ESRI Basemap (2025) | **Data Source:** Qld Spatial (2025)

4.2.3 Regional Ecosystems

The Study Area has been subject to historical clearing, livestock impacts, pasture improvement and weed encroachment. A review of the Department of Natural Resources and Mines, Manufacturing, and Regional and Rural Development (DNRMMRRD) RE mapping (Version 13) shows the Study Area is largely mapped as non-remnant, with one patch of Category R vegetation mapped as RE 11.3.4/11.3.2 (**Figure 4.2**).

The field surveys ground-truthed one remnant RE within the Study Area (**Table 4.3, Figure 4.3**). In total, 0.1 ha of remnant vegetation was ground-truthed, comprising RE 11.3.4, listed as 'Of Concern' under the VM Act. The majority of the Study Area (99%) comprises non-remnant vegetation (48.7 ha).

A detailed description of ground-truthed REs, including representative photos of each RE, is provided in **Table 4.4.**

Table 4.3 Extent and Condition of REs Identified within the Study Area

RE	REDD Short Description	VM Act Status	Vegetation Condition	Ground-truthed Extent within the Study Area (ha)
11.3.2	Eucalyptus *populnea* (poplar box) woodland on alluvial plains	Of concern	Category R	0.0 (modelled only)
11.3.4	*Eucalyptus tereticornis* and/or *Eucalyptus* spp. woodland on alluvial plains	Of concern	Remnant	0.1
			Category R	0.0 (modelled only)
Non-remnant	-	-	-	48.7
Total				**48.8**

Table 4.4 Ground-truthed Regional Ecosystems within the Study Area

RE	Field Description	Representative Photo
11.3.4	This RE is described as a *Eucalyptus tereticornis* and/or *Eucalyptus* spp. woodland on alluvial plains. Within the Study Area, this RE occurred as a very small patch within the very eastern extent of the Study Area, within the eastern portion of the access road. It was dominated by *Blakella tessellaris* (Moreton bay ash), with *Eucalyptus tereticornis* and *Eucalyptus crebra* (narrow-leaved red ironbark) throughout, up to 25 m tall. The canopy cover was approximately 30%. No shrubs were present, and the understorey was dominated by introduced grasses and forbs, including *Megathyrsus maximus* var. *maximus** (guinea grass) and *Clitoria ternatea** (butterfly pea). Native species were present, but not abundant within the understorey, including *Flemingia parviflora* (flemingia), *Cyperus gracilis* and *Imperata cylindrica* (blady grass).	

RE	Field Description	Representative Photo
Non-remnant	This vegetation is characterised by the dominance of exotic and native pasture grasses (including *Heteropogon contortus* (black speargrass) and *Bothriochloa pertusa* with occasional scattered emergent trees, typically *Eucalyptus crebra*, *Corymbia erythrophloia* (variable-barked bloodwood) and *Acacia leiocalyx*. Occasional native forbs were also scattered throughout the exotic pasture grasses. The introduced shrub *Lantana camara* (Lantana) occurred persistently throughout the Study Area, comprising approximately 1% cover. Extensive grazing activities are evident in addition to past land clearing. This vegetation community is associated with a diversity of landforms and soils.	 

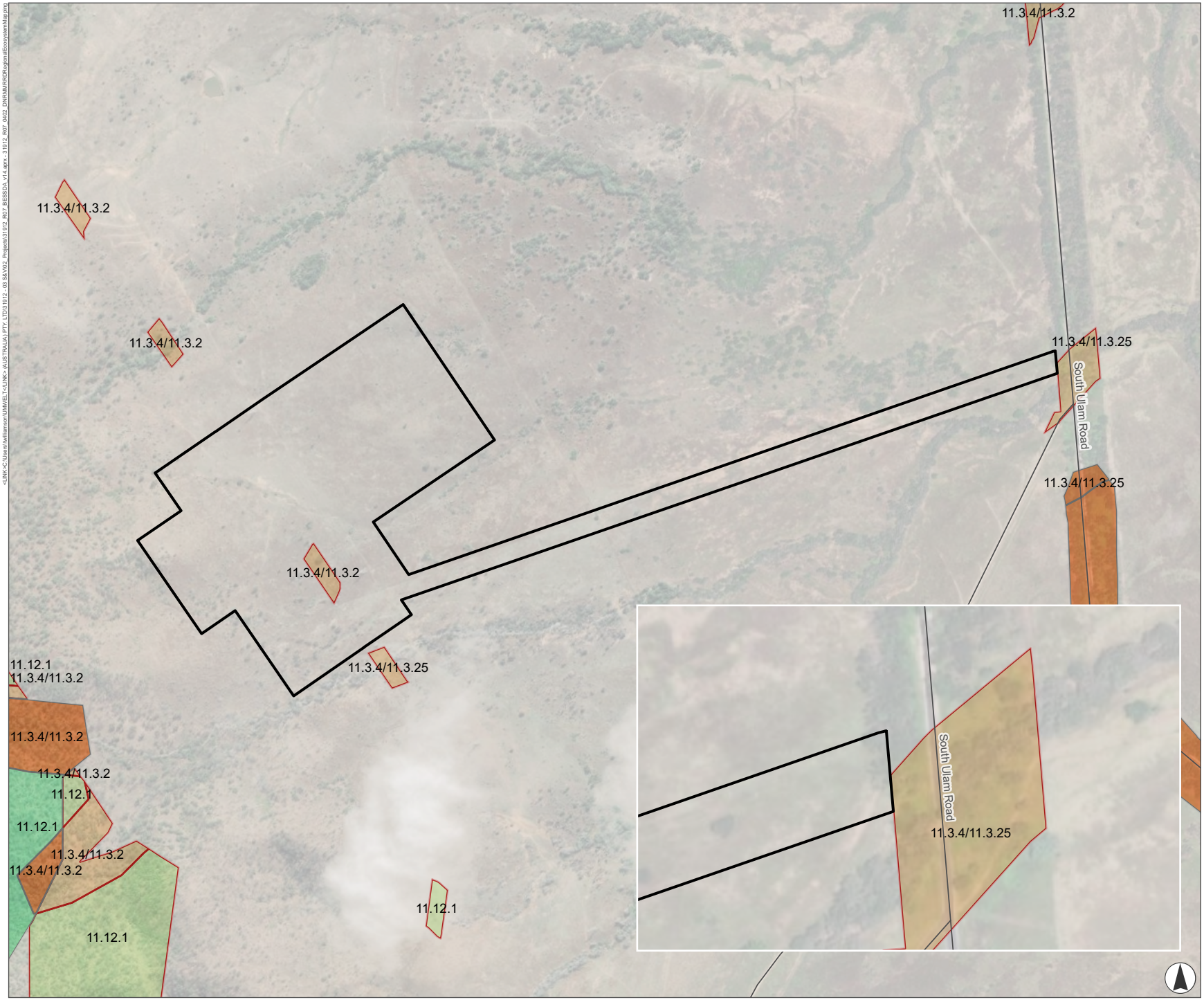


FIGURE 4.2

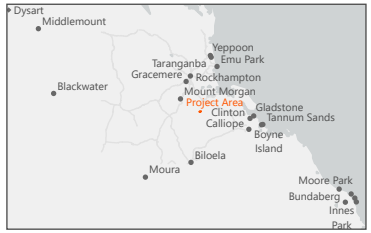
DNRMMRRD Regional Ecosystem Mapping (Version 13.0)

Legend

- Study Area
- Road

Regional Ecosystem Mapping (Version 13.0)

- Category A or B area containing of concern
- Category A or B area that is least concern
- Category C or R area containing of concern
- Category C or R area that is of least concern
- Non-remnant



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GDA2020 MGA Zone 56

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Image Source: ESRI Basemap (2025) | **Data Source:** Qld Spatial (2025)

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FIGURE 4.3

Ground-truthed Regional Ecosystem Mapping

Legend

- Study Area
- Road

Ground-truthed Regional Ecosystems

- 11.3.4 - Remnant
- Non-remnant

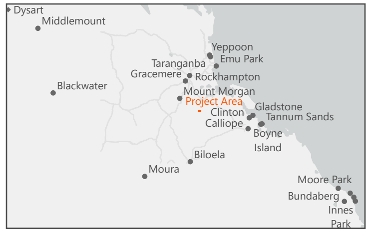

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Image Source: ESRI Basemap (2025) | **Data Source:** Qld Spatial (2025)

4.2.4 Threatened Ecological Communities

A total of six TECs listed under the EPBC Act were highlighted through the desktop assessment (**Appendix A**). Of those TECs, two had potentially analogous vegetation modelled within the Study Area (Department of Natural Resources and Mines, Manufacturing and Regional and Rural Development 2024b) and were subject to further field assessment; *Poplar Box Grassy Woodland on Alluvial Plains* (Poplar Box Woodland) and *Weeping Myall Woodlands*. The results of the field survey confirmed that no analogous vegetation was present within the Study Area and these TEC are considered absent from the Study Area.

No analogous vegetation for the remaining five TECs was recorded within the Study Area and therefore, they are considered unlikely to occur (**Appendix B**).

4.2.5 Flora Diversity

A total of 58 flora species were recorded within the Study Area during the field survey, comprising 42 native and 16 introduced species. The dominant plant families recorded included: Leguminosae and Poaceae. A full flora species list is provided in **Appendix C**.

4.2.5.1 Introduced Flora Species

One introduced flora species recorded during field surveys listed as WONS and listed as State Restricted under the Biosecurity Act; *Lantana camara* (Lantana).

4.2.5.2 Threatened or Near Threatened Flora Species

A total of 18 flora species listed under the EPBC Act and/or NC Act were returned during the desktop assessment (**Appendix A**). Locations of the available records for threatened flora species previously recorded within the desktop assessment area are displayed on **Figure 4.6.**

One threatened species was recorded within the Study Area; *Cycas megacarpa*, which is listed as Endangered under the EPBC Act and NC Act (**Section 4.2.5.3**).

The likelihood of occurrence assessment did not identify any additional threatened flora species with a high or moderate likelihood of occurring within the Study Area based on suitable habitat identified during the field surveys and soundness of nearby records. All other species listed under the EPBC Act and/or NC Act are considered unlikely to occur within the Study Area.

All remaining threatened species are considered to have a low likelihood of occurring or are unlikely to occur within the Study Area and therefore are not discussed further. Refer to **Appendix B** for the full likelihood of occurrence assessment.

Table 4.5 Flora Likelihood of Occurrence Results

Scientific Name	Common Name	NC Act Status	EPBC Act Status
Known			
Cycas megacarpa	-	Endangered	Endangered

4.2.5.3 Cycas megacarpa

A total of 96 *Cycas megacarpa* individuals occur within the Study Area but only 29 occur within the Disturbance Footprint. A breakdown of the age-classes in provided in **Table 4.6** and displayed in **Figure 4.4.** Impacted to *Cycas megacarpa* are discuss in **Section 5.1.1.1**.

Table 4.6 *Cycas megacarpa* Individuals by Age-Class with the Study Area

Age-class	Count (Study Area)	Count (Disturbance Footprint)
Juvenile (0–0.5 m)	69	23
Sub-adult (0.5–1 m)	23	6
Adult (1–5 m)	4	0
Total	**96**	**29**

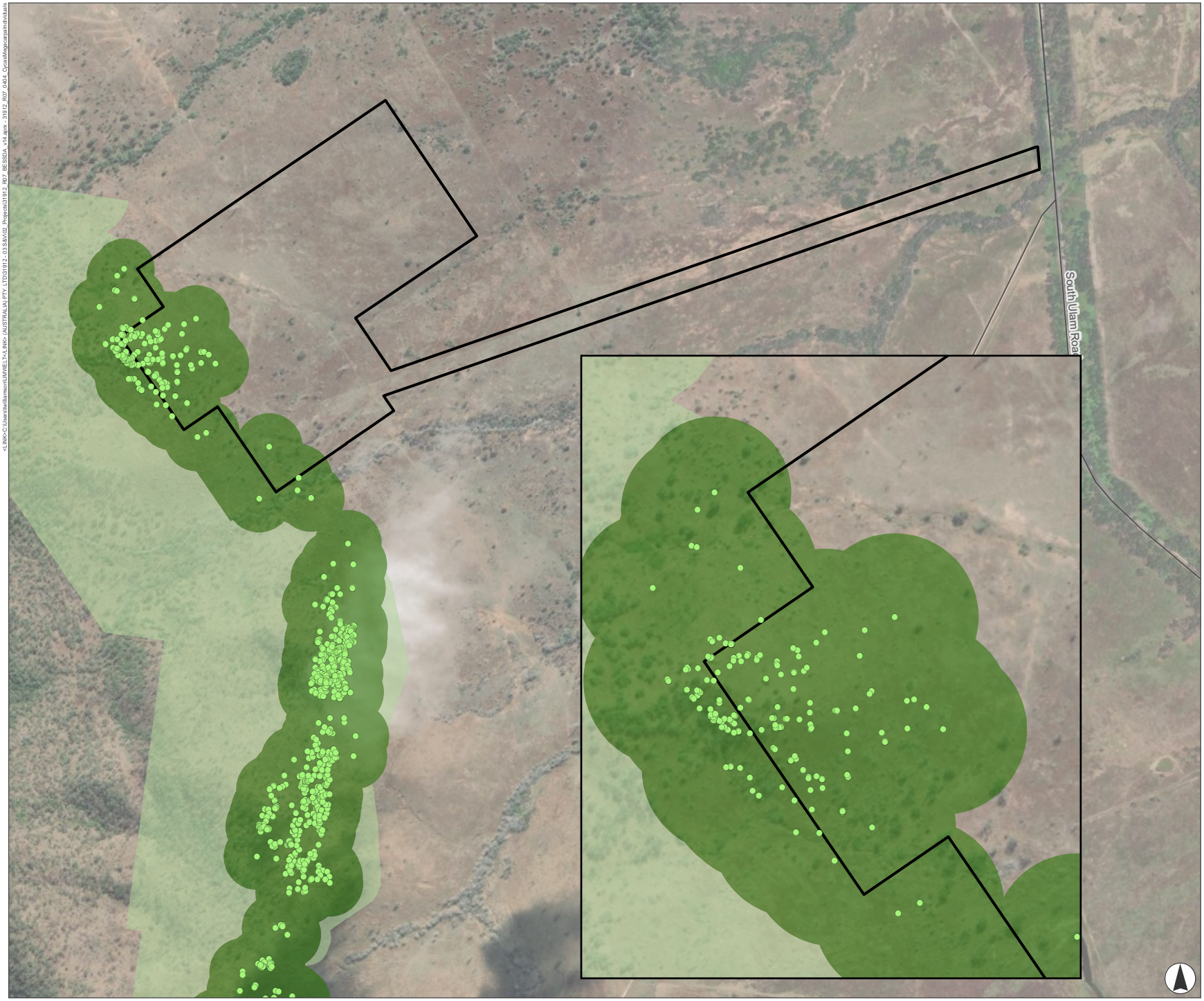


FIGURE 4.4

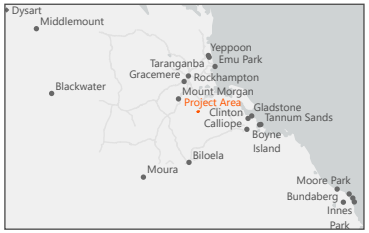
Cycas megacarpa Individuals

Legend

- Study Area
- Road
- *Cycas megacarpa* Records

***Cycas megacarpa* Habitat**

- Known (confirmed)
- Known (suspected)



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Kilometres

Scale 1:12,500 at A4
GDA2020 MGA Zone 56

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Image Source: ESRI Basemap (2025) | **Data Source:** Qld Spatial (2025)

4.2.6 Fauna Habitat

The Study Area can be characterised into two terrestrial fauna habitat types based on the findings of the field surveys. The presence and extent of these habitat types is summarised in **Table 4.7** and displayed on **Figure 4.5**.

The 'non-remnant pasture' habitat type dominates the Study Area, occupying 99%. A description of each habitat type, relevant microhabitat features and associated MNES is provided in the following subsections.

Table 4.7 Summary of Terrestrial Habitat Types

Habitat Type	Extent (ha) within Study Area
Alluvial eucalypt woodland	0.1
Non-remnant pasture	48.7

4.2.6.1 Alluvial Eucalypt Woodland

Open woodland dominated by *Blakella tessellaris*, *Eucalyptus tereticornis* and *Eucalyptus crebra* occurred within the eastern extent of the Study Area, within the eastern portion of the access road. This patch is narrow and linear and has been subject to historic edge effects, such as weed incursion.

Given this patch occurs on an alluvial plain (land zone 3) and suitability of canopy trees, this vegetation may provide suitable climate refugia for koala (*Phascolarctos cinereus*). The shrub layer contained *Planchonia careya* (cockatoo apple) and the ground layer was dense and dominated by exotic grass (*Megathyrsus maximus* var. *maximus**). The dense, tall grassy ground cover smothered the patch. Microhabitat features, such as logs, surface rocks and litter were absent from this habitat. Due to this, it is not considered suitable habitat for squatter pigeon and collared delma (*Delma torquata*). Large trees with a >50 cm diameter at breast height (DBH) were present within this small patch of vegetation, satisfying denning requirements for greater glider (southern and central). Small and medium hollows were rare, however, may provide suitable denning habitat for other common hollow-dependent species.

Photo 4.1 Alluvial Eucalypt Woodland

4.2.6.2 Non-remnant Pasture

This habitat type was dominant within the Study Area and is characterised by non-remnant vegetation (Category X) which has been cleared for predominantly agricultural purposes. Habitat values within this habitat type are limited due to the historical clearing of native woody vegetation. Microhabitat, including hollow logs, surface rocks, boulders and coarse woody debris, were rare. Individual eucalypt trees (*Eucalyptus crebra* and *Eucalyptus tereticornis*), as well as stags, were scattered throughout the cleared paddocks and may provide occasional perching habitat for generalist bird species. The habitat may also facilitate the dispersal for a range of commonly occurring fauna species. The dominant species within the ground layer of this habitat type include *Bothriochloa pertusa**, *Heteropogon contortus* and isolated stands of *Lantana camara**.

A stream order one drainage line intersected the study site, however, is shallow, ephemeral and was dry at the time of the field survey. Occasional *Eucalyptus crebra* and *Eucalyptus tereticornis* occurred along the banks, in conjunction with *Lanata camara**. This habitat, within a suitable distance from a watercourse and with open ground cover, is considered suitable dispersal habitat for squatter pigeon. No suitable water sources, including farm dams, were present within the Study Area.

Airspace above this habitat type is considered foraging habitat suitable for fork-tailed swift (*Apus pacificus*) and white-throated needletail (*Hirundapus caudacutus*).

Photo 4.2 Non-remnant Pasture

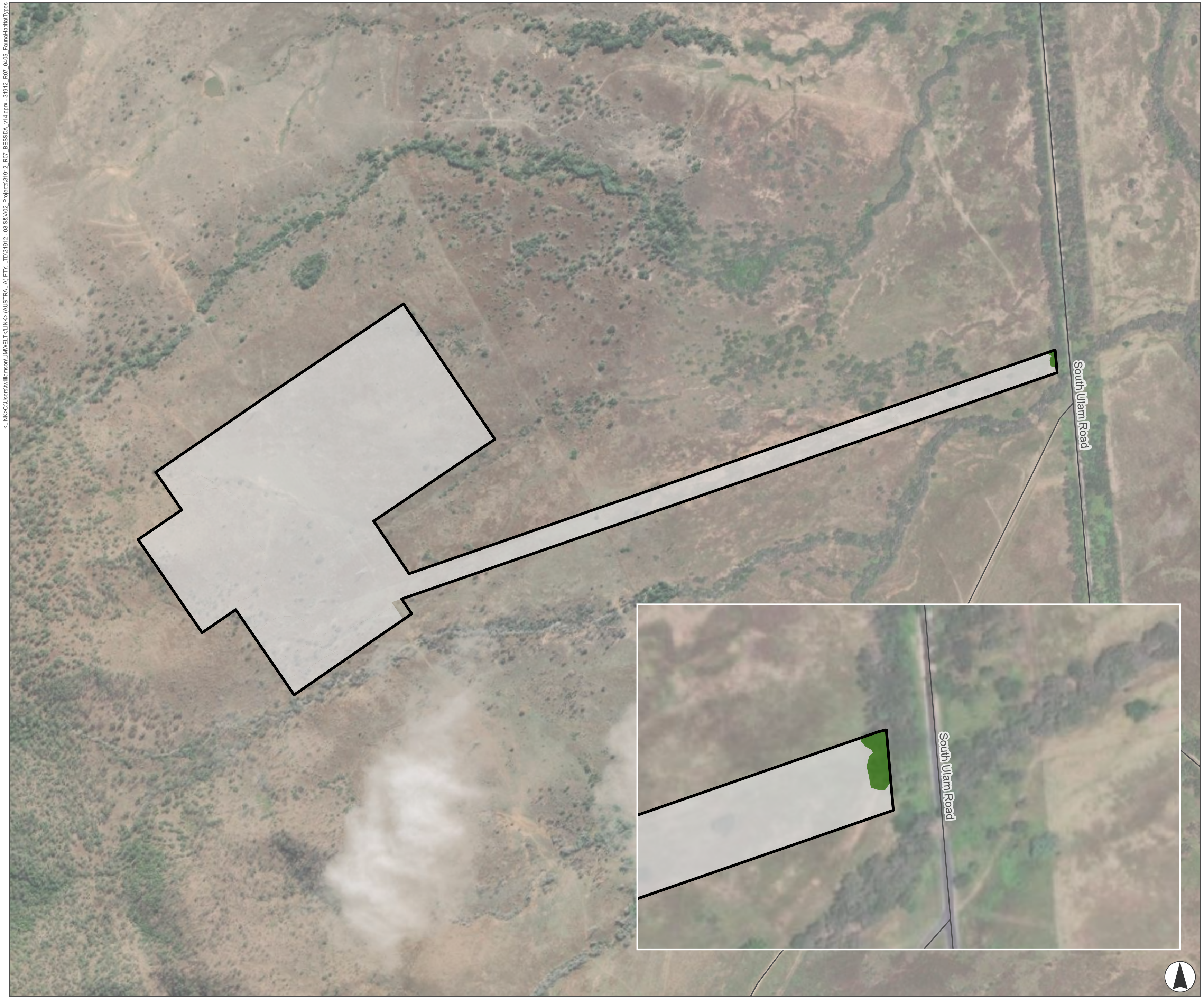

FIGURE 4.5

Fauna Habitat Types

Legend

- Study Area
- Road

Fauna Habitat Type

- Alluvial Eucalypt Woodland
- Non-remnant Pasture

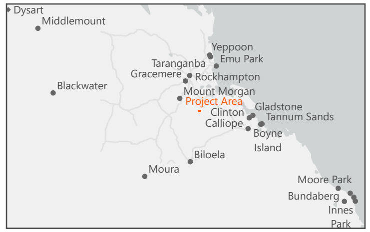

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Image Source: ESRI Basemap (2025) | **Data Source:** Qld Spatial (2025)

4.2.7 Fauna Diversity

A total of 28 fauna species were identified within the Study Area throughout the field surveys all of which are birds. All of the fauna species recorded are native. The full list of fauna species recorded within the Study Area is provided in **Appendix C**.

4.2.7.1 Introduced Fauna Species

The field survey did not identify any introduced fauna species within the Study Area. However, due to the modified landscape and historical clearing, the Study Area is likely to host populations of numerous introduced fauna species.

Other species including feral cat (*Felis catus*), horse (*Equus caballus*), pig (*Sus scrofa*), wild dog (*Canis familiaris*) and cane toad (*Bufo marinus*), are considered likely to occur and have been recorded within the adjacent Mount Hopeful Windfarm.

4.2.7.2 Threatened and Near Threatened Fauna Species

No fauna species listed under the EPBC Act and/or NC Act were recorded within the Study Area during the field surveys.

A total of 63 fauna species listed as threatened or near threatened under the EPBC Act and/or NC Act were returned during the desktop assessment (**Appendix A**) including 46 birds, 10 mammals and 7 reptiles. Locations of the available desktop records for these fauna species previously recorded within the desktop assessment area are displayed on **Figure 4.6.**

The likelihood of occurrences assessment determined 12 fauna species listed under the NC Act with the potential to occur within the Study Area based on the habitat recorded during the field surveys: three have a high likelihood of occurring and nine have a moderate likelihood of occurring. One additional species is listed under the EPBC Act only. A summary of these species is provided in **Table 4.8.**

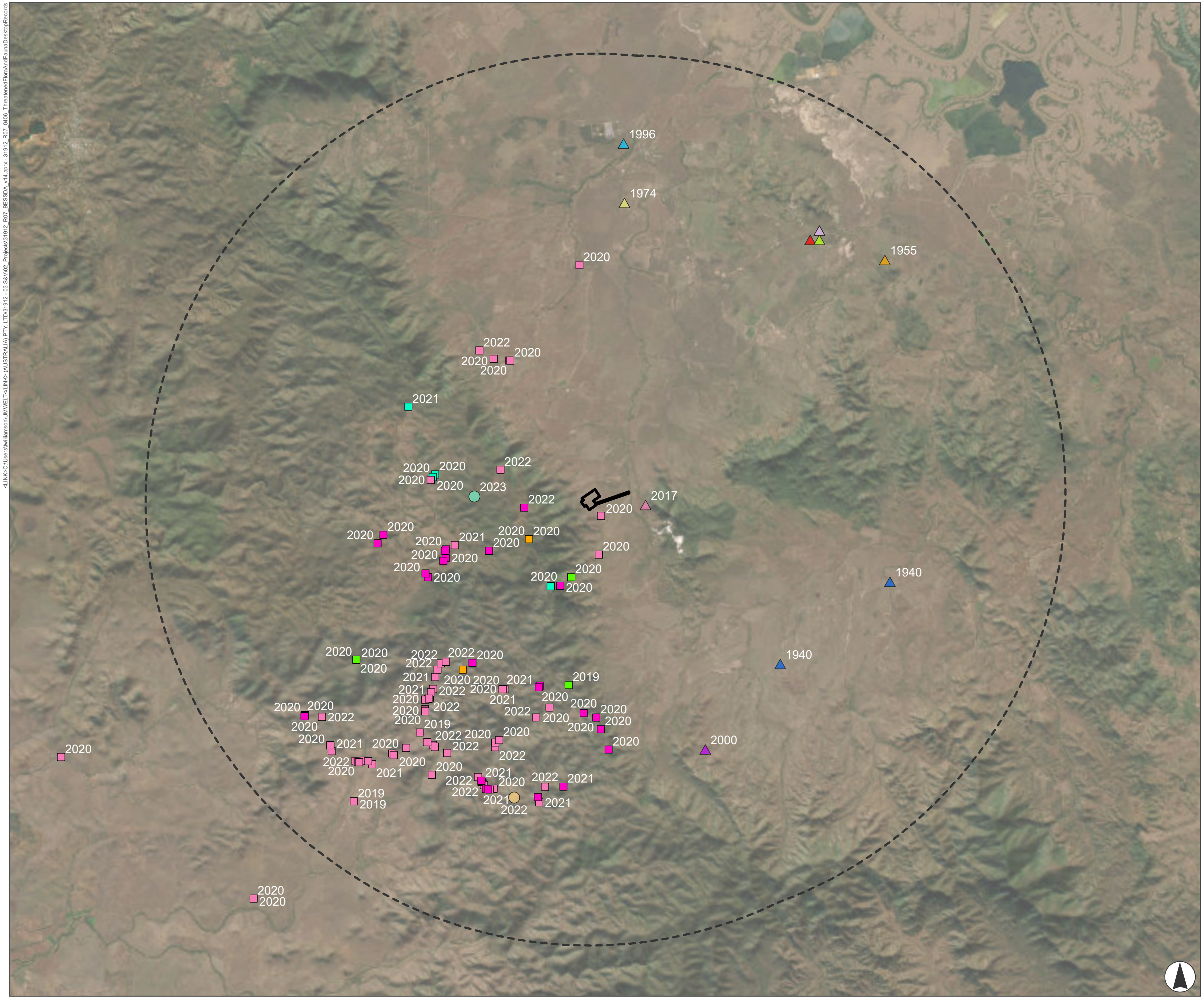
All remaining species are regarded as having a low likelihood of occurring or are unlikely to occur within the Study Area and therefore are not discussed further. Refer to **Appendix B** for the full likelihood of occurrence assessment.

Table 4.8 Fauna Likelihood of Occurrence Results

Scientific Name	Common Name	NC Act Status	EPBC Act Status
High likelihood of occurrence			
Apus pacificus	Fork-tailed swift	Special Least Concern	Migratory
Hirundapus caudacutus	White-throated needletail	Vulnerable	Vulnerable, Migratory
Phascolarctos cinereus	Koala	Endangered	Endangered
Moderate likelihood of occurrence			
Cuculus optatus	Oriental cuckoo	Special Least Concern	This species was delisted 8 November 2024, however, has been considered in this report as it was listed migratory at the time of the referral.
Dasyurus hallucatus	Northern quoll	-	Endangered
Geophaps scripta scripta	Squatter pigeon (southern)	Vulnerable	Vulnerable
Macroderma gigas	Ghost bat	Endangered	Vulnerable
Monarcha melanopsis	Black-faced monarch	Special Least Concern	These species was delisted 8 November 2024, however, has been considered in this report as it was listed migratory at the time of the referral.
Myiagra cyanoleuca	Satin flycatcher	Special Least Concern	
Petauroides volans	Greater glider (southern and central)	Endangered	Endangered
Rhipidura rufifrons	Rufous fantail	Special Least Concern	These species was delisted 8 November 2024, however, has been considered in this report as it was listed migratory at the time of the referral.
Symposiachrus trivirgatus	Spectacled monarch	Special Least Concern	
Tachyglossus aculeatus	Short-beaked echidna	Special Least Concern	-

FIGURE 4.6

Threatened or Near Threatened Flora and Fauna Desktop Records



Legend

Study Area

Desktop Assessment Area

Threatened Fauna [Wildnet]

- Western Alaskan Bar-tailed Godwit
- Black-breasted Button-quail
- Collared Delma
- Common Greenshank
- Curlew Sandpiper
- Eastern Curlew
- Grey Snake
- Koala
- Little Tern
- Shy Albatross
- Squatter Pigeon (southern subspecies)

Threatened Flora [Wildnet]

- *Cossinia australiana*
- *Samadera bidwillii*

Threatened Species Records [Umwelt]

- Glossy Black-cockatoo
- Rufous Fantail
- Spectacled Monarch
- Squatter Pigeon
- White-throated Needletail

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Kilometres

Scale 1:240,000 at A4
GDA2020 MGA Zone 56

umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Qld Spatial (2025)

4.2.8 Wetlands and Watercourses

One unnamed, ephemeral drainage line intersects the Study Area on a west to east trajectory. This is a stream order one watercourse under the VM Act and is mapped as having a 'low' fish passage risk level under the Fisheries Act (**Figure 4.7**). While this watercourse intersects the Disturbance Footprint, no permanent infrastructure is proposed to occur within 25 m of this watercourse. Where the access track intersects the watercourse, this will be constructed in accordance with the accepted development requirements for waterway barrier works (DAF 2018).

A stream order two watercourse occurs to the south of the Study Area and will not be impacted by the Project.

Due to the small size and highly ephemeral nature of this watercourse, in-stream aquatic habitat is relatively simple with an absence of aquatic vegetation and course woody debris. The substrate is predominantly grassy and comprised of small to large rocks. The banks of the watercourse were largely cleared of trees, dominated by *Aristida* sp.. Where dry, drainage lines were present within the Study Area, few *Eucalyptus crebra* and *Eucalyptus tereticornis* were present along the banks as well as continuous thickets of *Lantana camara**.

Whilst the watercourse within the Study Area was dry at the time of the survey, during intense periods of inundation, the aquatic environments within the Study Area may temporarily support assemblages of aquatic species and water sources for terrestrial fauna species.

No farm dams or wetlands are present within the Study Area.

Photo 4.3 Stream Order 1 Waterway within the Study Area

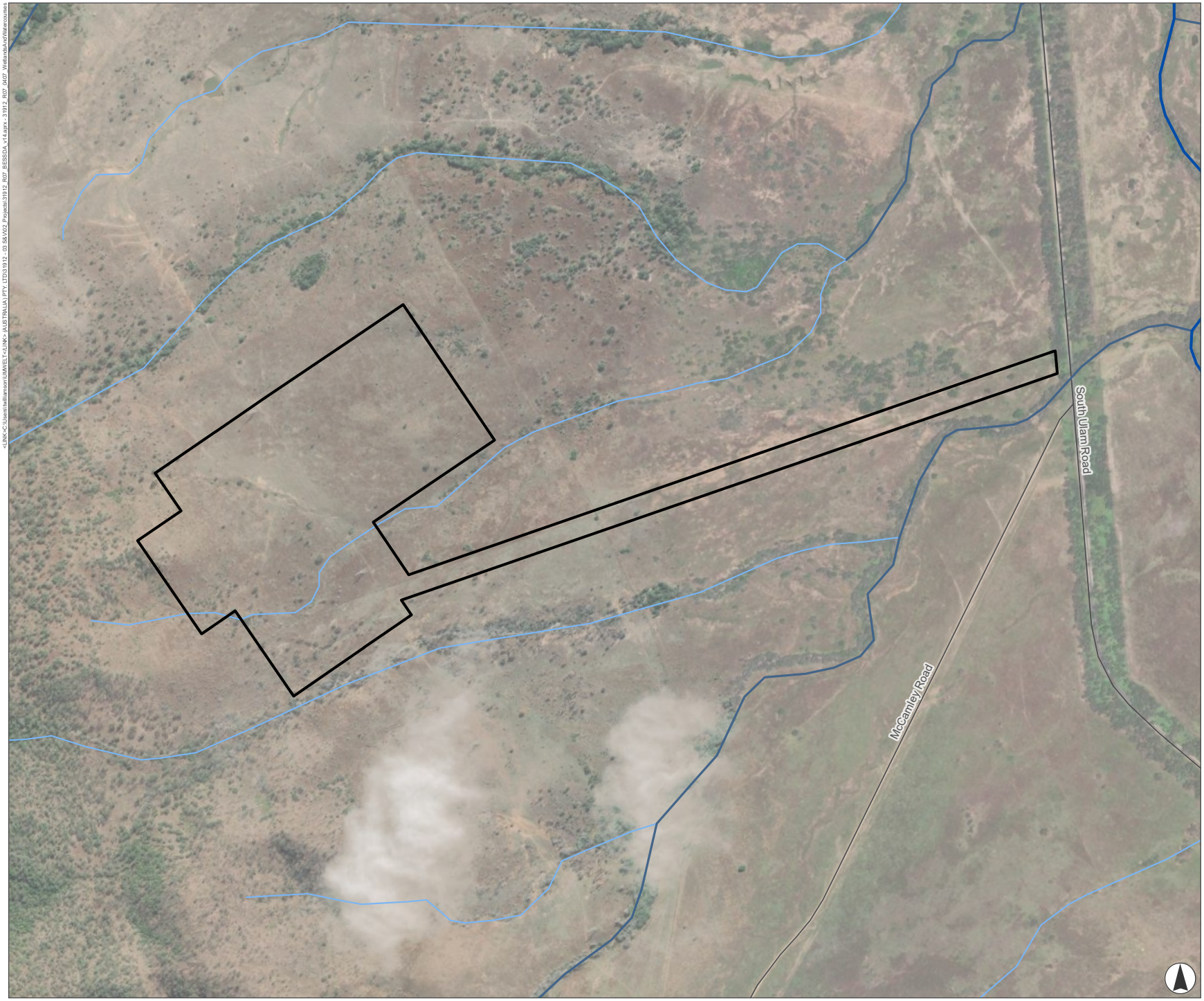


FIGURE 4.7

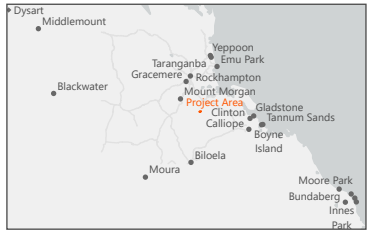
Wetlands and Watercourses

Legend

- Study Area
- Road

VM Act Watercourse

- 1st Order Stream
- 2nd Order Stream
- 3rd Order Stream



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Kilometres

Scale 1:12,500 at A4
GDA2020 MGA Zone 56

Image Source: ESRI Basemap (2025) | **Data Source:** Qld Spatial (2025)

4.2.9 Protected Plant Flora Trigger Mapping

The Study Area does not contain any 'high risk' areas on the Protected Plants Flora Trigger Map (Version 10.0) (Department of the Environment, Tourism, Science and Innovation 2023). The nearest 'high risk' area is located approximately 1 km west from the Study Area (**Figure 4.8**).

4.2.10 Essential Habitat

Review of the essential habitat mapping (Department of Natural Resources and Mines, Manufacturing and Regional and Rural Development 2024a) determined that no essential habitat is present within the Study Area. The closest area of essential habitat is approximately 250 m to the south, within the reserve of South Ulam Road. Essential habitat mapping is displayed in **Figure 4.8**.

4.2.11 Connectivity

The Study Area occurs within a mapped state biodiversity corridor, which is mapped based on the hilly range to the west of the Study Area. The biodiversity corridors mapped by the Queensland Government are displayed on **Figure 4.8**.

Although the Study Area is situated within a predominantly cleared landscape, dispersal opportunities to larger patches of vegetation do exist, albeit restricted. The Study Area is near void of patches of vegetation and comprises scattered trees. These trees are unlikely to provide dispersal opportunities for fauna species due to their scarcity. Remnant vegetation which occurs within the Study Area occurs adjacent South Ulam Road reserve, which provides dispersal opportunities to the north and south and to the nearby Eight Mile Creek.

4.2.12 Matters of Local Environmental Significance

No MLES occurs within the Study Area or adjacent areas or are proposed to be impacted by the Project (**Figure 4.9**).

FIGURE 4.8

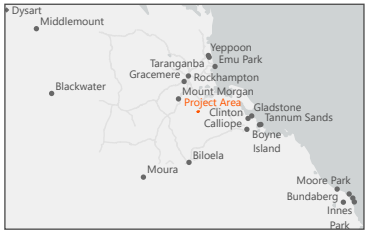
Protected Plant Trigger Map, Essential Habitat and Connectivity Areas

Legend

- Study Area
- Road
- Essential Habitat
- Protected Plants Trigger Map
- State Biodiversity Corridor

VM Act Watercourse

- 1st Order Stream
- 2nd Order Stream
- 3rd Order Stream



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Scale 1:12,500 at A4
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Image Source: ESRI Basemap (2025) | **Data Source:** Qld Spatial (2025)

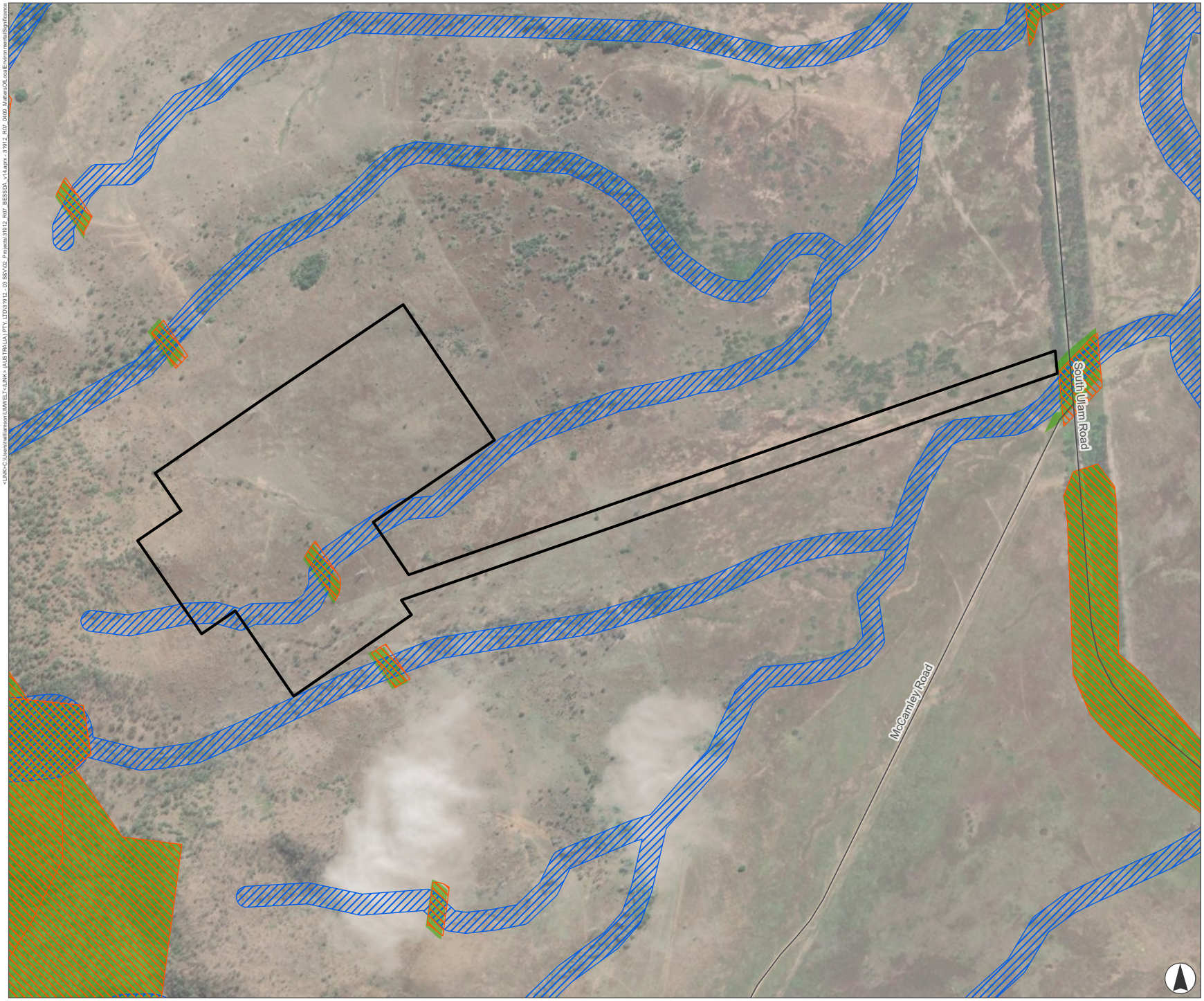
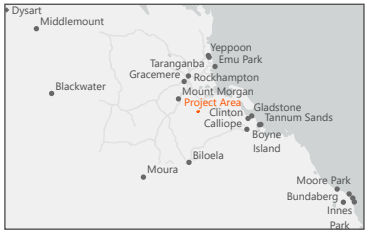


FIGURE 4.9

Matters of Local Environmental Significance

Legend

- Study Area
- Road
- Watercourse Buffers
- Matter of Local Environmental Significance
- Matters of State Environmental Significance



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GDA2020 MGA Zone 56

umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Qld Spatial (2025)

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5.0 Potential Impacts

Potential impacts to ecological values may arise throughout the life of the Project; construction, operation and decommissioning, and may include both direct and indirect impacts.

5.1 Construction

The greatest risk of impact on ecological values will occur during the construction phase. The construction activities will involve vegetation clearing/habitat loss, trenching and/or excavation and ground reinstatement. Direct and indirect impacts associated with construction are discussed in **Section 5.1.1** and **Section 5.1.2** respectively.

5.1.1 Direct Impacts

5.1.1.1 Vegetation Clearance and Habitat Loss

The most significant direct impacts occur during construction phase activities which require the clearance of vegetation and habitat, and associated land disturbance activities (i.e. levelling of ground). Potential impacts resulting from clearing native vegetation can include:

- Loss of habitat causing a reduction of biological diversity or loss of local populations and genotypes.
- Reduced patch size of vegetation communities potentially compromising the viability of the community and associated habitat.
- Loss of, or disturbance to microhabitat features such as tree hollows, leaf litter, ground timber, dense shrubs and hollows.
- Loss of floristic diversity and the food resources this provides such as foliage, flowers, nectar, fruit and seeds.
- Fragmentation of habitats resulting in reduced dispersal opportunities for fauna.
- Destruction of abiotic features necessary to support vegetation communities and habitat types.

The vegetation types proposed to be cleared for the Project are detailed in **Table 5.1**. The direct impact to habitat to known threatened species, or those determined as having a moderate or high likelihood of occurring within the Study Area are listed in **Table 5.2**.

Table 5.1 Vegetation Clearing Required for the Project

Value	VM Act Status	Study Area (ha)	Disturbance Footprint (ha)
Ground-truthed Regional Ecosystem			
Remnant RE 11.3.4	Of Concern	0.1	0.0[1]
State Mapped Regulated Vegetation			
Category R (regrowth watercourse)			
RE 11.3.2	Of Concern	0.1	0.1
RE 11.3.4	Of Concern	0.4	0.4
Category X (non-remnant)	-	48.3	41.5

[1] Rounded down to 0.0.

Table 5.2 Habitat Clearing Required for the Project

Species	Habitat Utilisation	Study Area (ha)	Disturbance Footprint (ha)
Threatened Flora Habitat			
Cycas megacarpa	*Cycas megacarpa* habitat	8.8	6.8
Threatened and Migratory Fauna Habitat			
Black-faced monarch	Foraging and dispersal	0.1	0.0[2]
Fork-tailed swift	Foraging and dispersal	48.8	42.0
Ghost bat	Seasonal foraging and dispersal	48.8	42.0
Greater glider	Current denning	0.1	0.0[4]
Koala	Climate refugia	0.1	0.0[4]
Northern quoll	Foraging and dispersal	0.1	0.0[4]
Oriental cuckoo	Foraging and dispersal	0.1	0.0[4]
Rufous fantail	Foraging and dispersal	0.1	0.0[4]
Satin flycatcher	Foraging and dispersal	0.1	0.0[4]
Short-beaked echidna	Foraging and dispersal	48.8	42.0
Spectacled monarch	Foraging and dispersal	0.1	0.0[4]
Squatter pigeon	Dispersal	4.4	2.2
White-throated needletail	Foraging and dispersal	0.1	0.0[4]

Cycas megacarpa direct impacts

A total of 29 *Cycas megacarpa* individuals occur within the Disturbance Footprint. A breakdown of these individuals by age-class is provided in **Table 4.6** and **Figure 4.4.**

Potential impacts on *Cycas megacarpa* resulting from the Project include habitat loss, fragmentation and degradation, soil erosion, dust generation, introduction and exacerbation of introduced flora species, increased intensity and frequency of fires and the disruption of breeding within the species life cycle. Mitigation measures (**Section 5.6**) will be implemented throughout the life of the Project.

5.1.1.2 Fauna Injury and Mortality

Fauna mortality is a direct impact that may occur during the construction phase. Fauna may be injured or killed during construction principally through:

- Strike from moving vehicles/machinery – key issue for ground dwelling species, particularly those with poor mobility.
- Entrapment in habitat during removal – key issue during tree felling for species that use tree hollows or hollow logs for roosting and denning; or for species which utilise subterranean habitat for refuge.
- Entrapment in trenches/holes – key issue for ground dwelling species (reptiles and small mammals), particularly those that are active at night and cannot detect trenches to avoid.

The potential impact of fauna mortality is likely to be at a very low frequency given the extensive clearing that has been undertaken within the Study Area, the extent and condition of habitat (i.e.

[2] Rounded down to 0.0.

cleared pasture and cropping) and the mitigation measures that will be implemented (spotter-catcher presence during clearing, appropriate speed limits, minimal night works, see **Section 5.6**). The impact duration will be limited to the construction period, with the impact magnitude likely to be low (rare occurrence of individuals). However, it is noted that this risk profile does differ between species and broader fauna groups. For example, cryptic species that are more likely to stay still when threatened rather than disperse away from the disturbance will have a higher mortality risk.

5.1.1.3 Loss of Fauna Movement Opportunities

The Study Area is compact and largely restricted to non-remnant areas. Patches of remnant vegetation proposed to be cleared are already fragmented from historical clearing for agriculture and construction of roads. Clearing of treed vegetation is linear in nature, with a maximum width of 50 m. This clearing is not expected to contribute significantly to loss of fauna movement opportunities within the landscape.

Development of battery will result in a permanent above-ground structure which may impede fauna movement. Fencing will be installed around the BESS and switchyard. While this may restrict fauna movement, due to the siting within non-remnant vegetation which provides marginal habitat for fauna species, it will primarily affect generalist or common species. The fenced area is relatively small in the context of the broader paddock, and the location is not considered a wildlife corridor.

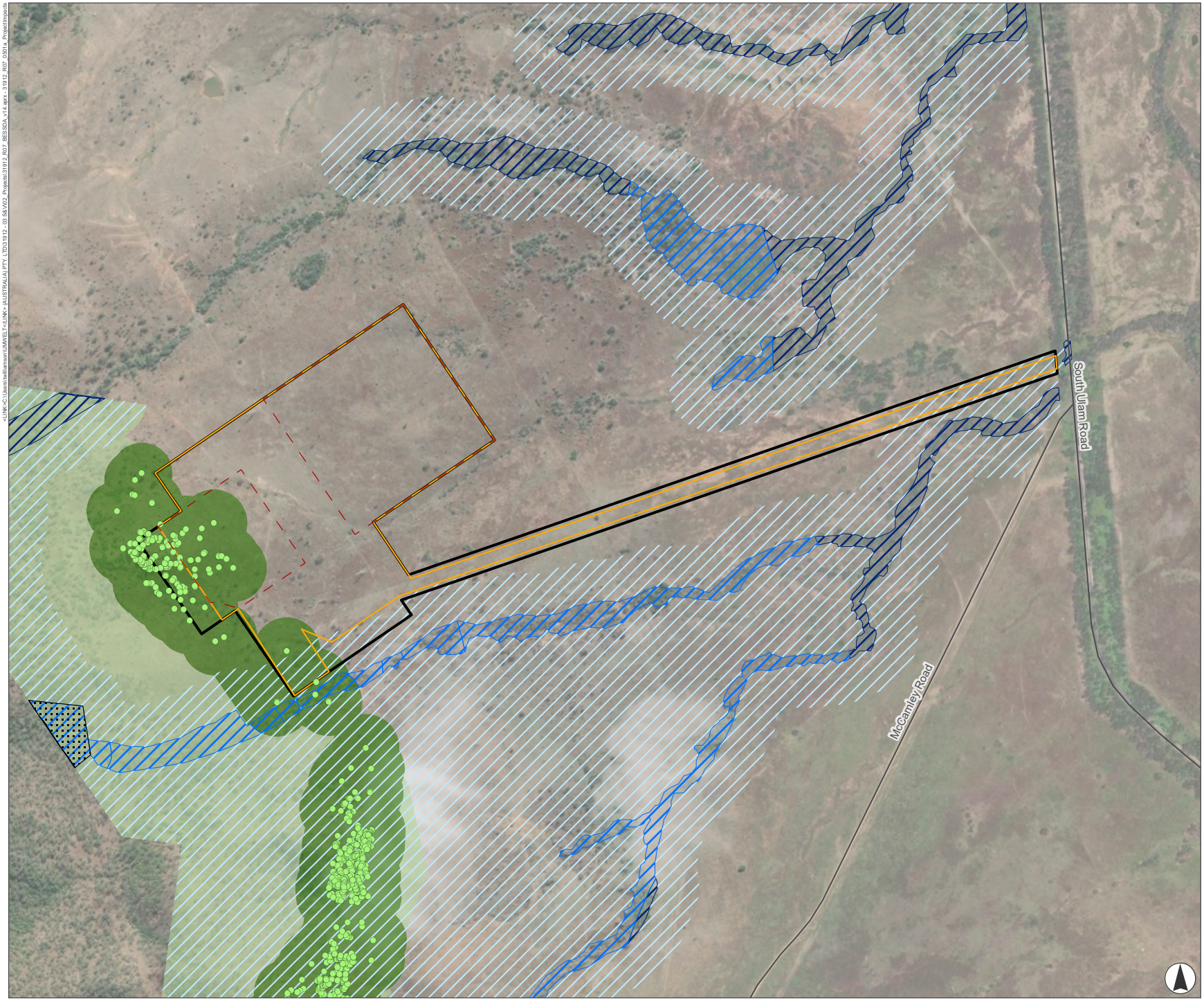


FIGURE 5.1a

Project Impacts

Legend

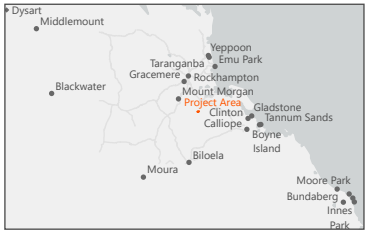
- Study Area
- Disturbance Footprint
- *Cycas megacarpa* Records
- Fence
- Road
- Yellow-bellied Glider Habitat

Squatter Pigeon Habitat

- Breeding
- Foraging
- Dispersal

***Cycas megacarpa* Habitat**

- Known (confirmed)
- Known (suspected)



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Kilometres

Scale 1:12,500 at A4
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Image Source: ESRI Basemap (2025) | **Data Source:** Qld Spatial (2025)

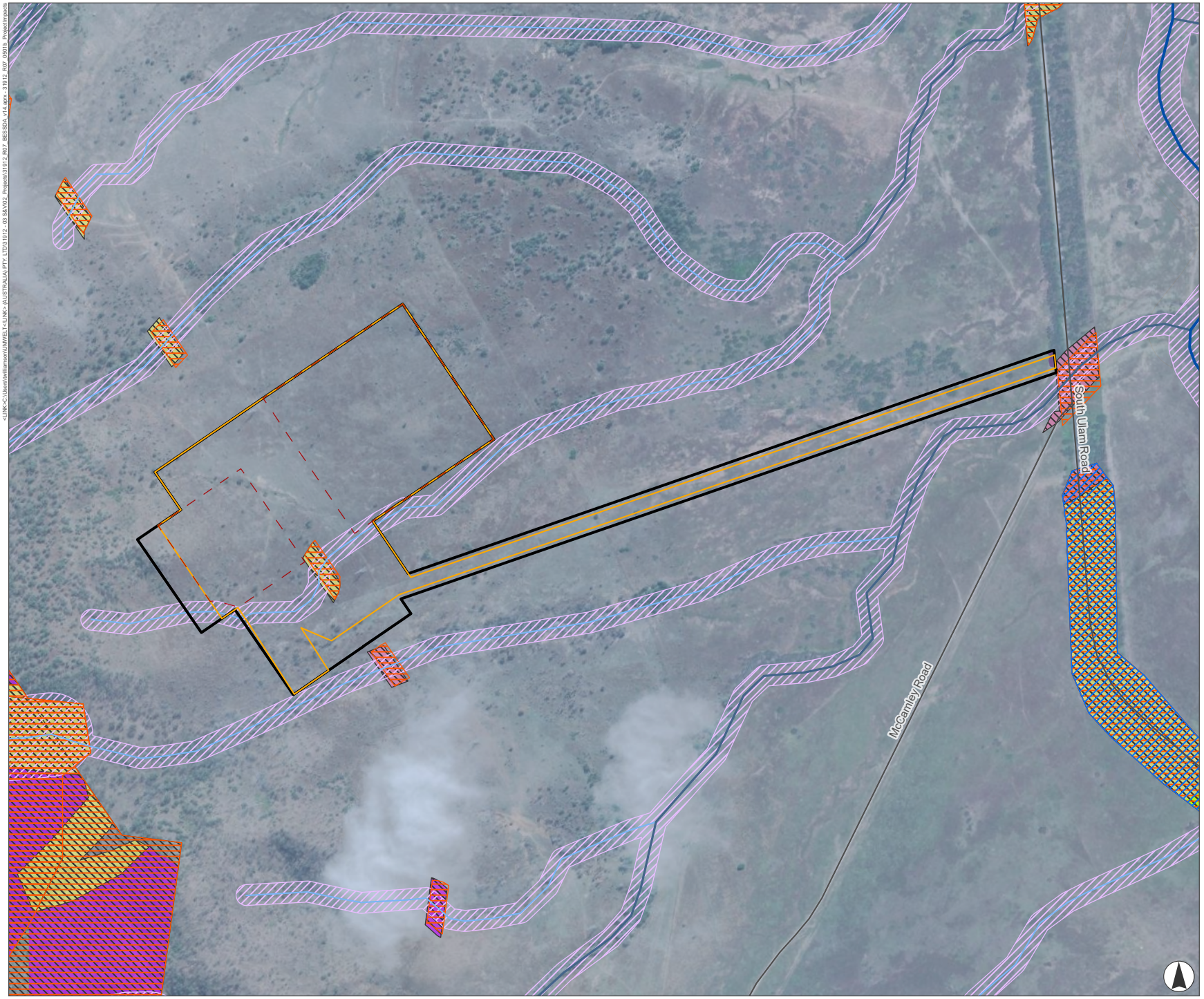

FIGURE 5.1b

Project Impacts

Legend

- Study Area
- Disturbance Footprint
- Fence
- Road
- Essential Habitat
- Watercourse Buffers
- Matter of Local Environmental Significance
- Matters of State Environmental Significance
- State Biodiversity Corridor
- Protected Plants Trigger Map

Ground-truthed Regional Ecosystems

- 11.3.4 - Remnant

State Mapped Regional Ecosystems

- 11.12.1
- 11.3.4/11.3.2
- 11.3.4/11.3.25

VM Act Watercourse

- 1st Order Stream
- 2nd Order Stream
- 3rd Order Stream

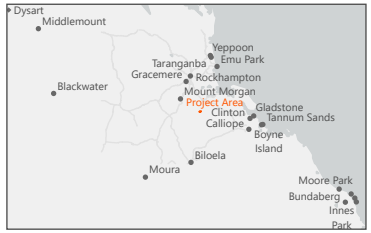

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Image Source: ESRI Basemap (2025) | **Data Source:** Qld Spatial (2025)

5.1.2 Indirect Impacts

Proposed construction activities, including the loss of vegetation and habitat, may result in indirect or secondary impacts to flora, fauna and vegetation.

5.1.2.1 Introduction and/or Exacerbation of Weeds

Construction activities inherently have the potential to introduce and spread weeds and diseases. This can subsequently impact the integrity of remaining vegetation, increase the intensity and/or frequency of fire, as well as threaten the long-term survival of threatened species.

Introduced flora species are present throughout the Study Area, including WoNS. Given the long disturbance history and current land use practises within the Study Area, construction activities are unlikely to introduce new weed species or exacerbate existing ones. Nonetheless, best practice construction and operational methods will be implemented, including the development and implementation of a Construction Environmental Management Plan (CEMP), which would include weed management measures.

5.1.2.2 Introduction and/or Exacerbation of Pest Fauna

Pest fauna, such as red fox, feral cat and cane toads, are likely to occur within the Study Area. These species are known to predate on native fauna. Development of the battery is unlikely to materially increase the abundance of pest fauna given the short duration of construction and application of best practice construction and operational measures.

5.1.2.3 Noise and Vibration

The Disturbance Footprint is located primarily on cleared agricultural land and local fauna will have been subject to intermittent noise and vibration levels associated with this land use in the past. Nonetheless, construction activities will temporarily result in increased noise and vibration levels in the vicinity of the construction works. These will be intermittent and restricted to when construction works are being undertaken.

Noise and vibration impacts will be mitigated through development and implementation of a Project CEMP.

5.1.2.4 Edge Effects

The Project will be predominately within existing modified vegetation types, with only extremely limited loss of treed vegetation proposed. Nonetheless, edge effects resulting from removal of vegetation can reduce the condition and quality of remaining vegetation communities and habitat types. Primarily, this would occur where larger tracts of remnant vegetation are disturbed. However, the only clearing of treed vegetation clearing occurs within an isolated patch within the eastern extent of the Disturbance Footprint, which has been subject to disturbance previously, and is subject to severe weed incursion as recorded during field survey.

5.1.2.5 Soil Erosion and Sedimentation

Construction of the Project may result in soil exposure resulting in an increased risk of erosion and sedimentation, which in turn, may result in reduction of water quality and degradation of aquatic habitats. Soil erosion and sedimentation impacts will be mitigated through development and implementation of a Project Erosion and Sediment Control Plan (ESCP).

5.1.2.6 Dust Impacts

Earthworks and clearing of vegetation have the potential to increase dust levels. There is the potential for dust to settle on adjacent vegetation, particularly if excessive levels are sustained over extended periods. The majority of the Study Area is cleared agricultural land and is unlikely to be adversely impacted by increased dust levels. Nonetheless, best practice dust suppression will be undertaken during construction, in line with the Project CEMP.

5.2 Operation and Maintenance Phase

Operation of the battery is expected to extend across approximately 20-25 years. During operation, up to 10 personnel will be employed to operate and maintain the facility. It will operate 24 hours a day, typically charging during the day when excess renewable energy is being generated and discharging during peak period.

Noise generated by the operation equipment has the potential to impact fauna species by interrupting foraging and breeding behaviours, or complete avoidance and displacement from habitats. Given the position within a cleared agricultural landscape, and the limited habitat value this vegetation provides, it is anticipated these impacts are localised and unlikely to impact EPBC Act or NC Act listed species.

Impacts to fauna during the operation and maintenance phase of the Project are expected to be minimal and relate primarily to vehicle strikes. During operations when local staff may be accessing the site, there will be some vehicle activity. This is considered a very limited impact, and negligible in comparison to the existing threat levels.

5.3 Decommissioning and Rehabilitation Phase

At the battery's end of life, a review will be conducted to determine whether it will be renewed or decommissioned.

Decommissioning will adopt the best practice approach for the removal of infrastructure. Areas of disturbed land will be revegetated with species that were present prior to construction.

Direct impacts associated with the decommissioning and revegetation phase are expected to be minor. The main potential direct impact is vehicle and equipment strike. Indirect impacts associated with decommissioning and rehabilitation are expected to include noise and vibration, and dust generation as a result of increased vehicle and machinery use.

It is acknowledged that a condition may be included on the development permit requiring a Decommissioning Management Plan to be prepared and submitted prior to the cessation of the use.

5.4 Avoidance, Mitigation and Management

The avoidance, mitigation and management measures to be implemented to reduce the impacts of the Project on vegetation, flora and fauna are identified below. Specific mitigation measures for EPBC Act and/or NC Act listed flora and fauna species that are known, or considered to have a moderate or high likelihood to occur within the Study Area are discussed in **Section 5.6.3.**

5.5 Avoid and Minimise

5.5.1 Site Selection and Design

Neoen have undertaken a site selection process that minimises the impacts on ecological values. Additional consultation with PLQ was undertaken to optimise siting and confirm constructability of the PLQ switchyard required for the Project. The PLQ switchyard occurs adjacent the BESS, and due to the required switchyard construction area, further siting of the BESS was required. The siting of the BESS and switchyard has also considered pre-clearance survey data for *Cycas megacarpa*, completed to inform the preliminary *Cycas megacarpa* Translocation Management Plan (Ecologica Consulting 2024). The Project has been designed to avoid and minimise direct impacts on this species where possible.

Neoen's site selection process also considered the following factors:

- The Study Area is in close proximity to existing energy infrastructure.
- The Study Area is predominantly cleared, non-remnant vegetation, and as a result there is reduced impact to native vegetation and biodiversity (relative to other heavily vegetated locations).
- The Study Area is large enough to accommodate the BESS.
- There is good access to the road network, with minimal requirements to construct new access roads.

The design of the BESS, switchyard and associated ancillary infrastructure has been optimised so that most of the Disturbance Footprint is located within cleared land. Within the Disturbance Footprint, the infrastructure layout has been optimised through an iterative design process. A key consideration in the design concept was to maximise existing non-remnant areas and avoid the clearance of native vegetation. This was informed by the existing ecological report and other early environmental technical studies.

5.6 Mitigation and Management

Mitigation and management measures proposed to be implemented to reduce impacts from the Project are discussed in **Section 5.6.1.1** to **Section 5.6.3**.

5.6.1.1 Vegetation Clearing

Mitigation and management measures that relate to vegetation clearing include:

- Where vegetation clearing is proposed, boundaries will be clearly demarcated.
- Where trees are to be removed, they will be felled away from areas of retained vegetation, where safe and practicable. Where trees unavoidably fall into retained areas, they will be left in-situ to mimic natural tree fall and provide habitat for ground-dwelling fauna.
- Fauna spotter-catchers will be present during all vegetation clearing activities.
- A CEMP will be developed and implemented and will include the measures described in this report, as well as:

- Appropriate measures will be implemented to minimise indirect impacts to native vegetation adjacent to the Project, including control of runoff and erosion.
- A site induction so that all staff and contractors are aware of site environmental values and controls.
- Management measures to limit the spread of State Restricted weed, *Lantana camara**.

5.6.1.2 Fauna

Mitigation and management measures relating to fauna include:

- Micro-siting of Project infrastructure will aim to retain habitat trees where possible.
- Where habitat features such as hollow logs cannot be retained in-situ, they will be relocated to adjacent areas of suitable habitat if safe and practical.
- Construction personnel will be educated (through site inductions and toolbox talks) on the potential presence of fauna.
- Where encountered, personnel shall keep their distance from fauna and not harm or trap them.
- Where injured fauna is encountered, a wildlife carer or vet will be contacted.

5.6.1.3 Weeds and Pests

Mitigation and management measures related to weeds and pests include:

- Weed and hygiene control measures will be in place during construction in accordance with a Project CEMP.
- Prior to entering the Study Area, the origin of construction materials, machinery and equipment will be determined and certified where applicable.
- During construction and operation, waste will be contained within fauna proof bins so as not to attract pest species.

5.6.2 General Mitigation Measures

General mitigation and management measures include:

- Erosion and sediment control devices will be implemented in accordance with a Project ESCP to minimise the risk of potential sedimentation to sensitive receptors.
- To minimise dust impacts, vegetation clearing will not be undertaken in high wind conditions unless dust suppression measures such as water tanks are being used.
- Hot/hazardous works will not to be undertaken during a Total Fire Ban or on a day with a Fire Danger Rating of ‘Extreme’ or ‘Catastrophic’.
- A dedicated firefighting water tank will be installed for firefighting during operations. Firefighting water will be provided from water carts during construction.

5.6.3 Species-specific Mitigation Measures

Mitigation and management measures specific to relevant known, or potentially (high and moderate) occurring threatened species within the Study Area are detailed in **Table 5.3** below.

Key threatening processes are detailed in the made/adopted National Recovery Plans, SPRAT database, Approved Conservation or Conservation Listings. These documents have been reviewed to ensure the mitigation measures are appropriate and relevant.

Table 5.3 Species-Specific Mitigation Measures

Relevant MNES	Mitigation Measures
All threatened and near-threatened species	• In the very unlikely event that a flora or fauna individual listed under the EPBC Act and/or NC Act is damaged, removed or killed as a result of Project activities (without an appropriate permit), the relevant regulating body for that species will be notified within a maximum period of 2 business days.
Cycas megacarpa	• Minimise impacts to individuals and mapped habitat for *Cycas megacarpa*. • Pre-clearance surveys for *Cycas megacarpa* have been undertaken within the Study Area and this data will be used for micro-siting purposes. • Areas proposed to be cleared will be demarcated to ensure no accidental clearing outside the Disturbance Footprint. • A pre-approved *Cycas megacarpa* Translocation Management Plan (CTMP) (which is a requirement of the EPBC Act approval) will be implemented through all Project phases. This plan will provide detailed information regarding: ○ Species information including a description to aid identification. ○ Mitigation and management methods, including corrective actions. ○ Vegetation clearing requirements and methods to reduce impacts to surrounding individuals and their habitat. ○ Specific weed and pest management measures to reduce impacts on the long-term integrity of the remaining habitat and population, including high-biomass weeds. ○ Erosion, sedimentation, and dust management requirements specific to the species. • This species is also considered a protected plant under the NC Act. The *Nature Conservation (Plants) Regulation 2020* outlines the regulatory requirements for managing potential impacts on a protected plant. While the Study Area occurs outside of the protected plants trigger map, a permit is still required for the removal of *Cycas megacarpa* individuals.
Ghost bat	• Where pits, voids or trenches are required, include appropriate cover to prevent extended water retention in these spaces and/or subsequent breeding opportunities for cane toads.
Greater glider	• Where clearing is proposed for areas of greater glider (southern and central) denning habitat, preclearance surveys must include canopy searches and inspections of suitably sized hollows (>8 cm diameter). Where inspection of hollows cannot be safely undertaken prior to felling, the hollow-bearing tree will be slow felled to minimise the likelihood of injury or death and will be inspected by a qualified fauna spotter to confirm presence or absence of greater glider (southern and central). If an individual is found to be present, it will be inspected for injury and if healthy, relocated to an adjacent area of

Relevant MNES	Mitigation Measures
	mapped breeding and denning habitat after dusk. If the individual is injured, it will be transported to a local wildlife carer and rehabilitated prior to releasing in a suitable area adjacent to the location in which it was found. • In the unlikely event that a greater glider (southern and central) is killed as a result of Project activities, DCCEEW will be notified within a maximum period of 2 business days.
Koala	• Pre-clearance surveys will include canopy searches for koalas. If a koala is located during pre-clearance surveys or during clearing activities: ○ The individual must not be forcibly relocated. ○ Any tree which houses a koala as well as any tree with a crown that overlaps that tree will not be cleared until the koala vacates the tree on its own volition. ○ Allow a clearing buffer surrounding the tree, equal to the height of the tree or deemed suitable by the fauna spotter-catcher. ○ Any injured koala (and fauna in general) should be transported to a vet or recognised wildlife carer. ○ Requirements for koalas subject to handling to be examined and if suspected of Chlamydia infection will be taken to a predesignated veterinarian/wildlife care facility for treatment prior to release. • Clearing must be carried out in a way that ensures any koala present has time to move out of the clearing site without human intervention. • In the unlikely event that a koala is killed as a result of Project activities, DCCEEW will be notified within a maximum period of 2 business days. • Vehicles may cause direct mortality to koalas (DAWE, 2022). Speed limit restrictions (40 km/hour) will be enforced throughout the site to minimise potential vehicle strike risk to the species. • Habitat degradation by invasion of weeds has the potential to increase impacts associated with land clearing (DAWE, 2022). A Weed and Pest Management Plan will be implemented to ensure no introduction or proliferation of invasive weed species or pest fauna species. This includes *Lantana camara* and *Cryptostegia grandiflora* (rubber vine), which are known habitat degrading species of the koala and have been identified as occurring on site.
Squatter pigeon (southern)	• Where clearing is proposed for areas of squatter pigeon (southern) dispersal habitat, pre-clearance surveys must include flushing to encourage the movement of individuals out of the clearing area. • As squatter pigeon (southern) nests on the ground and is at high risk of direct mortality, nests should be identified and clearly demarcated by a spotter-catcher during pre-clearance surveys. If the spotter-catcher determines a nest to be active, it will be managed in accordance with an approved High-risk Species Management Plan (SMP). • To minimise the chances of a collision, in known squatter pigeon (southern) occurrence areas speed limits (in private areas) will be reduced to 40 km/hr or less and signage will be installed that indicates subspecies' presence. Signage will also be installed within the public access road corridor.

5.7 State and Local Government

5.7.1 Significant Residual Impacts

Under various State assessment frameworks, if the Project is likely to have a significant residual impact (SRI) on an MSES, environmental offsets may be required for the Project.

This Project is assessed under the Planning Act, and therefore utilises the *Significant Residual Impact Guideline; For matters of state environmental significance and prescribed activities under the Sustainable Development Act 2009* (Department of State Development 2014). Section **1.4** and **Table 1.1** of this document identifies the State Development Assessment Provisions (SDAP) modules that are relevant to MSES. It has been identified that none of the SDAP modules are triggered by the Project, and therefore SRI assessments are not required.

5.7.2 Rockhampton Regional Council Planning Scheme

The Project is being assessed in accordance with the provisions of the Rockhampton Regional Council Planning Scheme. The assessment considers the site's environmental values and potential impacts to ensure the proposal aligns with the scheme's strategic framework and relevant codes. In particular, performance outcome (PO) 6 of the biodiversity overlay code is addressed below as it has been identified as an assessment benchmark that requires further justification through a performance solution to assist in demonstrating compliance with the code.

5.7.2.1 P06 – Wetlands and Waterways

Impacts within the Disturbance Footprint where the watercourse buffer intersects are limited to clearing vegetation above 100 mm. This includes removal of the small, paddock trees and maintenance of grass to 100 mm tall. It is noted the area where the watercourse buffer intersects the Disturbance Footprint is limited to 0.1 ha of vegetation clearing. **Table 5.4** provides an assessment of this impact against PO6 for watercourses and wetlands in the biodiversity overlay code of the Rockhampton Region Planning Scheme.

Table 5.4 Project Response to PO6 – Wetlands and Waterways

Development has no adverse impacts on:	Project response
Native vegetation	No native vegetation occurs within the watercourse buffer where it intersects with the Disturbance Footprint. The area is mapped as Category X on the Vegetation Management Regional Ecosystem Map, and it was ground-truthed as non-remnant vegetation. Sparse, small eucalypts occur within this area and will need to be cleared for the Project. Scattered native grasses occur, however, they will not be removed, only maintained (to <100 mm tall).
Habitat	The habitat values provided by vegetation within the watercourse buffer is of limited quality for species as the area is heavily managed and grazed, offering little refuge, foraging or connectivity resources for native species. Additionally, the area where the watercourse buffer intersects the Disturbance Footprint is limited in extent (0.1 ha). Common bird species may utilise this habitat intermittently. The removal of trees and maintenance of grass does not functionally change this habitat and species utilisation will likely remain consistent. The Project is not anticipated to otherwise have an adverse impact on the habitat provided by this area.
Ecological functions	The ecological function of this non-remnant paddock is typical of a highly modified community, providing limited habitat value, predominately restricted to the movement and/or foraging of highly mobile, generalist species. , The removal of the few scattered paddock trees and shrubs, along with the maintenance of an existing grass layer is unlikely to materially change or degrade the existing ecological function (dispersal and foraging for generalist species) of the watercourse buffer. Given the small area of disturbance and the large extent of adjacent modified paddock / watercourse buffer, the existing ecological function of the area is anticipated to remain unchanged.
Water quality	The watercourse (and associated buffer) that occurs within Disturbance Footprint is a stream order one watercourse that is highly ephemeral and would only hold water following periods of intense rain. This means there is a very low risk of nutrient loading or changes to hydrology. Vegetation below 100 mm and grass will be maintained to stablilise soil and minimise erosion and sediment run off. The Project is therefore not anticipated to result in an adverse impact on water quality.
Nature conservation values	The habitat values provided by vegetation within the watercourse buffer is of limited quality for species as the area is heavily managed and grazed, offering little refuge, foraging or connectivity resources for native species. It is considered unlikely that threatened flora species occur, with the exception of *Cycas megacarpa* in the broader area. This species was not recorded at this location during Field Surveys. This area has not been mapped as habitat for threatened fauna species. Additionally, the impacts are extremely limited in extent in this area and there is an abundance of similar, low quality habitat within the immediate area.

6.0 Conclusion

The aim of this ecological assessment report was to provide a summary of the ecological values and potential impacts that may result from the construction of the battery.

Using a combination of desktop information, field-validated data, and extrapolated field survey results, the potential presence and habitat extent of ecological values within the Study Area was determined. The Study Area is majority non-remnant vegetation, with a very small patch of remnant alluvial woodland (comprising RE 11.3.4) in the very east of the Study Area, within the eastern portion of the access road.

A total of 13 NC Act-listed species were considered to have a moderate or high likelihood of occurring or are known to occur within the Study Area, including one flora species and 12 fauna species. No TECs were present or considered likely to occur.

Both direct and indirect impacts on NC Act-listed species may occur as a result of the Project, with the greatest risk occurring during the construction phase, owing to the vegetation clearing and associated habitat loss proposed. Essential habitat, protected plant flora trigger mapping, connectivity areas and MLES do not occur within the Study Area. No SDAP modules were triggered by the Project and therefore, no SRI assessments were undertaken.

References

Atlas of Living Australia. 2025. “Atlas of Living Australia.” Atlas of Living Australia. http://www.ala.org.au.

Ausecology. Unpublished. *Cycas Megacarpa Translocation Management Plan; Moah Creek Wind Farm*.

Brown, G.K., and P.D. Bostock. 2023. *Introduction to the Census of the Queensland Flora 2023*. Queensland Department of Environment and Science. https://data.qld.gov.au/dataset/census-of-the-queensland-.

DAF. 2018. “Waterway Barrier Works Accepted Development Requirements.” Department of Agriculture and Fisheries. https://www.daf.qld.gov.au/__data/assets/pdf_file/0006/1476888/adr-operational-waterway-barrier-works.pdf.

Department of Agriculture, Fisheries and Forestry. 2025. “Queensland Waterways for Waterway Barrier Works.” Department of Agriculture, Fisheries and Forestry.

Department of Climate Change, Energy, the Environment and Water. 2025. “Protected Matters Search Tool.” http://www.environment.gov.au/epbc/protected-matters-search-tool.

Department of Natural Resources and Mines, Manufacturing and Regional and Rural Development. 2024a. “Vegetation Management Essential Habitat Map No Attribute - Version 12.08.” http://qldspatial.information.qld.gov.au/catalogue/custom/search.page?q=%22Vegetation%20management%20essential%20habitat%20map%20no%20attribute%20-%20version%2011.06%22.

Department of Natural Resources and Mines, Manufacturing and Regional and Rural Development. 2024b. *Vegetation Management Regional Ecosystem Map - Version 13*. Department of Resources. http://qldspatial.information.qld.gov.au/catalogue/custom/search.page?q=%22Vegetation%20management%20regional%20ecosystem%20map%20-%20version%2013.00%20-%20By%20Area%20Of%20Interest%22.

Department of Natural Resources and Mines, Manufacturing and Regional and Rural Development. 2024c. “Vegetation Management Regulated Vegetation Management Map - Version 7.08.”

Department of Natural Resources and Mines, Manufacturing, and Regional and Rural Development. 2024. *Vegetation Management Watercourse and Drainage Feature Map (1:100000 and 1:250000) - Queensland except South East Queensland Version 7.00*. Department of Resources. http://qldspatial.information.qld.gov.au/catalogue/custom/search.page?q=%22Vegetation%20management%20watercourse%20and%20drainage%20feature%20map%20(1:100000%20and%201:250000)%20-%20Queensland%20except%20South%20East%20Queensland%20Version%207.00%22.

Department of State Development, Infrastructure and Planning. 2014. *Significant Residual Impact Guideline - For Matters of State Environmental Significance and Prescribed Activities Assessable under the Sustainable Planning Act 2009*. Brisbane.

Department of Sustainability Environment Water Populations and Communities. 2012. *Environment Protection and Biodiversity Conservation Act 1999 Environmental Offsets Policy*. Commonwealth of Australia, Canberra.

Department of the Environment, Tourism, Science and Innovation. 2023. “Flora Survey Trigger Map for Clearing Protected Plants in Queensland - Version 10.0.”

Department of the Environment, Tourism, Science and Innovation. 2025. “Wildlife Online Species List.” Wildlife Online Dataset.

Ecologica Consulting. 2024. “Mount Hopeful Wind Farm; Preliminary Translocation Management Plan for Cycas Megacarpa.” February.

Neldner et. al. 2024. “Methodology for Surveying and Mapping Regional Ecosystems and Vegetation Communities in Queensland Version 7.0.” Queensland Government. https://www.qld.gov.au/__data/assets/pdf_file/0033/459186/methodology-mapping-surveying-v7.pdf.

Neldner, V J, B A Wilson, H.A. Dillewaard, et al. 2025. *Methodology for Survey and Mapping of Regional Ecosystems and Vegetation Communities in Queensland. Version 7.0*. The State of Queensland (Department of Environment, Science and Innovation).

Phillips, Stephen, and John Callaghan. 2011. “The Spot Assessment Technique: A Tool for Determining Localised Levels of Habitat Use by Koalas Phascolarctos Cinereus.” *Australian Zoologist* 35 (3): 774–79.

Queensland Globe. 2025. “Queensland Globe.” Queensland Government. https://qldglobe.information.qld.gov.au/.

Queensland Government. 2025. “SILO | LongPaddock | Queensland Government.” https://www.longpaddock.qld.gov.au/silo/.

Queensland Herbarium. 2024. *Regional Ecosystem Description Database (REDD) Version 13.1*. Department of the Environment, Tourism, Science and Innovation. https://www.qld.gov.au/environment/plants-animals/plants/ecosystems/descriptions/download.

Queensland Herbarium, and T Bean. 2016. *Collection and Preserving Plant Specimens, a Manual*. no. August. Queensland Herbarium.

Sattler, P., and R. Williams. 1999. *The Conservation Status of Queensland’s Bioregional Ecosystems*. Edited by R. Sattler, P., Williams. Environmental Protection Agency, Queensland Government.

Specht, R.L. 1970. *Australian Environment*. 4th ed. Melbourne University Pres.

Umwelt. 2024. “Mount Hopeful Wind Farm; Assessment of Matters of National Environmental Significace - Preliminary Documentation (2021/9137).” March.

Appendix A

Desktop Assessment 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. Please see the caveat for interpretation of information provided here.

Report created: 13-Jun-2025

Summary

Matters of National Environment Significance

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

World Heritage Properties:	1
National Heritage Places:	1
Wetlands of International Importance (Ramsar	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	6
Listed Threatened Species:	63
Listed Migratory Species:	30

Other Matters Protected by the EPBC Act

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

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

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

Commonwealth Lands:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	35
Whales and Other Cetaceans:	2
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

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

State and Territory Reserves:	4
Regional Forest Agreements:	None
Nationally Important Wetlands:	1
EPBC Act Referrals:	13
Key Ecological Features (Marine):	None
Biologically Important Areas:	None
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

World Heritage Properties [Resource Information]

Name	State	Legal Status	Buffer Status
Great Barrier Reef	QLD	Declared property	In buffer area only

National Heritage Places [Resource Information]

Name	State	Legal Status	Buffer Status
Natural			
Great Barrier Reef	QLD	Listed place	In buffer area only

Listed Threatened Ecological Communities [Resource Information]

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

Community Name	Threatened Category	Presence Text	Buffer Status
Brigalow (Acacia harpophylla dominant and co-dominant)	Endangered	Community known to occur within area	In buffer area only
Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community	Endangered	Community may occur within area	In buffer area only
Coolibah - Black Box Woodlands of the Darling Riverine Plains and the Brigalow Belt South Bioregions	Endangered	Community may occur within area	In feature area
Poplar Box Grassy Woodland on Alluvial Plains	Endangered	Community likely to occur within area	In feature area
Semi-evergreen vine thickets of the Brigalow Belt (North and South) and Nandewar Bioregions	Endangered	Community likely to occur within area	In buffer area only
Weeping Myall Woodlands	Endangered	Community likely to occur within area	In feature area

Listed Threatened Species [Resource Information]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Botaurus poiciloptilus](#) Australasian Bittern [1001]	Endangered	Species or species habitat may occur within area	In buffer area only
[Calidris acuminata](#) Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area	In feature area
[Calidris ferruginea](#) Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area	In feature area
[Charadrius leschenaultii](#) Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat may occur within area	In buffer area only
[Cyclopsitta diophthalma coxeni](#) Coxen's Fig-Parrot [59714]	Critically Endangered	Species or species habitat may occur within area	In buffer area only
[Epthianura crocea macgregori](#) Capricorn Yellow Chat, Yellow Chat (Dawson) [67090]	Critically Endangered	Species or species habitat known to occur within area	In buffer area only
[Erythrotriorchis radiatus](#) Red Goshawk [942]	Endangered	Species or species habitat likely to occur within area	In feature area
[Falco hypoleucos](#) Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area	In feature area
[Gallinago hardwickii](#) Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat known to occur within area	In feature area
[Geophaps scripta scripta](#) Squatter Pigeon (southern) [64440]	Vulnerable	Species or species habitat likely to occur within area	In feature area
[Grantiella picta](#) Painted Honeyeater [470]	Vulnerable	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Limosa lapponica baueri Nunivak Bar-tailed Godwit, Western Alaskan Bar-tailed Godwit [86380]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In buffer area only
Neochmia ruficauda ruficauda Star Finch (eastern), Star Finch (southern) [26027]	Endangered	Species or species habitat likely to occur within area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Pachyptila turtur subantarctica Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Poephila cincta cincta Southern Black-throated Finch [64447]	Endangered	Species or species habitat may occur within area	In feature area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat known to occur within area	In feature area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Turnix melanogaster Black-breasted Button-quail [923]	Vulnerable	Species or species habitat known to occur within area	In feature area
MAMMAL			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Chalinolobus dwyeri Large-eared Pied Bat, Large Pied Bat [183]	Endangered	Species or species habitat may occur within area	In feature area
Dasyurus hallucatus Northern Quoll, Digul [Gogo-Yimidir], Wijingadda [Dambimangari], Wiminji [Martu] [331]	Endangered	Species or species habitat likely to occur within area	In feature area
Macroderma gigas Ghost Bat [174]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Nyctophilus corbeni Corben's Long-eared Bat, South-eastern Long-eared Bat [83395]	Vulnerable	Species or species habitat may occur within area	In feature area
Orcaella heinsohni Australian Snubfin Dolphin [81322]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Petauroides volans Greater Glider (southern and central) [254]	Endangered	Species or species habitat likely to occur within area	In feature area
Petaurus australis australis Yellow-bellied Glider (south-eastern) [87600]	Vulnerable	Species or species habitat likely to occur within area	In feature 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	In feature area
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour may occur within area	In feature area
Sousa sahulensis Australian Humpback Dolphin [87942]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Xeromys myoides Water Mouse, False Water Rat, Yirrkoo [66]	Vulnerable	Species or species habitat known to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
PLANT			
[Arthraxon hispidus](#) Hairy-joint Grass [9338]	Vulnerable	Species or species habitat may occur within area	In buffer area only
[Bosistoa transversa](#) Three-leaved Bosistoa, Yellow Satinheart [16091]	Vulnerable	Species or species habitat likely to occur within area	In feature area
[Bulbophyllum globuliforme](#) Miniature Moss-orchid, Hoop Pine Orchid [6649]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
[Cadellia pentastylis](#) Ooline [9828]	Vulnerable	Species or species habitat may occur within area	In buffer area only
[Cossinia australiana](#) Cossinia [3066]	Endangered	Species or species habitat likely to occur within area	In feature area
[Cupaniopsis shirleyana](#) Wedge-leaf Tuckeroo [3205]	Vulnerable	Species or species habitat likely to occur within area	In feature area
[Cycas megacarpa](#) [55794]	Endangered	Species or species habitat known to occur within area	In feature area
[Cycas ophiolitica](#) [55797]	Endangered	Species or species habitat may occur within area	In feature area
[Decaspermum struckoilicum](#) Struck Oil Myrtle [78796]	Critically Endangered	Species or species habitat may occur within area	In buffer area only
[Dichanthium setosum](#) bluegrass [14159]	Vulnerable	Species or species habitat likely to occur within area	In feature area
[Eucalyptus raveretiana](#) Black Ironbox [16344]	Vulnerable	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Leichhardtia brevifolia listed as Marsdenia brevifolia [91893]	Vulnerable	Species or species habitat may occur within area	In feature area
Leuzea australis listed as Rhaponticum australe Austral Cornflower, Native Thistle [9363]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Polianthion minutiflorum [82772]	Vulnerable	Species or species habitat may occur within area	In feature area
Samadera bidwillii Quassia [29708]	Vulnerable	Species or species habitat likely to occur within area	In feature area
REPTILE			
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area	In buffer area only
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Delma torquata Adorned Delma, Collared Delma [1656]	Vulnerable	Species or species habitat may occur within area	In feature area
Denisonia maculata Ornamental Snake [1193]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Egernia rugosa Yakka Skink [1420]	Vulnerable	Species or species habitat known to occur within area	In feature area
Elseya albagula Southern Snapping Turtle, White-throated Snapping Turtle [81648]	Critically Endangered	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Furina dunmalli Dunmall's Snake [59254]	Vulnerable	Species or species habitat known to occur within area	In feature area
Hemiaspis damelii Grey Snake [1179]	Endangered	Species or species habitat known to occur within area	In feature area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Rheodytes leukops Fitzroy River Turtle, Fitzroy Tortoise, Fitzroy Turtle, White-eyed River Diver [1761]	Endangered	Species or species habitat may occur within area	In feature area
SHARK			
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Breeding may occur within area	In buffer area only
Sphyrna lewini Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat likely to occur within area	In buffer area only

Listed Migratory Species			[Resource Information]
Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Phaethon lepturus](#) White-tailed Tropicbird [1014]		Species or species habitat may occur within area	In buffer area only
[Thalassarche impavida](#) Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Migratory Marine Species			
[Anoxypristis cuspidata](#) Narrow Sawfish, Knifetooth Sawfish [68448]		Species or species habitat likely to occur within area	In buffer area only
[Caretta caretta](#) Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area	In buffer area only
[Chelonia mydas](#) Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
[Crocodylus porosus](#) Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat likely to occur within area	In feature area
[Dermochelys coriacea](#) Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
[Eretmochelys imbricata](#) Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
[Lepidochelys olivacea](#) Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
[Mobula alfredi as Manta alfredi](#) Reef Manta Ray, Coastal Manta Ray [90033]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Mobula birostris as Manta birostris			
Giant Manta Ray [90034]		Species or species habitat may occur within area	In buffer area only
Natator depressus			
Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Orcaella heinsohni			
Australian Snubfin Dolphin [81322]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Pristis zijsron			
Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Breeding may occur within area	In buffer area only
Sousa sahulensis as Sousa chinensis			
Australian Humpback Dolphin [87942]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Migratory Terrestrial Species			
Cuculus optatus			
Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area	In feature area
Hirundapus caudacutus			
White-throated Needletail [682]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Motacilla flava			
Yellow Wagtail [644]		Species or species habitat may occur within area	In buffer area only
Migratory Wetlands Species			
Actitis hypoleucos			
Common Sandpiper [59309]		Species or species habitat known to occur within area	In feature area
Calidris acuminata			
Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area	In feature area
Calidris ferruginea			
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Calidris melanotos](#) Pectoral Sandpiper [858]		Species or species habitat may occur within area	In feature area
[Charadrius leschenaultii](#) Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat may occur within area	In buffer area only
[Gallinago hardwickii](#) Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat known to occur within area	In feature area
[Limosa lapponica](#) Bar-tailed Godwit [844]		Species or species habitat known to occur within area	In buffer area only
[Numenius madagascariensis](#) Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area
[Pandion haliaetus](#) Osprey [952]		Species or species habitat known to occur within area	In buffer area only
[Tringa nebularia](#) Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area	In buffer area only

Other Matters Protected by the EPBC Act

Listed Marine Species			[Resource Information]
Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			
[Actitis hypoleucos](#) Common Sandpiper [59309]		Species or species habitat known to occur within area	In feature area
[Anseranas semipalmata](#) Magpie Goose [978]		Species or species habitat may occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Breeding likely to occur within area overfly marine area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area	In feature area
Chalcites osculans as Chrysococcyx osculans Black-eared Cuckoo [83425]		Species or species habitat likely to occur within area overfly marine area	In feature area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat likely to occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area	In buffer area only
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In buffer area only
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat likely to occur within area overfly marine area	In feature area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area overfly marine area	In buffer area only
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat likely to occur within area overfly marine area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Pachyptila turtur Fairy Prion [1066]		Species or species habitat may occur within area	In buffer area only
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area	In buffer area only
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Pterodroma cervicalis](#) White-necked Petrel [59642]		Species or species habitat may occur within area	In feature area
[Rhipidura rufifrons](#) Rufous Fantail [592]		Species or species habitat likely to occur within area overfly marine area	In feature area
[Rostratula australis as Rostratula benghalensis (sensu lato)](#) Australian Painted Snipe [77037]	Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
[Symposiachrus trivirgatus as Monarcha trivirgatus](#) Spectacled Monarch [83946]		Species or species habitat may occur within area overfly marine area	In feature area
[Thalassarche impavida](#) Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In buffer area only
[Tringa nebularia](#) Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area overfly marine area	In buffer area only
Reptile			
[Caretta caretta](#) Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area	In buffer area only
[Chelonia mydas](#) Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
[Crocodylus porosus](#) Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat likely to occur within area	In feature area
[Dermochelys coriacea](#) Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Eretmochelys imbricata			
Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Lepidochelys olivacea			
Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Natator depressus			
Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only

Whales and Other Cetaceans			[Resource Information]
Current Scientific Name	Status	Type of Presence	Buffer Status
Mammal			
Orcaella heinsohni			
Australian Snubfin Dolphin [81322]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Sousa sahulensis			
Australian Humpback Dolphin [87942]	Vulnerable	Species or species habitat may occur within area	In buffer area only

Extra Information

State and Territory Reserves			[Resource Information]
Protected Area Name	Reserve Type	State	Buffer Status
Bouldercombe Gorge	Resources Reserve	QLD	In feature area
Fitzroy River	Fish Habitat Area (A)	QLD	In buffer area only
Mount Hopeful	Conservation Park	QLD	In buffer area only
Pindari	Nature Refuge	QLD	In buffer area only

Nationally Important Wetlands		[Resource Information]
Wetland Name	State	Buffer Status
Fitzroy River Delta	QLD	In buffer area only

EPBC Act Referrals				[Resource Information]
Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Geotechnical Investigations for Balaclava Island Coal Export Terminal	2011/5905		Completed	In buffer area only
Gladstone - Fitzroy Pipeline	2007/3501		Post-Approval	In buffer area only
Mount Hopeful Wind Farm	2021/9137		Post-Approval	In feature area
Controlled action				
Arrow Bowen Pipeline (CSG), QLD	2012/6459	Controlled Action	Post-Approval	In buffer area only
Balaclava Island Coal Export Terminal	2009/5158	Controlled Action	Completed	In buffer area only
Blackwater to Gladstone Gas Pipeline Project	2011/6034	Controlled Action	Completed	In buffer area only
Construct and operate 447km high pressure gas transmission pipeline	2009/4976	Controlled Action	Post-Approval	In buffer area only
Expansion of Salt Fields Bajool-Port Alma Operation	2003/1022	Controlled Action	Completed	In buffer area only
Fitzroy Terminal Project	2011/6069	Controlled Action	Completed	In buffer area only
install & operate gas pipeline	2005/2059	Controlled Action	Post-Approval	In buffer area only
Nickel and cobalt laterite mine, High-pressure acid leach plant, slurry pipeline	2005/2257	Controlled Action	Completed	In buffer area only
Not controlled action				
Bajool - Port Alma Road Safety Upgrade Project	2019/8511	Not Controlled Action	Completed	In buffer area only
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area

Caveat

1 PURPOSE

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

The report contains the mapped locations of:

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

2 DISCLAIMER

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

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

3 DATA SOURCES

Threatened ecological communities

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

Threatened, migratory and marine species

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

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

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

4 LIMITATIONS

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

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

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

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

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

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

Acknowledgements

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

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

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

Please feel free to provide feedback via the Contact us page.

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Appendix B

Likelihood of Occurrence Assessment

umwelt

Family/Type	Common name	Scientific name	EPBC Act listing	NC Act listing	Habitat	Likelihood of Occurrence
Threatened Ecological Community						
Coolibah - Black Box Woodlands of the Darling Riverine Plains and the Brigalow Belt South Bioregions			Endangered	-	The TEC is associated with floodplains and drainage areas of the Darling Riverine Plains and Brigalow Belt South IBRA bioregions. This community is represented by eucalypt woodland where *Eucalyptus coolabah* subsp. *coolabah* (coolabah) and/or *Eucalyptus largiflorens* (black box) are the dominant canopy species. The understorey tends to be grassy. The following REs may be synonymous with this TEC: RE 11.3.3, 11.3.15, 11.3.16, 11.3.28, 11.3.37.	Unlikely. No REs that are synonymous with this TEC were modelled or recorded within the Study Area.
Weeping myall woodlands			Endangered	-	The TEC occurs on the inland alluvial plains west of the Great Dividing Range in NSW and Qld. This community is an open woodland to woodland in which *Acacia pendula* (weeping myall) trees are the sole or dominant overstorey species. The following REs may be synonymous with this TEC: 11.3.2, 11.3.28.	Unlikely. One synonymous RE (11.3.2) was modelled to occur within the Study Area from the State Mapped REs. This RE was confirmed to be absent from the Study Area during field surveys.

Family/Type	Common name	Scientific name	EPBC Act listing	NC Act listing	Habitat	Likelihood of Occurrence
Brigalow (*Acacia harpophylla* dominant and co-dominant)			Endangered	-	The TEC is characterised by the presence of brigalow which is usually dominant in the tree layer or co-dominant with other species such as *Casuarina cristata* (belah), *Acacia* spp. or *Eucalyptus* spp. The structure of the vegetation ranges from open forest to open woodland. The following REs may be synonymous with this TEC: RE 11.3.1, 11.4.3, 11.4.7, 11.4.8, 11.4.9, 11.4.10, 11.5.16, 11.9.1, 11.9.5, 11.11.14, 11.12.21.	Unlikely. No REs that are synonymous with this TEC were modelled or recorded within the Study Area.
Poplar Box Grassy Woodland on Alluvial Plains			Endangered	-	The TEC occurs on alluvial soils and is typically a grassy woodland with a canopy dominated by *Eucalyptus populnea* (poplar box) with an understorey of mostly grasses and herbs. The following REs may be synonymous with this TEC: 11.3.2, 11.3.17, 11.4.7, 11.4.12, 12.3.10.	Unlikely. One synonymous RE (11.3.2) was modelled to occur within the Study Area from the State Mapped REs. This RE was confirmed to be absent from the Study Area during field surveys.
Coastal Swamp Oak (*Casuarina glauca*) Forest of New South Wales and South East Queensland ecological community			Endangered	-	This TEC occurs in low-lying coastal flats, floodplains, drainage lines, lake margins, wetlands, and estuarine fringes where soils are at least occasionally saturated, waterlogged, or inundated. The soils are typically hydrosols (grey-black clay-loam and/or sandy loam	Unlikely. No REs that are synonymous with this TEC were modelled or recorded within the Study Area.

Family/Type	Common name	Scientific name	EPBC Act listing	NC Act listing	Habitat	Likelihood of Occurrence
					soils) and sometimes organosols (peaty soils). The vegetation structure varies from forest to woodland, with a canopy dominated by *Casuarina glauca*, while Eucalypt species can emerge from the canopy. If a mid-layer is present, it is typically sparse, but a sub-canopy of smaller trees can often be present, typically composed of canopy species. The ground layer typically comprises forbs, ferns, sedges, grasses, and/or plant litter, but can often be patchy. The habitat supports a diverse range of flora and fauna, including many species adapted to saline or brackish groundwater conditions. The following REs may be synonymous with this TEC: 12.1.1, 12.3.20	
Semi-evergreen vine thickets of the Brigalow Belt (North and South) and Nandewar Bioregions			Endangered	-	The TEC occurs within the Brigalow Belt Bioregions in Queensland, New South Wales, the Northern Territory and Western Australia. This community is a form of seasonal sub-tropical rainforest that occurs in areas that experience seasonally dry periods with vegetation that is characterized by trees with	Unlikely. No REs that are synonymous with this TEC were modelled or recorded within the Study Area.

Family/Type	Common name	Scientific name	EPBC Act listing	NC Act listing	Habitat	Likelihood of Occurrence
					microphyll sized leaves and emergent Brachychiton spp.. The following REs may be synonymous with this TEC: 12.2.3, 11.3.11, 11.4.1, 11.5.15, 11.8.3, 11.8.6, 11.8.13, 11.9.4, 11.9.8, 11.11.18.	
Flora						
Poaceae	Hairy-joint grass	*Arthraxon hispidus*	Vulnerable	Vulnerable	This species thrives in or on the edges of rainforest and wet eucalypt forest, often near creeks or swamps. In the South-East Queensland Bioregion, it is also found around freshwater springs on coastal foreshore dunes, in shaded small gullies, on creek banks, and on sandy alluvium in creek beds in open forests. It can also grow with bog mosses in mound springs.	Unlikely. No rainforest or wet eucalypt forest occurs within the Study Area which is largely non remnant. A small patch of alluvial eucalypt woodland occurs in the east of the Study Area (RE 11.3.4) but is degraded and dominated by weeds in the understorey and is considered unsuitable for the species. The species has not been recorded within 150 km of the Study Area (ALA).
Rutaceae	Three-leaved bosistoa	*Bosistoa transversa*	Vulnerable	Least Concern	This species grows in lowland subtropical rainforest up to 300 m ASL. It is often found on steep slopes with dark organic loam over basalt. Associated species include *Heritiera actinophylla* (white booyong), *Syzygium moorei* (smooth-bark rose apple), *Endiandra pubens* (hairy walnut),	Unlikely. No lowland subtropical rainforest occurs within the Study Area which is largely non remnant with a small portion of alluvial eucalypt woodland. The closest record occurs approximately 40 km to the east of the Study Area (ALA).

Family/Type	Common name	Scientific name	EPBC Act listing	NC Act listing	Habitat	Likelihood of Occurrence
					and *Dendrocnide excelsa* (shiny leaf stinging tree). Umwelt also have records that are associated with notophyll or Auracarian dominated vegetation communities.	
Orchidaceae	Miniature moss-orchid	*Bulbophyllum globuliforme*	Vulnerable	Near threatened	The species is host-specific, only growing on *Araucaria cunninghamii* (hoop pine), where it colonises the upper branches of mature trees. The *Araucaria cunninghamii* occurs in upland (usually 100-900 m ASL) subtropical rainforest communities.	Unlikely. The host species (*Araucaria cunninghamii*) is not present, nor is it considered likely to occur within the Study Area. The closest record of *Bulbophyllum globuliforme* occurs approximately 62 km south-east of the Study Area.
Surianaceae	Ooline	*Cadellia pentastylis*	Vulnerable	Vulnerable	This species occurs in a range of vegetation types including semi-evergreen vine thicket, *Acacia harpophylla-Casuarina cristata*, *Eucalyptus populnea*, and *Acacia catenulata* communities. Ooline often grows on the edges of sandstone and basalt escarpments, at elevations of 200–500 m ASL. It prefers moderately fertile soils (sandstone/basaltic) that are often used for agriculture and pasture development.	Unlikely. Suitable habitat is not present within the Study Area. The species is a conspicuous tree and was not observed within the Study Area. The closest records occur approximately 74 km to the south-west of the Study Area (ALA).

Family/Type	Common name	Scientific name	EPBC Act listing	NC Act listing	Habitat	Likelihood of Occurrence
Sapindaceae	Cossinia	*Cossinia australiana*	Endangered	Endangered	This species prefers edges of dry rainforests but can also exist scattered within closed forests. It grows in Araucarian microphyll vine forest and relict semi-evergreen vine thicket on various soils like red volcanic soil and black loam. Associated species include *Alyxia ruscifolia, Capparis arborea, Drypetes deplanchei, Flindersia australis, Owenia venosa,* and *Siphonodon australis*. Associated vine species include *Cissus oblonga, Malaisia scandens,* and *Melodorum leichhardtii*. Some populations occur in remnant vegetation, providing protection from broad-scale clearing.	Unlikely. Suitable dry rainforest habitat is not present within the Study Area which is largely non remnant with a small portion of alluvial eucalypt woodland. The closest records occur approximately 13 km south of the Study Area (ALA).
Sapindaceaae	Wedge-leaf tuckeroo	*Cupaniopsis shirleyana*	Vulnerable	Vulnerable	This species grows in dry rainforest and scrubby urbanized areas, typically on moderate to very steep slopes, screeslope gullies, and rocky stream channels. It is found at elevations of 60–550 m ASL.	Unlikely. Suitable dry rainforest habitat is not present within the Study Area which is largely non remnant with a small portion of alluvial eucalypt woodland. The closest record occurs approximately 44 km east of the Study Area from 1993 (ALA).

Family/Type	Common name	Scientific name	EPBC Act listing	NC Act listing	Habitat	Likelihood of Occurrence
Cycadaceae	-	*Cycas megacarpa*	Endangered	Endangered	It is found in woodland or open woodland dominated by eucalypts, particularly *Blakella citriodora* and *Eucalyptus crebra*, but also *Corymbia erythrophloia, E. melanophloia*, and *Lophostemon confertus*. The species typically grows on rocky substrates derived from acid volcanics, ironstone, or mudstone, and rarely on alluvium. *Cycas megacarpa* thrives in woodland or open woodland environments, often on rocky substrates. It is adapted to habitats subjected to periodic fires, which adult plants can resist, although foliage may be destroyed and stems scarred. The species is also found on rainforest margins and in areas with sandy loams or shallow clay loams, often stony.	**Known**. This species has been recorded within the Study Area.
Cycadaceae	Marlborough blue	*Cycas ophiolitica*	Endangered	Endangered	This species grows in eucalypt open forest and woodland communities with a grassy understorey. It is frequently found on shallow, stony, infertile soils developed on sandstone and serpentinite. The species is often associated with species such as *Blakella dallachiana, Corymbia erythrophloia, Corymbia xanthope*, and *Eucalyptus fibrosa*. The	Unlikely. The Study Area occurs to the south of the known extent of the species. Habitat within the Study Area is considered marginal for the species. This species is noted on red clay soils near Marlborough, and often found on shallow, stony, infertile soils, which are developed on sandstone and serpentinite; all of these soils types are absent

Family/Type	Common name	Scientific name	EPBC Act listing	NC Act listing	Habitat	Likelihood of Occurrence
					climate in its habitat is tropical, characterized by hot, humid summers and mild, dry winters. The species is adapted to habitats subjected to periodic fires, which adult plants can resist, although the foliage may be destroyed and stems scarred.	from the Study Area. The closest record occurs 34 km to the north of the Study Area, however, this record has a spatial uncertainty of 2 km (ALA).
Combretaceae	-	*Dansiea elliptica*	-	Near threatened	The species occurs in lowland dry rainforest and vine thicket (notophyll vineforests, semi evergreen vine thickets) on substrates derived from greywacke (southern populations) or rhyolite and basalt (northern populations). Species associated with D. elliptica from a site in semi evergreen vine thicket include *Flindersia australis* and *Casuarina cristata*. In the Rundle Ranges, species such as *Gossia bidwillii, Drypetes deplanchei, Planchonella cotinifolia, Pleiogynium timorense* and *Terminalia porphyrocarpa* occur with *D. elliptica*. In notophyll-mesophyll rainforest in north-east Queensland, associated species include a canopy of *Polyscias elegans, Flindersi*a spp., *Elaeocarpus eumundi, Synima, Cryptocarya mackinnoniana* and *Cryptocarya*	Unlikely. No suitable lowland dry rainforest or vine thicket habitat occurs within the Study Area which is largely non remnant with a small portion of alluvial eucalypt woodland. The closest record occurs approximately 8 km to the east, from 2000, and has a spatial accuracy of 2 km (ALA).

Family/Type	Common name	Scientific name	EPBC Act listing	NC Act listing	Habitat	Likelihood of Occurrence
					vulgaris on soil derived from rhyolite.	
Myrtaceae	-	*Decaspermum struckoilicum*	Endangered	Endangered	The species is only known from two populations in Qld, both about 8 km east of Mount Morgan, in the area known as Struck Oil. It occurs in semi-evergreen vine thicket on brown or reddish soil, often in disturbed areas and at elevations up to 300 m. The northern population comprises only 1 plant, where the northern population possibly comprises 17. Both populations occur in remnant vegetation.	Unlikely. No suitable semi-evergreen vine thicket habitat occurs within the Study Area. This species has an extremely limited distribution. The closest record occurs approximately 22 km to the north-east of the Study Area (ALA).

Family/Type	Common name	Scientific name	EPBC Act listing	NC Act listing	Habitat	Likelihood of Occurrence
Poaceae	Bluegrass	*Dichanthium setosum*	Vulnerable	Least Concern	This species is associated with heavy basaltic black soils and stony red-brown hard-setting loam with clay subsoil. It is found in moderately disturbed areas such as cleared woodland, grassy roadside remnants, grazed land, and highly disturbed pasture. The species is also found in habitats that overlap with several EPBC Act-listed threatened ecological communities, including semi-evergreen vine thickets of the Brigalow Belt and Brigalow (*Acacia harpophylla* dominant and co-dominant).	Unlikely. While suitable habitat may be present within cleared woodland and high disturbed pasture, the species has not been recorded within 200 km of the Study Area (ALA).
Myrtaceae	-	*Eucalyptus raveretiana*	Vulnerable	Vulnerable	This species thrives on the banks of rivers, creeks, and other watercourses, preferring clayey or loamy soils. Several populations are located in areas of remnant vegetation, which are protected from broad-scale vegetation clearing.	Unlikely. No suitable river, creek or watercourse habitat occurs within the Study Area. A small patch of alluvial eucalypt woodland occurs in the east of the Study Area, which is regrowth vegetation and is heavily degraded. The species was not recorded within this patch. The closest records approximately 40 km to the north-west of the Study Area (ALA).

Family/Type	Common name	Scientific name	EPBC Act listing	NC Act listing	Habitat	Likelihood of Occurrence
Hernandiaceae	-	*Hernandia bivalvis*	-	Near Threatened	This species exhibits a restricted distribution within central coastal and south-eastern Queensland, documented from near Proserpine to Mount Tamborine. This arboreal species preferentially inhabits rainforests established on rocky pavements and outcrops characterized by shallow soils. Queensland Herbarium records primarily associate *H. bivalvis* with two distinct rainforest communities: vine thicket and microphyll vine forest. Furthermore, its elevational range extends up to 620 m ASL.	Unlikely. No suitable rainforest habitat occurs within the Study Area which is largely non remnant with a small portion of alluvial eucalypt woodland. The closest record occurs approximately 9 km to the north-west of the Study Area, from 2006 (ALA).
Apocynaceae	Shrubby bush pear	*Leichhardtia brevifolia*	Vulnerable	Vulnerable	This species is known to occur in woodlands dominated by *Corymbia erythrophloia* and *Eucalyptus crebra*, with dense *Themeda triandra* understorey on basalt. Plants occurring north of Rockhampton grow on serpentine rock outcrops or on black crumbly soils derived from serpentine in woodland dominated by *Corymbia xanthope* and *Eucalyptus fibrosa*.	Unlikely. No suitable woodland habitat, rocky outcrops or serpentine rocks occurs within the Study Area. The closest record occurs approximately 42 km to the north, from 2005 (ALA).

Family/Type	Common name	Scientific name	EPBC Act listing	NC Act listing	Habitat	Likelihood of Occurrence
Asteraceae	-	*Leuzea australis*	Vulnerable	Vulnerable	Within Qld this species has a known distribution range of 600 km from Mt Moffat to Gatton. While the total population size and extent of occurrence are unknown, one population has been estimated to contain 1,000 individual plants. Most populations, however, are significantly smaller. This species typically grows in eucalypt open forests with grassy understories, often found on roadsides and road reserves. It is commonly associated with *Chloris gayana, Cirsium vulgare, Eucalyptus tereticornis* and *Angophora floribunda* on black clay soil.	Unlikely. An extremely limited area of suitable eucalypt open forest habitat occurs within the Study Area. Clacking black clay soils are not present within the Study Area. The species was not observed within this area during field surveys. The closest record occurs approximately 78 km to the south of the Study Area, from 1947 (ALA).
Combretaceae	-	*Macropteranthes leiocaulis*	-	Near threatened	The species occurs in central-east Queensland, known from Mingela Bluff south of Townsville to Binjour Plateau west of Maryborough in dry rainforest, vine thicket communities, semi-evergreen vine thickets and araucarian microphyll vine forests.	Unlikely. No suitable rainforest or vine thicket habitat is present within the Study Area which is largely non remnant with a small portion of alluvial eucalypt woodland. The closest record occurs approximately 13 km to the north-east, from 1943, with a spatial accuracy of 25 km.

Family/Type	Common name	Scientific name	EPBC Act listing	NC Act listing	Habitat	Likelihood of Occurrence
Rhamnaceae	-	*Polianthion minutiflorum*	Vulnerable	Vulnerable	This species has a scattered distribution across five locations in eastern Queensland. Ranging approximately 800 km, records exist from Redcliffe Vale (west of Mackay) south to the Kingaroy area. Its preferred habitat includes forest and woodland on sandstone slopes and gullies. These areas may have skeletal soil or deeper soils near weathered laterite. Specific documented locations include Redcliffe Vale, near Blackwater, the Callide Range, East Boogalgopal, and the Kingaroy area. While the extent of its occurrence is unknown, herbarium records suggest varying population densities across its range, from rare to common. This species falls within the Burdekin, Fitzroy, and Burnett Mary (Queensland) Natural Resource Management Regions.	Unlikely. No forest or woodland habitat on sandstone slopes and gullies occur within the Study Area. The closest record occurs approximately 48 km to the south, from 1995 (ALA).

Family/Type	Common name	Scientific name	EPBC Act listing	NC Act listing	Habitat	Likelihood of Occurrence
Simaroubaceae	Quassia	*Samadera bidwillii*	Vulnerable	Vulnerable	The species occurs in lowland rainforest or on rainforest margins, but it can also be found in other forest types, such as open forest and woodland. It is commonly found in areas adjacent to both temporary and permanent watercourses in locations up to 510 m altitude. The species occurs on lithosols, skeletal soils, loam soils, sands, silts and sands with clay subsoils.	Unlikely. No suitable rainforest habitat, and extremely limited open forest and woodland habitat occurs within the Study Area. The closest record occurs approximately 5 km to the west of the Study Area, from 2023 (ALA).
Fauna						
Bird	Common sandpiper	*Actitis hypoleucos*	Migratory, Marine	Special Least Concern	This species utilises a wide range of coastal wetlands and some inland wetlands with varying levels of salinity. The species is mostly found around muddy margins or rocky shores and rarely on mudflats. It has been recorded in estuaries and deltas of streams, as well as on banks further upstream; around lakes, pools, billabongs, reservoirs, dams and claypans, and occasionally piers and jetties.	Unlikely. One stream order 1 watercourse intersects the Study Area, however, is ephemeral and seldom flows and is therefore unlikely to provide suitable wetland habitat for the species. No other wetland habitat is present within the Study Area. Records from the region occur. The closest record is approximately 24 km north of the Study Area, dated 2014 (ALA, 2025).
Bird	Fork-tailed swift	*Apus pacificus*	Migratory, Marine	Special Least Concern	This species is almost exclusively aerial, flying from less than 1 m to at least 300 m above ground and probably much higher.	**High**. Likely to occur overhead throughout the Study Area, as this species frequently visits the region on migration and utilises updrafts from hills and ridges to

Family/Type	Common name	Scientific name	EPBC Act listing	NC Act listing	Habitat	Likelihood of Occurrence
						maintain flight. The nearest record is approximately 21 km north-east of the Study Area, dated 2023 (ALA, 2025).
Bird	Ruddy turnstone	*Arenaria interpres*	Vulnerable, Migratory, Marine	Special Least Concern	This species can be found along rocky shores, sandy beaches, and mudflats, often near estuaries, inlets, and coastal lagoons.	Unlikely. One stream order 1 watercourse intersects the Study Area, however, is ephemeral and seldom flows and is therefore unlikely to provide suitable wetland habitat for the species. No other wetland habitat is present within the Study Area. Records from the region occur along the coast. The closest record is approximately 35 km north of the Study Area near Gracemere, undated with a high spatial uncertainty of 54 km (ALA, 2025).
Bird	Australasian bittern	*Botaurus poiciloptilus*	Endangered	Endangered	This species occurs mainly in freshwater wetlands and, rarely, in estuaries or tidal wetlands. It favours wetlands with tall dense vegetation, where it forages in still, shallow water up to 0.3 m deep, often at the edges of pools or waterways, or from platforms or mats of vegetation over deep water. It favours permanent and seasonal freshwater habitats,	Unlikely. One stream order 1 watercourse intersects the Study Area, however, is ephemeral and seldom flows and is therefore unlikely to provide suitable wetland habitat for the species. No other wetland habitat is present within the Study Area. The nearest record is approximately 36 km north-east of the Study Area along the banks

Family/Type	Common name	Scientific name	EPBC Act listing	NC Act listing	Habitat	Likelihood of Occurrence
					particularly those dominated by sedges, rushes and reeds.	of the Fitzroy River, dated 2003 (ALA, 2025).
Bird	Sharp-tailed sandpiper	*Calidris acuminata*	Vulnerable, Migratory, Marine	Special Least Concern	This species prefers muddy edges of shallow fresh or brackish wetlands, with inundated or emergent sedges, grass, saltmarsh or other low vegetation. This includes lagoons, swamps, lakes and pools near the coast, and dams, waterholes, soaks, bore drains and bore swamps, saltpans and hypersaline salt lakes inland. It also occurs in salt works and sewage farms.	Unlikely. One stream order 1 watercourse intersects the Study Area, however, is ephemeral and seldom flows and is therefore unlikely to provide suitable wetland habitat for the species. No other wetland habitat is present within the Study Area. The majority of records from the region occur along the coast. The closest record occurs approximately 12 km north-east of the Study Area, dated 2004 (ALA).
Bird	Curlew sandpiper	*Calidris ferruginea*	Critically Endangered, Migratory	Critically Endangered	This species mainly occurs on intertidal mudflats in sheltered coastal areas such as estuaries, bays, inlets and lagoons, and around non-tidal swamps, lakes and lagoons near the coast, and ponds in saltworks and sewage farms. They are also recorded less often inland, including around ephemeral and permanent lakes, dams, waterholes and bore drains, usually with bare edges of mud or sand, occurring in both fresh and brackish waters.	Unlikely. One stream order 1 watercourse intersects the Study Area, however, is ephemeral and seldom flows and is therefore unlikely to provide suitable wetland habitat for the species. No other wetland habitat is present within the Study Area. Records from the region occur along the coast away from the site. Two records occur approximately 16 km north-east of the Study Area, dated 1997 and undated (ALA, 2025).

Family/Type	Common name	Scientific name	EPBC Act listing	NC Act listing	Habitat	Likelihood of Occurrence
Bird	Pectoral sandpiper	*Calidris melanotos*	Migratory	Special Least Concern	This species prefers shallow fresh to saline wetlands. It is found at coastal lagoons, estuaries, bays, swamps, lakes, inundated grasslands, saltmarshes, river pools, creeks, floodplains and artificial wetlands.	Unlikely. One stream order 1 watercourse intersects the Study Area, however, is ephemeral and seldom flows and is therefore unlikely to provide suitable wetland habitat for the species. No other wetland habitat is present within the Study Area. Two records occur approximately 66 km north-east of the Study Area, dated 1987 and 1990 (ALA, 2025).
Bird	Red-necked stint	*Calidris ruficollis*	Migratory	Special Least Concern	This species has been recorded in all coastal regions and found inland in all states when conditions are suitable. They are mostly found in coastal areas, including in sheltered inlets, bays, lagoons, and estuaries with intertidal mudflats, often near spits, islets, and banks and, sometimes, on protected sandy or coralline shores. They are occasionally recorded in other wetland areas where suitable.	Unlikely. One stream order 1 watercourse intersects the Study Area, however, is ephemeral and seldom flows and is therefore unlikely to provide suitable wetland habitat for the species. No other wetland habitat is present within the Study Area. Records from the region occur along the coast. Two records occur approximately 16 km north-east of the Study Area, dated 1997 and undated (ALA, 2025).
Bird	Glossy black-cockatoo (northern)	*Calyptorhynchus lathami erebus*	-	Vulnerable	This species prefers habitat dominated by *Allocasuarina* spp., or open sclerophyll forests and woodlands with a stratum of *Allocasuarina* spp. beneath a	Low. No habitat woodlands or forests dominated by *Allocasuarina* spp. or *Casuarina* species were present within the Study Area and no mature

Family/Type	Common name	Scientific name	EPBC Act listing	NC Act listing	Habitat	Likelihood of Occurrence
					canopy of myrtaceous species. Has been recorded using habitat with mixed species of *Allocasuarina* spp., *Casuarina* spp., *Callitris* spp. and *Acacia harpophylla*. Requires tree hollows, usually mature Eucalyptus for breeding.	eucalypt trees bearing large hollows suitable to this species were present within the Study Area. An ALA record from 1994 with a spatial uncertainty of 20 km occurs approximately 22 km north-west of the Study Area (ALA, 2025). No other non-historical records are located in proximity to the Study Area.
Bird	Greater sand plover	*Charadrius leschenaultii*	Vulnerable, Migratory	Vulnerable	This species is almost entirely coastal, inhabiting littoral and coastal wetlands. It occurs in a variety of sheltered coastal habitat including beaches, mudflats and sand banks. It roosts on sand spits and banks usually above the high tide mark.	Unlikely. Suitable habitat does not occur within the Study Area. Records for this species occur within the wider Project region though are further east towards the coast. The nearest record is approximately 22 km north-east of the Study Area, dated 2023 (ALA, 2025).
Bird	Oriental cuckoo	*Cuculus optatus*	This species was delisted 8 November 2024, however, has been considered in this report as it was listed migratory at	Special Least Concern	This species uses a range of vegetated habitats such as monsoon rainforest, wet sclerophyll forest, open woodlands and often along edges of forests, or ecotones between forest types.	**Moderate**. This species is unlikely to occur within majority of the Study Area due to the dominance of non-remnant vegetation, however, a small area of open-woodland habitat occurs within the reserve of South Ulam Road in the eastern portion of the Study Area. This habitat may provide suitable habitat for oriental cuckoo. The Study Area occurs within the species 'may occur' distribution.

Family/Type	Common name	Scientific name	EPBC Act listing	NC Act listing	Habitat	Likelihood of Occurrence
			the time of the referral.			This species has been recorded within 32 km north-west of the Study Area (record undated and spatial uncertainty of 9 km) (ALA, 2025).
Bird	Coxen's fig-parrot	*Cyclopsitta diophthalma coxeni*	Critically Endangered	Critically Endangered	This species occurs in rainforest habitats including subtropical rainforest, dry rainforest, littoral and developing littoral rainforest, and vine forest, from sea level to approximately 900 m ASL. The species is likely to favour alluvial areas that support figs and other trees with fleshy fruits. It has also been recorded in other habitat types including corridors of riparian vegetation in woodland, open woodland or other types of cleared habitat and isolated stands of fig or other trees on urban, agricultural or cleared land.	Unlikely. The Study Area is located north of the historic range of the species. The Study Area does not provide suitable habitat of vine forest and riparian woodland habitats. The closest record is over 120 km south-east of the Study Area, within the Bulburin National Park (dated 1970) (ALA, 2025).
Bird	Yellow chat	*Epthianura crocea macgregori*	Critically Endangered	Endangered	This species occupies seasonally inundated marine plains with salt-tolerant grasses and sedges, and patches of samphire. These marine plains are generally treeless with the exception of adjacent mangroves and generally receive significant freshwater flows during the wet season (December–February) before drying out. These wetlands are generally less than 5	Unlikely. The Study Area is not located within a tidal influenced area and lacks marine plains. Three records occur within 15 km of the Study Area on ALA. All records are recent (2012, 2016, 2018) and verified (ALA, 2025). However, due to sensitivity concerns, the coordinates of the records have been generalised by 2 km. Chats have a high

Family/Type	Common name	Scientific name	EPBC Act listing	NC Act listing	Habitat	Likelihood of Occurrence
					m ASL and either below or within 1.5 m of the highest astronomical tide. It is found at one location in Curtis Island National Park, and on private land at eight locations in the Fitzroy River delta and eight locations in the Broad Sound region. The total population size is estimated to be between 220–280 individuals, with the majority found in the Broad Sound, followed by the Fitzroy River delta and Curtis Island National Park. The bird is associated with levy banks or check banks that prevent saltwater ingress, which increase the wetland area, extend the period of freshwater inundation, and support the salt-tolerant sedges used for breeding.	dispersal capacity and adaptations for nomadism that allow them to exploit unpredictable environments, particularly following rainfall. Despite this, the distance from tidal areas and poor connection value afforded through narrow roadside vegetation (with low shrub cover) suggests the species is unlikely to occur.
Bird	Red goshawk	*Erythrotriorchis radiatus*	Vulnerable	Endangered	This species occurs in coastal and sub-coastal tall open forests and woodlands, preferring areas with a mosaic of vegetation types, permanent water and abundant small birds. This species is associated with gorge and escarpment country in partially cleared country in eastern Queensland. In eastern Australia, populations seem to move from inland nest sites to coastal plains	Low. This species was recently reported to be extinct in the region (Briggs & Noske 2021), and no records occur within the wider area surrounding the Study Area. Due to the lack of permanent water and the location of the Study Area in the region, no potential breeding habitat is identified. Habitat within the Study Area is unlikely to be suitable for foraging and

Family/Type	Common name	Scientific name	EPBC Act listing	NC Act listing	Habitat	Likelihood of Occurrence
					in winter, thus occupying home ranges of 50-220 km^2.	dispersal. Two historical records (both dated 1955) occur approximately 50 km north of the Study Area (ALA, 2025).
Bird	Grey falcon	*Falco hypoleucos*	Vulnerable	Vulnerable	This species frequents timbered lowland plains, particularly A*cacia* shrublands that are crossed by tree-lined water courses. It has been observed hunting in treeless areas and frequents tussock grassland and open woodland, especially in winter.	Low. The Study Area is dominated by non-remnant, cleared vegetation which may create suitable hunting habitat for grey falcon in winter. One stream order 1 watercourse intersects the Study Area, however, very limited trees line this watercourse. One record occurs in Rockhampton approximately 46 km north of the Study Area, however, this record is undated and has a spatial uncertainty of 10 km (ALA, 2025).
Bird	Latham's snipe	*Gallinago hardwickii*	Vulnerable, Migratory	Special Least Concern	In Australia, this species occurs in permanent and ephemeral wetlands up to 2,000 m ASL. They usually inhabit open, freshwater wetlands with low, dense vegetation such as swamps,	Unlikely. One stream order 1 watercourse intersects the Study Area, however, is ephemeral and seldom flows and is therefore unlikely to provide suitable wetland habitat for the species.

Family/Type	Common name	Scientific name	EPBC Act listing	NC Act listing	Habitat	Likelihood of Occurrence
					flooded grasslands or heathlands, around bogs and other water bodies.	No other wetland habitat is present within the Study Area. Records from the region occur along the coast. The closest records occur near Bajool, approximately 20 km north-east of the Study Area (ALA, 2025). These records range from 2007 to 2023.
Bird	Squatter pigeon (southern)	*Geophaps scripta scripta*	Vulnerable	Vulnerable	This species occurs in open, dry woodland with a grassy understorey in proximity to permanent water. It prefers areas of sandy soil with sparser cover of low grasses; and is less common on heavier soils with dense grass cover.	**Moderate**. No farm dams or permanent water sources were present within the Study Area. The Study Area is therefore unlikely to provide any suitable breeding or foraging habitat for this species. However, the species has been identified more broadly in the area and may utilise the habitat within portions of Study Area as dispersal habitat. One ALA record, dated 2017, occurs approximately 1 km south of the Study Area (ALA, 2025).
Bird	Painted honeyeater	*Grantiella picta*	Vulnerable	Vulnerable	This species mostly occurs in woodland habitats which have an abundance of mistletoes. These woodlands are usually dominated by *Acacia* spp. (e.g. *A. harpophylla, A. pendula*, and *A. aneura*), *Casuarina cristata* and *Allocasuarina luehmannii*. Also	Low. Non-remnant habitat dominates the Study Area. A small area of eucalypt woodland occurs along the eastern extent of the Study Area within the reserve of South Ulam Road, however, no habitat dominated by mistletoe, Acacia, *Casuarina*

Family/Type	Common name	Scientific name	EPBC Act listing	NC Act listing	Habitat	Likelihood of Occurrence
					found in *Callitris glaucophylla* woodlands in the eastern part of their range, if mistletoes are abundant.	*cristata* or *Allocasuarina luehmannii* species. were observed. The closest record is approximately 48 km north of the Study Area in Rockhampton (ALA, 2025). However, the record has a high spatial uncertainty of 10 km and is dated 1881. The Study Area is just outside the species 'known' or 'may occur' distribution.
Bird	White-throated needletail	*Hirundapus caudacutus*	Vulnerable, Migratory	Vulnerable	This species is found across a range of habitats, more often over wooded areas, where it is almost exclusively aerial, though it roosts in tree hollows and the foliage canopy. It forages for insects aerially, flying anywhere between 'cloud level' and 'ground level', often forming mixed feeding flocks with other species. The species roosts in tall trees at night, mainly in forests.	**High**. The species was recorded in adjacent properties to the Study Area during surveys for the windfarm. White-throated needletail is unlikely to forage within the Study Area given the lack of suitable foliage present that is required foraging purposes, however, may still fly over the Study Area for dispersal purposes. Three records occur approximately 18 km north of the Study Area, dated 2021-2022 (ALA, 2025).
Bird	Caspian tern	*Hydroprogne caspia*	Migratory	Special Least Concern	This species can be found in various habitats that include seacoasts, bays, estuaries, lakes, marshes, and rivers.	Unlikely. One stream order 1 watercourse intersects the Study Area, however, is ephemeral and seldom flows and is therefore unlikely to provide suitable wetland habitat for the species. No other wetland habitat is

Family/Type	Common name	Scientific name	EPBC Act listing	NC Act listing	Habitat	Likelihood of Occurrence
						present within the Study Area. Records from the region occur along the coast, at least 18 km north-east of the Study Area (ALA, 2025).
Bird	Bar-tailed Godwit	*Limosa lapponica*	Migratory	-	This species is found mainly in coastal habitats such as large intertidal sandflats, banks, mudflats, estuaries, inlets, harbours, coastal lagoons, and bays. It is found often around beds of seagrass and, sometimes, in nearby saltmarsh.	Unlikely. One stream order 1 watercourse intersects the Study Area, however, is ephemeral and seldom flows and is therefore unlikely to provide suitable wetland habitat for the species. No other wetland habitat is present within the Study Area. Records from the region occur along the coast. The majority of records occur at least 18 km north-east of the Study Area (ALA, 2025).
Bird	Black-faced monarch	*Monarcha melanopsis*	This species was delisted 8 November 2024, however, has been considered in this report as it was listed migratory at the time of the referral.	Special Least Concern	This species primarily inhabits rainforests and wet forests. It is also found in eucalypt woodlands, coastal scrub, and damp gullies.	**Moderate**. Habitat potentially suitable for foraging and dispersal of this species has been identified in a remnant, small, open-forest patch (RE 11.3.4) within the eastern extent of the Study Area. The closest record is approximately 26 km north-west of the Study Area in Bouldercombe National Park dated 2022 (ALA, 2025).

Family/Type	Common name	Scientific name	EPBC Act listing	NC Act listing	Habitat	Likelihood of Occurrence
Bird	Yellow wagtail	*Motacilla flava*	Migratory, Marine	Special Least Concern	Habitat requirements for this species are highly variable but typically include open grassy flats near water. Habitats include open areas with low vegetation such as grasslands, airstrips, pastures, sports fields; damp open areas such as muddy or grassy edges of wetlands, rivers, irrigated farmland, dams, waterholes; sewage farms, sometimes utilise tidal mudflats and edges of mangroves.	Unlikely. Suitable habitat for this species does not exist within the Study Area. The Study Area is dominated by non-remnant with no farm dams or damp, open areas present. The closest record of this species to the Study Area is approximately 72 km to the south-east of the Study Area, in Gladstone, dated 2016 (ALA, 2025).
Bird	Satin flycatacher	*Myiagra cyanoleuca*	This species was delisted 8 November 2024, however, has been considered in this report as it was listed migratory at the time of the referral.	Special Least Concern	This species primarily inhabits tall, wet sclerophyll forests and woodlands, particularly in densely vegetated gullies, along Australia's east coast. It also frequents higher areas and is found in eucalypt woodlands.	**Moderate**. Habitat potentially suitable for foraging and dispersal of this species has been identified in a remnant, small, open-woodland patch (RE 11.3.4) within the eastern extent of the Study Area. The closest record is approximately 13 km east of the Study Area, undated and a spatial uncertainty of 9 km (ALA, 2025).
Bird	Star finch (eastern, southern)	*Neochmia ruficauda ruficauda*	Endangered	Endangered	This species inhabits tall grass and reed beds associated with swamps and watercourses. It may also be found in grassy woodlands, open forests and mangroves. The	Low. One stream order 1 watercourse intersects the Study Area, however, is ephemeral and seldom flows and is therefore unlikely to provide suitable

Family/Type	Common name	Scientific name	EPBC Act listing	NC Act listing	Habitat	Likelihood of Occurrence
					condition of preferred habitat varies according to season, grazing pressure and fire.	wetland habitat for the species. The closest two records are in Rockhampton, 48 km north of the Study Area, both undated (ALA, 2025).
Bird	Eastern curlew	*Numenius madagascariensis*	Critically Endangered	Endangered	This species occurs in sheltered coasts, especially estuaries, bays, harbours, inlets and coastal lagoons, with large intertidal mudflats or sandflats, often with beds of seagrass. This species occurs on ocean beaches (often near estuaries), and coral reefs, rock platforms, or rocky islets. They are often recorded among saltmarsh and on mudflats fringed by mangroves, sometimes within the mangroves. They are also found in coastal saltworks and sewage farms.	Unlikely. The closest record occurs approximately 14 km east of the Study Area, dated 1977 (ALA, 2025). The closest non-historical record occurs approximately 18 km north-east of the Study Area, dated 2016. However, due to the inland location of the Study Area and an absence of wetland habitat, the Study Area is unlikely to provide suitable habitat for this species.
Bird	Whimbrel	*Numenius phaeopus*	Migratory	Special Least Concern	This species is a regular migrant to Australia and New Zealand, with a primarily coastal distribution. It is often found on the intertidal mudflats of sheltered coasts. It is also found in harbours, lagoons, estuaries, and river deltas, often those with mangroves, but also open, unvegetated mudflats.	Unlikely. Two records occur approximately 16 km north-east of the Study Area, dated 1997 and undated (ALA, 2025). The closest recent record occurs approximately 20 km north of the Study Area, dated 2021. However, due to the inland location of the Study Area and an absence of wetland habitat, the

Family/Type	Common name	Scientific name	EPBC Act listing	NC Act listing	Habitat	Likelihood of Occurrence
						Study Area is unlikely to provide suitable habitat for this species.
Bird	Osprey	*Pandion haliaetus*	Migratory, Marine	Special Least Concern	This species favours habitat that are in coastal areas, especially the mouths of large rivers, lagoons and lakes but also along the larger coastal rivers such as the Clarence where nesting occurs upriver of Grafton, NSW. In east and south-east Australia, this species mainly inhabits wet sclerophyll forests, often in gullies dominated by eucalypts; usually with a dense shrubby understorey often including ferns.	Unlikely. The Study Area does not contain suitable foraging watercourses for this species. Records for the species within the broader project region are associated with the coast, and the large creeks and rivers. The closest, recent record is approximately 19 km east of the Study Area, dated 2022 (ALA, 2025).

Family/Type	Common name	Scientific name	EPBC Act listing	NC Act listing	Habitat	Likelihood of Occurrence
Bird	White-tailed Tropicbird	*Phaethon lepturus*	Migratory	Special Least Concern	This species occupies marine habitats in tropical waters with sea-surface temperatures of more than 22°C. This species breeds on islands and atolls, where it nests in a variety of habitats including on bare sandy ground, in closed-canopy rainforest, on rocky cliffs and in quarries. It feeds over warm waters of low salinity close to Christmas Island. In Australian waters they are more pelagic.	Unlikely. This species is pelagic, and no suitable habitat occurs within the Study Area. All records for this species are off the coastline and do not occur within 50 km of the Study Area (ALA, 2025).
Bird	Glossy ibis	*Plegadis falcinellus*	Migratory, Marine	Special Least Concern	This species prefers habitat for foraging and breeding are freshwater marshes at the edges of lakes and rivers, lagoons, flood-plains, wet meadows, swamps, reservoirs, sewage ponds, rice-fields and cultivated areas under irrigation. This species is occasionally found in coastal locations such as estuaries, deltas, saltmarshes and coastal lagoons.	Unlikely. One stream order 1 watercourse intersects the Study Area, however, is ephemeral and seldom flows and is therefore unlikely to provide suitable wetland habitat for the species. Majority of records from the region occur along the coast. The closest record occurs approximately 16 km north-east of the Study Area, dated 2017 (ALA, 2025).

Family/Type	Common name	Scientific name	EPBC Act listing	NC Act listing	Habitat	Likelihood of Occurrence
Bird	Southern black-throated finch	*Poephila cincta cincta*	Endangered	Endangered	This species inhabits grassy, open woodlands and forests, typically dominated by *Eucalyptus* spp. (including *E. crebra*, *E. camaldulensis* and *E. melanophloia*), *Corymbia* spp. and *Melaleuca* spp, and occasionally in tussock grasslands or other habitats often along or near watercourses, or in the vicinity of water.	Unlikely. The location of the Study Area is outside of this species current 'may occur' distribution. Some grassy woodland habitat is present within the eastern extent of the Study Area, however, the groundcover is dominated by exotic species are primarily exotic and not tussock grasses. The closest record is in Rockhampton, 45 km north of the Study Area, is undated and has a spatial uncertainty of 2 km (ALA, 2025).
Bird	Rufous fantail	*Rhipidura rufifrons*	This species was delisted 8 November 2024, however, has been considered in this report as it was listed migratory at the time of the referral.	Special Least Concern	This species primarily inhabits the lower levels of dense vegetation in and around damp forest gullies, rainforests, and woodlands, often near water sources. They can also be found in swamp woodlands and mangroves.	**Moderate**. Habitat potentially suitable for foraging and dispersal of this species has been identified in a remnant, small, open-forest patch (RE 11.3.4) within the eastern extent of the Study Area. The closest record is approximately 17 km north-east of the Study Area, dated 2020 (ALA, 2025).
Bird	Australian painted snipe	*Rostratula australis*	Endangered	Endangered	This species occurs in shallow freshwater wetlands or saltmarshes, including inundated	Unlikely. No wetland or inundated habitat is present within the Study Area. Records of

Family/Type	Common name	Scientific name	EPBC Act listing	NC Act listing	Habitat	Likelihood of Occurrence
					grasslands, dams and bore drains, generally with good cover of grasses or low scrub.	this species occur within the wider Project region but are found on low lying marsh and swamp land which is not present within the Study Area. The closest record is 19 km east of the Study Area, dated 2014.
Bird	Little tern	*Sternula albifrons*	Migratory	Special Least Concern	This is a coastal species that lives and breeds in sheltered environments, such as lagoons, estuaries, lakes and bays, where they can find exposed sandbanks or sand-spits for nesting and roosting. They also inhabit ocean beaches, but less frequently. They feed on small fish and crustaceans in shallow waters, often near their colonies or the entrances of rivers and lagoons.	Unlikely. Two records occur approximately 16 km north-east of the Study Area, dated 1997 and undated (ALA, 2025). The closest recent record occurs approximately 20 km north of the Study Area, dated 2021. However, due to the inland location of the Study Area and a lack of suitable wetland habitat, the Study Area is unlikely to provide suitable habitat for this species.
Bird	Spectacled monarch	*Symposiachrus trivirgatus*	This species was delisted 8 November 2024, however, has been considered in this report as it was listed migratory at	Special Least Concern	This species inhabits various lush environments, including subtropical and tropical moist lowland forests, mangrove forests, and moist montane forests. They prefer areas with dense undergrowth and are often found near water sources like wet gullies and waterside vegetation. Their habitat also includes mangrove forests.	**Moderate**. Habitat potentially suitable for foraging and dispersal of this species has been identified in a remnant, small, open-forest patch (RE 11.3.4) within the eastern extent of the Study Area. The closest record is approximately 17 km north-east of the Study Area, dated 2020 (ALA, 2025).

Family/Type	Common name	Scientific name	EPBC Act listing	NC Act listing	Habitat	Likelihood of Occurrence
			the time of the referral.			
Bird	Campbell albatross	*Thalassarche impavida*	Vulnerable	Special Least Concern	This species is a seabird that nests on Campbell Island and Jeanette Marie, New Zealand. It spends the rest of the year in the waters around southern Australia, the Tasman Sea and the South Pacific Ocean. It feeds mainly in the areas south of New Zealand and the Chatham Rise to the Ross Sea. The species nests on ledges and steep slopes covered in low native grasses, tussocks and mud (Brooke 2004). Foraging during short trips extends 150-640 km from the breeding colony, mainly over subantarctic waters within the 1,000 m depth contour on the Campbell Plateau. Longer trips extend up to 2,000 km from the colony, ranging from subtropical to Antarctic waters, but mainly to the	Unlikely. This species is pelagic and no suitable habitat occurs within the Study Area. No records occur in Queensland.

Family/Type	Common name	Scientific name	EPBC Act listing	NC Act listing	Habitat	Likelihood of Occurrence
					Polar Frontal Zone or to the east of the Campbell Plateau.	
Bird	Wandering tattler	*Tringa incana*	Migratory	Special Least Concern	This species is found in mountains and hilly regions, as well as along streams and lakes in areas that are rocky, mossy, or covered with scrubby vegetation, and in damp meadows. Occasionally, it can also be found in forest clearings away from water. Additionally, this species can also be located in rocky seacoasts and islands, jetties, and sandy beaches of oceanic islands.	Unlikely. No suitable habitat is present within the Study Area. Two records occur approximately 16 km north-east of the Study Area, undated and dates 1997 (ALA, 2025).
Bird	Common greenshank	*Tringa nebularia*	Migratory	Special Least Concern	The species is found in a wide variety of inland wetlands and sheltered coastal habitats of varying salinity. It occurs in sheltered coastal habitats, typically with large mudflats and saltmarsh, mangroves or seagrass. Habitats include embayments, harbours, river estuaries, deltas and lagoons.	Unlikely. The nearest record occurs approximately 12 km north-east of the Study Area, dated 2004 (ALA, 2025). However, due to the inland location of the Study Area and a lack of wetland habitat, the Study Area is unlikely to provide suitable habitat for this species.

Family/Type	Common name	Scientific name	EPBC Act listing	NC Act listing	Habitat	Likelihood of Occurrence
Bird	Marsh sandpiper	*Tringa stagnatilis*	Migratory	Special Least Concern	This species inhabits warm inland wetlands from open steppe to boreal forest. It can be found in a variety of habitats, including shallow freshwater and brackish marshlands, grassy or marshy lake-edges, river valleys, flooded meadows, and occasionally salt-lake margins. It also occurs in inland freshwater and brackish wetlands such as rice paddy-fields, swamps, salt-pans, salt-marshes, sewage works, and marshy lake-edges. Although rare on open coastlines, it can occasionally be found on estuaries, lagoons, and intertidal mudflats	Unlikely. Multiple records occur approximately 16 km north-east of the Study Area, dated 1997 to 2019 (ALA, 2025). However, due to the inland location of the Study Area and a lack of wetland habitat, the Study Area is unlikely to provide suitable habitat for this species.
Bird	Black-breasted button-quail	*Turnix melanogaster*	Vulnerable	Vulnerable	This species is restricted to rainforests and forests, mostly in areas with 770-1,200 mm rainfall per annum. It prefers drier low closed forests, particularly semi-evergreen vine thicket, low microphyll vine forest, Araucarian microphyll vine forest and Araucarian notophyll vine forest. They may also be found in low, dense acacia thickets and, in littoral areas, in vegetation behind sand dunes.	Low. No suitable forests or vine thickets are present within the Study Area. The nearest record is approximately 17 km north-east of the Study Area, dated 1955 (ALA, 2025).

Family/Type	Common name	Scientific name	EPBC Act listing	NC Act listing	Habitat	Likelihood of Occurrence
Bird	Lesser sand plover	*Charadrius mongolus*	Endangered, Migratory	Endangered	This species can be found in several habitats such as beaches, mudflats, saltmarshes, and lagoons, which provide the necessary resources of food, shelter, and nesting sites. The species is known to occur in Queensland, specifically in the far north at Roebuck Bay, along the coastline of Cape York Peninsula, and in the Gulf of Carpentaria. These regions are significant stopover locations during the bird's migration and serve as essential wintering places for the species.	Unlikely. One stream order 1 watercourse intersects the Study Area, however, is ephemeral and seldom flows and is therefore unlikely to provide suitable wetland habitat for the species. No other wetland habitat is present within the Study Area. Two records for the species occur approximately 17 km north-east of the Study Area, dated 2007 and 2023 (ALA, 2025).
Bird	Western Alaskan bar-tailed godwit	*Limosa lapponica baueri*	Endangered, Migratory	Vulnerable	This species feeds on intertidal flats and beaches, mainly on molluscs, crustaceans, worms, and insects. They prefer the upper tidal zone and feed mostly during the day. This species roost on sandflats, spits, banks, or sometimes mudflats, lagoons, and bays. They may also use artificial wetlands. They roost in high tide and move to lower tide areas for feeding. The species nest on dry elevated sites in the tundra, such as ridges, hummocks, or thickets.	Unlikely. One stream order 1 watercourse intersects the Study Area, however, is ephemeral and seldom flows and is therefore unlikely to provide suitable wetland habitat for the species. No other wetland habitat is present within the Study Area. Records from the region occur along the coast. Majority of records occur at least 18 km north-east of the Study Area (ALA, 2025).

Family/Type	Common name	Scientific name	EPBC Act listing	NC Act listing	Habitat	Likelihood of Occurrence
Bird	Southern giant-petrel	*Macronectes giganteus*	Endangered, Migratory, Marine	Endangered	This species breeds on six subantarctic and Antarctic islands under Australian control: Macquarie Island, Heard Island and McDonald Islands (Southern Ocean), and Giganteus Island, Hawker Island, and Frazier Island (Australian Antarctic Territories). This species ranges from Antarctic to subtropical waters, spending summers primarily in Antarctic regions, reaching as far south as the pack ice and the continent itself. Breeding sites encompass the Antarctic continent, peninsula, islands, subantarctic islands, and South America. In Antarctica, where there's no vegetation, nests are on exposed, snow-free coastal areas, open gravel plains, rocky features, ridges, slopes, mounds, raised beaches, or offshore rocks, ranging from 5-120 m ASL.	Unlikely. This species is pelagic and no suitable habitat occurs within the Study Area. No records occur within 30 km of the Study Area, with all records occurring along the coast. The nearest record is located approximately 66 km north of the Study Area, near Mulara, dated 1997 (ALA, 2025).

Family/Type	Common name	Scientific name	EPBC Act listing	NC Act listing	Habitat	Likelihood of Occurrence
Bird	Fairy Prion (southern)	*Pachyptila turtur subantarctica*	Vulnerable	Least Concern	This species was first recorded on Macquarie Island. confirmed breeding locations are near this island at Langdon Point and Davis Point. A secondary location exists on the nearby Bishop and Clerk Islands (Garnett and Crowley 2000). The total population is estimated at around 50 breeding pairs (Brothers 1984). This species utilizes crevices, hollows beneath cushions of the perennial herb *Colobanthus muscoides*, or burrows in peaty soil covered by the perennial herb *Cotula plumosa* for nesting are constructed at the end of a burrow or within a suitable rocky crevice.	Unlikely. This species is pelagic and no suitable habitat occurs within the Study Area. No records occur within 100 km of the Study Area, with all records occurring along the coast (ALA, 2025).
Bird	Shy albatross	*Thalassarche cauta*	Endangered, Migratory, Marine	Endangered	This species, endemic to Australia, breeds on three Tasmanian island colonies (Albatross Island, Pedra Branca, Mewstone) in the southern Indian Ocean. These rocky islands provide nesting habitat, where the species constructs mound nests using soil, grass, and roots. The species occurs in coastal areas, large bays, and open seas.	Unlikely. This species is pelagic, and no suitable habitat is present within the Study Area. One record occurs 12 km (dated 2000) to the south of the Study Area, however, is considered unreliable. Comments from the records metadata state the observation is from Yeppoon, 60 km north of the Study Area (ALA, 2025).

Family/Type	Common name	Scientific name	EPBC Act listing	NC Act listing	Habitat	Likelihood of Occurrence
Mammal	Large-eared pied bat	*Chalinolobus dwyeri*	Vulnerable	Endangered	This species requires a combination of sandstone cliff/escarpment to provide roosting habitat that is adjacent to higher fertility sites, particularly box gum woodlands or river/rainforest corridors which are used for foraging. Most records are from canopied habitat, although narrow connecting riparian strips in otherwise cleared habitat are sometimes quite heavily used. No maternity roost sites are known in Queensland.	Low. No suitable habitat within the Study Area exists for this species. The Study Area predominantly is dominated by non-remnant vegetation and no box gum woodlands or river/ rainforest corridors are present. Sandstone cliffs suitable for roosting within or nearby the Study Area are absent. No records are present within 100 km of the Study Area (ALA, 2025).
Mammal	Northern quoll	*Dasyurus hallucatus*	Endangered	Least Concern	This species is highly adaptable, and can occupy a diverse range of habitats, including eucalypt forests, woodlands, rainforests, sandy lowlands and beaches, shrublands, grasslands and deserts. While rocky areas are the preferred habitat for denning purposes, the species is also known to occupy non-rocky lowland habitats such as beach scrub communities in central Queensland. They generally encompass surroundings that are vegetated to provide foraging and dispersal opportunities. Rocky habitats, which are often rugged and dissected, provide high relief	**Moderate**. A small area of eucalypt dominated open-woodland habitat occurs along the eastern end of the Study Area, within the reserve of South Ulam Road and may provide suitable foraging and dispersal habitat for this species. Suitable habitat does not occur within most of the Study Area where non-remnant vegetation is the dominant habitat type. Northern quoll was recorded from surveys within remnant habitats associated with high relief area to the west of the Study Area. The nearest ALA record occurs approximately 22 km north-east

Family/Type	Common name	Scientific name	EPBC Act listing	NC Act listing	Habitat	Likelihood of Occurrence
					and are the most suitable habitats for the species. Hollow logs are also important to offer shelter and habitat for the species and are known to be used by the species for nesting and denning. Other denning sites for the species include termite mounds and tree hollows.	of the Study Area, near Bouldercombe Gorge National Park, dated 1994 with a spatial uncertainty of 20 km.
Mammal	Ghost bat	*Macroderma gigas*	Vulnerable	Endangered	This species occurs throughout a wide range of habitats from rainforest, monsoon and vine scrub, to open woodlands in arid areas. These habitats are used for foraging, while roost habitat is more specific. Favoured roosting sites of the species are undisturbed caves or mineshafts which have several openings.	**Moderate**. The majority of the Study Area comprises non-remnant vegetation and is considered unsuitable for this species, however, a small area of eucalypt open-woodland habitat within the eastern extent of the Study Area (within the reserve of South Ulam Road) may provide suitable foraging and dispersal habitat, particularly during the non-breeding season when the species is known to disperse large distances (up to 150 km from permanent roosts). Suitable roosting habitat is not found within the Study Area nor is it known from any location within 20 km. This species is known historically from the Rockhampton region, and the Mt Etna maternity roost is located 56 km north of the Study Area.

Family/Type	Common name	Scientific name	EPBC Act listing	NC Act listing	Habitat	Likelihood of Occurrence
						The closest record to the Study Area is 36 km to the north, from 1994 which has a spatial uncertainty of 20 km (ALA, 2025). However, due to the habitat within the eastern extent of the Study Area potentially providing suitable foraging and dispersal habitat, the species has conservatively been determined to have a moderate likelihood of occurring.
Mammal	South-eastern long-eared bat	*Nyctophilus corbeni*	Vulnerable	Vulnerable	This species inhabits a range of inland dry forest habitats including *Eucalyptus camaldulensis, Acacia harpophylla* and other arid and semi-arid habitats; in southern Queensland it is more common in box, ironbark and cypress pine forests on sandy soils. The species is most abundant in vegetation with a distinct canopy and a dense, cluttered shrub layer, and in large, continuous remnants. Roosts solitarily in tree hollows, crevices, and under loose bark (particularly on dead *Allocasuarina luehmannii* or *Casuarina cristata*).	Low. No suitable areas of large, continuous remnant vegetation with a dense, cluttered shrub layer is present within the Study Area. No records occur within 100 km; however, records are generally lacking due to the inability to distinguish this genus based on call data.

Family/Type	Common name	Scientific name	EPBC Act listing	NC Act listing	Habitat	Likelihood of Occurrence
Mammal	Yellow-bellied glider	*Petaurus australis australis*	Vulnerable	Vulnerable	This species occurs in eucalypt-dominant forests and woodlands. Prefers large, patches of mature old-growth forest that provide suitable trees for foraging and shelter. This species require a diverse range of tree species for food throughout the year, feed on sap from certain tree species and are unlikely to persist in forests dominated by only one or two tree species. Locally favoured trees (in order of importance) are *Eucalyptus longirostrata* and *Eucalyptus biturbinata*), *Eucalyptus tereticornis*, *Eucalyptus moluccana* and *Corymbia citriodora*. They have been found in tree hollows with a minimum entrance size of 5 cm. Stags (standing dead trees) account for only 2% of den trees in certain forest types.	Low. The majority of the Study Area comprises non-remnant vegetation is considered unsuitable for yellow-bellied glider. A small patch of eucalypt woodland within the reserve of South Ulam Road was deemed marginal habitat, however, occurs in an isolated, fragmented patch with poor connectivity. Additionally, it also has poor floristic diversity and few mature trees. Therefore, this habitat is not considered suitable. This species has been recorded on adjacent properties during field surveys for the Project. The closest ALA record occurs approximately 22 km north of the Study Area, near Mount Morgan dated 1994 and a spatial uncertainty of 20 km.

Family/Type	Common name	Scientific name	EPBC Act listing	NC Act listing	Habitat	Likelihood of Occurrence
Mammal	Koala (combined populations of Qld, NSW and the ACT	*Phascolarctos cinereus*	Endangered	Endangered	This species inhabits a range of temperate, sub-tropical and tropical forest, woodland and semi-arid communities dominated by eucalypt species. The species is limited by habitat (restricted to below 800 m ASL), temperature and, at the western and northern ends of the range, leaf moisture.	**High**. This species is known to the region, including the approved Mt Hopeful wind farm site (recorded from higher elevation woodland). A small patch of open-forest dominated by *E. crebra* and *E. tereticornis* occurs along the eastern extent of the Study Area and may provide potential climate refugia habitat. The closest record is approximately 11 km south-east of the Project Area, dated 1940 and a spatial uncertainty of 9 km (ALA, 2025).
Mammal	Grey-headed flying-fox	*Pteropus poliocephalus*	Vulnerable	Least Concern	This species requires both foraging resources and roosting sites. For foraging, the species utilises rainforests, open forests, closed and open woodlands, *Melaleuca* swamps and *Banksia* woodlands. They roost in aggregations of various sizes on exposed branches. Roost sites are typically located near water, such as lakes, rivers or the coast. Roost vegetation includes rainforest patches, stands of *Melaleuca*, mangroves and riparian vegetation, but colonies also use highly modified vegetation in urban and	Low. Habitat potentially suitable for foraging has been identified in a remnant, small, open-forest patch (RE 11.3.4) within the eastern extent of the Study Area. This small area contains suitable winter/spring foraging species including *E. crebra* and *E. tereticornis*. The closest known roost is located 42 km north of the Study Area, at Kabra (camp 362), however this roost has not recorded grey-headed flying-foxes since 2017. A camp at Wowan (camp 755), 45 km south-west of the Study Area

Family/Type	Common name	Scientific name	EPBC Act listing	NC Act listing	Habitat	Likelihood of Occurrence
					suburban areas. The grey-headed flying-fox is highly mobile and the national population is fluid, moving up and down the east coast in search of food.	exits, however, has not recorded the species since 2019. The closest record of the species is 46 km north of the Study Area in Rockhampton (no date provided). A number of other records occur in the wider Rockhampton area (ALA, 2025). However, the species range may be contracting south as it is no longer thought to regularly inhabit the Rockhampton region, as per its Listing Advice. Given the Study Area is not proximal to a known roost, the species is considered to have a low likelihood of utilising the Study Area at any time.
Mammal	Short-beaked echidna	*Tachyglossus aculeatus*	-	Special Least Concern	This species occupies a variety of habitat types including non-remnant vegetation in both coastal and inland regions.	**High**. Suitable habitat is present within the Study Area. The closest record is approximately 16 km north-east of the Study Area, dated 1993 (ALA, 2025).
Mammal	Greater glider (southern and central)	*Petauroides volans*	Endangered	Endangered	This species is largely restricted to eucalypt forests and woodlands; it is typically found in highest abundance in taller, montane, moist eucalypt forests with relatively old trees and abundant hollows.	**Moderate**. The closest record occurs approximately 40 km east of the Study Area, dated 2024 and a spatial uncertainty of 30 km. This species is known to the region, including the approved Mount Hopeful Windfarm site (recorded from higher elevation woodland).The majority of the

Family/Type	Common name	Scientific name	EPBC Act listing	NC Act listing	Habitat	Likelihood of Occurrence
						Study Area contains non-remnant vegetation and is considered unsuitable for greater glider (southern and central), however, a small area of the eastern extent within South Ulam Road reserve contains large trees with a DBH >50 cm and medium sized hollows (although rare) is conservatively considered as providing suitable denning habitat.
Mammal	Water mouse	*Xeromys myoides*	Vulnerable	Vulnerable	This species habitat includes mangrove communities and adjacent sedgelands, grasslands and freshwater wetlands. A supralittoral bank where present maybe be utilised by this species for nesting. The water mouse may nest or forage in the following Queensland Regional Ecosystems considered essential habitat for this species: 8.1.1, 11.1.1, 11.1.2, 11.1.4, 12.1.1, 12.1.2, 12.1.3, 12.2.5, 12.2.7, 12.2.11, 12.2.12 and 12.2.14.	Unlikely. No appropriate watercourses or wetlands are present within the Study Area. The closest record is approximately 22 km north-east of the Study Area, dated 2024 (ALA, 2025).

Family/Type	Common name	Scientific name	EPBC Act listing	NC Act listing	Habitat	Likelihood of Occurrence
Reptile	Salt-water crocodile	*Crocodylus porosus*	Migratory	Vulnerable	This species mostly occurs in tidal rivers, coastal floodplains and channels, billabongs and swamps up to 150 km inland from the coast. It usually inhabits the estuarine reaches of rivers. In Queensland, the species is usually restricted to coastal waterways and floodplain wetlands. Floating rafts of vegetation provide important nesting habitat.	Unlikely. One stream order 1 watercourse intersects the Study Area, however, is highly ephemeral and seldom flows and is therefore unlikely to provide suitable wetland habitat for the species. No other wetland habitat is present within the Study Area. The closest record is approximately 22 km north-west of the Study Area, near Bouldercombe Gorge Conservation Park, undated and a spatial uncertainty of 1 km (ALA, 2025).
Reptile	Collared delma	*Delma torquata*	Vulnerable	Vulnerable	This species is typically found in eucalypt-dominated woodlands and open-forests in Qld Regional Ecosystem Land Zones 3 (alluvium), 9 (undulating country on fine-grained sedimentary rocks), and 10 (sandstone ranges). The presence of rocks, logs, coarse woody debris, and leaf litter are essential characteristics of its microhabitat.	Low. A small area of eucalypt dominated open-woodland with a land zone of 3 (RE 11.3.4) occurs along the eastern end of the Study Area within the reserve of South Ulam Road. However, this patch was dominated by dense introduced grasses and lacked the required microhabitat for the species. A record from 1989 is located within the south of the Project Area (12 km south of the Study Area). However, details of the record indicate it has a spatial inaccuracy of 100 km (ALA, 2025). Record is thus considered unreliable.

Family/Type	Common name	Scientific name	EPBC Act listing	NC Act listing	Habitat	Likelihood of Occurrence
Reptile	Ornamental snake	*Denisonia maculata*	Vulnerable	Vulnerable	This species inhabits lower-lying subtropical areas with deep-cracking clay soils and adjacent slightly elevated ground of clayey and sandy loams. The species is also found in vegetation of woodland and shrub land, including *Acacia harpophylla*, riverside woodland and open forest, particularly on natural levees.	Unlikely. Suitable habitat does not exist within the Study Area. No deep-cracking clay soils or sandy loams were present. The closest record occurs approximately 30 km north of the Study Area, dated 1973 (ALA, 2025).
Reptile	Yakka skink	*Egernia rugosa*	Vulnerable	Vulnerable	This species occurs in a variety of drier forests and woodlands, usually on well-drained, gritty soils, including *Eucalyptus populnea* on alluvial soils, *Callitris glaucophylla* on sands, *Allocasuarina luehmannii*, *Acacia harpophylla, A. catenulata* and *A. aneura*. The species inhabits burrows, abandoned rabbit warrens, and hollow logs or in deep rock crevices.	Low. Suitable habitat does not exist within the Study Area. Non-remnant vegetation with scattered trees dominated the Study Area. The nearest record occurs approximately 21 km north-east of the Study Area, undated and a spatial uncertainty of 2 km, therefore considered unreliable (ALA, 2025).
Reptile	Southern snapping turtle	*Elseya albagula*	Critically Endangered	Critically Endangered	This species is only found in the Burnett, Fitzroy, Raglan and Mary River drainages of south-east Queensland. It prefers permanent flowing water habitats where there are suitable shelters and refuges.	Unlikely. This species has been recorded from creeks in the wider region. The Study Area lacks suitable watercourses to support this species. The closest record occurs approximately 15 km east of the Study Area (ALA, 2025).

Family/Type	Common name	Scientific name	EPBC Act listing	NC Act listing	Habitat	Likelihood of Occurrence
Reptile	Dunmall's snake	*Furina dunmalli*	Vulnerable	Vulnerable	This species has been found in a broad range of habitats, including forests and woodlands on black alluvial cracking clay/clay loams dominated by including *Acacia harpophylla* and other *Acacia* spp., *Callitris* spp. or *Allocasuarina luehmannii*, and various *Corymbia citriodora, Eucalyptus crebra* and *E. melanophloia*) and *Callitris glaucophylla* open forest and woodland associations on sandstone derived soils.	Low. Cracking clay or clay loam soils do not occur within the Study Area. The Study Area is within the species 'may' occur range on SPRAT. One record from 1971 occurs at Raglan, 22 km north-east of the Study Area. The only other record in the wider region occurs within Rockhampton.
Reptile	Grey snake	*Hemiaspis damelii*	Endangered	Endangered	In Queensland, this species habitat is *Acacia harpophylla* and *Casuarina cristata* woodlands on heavy, dark brown to black cracking clay soils, particularly in association with water bodies, areas with small gullies and ditches, and floodplain environments where the species shelters beneath logs, rocks and soil cracks (Queensland Government 2020). Habitat in Queensland also includes *Dichanthium sericeum* and/or *Astrebla* spp. grassland on alluvial plains with cracking clay soils (Queensland Herbarium 2021). This species occurrence on the western downs of Queensland has	Unlikely. The Study Area does not contain any habitat on cracking clay soils. The Study Area is within the species 'may' occur range on SPRAT. An undated record occurs at Bajool, 16 km north of the Study Are with a 3.6 km spatial uncertainty (ALA, 2025).

Family/Type	Common name	Scientific name	EPBC Act listing	NC Act listing	Habitat	Likelihood of Occurrence
					a strong positive association with red sodosol soils which have a strong texture contrast between the A horizon and sodic B horizon, and which are often quite dense and coarsely structured (blocky, prismatic or columnar peds) favouring the crack-inhabiting and foraging ecology of this species (Apan et al. 2010). Key attributes of grey snake habitat are the floodplains and ephemeral wetlands which provide breeding habitat for the frog species that are its main prey, the presence of the frog species themselves, and the heavy clay soils which provide and cracks and crevices that the species uses in its hunting strategy and for shelter	

Appendix C

Flora and Fauna Species List

C.1 Flora

Family	Scientific name	Common name	EPBC Act Status	NC Act Status
Amaranthaceae	*Gomphrena conica**	-	-	-
Apocynaceae	*Alyxia ruscifolia*	-	-	Least concern
Apocynaceae	*Cryptostegia grandiflora**	Rubber vine	-	-
Apocynaceae	*Gomphocarpus physocarpus**	Balloon cottonbush	-	-
Asteraceae	*Ageratum conyzoides* subsp. *conyzoides**	-	-	-
Asteraceae	*Chrysocephalum apiculatum*	Yellow buttons	-	Least concern
Asteraceae	*Cirsium vulgare**	Spear thistle	-	-
Asteraceae	*Cyanthillium cinereum*	-	-	Least concern
Asteraceae	*Pterocaulon redolens*	-	-	Least concern
Cactaceae	*Opuntia tomentosa**	Velvety tree pear	-	-
Campanulaceae	*Wahlenbergia gracilis*	Sprawling bluebell	-	Special least concern
Celastraceae	*Denhamia oleaster*	-	-	Least concern
Convolvulaceae	*Evolvulus alsinoides*	-	-	Least concern
Cycadaceae	*Cycas megacarpa*	-	Endangered	Endangered
Cyperaceae	*Cyperus gracilis*	-	-	Least concern
Cyperaceae	*Fimbristylis dichotoma*	Common fringe-rush	-	Least concern
Euphorbiaceae	*Euphorbia hirta**	-	-	-
Laxmanniaceae	*Lomandra filiformis*	-	-	Least concern
Lecythidaceae	*Planchonia careya*	Cockatoo apple	-	Least concern
Leguminosae	*Acacia leiocalyx*	-	-	Least concern
Leguminosae	*Chamaecrista rotundifolia**	-	-	-
Leguminosae	*Crotalaria montana*	-	-	Least concern
Leguminosae	*Flemingia parviflora*	Flemingia	-	Least concern
Leguminosae	*Indigofera linnaei*	Birdsville indigo	-	Least concern
Leguminosae	*Indigofera pratensis*	-	-	Least concern
Leguminosae	*Neptunia* sp.	-	-	Least concern
Leguminosae	*Stylosanthes scabra**	-	-	-
Leguminosae	*Vachellia bidwillii*	-	-	Least concern
Leguminosae	*Vachellia karroo**	Karroo thorn	-	-

Family	Scientific name	Common name	EPBC Act Status	NC Act Status
Malvaceae	*Malvastrum americanum* var. *americanum**	-	-	-
Malvaceae	*Sida cordifolia**	-	-	-
Malvaceae	*Sida hackettiana*	-	-	Least concern
Moraceae	*Ficus opposita*	-	-	Least concern
Myrtaceae	*Blakella tessellaris*	Moreton Bay ash	-	Least concern
Myrtaceae	*Corymbia erythrophloia*	Variable-barked bloodwood	-	Least concern
Myrtaceae	*Eucalyptus crebra*	Narrow-leaved red ironbark	-	Least concern
Myrtaceae	*Eucalyptus tereticornis*	-	-	Least concern
Myrtaceae	*Melaleuca bracteata*	-	-	Least concern
Myrtaceae	*Melaleuca leucadendra*	Broad-leaved tea-tree	-	Least concern
Oxalidaceae	*Oxalis* sp.	-	-	Least concern
Phyllanthaceae	*Phyllanthus virgatus*	-	-	Least concern
Pittosporaceae	*Pittosporum spinescens*	-	-	Least concern
Poaceae	*Aristida sp.*	-	-	Least concern
Poaceae	*Bothriochloa bladhii*	-	-	Least concern
Poaceae	*Bothriochloa pertusa**	-	-	-
Poaceae	*Eragrostis* sp.	-	-	Least concern
Poaceae	*Heteropogon contortus*	Black speargrass	-	Least concern
Poaceae	*Imperata cylindrica*	Blady grass	-	Least concern
Poaceae	*Megathyrsus maximus* var. *maximus*	Guinea grass	-	Least concern
Poaceae	*Melinis repens**	Red natal grass	-	-
Poaceae	*Sarga leiocladum*	-	-	Least concern
Polygonaceae	*Polygonum* sp.	-	-	Least concern
Portulacaceae	*Portulaca pilosa**	-	-	-
Rhamnaceae	*Alphitonia excelsa*	Soap tree	-	Least concern
Sapotaceae	*Planchonella* sp.	-	-	Least concern
Scrophulariaceae	*Eremophila debilis*	Winter apple	-	Least concern
Sparrmanniaceae	*Grewia latifolia*	Dysentery plant	-	Least concern
Verbenaceae	*Lantana camara**	Lantana	-	-

C.2 Fauna

Family	Scientific Name	Common Name	EPBC Act Status	NC Act Status
Acanthizidae	*Gerygone olivacea*	White-throated gerygone	-	Least concern
Accipitridae	Aquila *audax*	Wedge-tailed eagle	-	Least concern
Alcedinidae	*Dacelo novaeguineae*	Laughing kookaburra	-	Least concern
Artamidae	*Cracticus nigrogularis*	Pied butcherbird	-	Least concern
Artamidae	*Gymnorhina tibicen*	Australian magpie	-	Least concern
Artamidae	*Strepera graculina*	Pied currawong	-	Least concern
Cacatuidae	*Cacatua galerita*	Sulphur-crested cockatoo	-	Least concern
Cacatuidae	Eolophus roseicapilla	Galah	-	Least concern
Campephagidae	*Coracina novaehollandiae*	Black-faced cuckoo-shrike	-	Least concern
Cuculidae	*Cacomantis flabelliformis*	Fan-tailed cuckoo	-	Least concern
Corvidae	*Corvus orru*	Torresian crow	-	Least concern
Falconidae	*Falco berigora*	Brown falcon	-	Least concern
Falconidae	*Falco cenchroides*	Nankeen kestrel	-	Least concern
Maluridae	*Malurus melanocephalus*	Red-backed fairy-wren	-	Least concern
Meliphagidae	*Entomyzon cyanotis*	Blue-faced honeyeater	-	Least concern
Meliphagidae	*Lichenostomus virescens*	Singing honeyeater	-	Least concern
Meliphagidae	*Lichmera indistincta*	Brown honeyeater	-	Least concern
Meliphagidae	*Manorina melanocephala*	Noisy miner	-	Least concern
Meliphagidae	*Melithreptus albogularis*	White-throated honeyeater	-	Least concern
Motacillidae	*Anthus novaeseelandiae*	Australasian pipit	-	Least concern
Monarchidae	*Grallina cyanoleuca*	Magpie-lark	-	Least concern
Pachycephalidae	*Pachycephala rufiventris*	Rufous whistler	-	Least concern
Pardalotidae	*Pardalotus striatus*	Striated pardolote	-	Least concern

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Psittaculidae	*Aprosmictus erythropterus*	Red-winged parrot	-	Least concern
Psittaculidae	*Platycercus adscitus*	Pale-headed rosella	-	Least concern
Psittaculidae	*Trichoglossus moluccanus*	Rainbow lorikeet	-	Least concern
Rhipiduridae	*Rhipidura albiscapa*	Grey fantail	-	Least concern
Rhipiduridae	*Rhipidura leucophrys*	Willie wagtail	-	Least concern

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