MSES IMPACT ASSESSMENT REPORT

FOXLEIGH COAL MINE

PREPARED FOR
Foxleigh Management Pty. Ltd.

01 JUNE 2025

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Abbreviations

AARC	AARC Environmental Solutions
DAF	Department of Agriculture and Fisheries
DBH	Diameter at breast height
DETSI	Department of the Environment, Tourism, Science and Innovation
DNRMMRRD	Department of Natural Resources and Mines, Manufacturing and Regional and Rural Development
EA	Environmental Authority
EIS	Environmental impact assessment
EPBC	*Environment Protection Biodiversity and Conservation Act 1999*
ERA	Environmental Relevant Activity
EVNT	Endangered, Vulnerable, Near Threatened
HBA	Hansen Botanical Assessments
HVR	High value regrowth
JV	Joint Venture
LFC	Landscape Fragmentation and Connectivity
MIA	Mine infrastructure area
ML	Mining Leas
MLES	Matters of local environmental significance
MNES	Matters of national environmental significance
MSES	Matters of State Environmental Significance
NSW	New South Wales
PRCP	Progressive Rehabilitation and Closure Plan
RE	Regional Ecosystem
ROM	Run of Mine
SLC	Special Least Concern
TSSC	Threatened Species Scientific Committee
VM	*Vegetation Management Act 1999*

1 Introduction

AARC Environmental Solutions Pty Ltd (AARC) was commissioned by Foxleigh Management Pty Ltd (FoxMan), the operator of the Joint Venture (JV) between CAML Resources Pty Ltd, Nippon Steel Australia Pty Ltd, and Foxleigh Coal Pty Ltd—the Environmental Authority (EA) holders for the Foxleigh Mine—to prepare a Matters of State Environmental Significance (MSES) Impact Assessment. This assessment supports a proposed extension of the authorised disturbance footprint at Foxleigh Mine. The proposed additional disturbance (otherwise referred as the Project area) encompasses a total area of 99 Ha and aims to provide access for pre-construction preparatory testing and construction works for the Eagle Nest Levee re alignment and construction of a northern MIA.

The location of this proposed additional disturbance in relation to the already approved area, is shown in Figure 2.

1.1 Purpose and scope

The purpose of this report is to assess the potential for significant impacts resulting from the Project area proposed additional disturbance, as illustrated in Figure 2. This report provides an assessment of the prescribed environmental matters values within the Project area and the potential residual impact of the proposed disturbance on these values.

Prescribed environmental matters, as specified in the Queensland Environmental Offsets Regulation 2014, include:

- matters of national environmental significance (MNES);
- matters of state environmental significance (MSES); and
- matters of local environmental significance (MLES).

An MLES is a matter that is prescribed under a local planning instrument as a prescribed environmental matter that cannot replicate an MNES or MSES. No MLES are identified within the biodiversity overlay of the Isaac Regional Council Planning Scheme (Regional Isaac Council 2024a).

This report is designed to comprehensively address the MSES, serving as an enhancement and replacement for prior MSES studies conducted for the Project, and it will be submitted with an EA amendment application.

This report compiles information from all terrestrial ecology surveys conducted for the Project since 2009. It includes additional survey carried out in February 2024 and in September 2024, along with an updated vegetation map for the Project area.

Section 3.2 provides a summary of all the terrestrial ecology surveys for the Project considered in this report.

1.2 Project background

The Foxleigh Mine is an open cut coal mine located in the Bowen Basin, approximately 12 km south-east of Middlemount within the Isaac Regional Local Government Area (Figure 1). Foxleigh Mine was approved following the granting of the initial mining lease (ML 70337) in 1999. Mining operations commenced shortly thereafter, with coal production beginning in 2000. In 2010, an application for the expansion of the mine, initially known as the Foxleigh Plains Project, along with the related EA amendment, were submitted to the administering authority. The expansion received approval, resulting in the granting of ML 70429, ML 70430 and ML 70431 (collective referred to as Foxleigh Plains and Eagles Nest or the Project for this assessment), and a new EA issued in November 2013. This approval authorised, the current extent of authorised disturbance, an increase in ROM coal production from 3.2 to 4.0 Mtpa and extension of the life of Foxleigh Mine by approximately 15 years.

Mining activities are currently authorised by the EA EPML00744813. Issued under the *Environmental Protection Act 1994* (Queensland) (EP Act).

In conjunction with the EA application, the Foxleigh Plains Project was referred to the Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW)—then known as the Department of Environment, Water, Heritage and the Arts—on 28 May 2010. The Project was declared a Controlled Action under the Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth) (EPBC Act), with the controlling provisions being the potential impacts on listed threatened species and ecological communities. Commonwealth approval for the Project was granted on 15 April 2014, covering the entire project footprint, and subject to the conditions set out in referral EPBC 2010/5421.

The Queensland Environmental Offsets Policy establishes an environmental offset hierarchy to avoid duplication of offset conditions between jurisdictions. Under this policy, state and local governments may only impose an offset condition if "the same, or substantially the same, impact and the same, or substantially the same, matter" has not already been assessed under the Commonwealth regime. Consequently, impacts to MNES that were considered and approved under EPBC 2010/5421 are not further assessed within this report.

1.3 Regional context

The area is situated within an established region known for grazing, farming, and coal mining, entirely within the jurisdiction of the Isaac Regional Council. The project area is generally flat to undulating and is traversed by two ephemeral creeks: Cockatoo Creek in the east and Roper Creek in the west. Although much of the site has been cleared for grazing, remnant woodland vegetation remains, particularly along Cockatoo Creek and other drainage lines.

The surrounding area is currently used for beef cattle grazing and is bordered by other mining operations and pastoral properties. The climate is classified as sub-tropical and sub-humid.

Surface drainage flows southeast across the Foxleigh Mine, with Cockatoo Creek joining Roper Creek south of the Lake Lindsay Homestead and eventually entering the Mackenzie River, 16 km south of the mining area. The site's watercourses are ephemeral, flowing only during and immediately after heavy rainfall. Perennial pools are present in both Roper Creek and Cockatoo Creek, as well as in Bluchers Lagoon and Lake Lindsay towards the southern end of the mining area.

Figure 1: Project Location

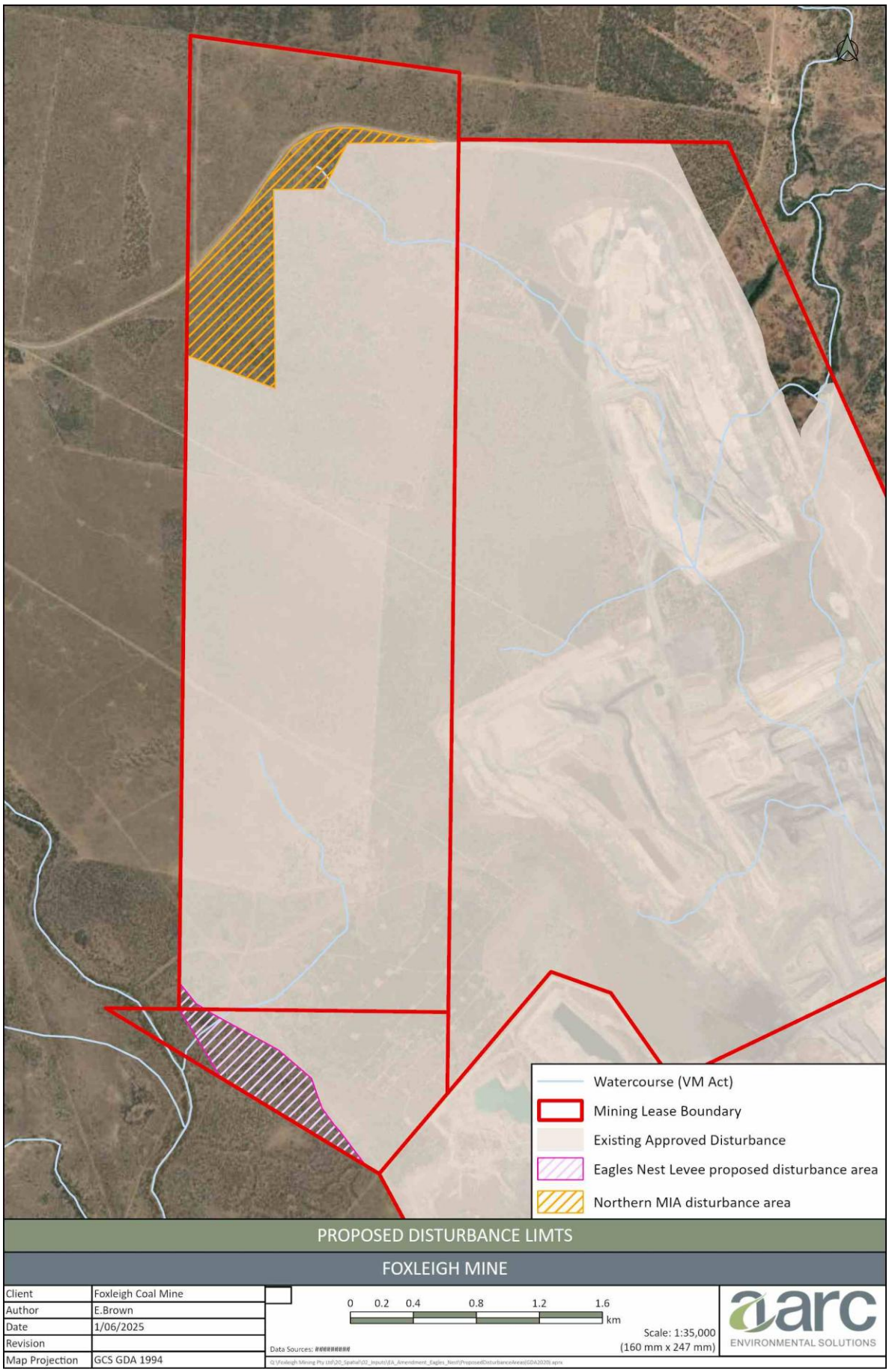

Figure 2: Proposed disturbance areas.

2 Legislative context

2.1 *Environmental Protection Act 1994*

The objective of the EP Act and its associated regulations and policies are to protect Queensland's environment while allowing for development that improves the total quality of life, both now and in the future, in a way that maintains the ecological processes on which life depends. This is commonly referred to as ecologically sustainable development. The EP Act addresses the following areas that are relevant to the Project:

- notifiable activities, that are listed in Schedule 3 of the EP Act.
- environmental protection policies for water and wetland biodiversity, noise and air which are intended to enhance or protect Queensland's environment and list relevant environmental outcomes and performance criteria.
- Prescribed Environmentally Regulated Activities defined within the EP Act and listed in schedule 2 of the Environmental Protection Regulation 2019.
- Environmental Authorities required to carry out an Environmental Relevant Activity (ERA) including a resource activity, and which will include conditions that will regulate the Project activities; and
- duties of care associated with environmental harm.

2.2 *Vegetation Management Act 1999*

The *Vegetation Management Act 1999* (Queensland) (VM Act) is part of the framework for the management of native vegetation across Queensland.

The purpose of the VM Act is to regulate the clearing of vegetation in a way that:

- conserves remnant vegetation that is an Endangered, Of Concern or Least Concern Regional Ecosystem (RE).
- conserves vegetation in declared areas.
- ensures the clearing does not cause land degradation.
- prevents the loss of biodiversity.
- maintains ecological processes.
- manages the environmental effects of the clearing to achieve the matters mentioned in the above bullet points.
- reduces greenhouse gas emissions; and
- allows for sustainable land use.

An RE is defined as a vegetation community in a bioregion that is consistently associated with a particular combination of geology, landform and soil (Neldner *et al*. 2017). Under the VM Act, each RE is classed as either Endangered, Of Concern or Least Concern. The Vegetation Management Regulation 2012 prescribes the status of each RE identified within Queensland as described in the Regional Ecosystem Description Database (DES 2023).

The VM Act does not apply to mining activities undertaken on MLs, as the consideration of impacts on native vegetation is addressed in the approval process and regulated by the conditions of the EA. However, the scientific basis for biodiversity conservation under the VM Act is still valid (including the conservation status categories of each RE) and used to assess the conservation significance of the vegetation communities.

2.3 *Nature Conservation Act 1992*

The *Nature Conservation Act 1992* (Queensland) (NC Act) and its associated Regulations provide a framework for the protection of native and threatened species. The Regulations include the Nature Conservation (Animals) Regulation 2020 and the Nature Conservation (Plants) Regulation 2020.

The Nature Conservation (Animals) Regulation 2020 and the Nature Conservation (Plants) Regulation 2020 prescribe the following classes of protected wildlife[1]:

- Extinct;
- Extinct in the wild;
- Critically Endangered;
- Endangered;
- Vulnerable;
- Near Threatened; and
- Least Concern.

The Nature Conservation (Animals) Regulation 2020 prescribes Least Concern wildlife as a Special Least Concern wildlife for the following species:

- Short-beaked Echidna (*Tachyglossus aculeatus*).
- Platypus (*Ornithorhynchus anatinus*).
- a Least Concern bird to which any of the following agreements apply: China-Australia Migratory Bird Agreement, Japan-Australia Migratory Bird Agreement, Republic of Korea-Australia Migratory Bird Agreement or the Convention on the Conservation of Migratory Species of Wild Animals.

2.4 *Environmental Offsets Act 2014*

The Queensland environmental offsets framework consists of the EO Act, Environmental Offsets Regulation 2014 and the Queensland Environmental Offsets Policy (Version 1.16) (DESI 2024a). The offsets framework requires environmental offsets to be delivered when an activity is likely to result in a significant residual impact on a prescribed environmental matter. The Significant Residual Impact Guideline (DEHP 2014) is used to assess whether an activity will result in a significant residual impact.

MSES are matters protected and regulated under Queensland legislation and are listed in schedule 2 of the Environmental Offsets Regulation.

MSES comprise:

- regulated vegetation including:
  - Endangered and Of Concern REs.
  - REs that intersect areas shown as wetlands on the Vegetation Management Wetlands map.
  - REs located within a defined distance from the defining banks of a relevant watercourse or relevant drainage feature; and
  - REs mapped as essential habitat for Endangered and Vulnerable flora and fauna.
- areas that provide connectivity and maintain ecosystem functioning.
- mapped wetlands and watercourses.

[1] Under the NC Act the term wildlife refers to any native taxon or species of an animal, plant, Protista, prokaryote or virus.

- designated precincts in a strategic environmental area under the Regional Planning Interests Regulation 2014.
- protected wildlife habitat.
- protected areas and highly protected zones of State marine parks.
- fish habitat areas.
- waterways providing for fish passage.
- marine plants; and
- legally secured offsets.

3 Desktop assessment

The following information sources have been reviewed to collate information on the terrestrial ecological values within the Project Area and surrounds, to allow assessment of environmental values associated with the Project and to identify potential prescribed matters within the Project Area.

The sources include Queensland Government mapping, past environmental reporting and database searches.

3.1 Government mapping, database searches and literature review

The following government maps have been reviewed as part of the desktop assessment:

- The Department of the Environment, Tourism, Science and Innovation (DETSI) Environmental Report: Matters of State Environmental Significance to identify known MSES within the Project area and surrounds (DETSI 2025a).
- Department of Natural Resources and Mines, Manufacturing and Regional and Rural Development (DNRMMRRD) Regulated Vegetation Management Map to identify areas of regulated vegetation, Vegetation Management REs mapping - *Vegetation management Act 1999* (VM Act) and essential habitat for protected wildlife (*Nature Conservation Act 1992* [NC Act]) within the Project area and surrounds based on central coordinates [-25.2876, 150.2943] (DNRMMRRD 2024).
- database searches to identify known records:
    - The DETSI WildNet Wildlife Records results to identify Endangered, Vulnerable, Near Threatened (EVNT) and Special Least Concern (SLC) species records (searches based on central coordinates [-22.87494, 148.73752 and -22.91886, 148.74079] with 10 km and 25 km buffers) (DETSI 2024b).
    - The Atlas of Living Australia Occurrence Records to identify EVNT and SLC species records (searches based on a 10 km and 25 km buffer of the Project area) (ALA 2025).

The findings of the desktop assessment are described in Section 3.3.

3.2 Past field surveys

3.2.1 2024 HBA Ecology Survey

Hansen Botanical Assessments (HBA) was engaged by Foxleigh to evaluate the ecological values of vegetation communities at and around the proposed Eagles Nest levee realignment area. As part of the assessment HBA conducted a field survey on February 15 and 16, 2024 (HBA 2024, Appendix E). Conditions during the field survey were considered optimal due to the hot, humid conditions and substantial recent rainfall. The study area included the proposed impact area around the levee and adjacent regions, as well as areas outside the proposed impact area to provide context for possible faunal interactions.

Remnant riparian communities were identified along Roper Creek include Queensland Blue Gum and Carbeen fringing woodland (11.3.25), flanked by a narrow strip of Poplar Box woodland (11.3.2). The rest of the study area consists of fragmented high value regrowth, primarily regrowth Poplar Box low woodland (11.3.2) and Brigalow low open forest to shrubland (11.3.1) (Figure 3). No wetlands were identified within the study area.

One endangered flora species, *Solanum elachophyllum*, was identified within the study area. No other threatened flora species were identified or considered likely to occur due to the comprehensive survey and optimal conditions. No threatened or significant fauna were observed.

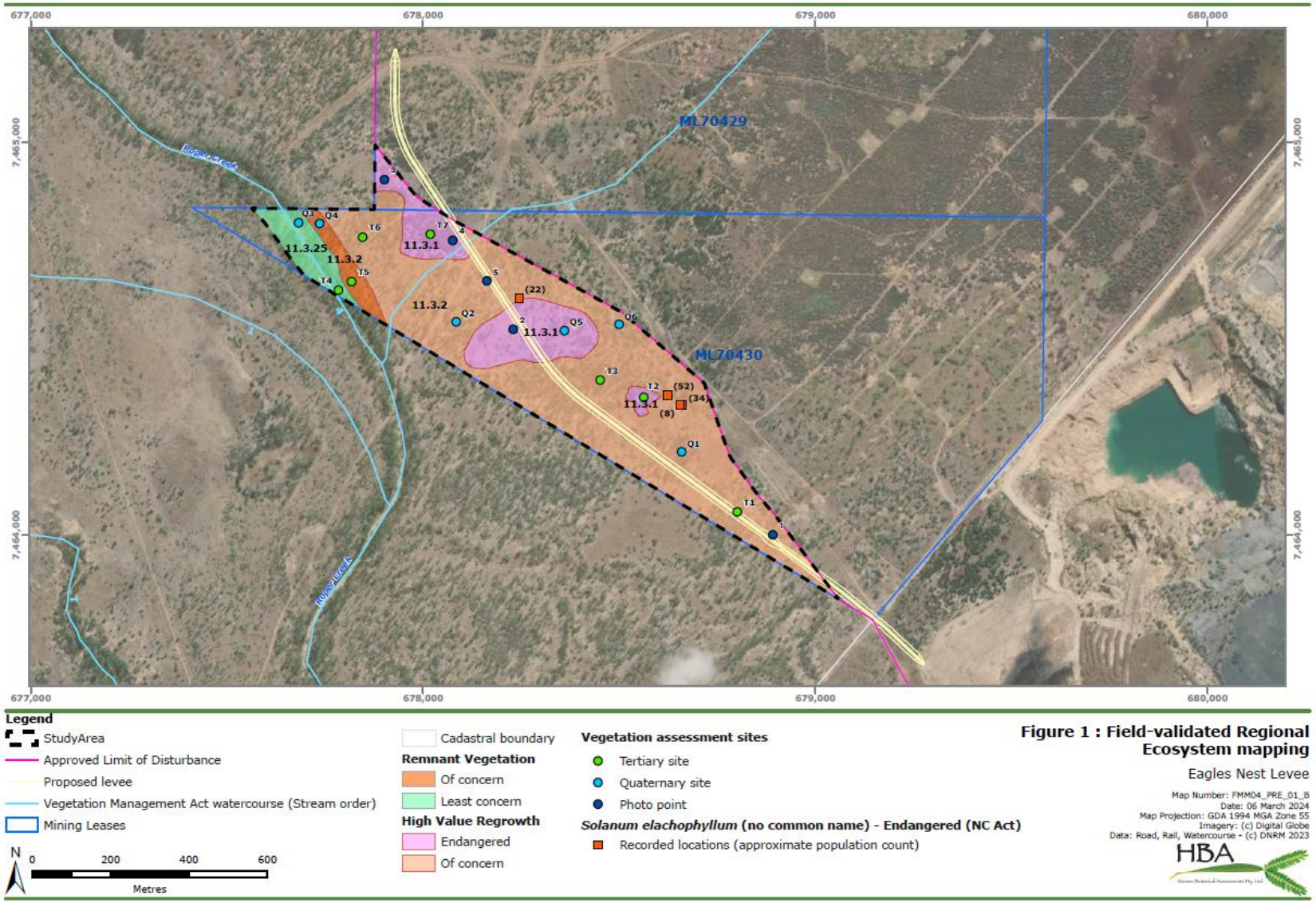

Figure 3: Field validated RE mapping (HBA 2024)

3.2.2 EIS ecology assessment

A flora and fauna terrestrial assessment was prepared by ECOSM as part of the EIS process (ECOSM 2012) to approve the extension of open cut mining. The study area included the then proposed expansion site and a portion of the then existing Foxleigh Mine (See Figure 3).

As part of the assessment, State and Commonwealth database searches were conducted within a 20 km radius of the project site (S22.8975°, E148.7720°) to identify records or potential occurrences of Threatened and Near Threatened flora and fauna species, as well as threatened ecological communities.

A late wet season flora survey was carried out from May 24 to 30, 2011, following the Methodology for Survey and Mapping of REs and Vegetation Communities in Queensland. The survey focused on areas with remnant and regulated regrowth vegetation, covering 71 sites in total: 20 Secondary, 22 Tertiary, and 29 Quaternary vegetation assessment sites.

The fauna survey took place from May 24 to 28, 2011, under clear, warm days and cool to cold nights. Various fauna survey techniques were employed, including:

- Five systematic trap transects (TS1—TS5) with pitfall traps, funnel traps, small and large Elliot traps, and cage traps.
- Spotlighting and active searching for at least one hour at each systematic survey site.
- Bird surveys each morning while checking traps.
- Additional spotlighting, bird surveys, or active searching at six supplementary survey sites (S1-S6).
- A Harp trap set at one location for two nights.
- Anabat detectors set for one night at each of seven locations (A1—A7).

Results of the assessment indicated a variety of vegetation types within the study area, including cleared grazing pastures, permanent wetlands, mid-dense regrowth shrublands, wattle scrubs, Belah open forest, sclerophyllous woodlands, and fringing open forest. Remnant vegetation from ten REs and high value regrowth (HVR) vegetation from four REs were identified, primarily around Cockatoo Creek. Moderate patches of remnant and HVR vegetation were found in the southern part of the study area, with smaller patches to the east and west of Cockatoo Creek. The north-west corner lacked remnant or HVR vegetation (See Figure 5).

An interpretation of the ECOSM assessment in regard to the proposed disturbance areas (northern MIA and levee relocation area) indicates that the proposed areas lack remnant or HVR vegetation and was extensively cleared for grazing pasture development.

The fauna survey recorded 134 species of terrestrial vertebrate fauna, including six introduced species. This comprised 94 bird species, eight amphibians, 11 reptiles, and 21 mammals. Notably, the Little Pied Bat and Cotton Pygmy-goose, both listed as Near Threatened under the NC Act, were recorded in the project site.

Results of the assessment indicated that the majority of the project site consists of cleared areas that are deemed to possess low habitat value for wildlife (ECOSM 2012).

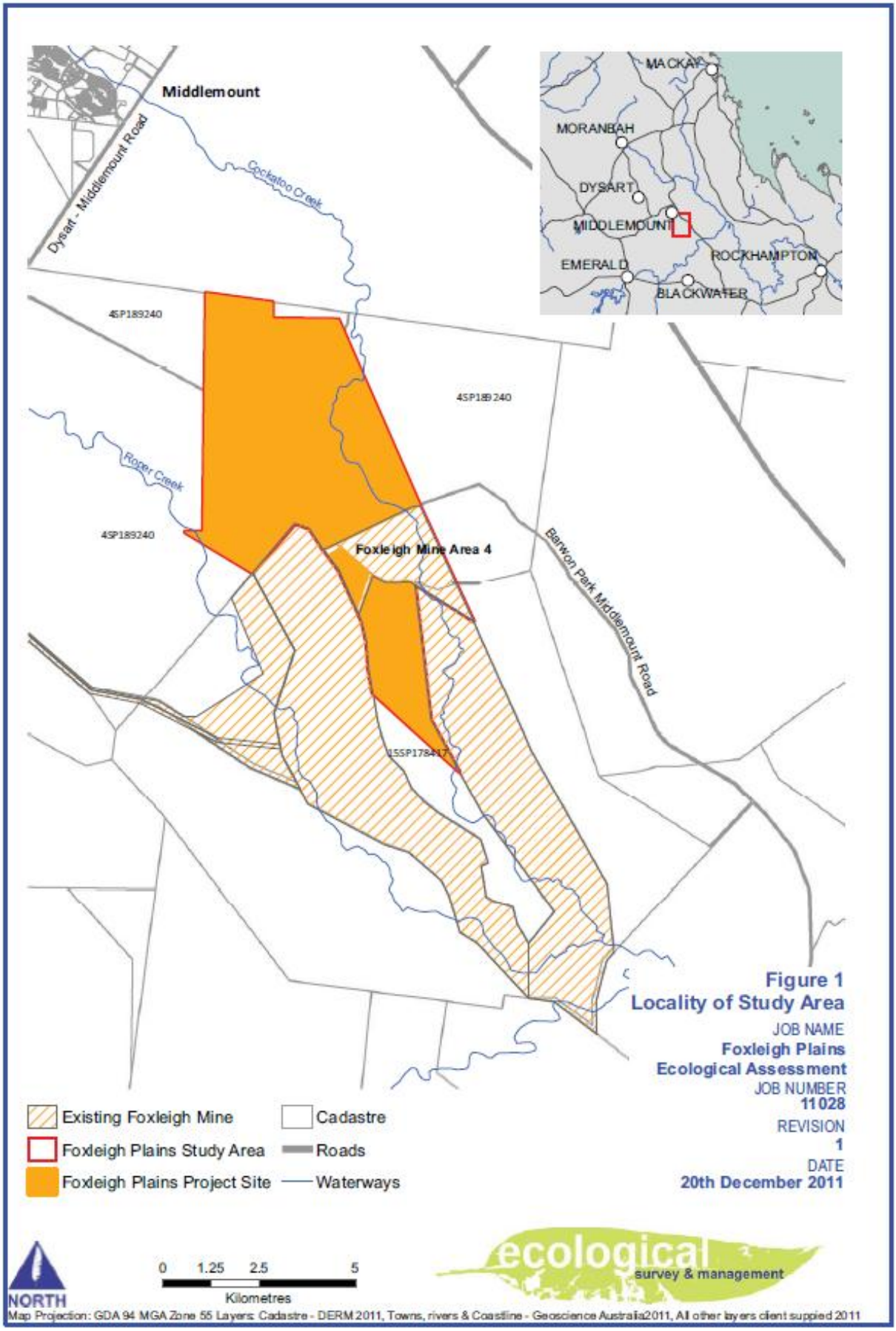

Figure 4: Terrestrial ecology flora and fauna study area for EIS process (ECOSM 2012)

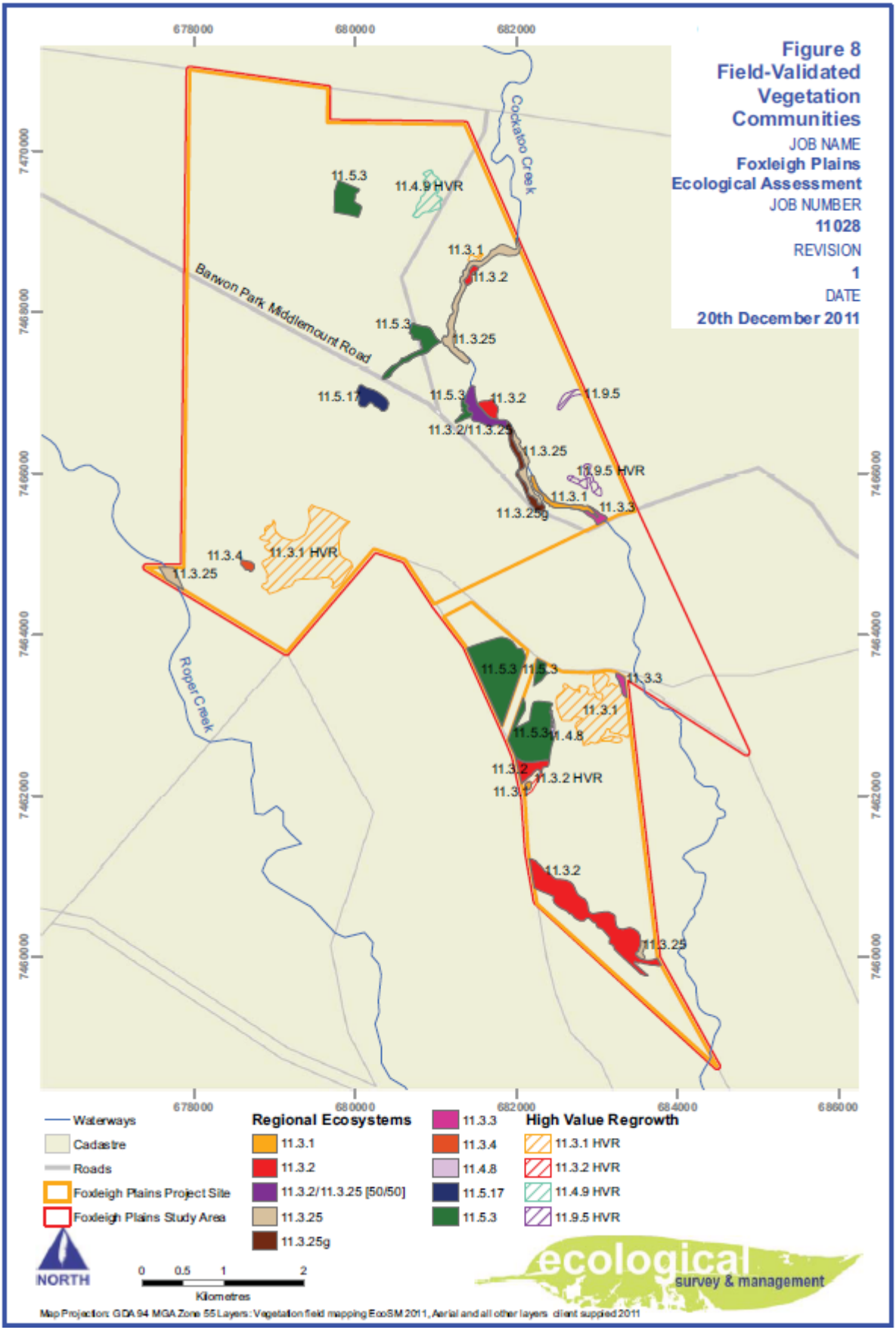

Figure 5: Field validated vegetation communities (ECOSM 2012)

3.3 Conservation significant species likelihood of occurrence

Six flora and 22 fauna species listed as Critically Endangered, Endangered, Vulnerable or SLC (non-migratory) under the NC Act were identified by the desktop assessment as potentially occurring within the levee project area (See Appendix A), no conservation significant species were identified as potentially occurring with the northern MIA project area. These species, identified by the desktop assessment, were assigned a likelihood of occurrence based on the knowledge of ecologists, species' distribution, potential habitat suitability, known records and scientific literature. The criteria used to assess the likelihood of species occurring within the study area are presented in Table 1. The likelihood of occurrence of the threatened species within the Project area is provided in Appendix B (flora) and Appendix C (fauna).

Table 1: Likelihood of occurrence criteria

Likelihood	Description
Known	The species was positively identified and recorded in the study area during the field assessment; previous records of occurrence within the study area.
Likely	The species was not recorded during the field survey or previously, however, there are known records within the surrounding area and suitable habitat exists in the study area.
Potential	The species was not recorded during the field survey or previously, however, known records occur within the surrounding area and habitat in the study area is marginal or may provide some suitability at some point during the species lifecycle.
Unlikely	Habitat in the study area might be suitable or marginal; however, the species was not recorded during the field survey, and no known records of the species exist within the surrounding area (50km), or the study area occurs outside the species current known range.

The desktop likelihood assessment concluded that several NC Act listed flora, and fauna species were classed as known, likely, or potentially to occur within proposed disturbance area. These species are listed in Table 2. Likelihood assessments were based on the known distribution and preferred habitat of the species and the identification of these habitat values during past field surveys.

All species identified to be known, likely or potentially occurring within the proposed disturbance area are assessed for significant impact in accordance with the Significant Residual Impact Guideline (DEHP 2014), in Section 6.

Table 2: Species likelihood assessment results

Scientific Name	Common Name	NC Act status	Likelihood of occurrence within the proposed disturbance area
Flora			
Solanum adenophorum	-	Endangered	Likely
Solanum elachophyllum	-	Endangered	Known
Fauna			
Denisonia maculata	Ornamental Snake	Vulnerable	Potential
Geophaps scripta scripta	Squatter pigeon (southern subspecies)	Vulnerable	Likely
Petauroides volans volans	Southern Central Greater Glider	Endangered	Likely

Scientific Name	Common Name	NC Act status	Likelihood of occurrence within the proposed disturbance area
Phascolarctos cinereus	Koala	Endangered	Likely
Tachyglossus aculeatus	Short-beaked Echidna	Special Least Concern	Likely

4 Summary MSES potentially occurring within the project area

Table 3 and Table 4 present the results of desktop assessments to determine the presence of MSES, as defined in Schedule 2 of the EO regulation within the Northern MIA and Eagle Nest Levee Project areas. Regulated vegetation, connectivity, wetland, watercourse, SEAs, fish passage, marine environment and legally secure offsets areas have been deemed absent for the impact area of the Project. However, suitable habitat for protected wildlife listed under the NC Act, has been identified within the Eagle Nest Levee proposed area and is addressed in sections 6.

Table 3: MSES with potential to occur within the Northern MIA proposed project area

MSES		Description	Presence	Source
Regulated vegetation	Endangered and Of Concern REs	Endangered and Of Concern VM Act REs	Absent	MSES report (Appendix F) verifies there are no VM Act mapped endangered or of concern REs within the northern MIA Project Area. No remnant vegetation is present within northern MIA project area (ECOSM2012).
	REs that lies within a mapped wetland	REs that intersects areas shown as wetlands on the Vegetation Management Wetlands map	Absent	MSES report (Appendix F) verifies there are no VM Act mapped wetlands within the northern MIA project area.
	RE within set buffer distance of a watercourse	REs located within a defined distance from the defining banks of a relevant watercourse or relevant drainage feature	Absent	MSES report (Appendix F) verifies there are no VM Act mapped waterways within the northern MIA project area. No remnant vegetation is present northern MIA project area (ECOSM2012).
	Essential habitat	REs mapped as essential habitat for Endangered and Vulnerable flora and fauna	Absent	MSES report (Appendix F) verifies there is no essential habitat within the northern MIA project area.
Areas that provide connectivity and maintain ecosystem functioning		Any significant impact on connectivity to an individual impact area	Absent	LFC tool (Appendix D) has determined any impact within the northern MIA project area on connectivity areas is not significant

MSES	Description	Presence	Source
Mapped wetlands and watercourses	Wetlands in a wetland protection area or wetlands of high ecological significance shown on the map of referable wetlands under the Environmental Protection Regulation 2008 (note this has been replaced with the map of Queensland wetland environmental values under the Environmental Protection Regulation 2019). Wetlands and watercourses in high ecological value waters identified in the Environmental Protection (Water) Policy 2009, schedule 1.	Absent	MSES report (Appendix F) verifies the northern MIA project area does not contain: • a wetland in a wetland protection area; or of high ecological significance shown on the map of Queensland wetland environmental values. • a wetland or watercourse in high ecological value waters.
Designated precincts in a strategic environmental area under the Regional Planning Interests Regulation 2014	SEAs include Cape York Peninsula, the Gulf Country, the Channel Country, Fraser Island Hinchinbrook Island, Wide Bay Burnett, and North Queensland	Absent	MSES Report (Appendix F) verifies the northern MIA project area does not contain strategic environmental area.
Protected wildlife habitat	Endangered, Vulnerable and SLC species listed under the NC Act. *SLC are defined under the Env Offset Regulation as the echidna and platypus.*	*Absent*	No protected wildlife habitat was identified within the northern MIA project area (ECOSM2012).
Koala Habitat in Southeast Queensland	Mapped Koala habitat in the Southeast Queensland planning area—as identified in the Southeast Queensland Regional Plan	Absent	The northern MIA project area is not within the South-East Queensland planning area.
Protected areas and highly protected zones of State marine parks	Marine parks declared under the *Marine Parks Act 2004* over Queensland state waters.	Absent	MSES Report (Appendix F) verifies the northern MIA project area does not contain protected areas or state marine parks.
Fish habitat areas	Areas within declared fish habitat areas that are management A areas or management B areas under the *Fisheries Regulation 2008*.	Absent	MSES Report (Appendix F) verifies the northern MIA project area does not contain fish habitat areas.

MSES	Description	Presence	Source
Waterways providing for fish passage	Waterway that provides for passage of fish (excluding waterways within an urban area)	Absent	QLD government mapping verifies waterways within the northern MIA project area is mapped as being low risk of adverse impact from waterway barrier works on fish passage (Section 6).
Marine plants	Marine plants under the *Fisheries Act 1994* (excluding marine plants in an urban area).	Absent	N/A
Legally secured offset areas	Legally secured offset areas as defined under the *Environmental Offsets Act 2014.*	Absent	MSES Report (Appendix F) verifies the northern MIA project area does not contain legally secured offsets.

Table 4: MSES with potential to occur within the Eagle Nest Levee proposed project area

MSES		Description	Presence	Source
Regulated vegetation	Endangered and Of Concern REs	Endangered and Of Concern VM Act REs	Absent	MSES report (Appendix G) verifies there are no VM Act mapped endangered or of concern REs within the levee relocation project area. No remnant vegetation is present within the southern project area (HBA 2024).
	REs that lies within a mapped wetland	REs that intersects areas shown as wetlands on the Vegetation Management Wetlands map	Absent	MSES report (Appendix G) verifies there are no VM Act mapped wetlands within the levee relocation area.
	RE within set buffer distance of a watercourse	REs located within a defined distance from the defining banks of a relevant watercourse or relevant drainage feature	Absent	MSES report (Appendix G) verifies there are no remnant REs within set buffer distance of VM Act mapped waterways within the levee relocation area. No remnant vegetation is present within the southern Project area (HBA 2024).
	Essential habitat	REs mapped as essential habitat for Endangered and Vulnerable flora and fauna	Absent	MSES report (Appendix G) verifies there is no essential habitat within the levee relocation project area

MSES	Description	Presence	Source
Areas that provide connectivity and maintain ecosystem functioning	Any significant impact on connectivity to and individual impact area	Absent	LFC tool (Appendix G) as determined any impact on connectivity areas within the levee relocation project area is not significant
Mapped wetlands and watercourses	Wetlands in a wetland protection area or wetlands of high ecological significance shown on the map of referable wetlands under the Environmental Protection Regulation 2008 (note this has been replaced with the map of Queensland wetland environmental values under the Environmental Protection Regulation 2019). Wetlands and watercourses in high ecological value waters identified in the Environmental Protection (Water) Policy 2009, schedule 1.	Absent	MSES report (Appendix G) verifies the Project area does not contain: • a wetland in a wetland protection area; or of high ecological significance shown on the map of Queensland wetland environmental values. • a wetland or watercourse in high ecological value waters.
Designated precincts in a strategic environmental area under the Regional Planning Interests Regulation 2014	SEAs include Cape York Peninsula, the Gulf Country, the Channel Country, Fraser Island Hinchinbrook Island, Wide Bay Burnett, and North Queensland	Absent	MSES Report (Appendix G) verifies the levee relocation project area does not contain strategic environmental area.
Protected wildlife habitat	Endangered, Vulnerable and SLC species listed under the NC Act. *SLC are defined under the Env Offset Regulation as the echidna and platypus.*	*Solanum adenophorum*	Desktop likelihood assessment (Appendix B)
		Solanum elachophyllum	Desktop likelihood assessment (Appendix B)
		Ornamental Snake	Desktop likelihood assessment (Appendix C)
		Squatter-pigeon (southern subspecies)	Desktop likelihood assessment (Appendix C)
		Southern central glider	Desktop likelihood assessment (Appendix C)
		Koala	Desktop likelihood assessment (Appendix C)
		Short-beaked Echidna	Desktop likelihood assessment (Appendix C)

MSES	Description	Presence	Source
Koala Habitat in Southeast Queensland	Mapped Koala habitat in the Southeast Queensland planning area—as identified in the Southeast Queensland Regional Plan	Absent	The levee relocation project area is not within the South-East Queensland planning area.
Protected areas and highly protected zones of State marine parks	Marine parks declared under the *Marine Parks Act 2004* over Queensland state waters.	Absent	MSES Report (Appendix G) verifies the levee relocation project area does not contain protected areas or state marine parks.
Fish habitat areas	Areas within declared fish habitat areas that are management A areas or management B areas under the *Fisheries Regulation 2008*.	Absent	MSES Report (Appendix G) verifies the levee relocation project area does not contain fish habitat areas.
Waterways providing for fish passage	Waterway that provides for passage of fish (excluding waterways within an urban area)	Present	The proposed disturbance within the pre-construction preparatory testing and construction works for the Eagle Nest Levee re alignment, will not result in the waterway barrier works.
Marine plants	Marine plants under the *Fisheries Act 1994* (excluding marine plants in an urban area).	Absent	N/A
Legally secured offset areas	Legally secured offset areas as defined under the *Environmental Offsets Act 2014.*	Absent	MSES Report (Appendix G) verifies the Project area does not contain legally secured offsets.

5 General potential impacts, avoidance, mitigation and management measures

This section assesses the potential direct impacts from the activities within the project areas. Mining activities and infrastructure that are authorised under the approved EA are not assessed.

The extent of works proposed involves the selective clearing of designated areas to facilitate the safe and effective completion of baseline environmental and geotechnical assessments required to support the design and construction of the levee re alignment and construction of a mining infrastructure area. The extent of the overall impact area for the Project is 99 ha. The project footprint has been designed as such to avoid disturbance to remnant vegetation.

5.1 Direct impacts

5.1.1 Vegetation clearing

A total of 33.3 ha of HVR will be cleared as a result of the Project.

The vegetation mapped during the field studies, provides terrestrial fauna with opportunities for foraging, breeding, nesting, predator avoidance and movement between areas, facilitates dispersal/migration and promotes genetic diversity. These opportunities could potentially be reduced for fauna by clearing associated with the proposed mining activities.

Table 5 and Figure 6 detail the proposed clearance of each vegetation community and major habitat type identified within the proposed disturbance area (Figure 6).

Table 5: Proposed disturbance of vegetation communities

RE	Vegetation community	Additional areas of disturbance (not previously approved in the EA) (ha)
Eucalypt open forest		
RE 11.3.1	Regrowth Brigalow (*Acacia harpophylla*) low open forest to shrubland	7.3
Eucalypt dry woodlands on low land		
RE 11.3.2	Poplar Box (*Eucalyptus populnea*) low woodland	26
Total		**33.3**

Opportunities will be sought to avoid clearing in sensitive areas located within the project area. Nevertheless, this assessment of impacts has adopted a conservative approach through the estimation of a maximum proposed disturbance area.

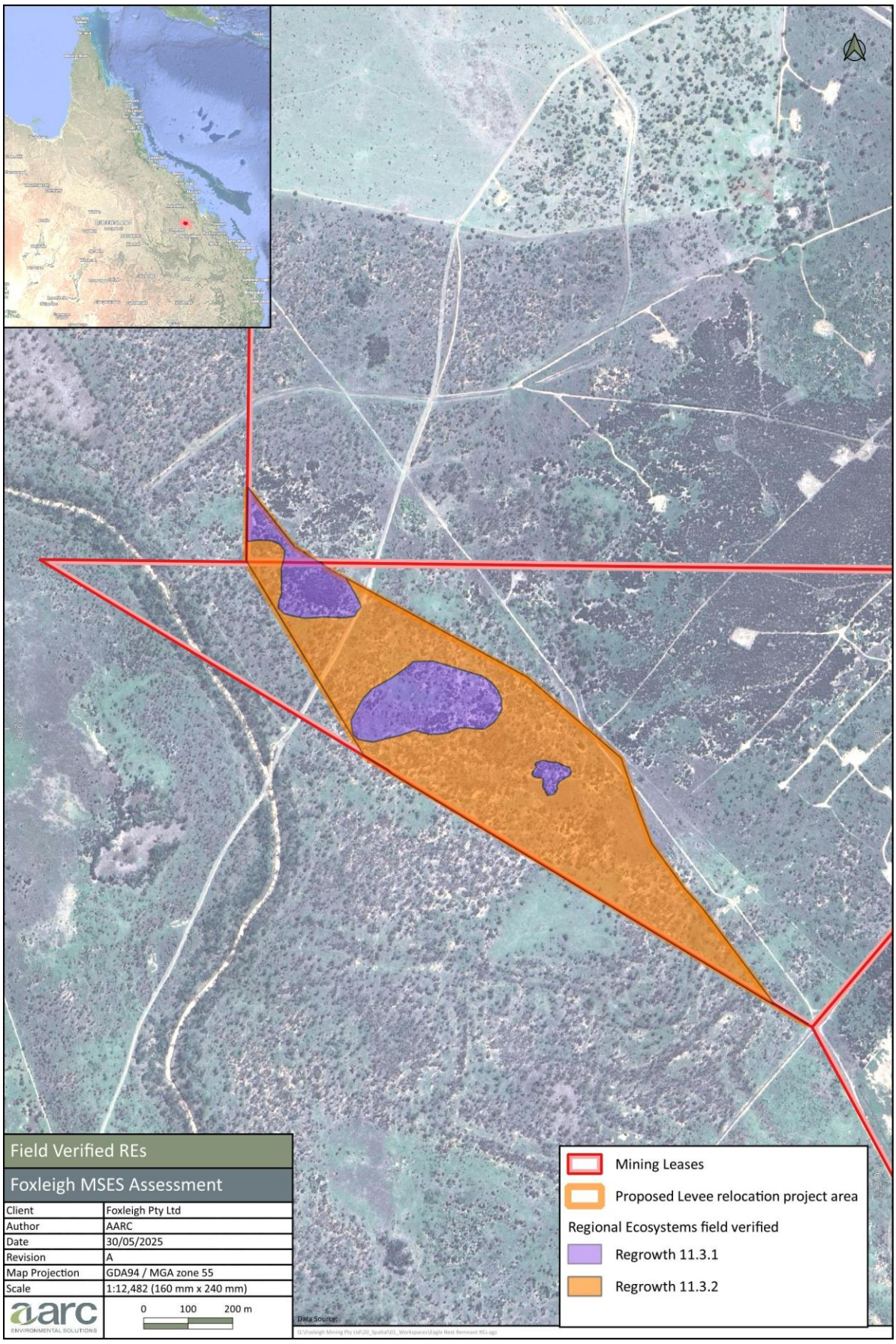

Figure 6: Proposed disturbance of Vegetation Communities

5.1.2 Vegetation clearance protocols

The following management measures are proposed to be implemented where vegetation clearance is necessary:

- Clearing activities will be undertaken progressively in accordance with the mine schedule and Project requirements and not before.
- Vegetation/habitat adjoining proposed clearance areas will be delineated and clearly marked to prevent accidental damage through a 'Permit to Disturb' process.
- Areas to be cleared will be inspected to identify fauna at direct risk from clearing activities, and an appropriately qualified fauna spotter/catcher will be present during clearing.
- Broadscale vegetation clearing is to be undertaken towards retained vegetation to prevent isolation and allow movements of fauna.
- Trees bordering vegetation will be felled in the direction of the clearance zone to avoid impacts to adjoining retained vegetation and habitat.
- Clearing operations will be managed to maximise the reuse of cleared vegetative material. This will include the salvage and reuse of select habitat resources from the cleared vegetation (e.g. logs) for habitat enhancement either in the rehabilitation program or elsewhere on site.

5.1.3 Rehabilitation

Land disturbed by mining activities will be rehabilitated progressively as it becomes available. Details of the proposed rehabilitation program are provided in the Progressive Rehabilitation and Closure Plan (PRCP) prepared for the Foxleigh Mine, as approved by DETSI on the 6 February 2025 (Fox 2025). In accordance with the policy objectives defined in the 'Mined Land Rehabilitation Policy' (Queensland Government 2018), the general rehabilitation goals for the Project are to leave an area that is safe and stable, does not cause environmental harm and is able to sustain the post-mining land use approved in the PRCP.

5.2 Indirect impacts

5.2.1 Habitat fragmentation

Vegetation clearing can result in a variety of environmental consequences, including habitat fragmentation reducing connectivity and reduced habitat value (through the impact of edge effects). Habitat fragmentation can impact both flora and fauna species. Often clearing activities form barriers that restrict and impair the movement of fauna species, resulting in lowered habitat connectivity.

Edge effects are impacts that occur along the boundary of vegetation and cleared or developed land. This boundary is exposed to increased light, wind shear and weed invasions augmenting the local environment (e.g. altered species and structural composition).

However, extensive clearing has already been undertaken within and surrounding the project area. Specifically, the disturbance within the project area will not result in any disturbance to remnant vegetation.

Further, the avoidance, mitigation and management measures that have been described for direct vegetation clearance (section 5.1.1) are also relevant to minimising habitat fragmentation and impacts on connectivity.

5.2.1 Vehicle strike

The movement of vehicles on the project area has the potential to increase the incidence of fauna mortality via vehicular strike. Ground-dwelling fauna are most susceptible to this potential impact. The risk of injury or

mortality from vehicle strike, particularly for Koala, is greatest were roads cross fauna movement corridors. Squatter Pigeon (Southern) and Short-beaked Echidna are at risk of vehicle strike along unsealed roads and tracks where they rest and dust-bathe, or where favourable conditions are adjacent to roads with high vehicular activity (DCCEEW 2024a).

Contributing risk factors for vehicle strike are the speed of vehicles on roads and tracks and limiting speed can reduce the threat of vehicle strike to fauna species such as Koala. Speed limits will continue to be imposed on Project roads and tracks to reduce the risk of vehicle strike on native fauna.

5.2.2 Weeds and pests

Introduced flora species are effective competitors for resources and have the potential to reduce the floristic structure and diversity of native plant communities.

Activities that could introduce or spread weeds include soil disturbance and vehicle movements. Vegetation clearing can also result in 'edge effects,' when the clearing activities cause modifications to the interface with natural habitats.

Introduced fauna species present a risk to native fauna and their habitat. Feral cats and foxes are considered likely to pose the greatest risk of predation for the Squatter Pigeon (Southern) and the Short-beaked Echidna. Feral cats and foxes have also been recorded to predate Greater Glider, with increased susceptibility to predation following fires (DCCEEW 2022). Predation from feral cats and foxes is, however, considered a minor threat to Greater Glider as a species. Wild dog can predate Koala; however, this is considered a minor threat to the species. Domestic dog attacks, on the other hand, are considered a significant threat to Koala in areas adjacent to peri-urban and residential areas (DAWE 2022).

Weed and Pest Management will continue to be enforced for the Foxleigh Mine. Weed and Pest Management includes:

- inspections within the MLs to identify areas requiring weed management to be implemented.
- weed management measures (e.g. mechanical removal and application of approved herbicides) based on weed control strategies outlined by the Department of Agriculture and Fisheries.
- requirements for maintenance of a clean, rubbish-free environment to discourage scavenging and reduce the potential for colonisation of these areas by introduced fauna.
- requirements for storage of domestic waste in appropriate receptacles and locations; and
- feral animal control strategies based on pest control strategies outlined by the Department of Agriculture and Fisheries (DAF), and/or relevant best practice manuals.

It is considered unlikely that disturbance within the project area will significantly increase the occurrence or diversity of weeds or feral pests with the proposed management measures.

5.2.3 Bushfire

While plants and animals have a range of mechanisms to survive individual fires, accidental bushfires could potentially occur if mine activities are not appropriately managed.

Bushfire prevention and management measures will continue to be implemented at Foxleigh Mine, and fire awareness will be included in the induction of personnel and contractors to minimise the risk of bushfire. This also is a critical health and safety requirement for mining activities. Given the implementation of management measures, the Project is unlikely to increase the bushfire potential within the surrounding landscape.

5.2.4 Hydrological changes

The proposed additional disturbance will not alter hydrological regimes, beyond what is already approved under the existing EA. Clearing will be restricted to designated areas to facilitate the safe and effective completion of baseline environmental and geotechnical assessments required to support the design and construction of the levee re alignment and construction of a mining infrastructure area.

5.2.5 Erosion and sedimentation

Vegetation clearing and land disturbance may result in topsoil exposure and erosion.

The disturbance within the project area has the potential to result in erosion and sedimentation of waterways through the clearing of vegetation.

Vegetation clearance protocols, as described in Section 5.1.2, and erosion and sediment control measures will be implemented to minimise potential impacts. The Foxleigh Sediment and Erosion Control will be implemented across the project area. Mitigation measures required under this plan include, but are not limited to, the construction of sediment and erosion control devices (e.g. sediment basins or coir logs).

5.2.6 Dust

The project proposes limited land clearing and disturbance for a levee realignment and a laydown infrastructure area (Figure 2), which is limited to a 99 ha area. Vegetation clearing, topsoil excavation and haulage, and associated vehicle movements have potential to generate and disperse atmospheric dust.

Studies have shown that excessive dust generation can impact the health and viability of surrounding vegetation. However, studies on the impacts of dust from unsealed roads on vegetation and fauna (Cumberland Ecology 2015; Jones *et al.* 2016) found no evidence that dust has any detrimental impacts on vegetation or fauna abundance.

Dust control measures will be employed, including personnel and contractors will be required to observe speed limits when driving on access roads and surrounds to minimise the generation of dust, watering of potential dust generating surfaces, and progressive rehabilitation of disturbance areas (such as mine waste rock emplacements) to minimise dust emissions.

Given the predicted dust deposition associated with the operation of Foxleigh Mine, including the Project area, and the suggested control measures, the health and viability of surrounding vegetation and local fauna will not be deleteriously affected.

6 Significant residual impact assessment

The relevant MSES identified as either currently present or likely to occur in the proposed additional disturbance area are based on the terrestrial ecology assessments detailed in Section 4. A summary of the potentially occurring MSES is also provided in the same section. The MSES pertinent to the Project include:

- protected wildlife habitat.

The impact assessments described in section 6.1 consider the potential impacts, avoidance, mitigation and management measures described in Section 5.

6.1 Protected wildlife habitat

Protected wildlife habitat includes an area of habitat for Endangered, Vulnerable or the non-migratory SLC animals (Short-beaked Echidna (*Tachyglossus aculeatus*), and Platypus (*Ornithorhynchus anatinus*)) (DEHP 2014).

The desktop assessment (Appendix A) identified six flora, and 22 fauna species listed as Critically Endangered, Endangered, Vulnerable or SLC (non-migratory) under the NC Act were as potentially occurring within the levee project area. These species, identified by the desktop assessment, were assigned a likelihood of occurrence based on the knowledge of ecologists, species' distribution, potential habitat suitability, known records and scientific literature (Appendix B and Appendix C).

Two flora species and four fauna species listed under the NC Act as Endangered or Vulnerable have been assessed as known, likely, or potentially to occur within the Project area:

- *Solanum adenophorum*;
- *Solanum elachophyllum*;
- Ornamental Snake;
- Squatter pigeon;
- Greater Glider; and
- Koala.

The Short-beaked Echidna, which is listed as a non-migratory SLC species under the NC Act, was determined potentially to occur within the study area (See Appendix C).

The ornamental snake and squatter pigeon are also listed as threatened under the EPBC Act, and the likelihood of significant residual impacts to the species and their habitats within the Project area, including the additional disturbance area, have been addressed and assessed previously in the EPBC Approval 2010/5421. The Queensland Environmental Offsets Policy establishes an environmental offset hierarchy to avoid duplication of offset conditions between jurisdictions. State and local governments may only impose an offset condition if "the same, or substantially the same, impact and the same, or substantially the same, matter" has not been subject to assessment under the Commonwealth. Consequently, the residual impact assessment for these species is not addressed in this report.

Assessments of the likelihood of significant impacts on the *Solanum adenophorum*, *Solanum elachophyllum*, Greater Glider, Koala and Short-beaked Echidna are provided in the following sections.

6.1.1 *Solanum adenophorum*

Solanum adenophorum is a perennial herb that grows up to 40 cm high. It features annual stems that are green and covered with fine glandular hairs. The stems, leaves, leaf stalks, flower stalks, and the base of the flowers are armed with prickles measuring 1-7 mm long.

Solanum adenophorum is endemic to central-eastern Queensland, specifically the Dingo - Nebo - Clermont area. It primarily occurs in brigalow woodlands and on very gently inclined slopes. It is also found in gidgee (*Acacia cambagei*) scrub on deep cracking clay soils.

Threats to the *solanum adenophorum* include (Fensham *et al.* 2019):

- Habitat loss and fragmentation due to extensive clearing of its natural habitat, particularly the brigalow forests, has led to a significant reduction in available habitat.
- Invasive Species: The invasion of exotic grasses, especially those used for pastures, poses a major threat. These grasses can outcompete *Solanum adenophorum*.
- Edge Effects: Many of the remaining populations are in habitat fragments with high edge-to-area ratios, making them more vulnerable to environmental changes and invasive species.

Database searches identified records of the species within 25 kilometres of the Project area. However, *Solanum adenophorum* has not been recorded during any field surveys conducted within the Project area to date. Nonetheless, clearing of 7.3 ha of suitable regrowth brigalow woodland on cracking clay soils within the levee relocation project area may provide potential habitat for this species.

Table 6 provides an assessment of the likelihood of significant impacts on the *Solanum adenophorum* in accordance with the Significant Residual Impact Guideline (DEHP 2014).

Table 6: Solanum adenophorum significant impact assessment

Significance criteria	**Assessment of significance**
An action is likely to have a significant impact on endangered and vulnerable wildlife if the impact on the habitat is likely to:	
A long-term decrease in the size of a local population	*Solanum adenophorum* is endemic to central-eastern Queensland, its natural distribution is limited to the Dingo - Nebo - Clermont area. The species has not been recorded within the project area; however, it has been observed in locations near the Project area (8 km to the north-west) in regrowth Brigalow on cracking clays (HBA 2024). It is unlikely that the Project will lead to a long-term decrease in the local population as there is no confirmed population in the Project area and suitable habitat occurs across a broader area than the Project footprint.
A reduced extent of occurrence of the species	As there is no confirmed population in the Project area, the Project is unlikely to reduce the extent of occurrence of this species. The Project is also not near the edge of the known distribution of the species.
Fragmentation of an existing population	The Project is unlikely to fragment a population of *Solanum adenophorum*. The species has not been recorded in the impact area and the removal of 7.3 ha of potential habitat is considered unlikely to result in fragmentation of an existing population. To minimise impacts on individuals that may be present in the impact area, pre-clearance surveys will be conducted by a suitably qualified person. Should any individuals or populations be identified, measures will be implemented to avoid impacts as far as practical.

Significance criteria	Assessment of significance
Genetically distinct populations forming as a result of habitat isolation	It is unlikely that the Project will result in genetically distinct populations for the species. Similar quality habitat exists outside of project area. Furthermore, the Project will not isolate habitat for this species across the broader area. The Project will therefore be unlikely to result in genetically distinct populations due to habitat isolation.
Invasive species that are harmful to an endangered or vulnerable species becoming established in the endangered or vulnerable species' habitat	A threatening process to *Solanum adenophorum* is reduced habitat availability and invasive weeds. The Foxleigh Mine weed and pest management procedures will be reviewed and where necessary, updated to incorporate the Project. Weeds and feral animals' risk will continue to be managed with procedures as specified in section 5.2.2. The Project is considered unlikely to result in the introduction of any new pest species.
Introduction of disease that may cause the population to decline	Disease is not recognised as a threat to *Solanum adenophorum*. Given this, it is unlikely that the Project will introduce diseases that cause the species to decline.
Interference with the recovery of the species	There is no adopted or made Recovery Plan and no management recommendations for *Solanum adenophorum*. The Project will not interfere with the recovery of the species. Suitable species habitat will remain adjacent to the impact area.
Disruption to ecologically significant locations (breeding, feeding or nesting sites) of a species	Management measures to ensure indirect impacts from aspects such as weeds will be put in place. Large areas of suitable and known habitat will remain. Based on the management measures to be implemented, outlined in Section 5.2, indirect impacts are unlikely to have a significant impact on areas that have potential to occasionally support this species. It is anticipated that based on implementation of management strategies that impacts on habitat quality of areas of suitable habitat will be controlled.
Conclusion	The Project is unlikely to result in a residual significant impact to *Solanum adenophorum*.

6.1.2 *Solanum elachophyllum*

Solanum elachophyllum is a sprawling or erect, rhizomatous, perennial grey-green shrub that grows to a height of 0.1 to 0.4 metres. Juvenile branchlets are armed with up to 30 prickles per decimetre, each measuring 6 to 12 mm in length. Adult branches are white, grey, or brown and feature 15 to 50 straight, acicular prickles per decimetre, each 7 to 10 mm long.

This species is endemic to Queensland, Australia, and is restricted to the central subcoastal region of the state. While the species description states that the species distribution extends from Middlemount to Theodore (DETSI 2024), there are records of the species further north, near Nebo. It typically grows on fertile cracking clay soils within open forests dominated by *Eucalyptus thozetiana* and *Acacia harpophylla*, with an understorey comprising *Geijera parviflora, Casuarina cristata, Macropteranthes leichhardtii*, and *Eucalyptus cambageana*. It is also found in woodlands dominated by *Eucalyptus crebra* and *E. tenuipes*.

Threats to *Solanum elachophyllum* (Fensham *et al.* 2019) include:

- Habitat loss and fragmentation: Extensive clearing of its natural habitat, particularly brigalow forests, has significantly reduced the extent of suitable habitat.
- Invasive species: The spread of exotic grasses, particularly pasture species, poses a major threat as they can outcompete S. elachophyllum for resources.
- Edge effects: Remaining populations are often confined to small habitat fragments with high edge-to-area ratios, increasing their vulnerability to environmental changes and invasion by weeds.

A desktop assessment was undertaken using relevant databases—including Wildlife Online, WildNet, the Regulated Vegetation Management Map, and Atlas of Living Australia occurrence records—to identify known records of *S. elachophyllum* within the vicinity of the project. This assessment also included a review of previous findings within the levee relocation project area.

Several records were identified within 10 km of the project area during the database searches.

During the 2024 field survey (HBA 2024), this species was recorded at two primary locations within the levee relocation project area, totalling 116 individuals. All observed individuals were found beneath regrowth brigalow trees or stags. However, the field assessment suggests that the broader community, comprising both regrowth regional ecosystems within the study area (REs 11.3.1 and 11.3.2), may serve as suitable habitat for the species (HBA 2024). Although the observed populations occupied a relatively small area (less than 20 m²), the project area includes 7.3 hectares of regrowth brigalow woodland and 26 hectares of regrowth poplar box woodland, both of which are considered to have the potential to provide suitable habitat for this species.

Table 7 provides an assessment of the likelihood of significant impacts on the *Solanum elachophyllum* in accordance with the Significant Residual Impact Guideline.

Table 7: Solanum elachophyllum significant impact assessment

Significance criteria	**Assessment of significance**
An action is likely to have a significant impact on endangered and vulnerable wildlife if the impact on the habitat is likely to:	
A long-term decrease in the size of a local population	It is proposed that approximately 116 individuals of this species will be cleared as part of the Project. 33.3 hectares of suitable habitat for the species is proposed to be cleared by the project. However, this species is relatively commonly occurring in the region as identified in previous environmental impact studies for the site (HBA 2024). Additionally, significant suitable habitat has been identified to the south of the project, comprising 128.9 hectares of RE 11.3.1 and 63.6 hectares of RE 11.3.2 (ECOSM 2012). The project will decrease the size of the population within the Project area; however, it is unlikely that the Project will lead to a long-term decrease in the local population of the region, as suitable habitat occurs across a broader area than the Project footprint as large populations of the species have been identified for the broader Foxleigh plains area (HBA 2024).
A reduced extent of occurrence of the species	*Solanum elachophyllum* is known to occur over a relatively broad range between Nebo in the north-east, Emerald in the west, Rolleston in the south-west, Rockhampton in the east and Theodore in the south. While the Project will disturb individuals of the species within the project area, based on the location and size of the project in relation to the known distribution of the species and available habitat the proposed impact is unlikely to reduce the extent of occurrence of this species as defined by IUCN (2012). The Project is not near the edge of the known distribution of the species.
Fragmentation of an existing population	The clearing proposed within the Project area will result in the removal of the local population in its entirety, however, in relation to the regional population the impact is not considered significant, large populations of the species have been identified for the broader Foxleigh plains area (HBA 2024)
Genetically distinct populations forming as a result of habitat isolation	It is unlikely that the Project will result in genetically distinct populations for the species. Within the project area, the species was only recorded at two distinct locations in area less than 20m2 (HBA 2024), therefore, this population is inferred to be already separate from other populations in the region. Thus, no isolation of other populations will result from the Project. Similar quality habitat exists outside of the impact area and the Project will not isolate habitat for this species across the broader area. The Project will therefore be unlikely to result in genetically distinct populations due to habitat isolation.

Significance criteria	Assessment of significance
Invasive species that are harmful to an endangered or vulnerable species becoming established in the endangered or vulnerable species' habitat	The project is located within a highly modified rural landscape, in the vicinity of mining infrastructure. Introduced plants and pest species have been already recorded within the Project area (HBA 2024). The Foxleigh Mine weed and pest management procedures will be reviewed and where necessary, updated to incorporate the Project. Therefore, it is unlikely the Project would result in the establishment of new invasive species in the Project area. Weeds and feral animals' risk will continue to be managed with procedures to: • prevent the introduction of new weeds through the early detection of, and rapid response to new weeds. • identifying and controlling the spread of weeds and feral animal populations at • the site. • raising awareness and understanding of the risks associated with weeds and feral animals; and • ensuring compliance with regulatory and company requirements. Weed hygiene protocols will continue to be implemented.
Introduction of disease that may cause the population to decline	Disease is not recognised as a threat to *Solanum elachophyllum*. Given this, it is unlikely that the Project will introduce diseases that cause the species to decline
Interference with the recovery of the species	There is no adopted or made Recovery Plan and no management recommendations for *Solanum elachophyllum*. Abundant suitable habitat for the species will remain close to the impact area, therefore, the Project will not interfere with the recovery of the species.
Disruption to ecologically significant locations (breeding, feeding or nesting sites) of a species	Management measures to ensure indirect impacts from aspects such as weeds will be put in place. Large areas of suitable and known habitat will remain. Based on the management measures to be implemented, outlined in Section 5.2, indirect impacts are unlikely to have a significant impact on areas that have potential to occasionally support this species. It is anticipated that, based on implementation of management strategies, impacts on habitat quality of areas of suitable habitat will be controlled.
Conclusion	The Project is considered unlikely to result in a residual significant impact to *Solanum elachophyllum.* The local population of the species is small when compared to other populations within the Project area, where large populations of the species have been identified for the broader Foxleigh plains area (HBA 2024).

6.1.3 Greater Glider

The Greater Glider (southern and central) (Petauroides volans) is listed as Endangered under the Nature Conservation Act 1992 (NC Act). This arboreal, nocturnal marsupial is restricted to eastern Australia, with a distribution that extends from the Windsor Tableland in north Queensland to central Victoria. It occupies habitats from sea level up to elevations of approximately 1200 metres above sea level (DCCEEW 2022).

Greater Gliders are typically found in eucalypt-dominated forests and woodlands, where they feed primarily on eucalypt leaves and, occasionally, flowers. They show a preference for taller, moist montane eucalypt forests containing mature trees with abundant hollows. Forests with a high diversity of eucalypt species are also favoured, as this diversity supports seasonal variation in the gliders' preferred food sources (DCCEEW 2022). During the day, individuals shelter in tree hollows, with a strong preference for large hollows in old trees. Suitable habitat generally supports at least two hollow-bearing trees per two hectares of forest (DCCEEW 2022; Kerswell *et al.* 2020).

Home ranges are relatively small, typically between one and four hectares, but may expand up to 19 hectares in lower productivity forests and more open woodlands (DCCEEW 2022). Due to their limited dispersal ability and small home ranges, Greater Gliders are poor at moving across non-native vegetation or cleared areas. While the species has been recorded in habitat patches smaller than 10 hectares, these fragmented populations are considered to have low viability due to low reproductive output, sensitivity to disturbance, and exposure to edge effects (DCCEEW 2022).

The main threats to the Greater Glider include (DCCEEW 2022):

- inappropriate fire regimes;
- habitat clearing and fragmentation;
- timber harvesting;
- barbed wire fencing (entanglement);
- increased temperatures and altered rainfall patterns;
- hyper-predation by owls;
- competition from Sulphur-crested Cockatoos;
- predation by Feral Cats; and
- predation by European Red Foxes.

A desktop assessment was undertaken using data from Wildlife Online, WildNet, the Regulated Vegetation Management Map, and the Atlas of Living Australia, along with a review of previous studies within the project area. Several records of the Greater Glider were identified within ten kilometres of the project area. Additionally, the species has been recorded during earlier surveys in the region (ISON 2010; ECOSM 2012), including in Blue Gum riparian woodland along Roper Creek (ISON 2010).

The most recent conservation advice (DCCEEW 2022) outlines several key factors to identify habitat critical to the survival of the Greater Glider:

- Large, contiguous areas of eucalypt forest containing mature hollow-bearing trees and a diversity of preferred food species.
- Smaller or fragmented habitat patches that are connected to larger patches, enabling dispersal and recolonisation.
- Cool microclimate forest or woodland areas (e.g. sheltered gullies, high elevation sites, southern slopes, or coastal lowlands).
- Areas identified as climate change refuges; and
- Short- or long-term post-fire refuges (e.g. unburned habitat within or adjacent to recently burned areas that support species persistence and recovery).

The conservation advice also notes that, where hollow-bearing trees cannot be directly observed, a diameter at breast height (DBH) of more than 30 cm can be used as a proxy (Eyre *et al.* 2021). However, more recent guidance specific to Queensland (Eyre *et al.* 2022) suggests that denning trees typically have a DBH greater than 50 cm, with an average DBH threshold of >46 cm across nearly half of the REs known to support Greater Glider habitat. Accordingly, this assessment has adopted the more recent DBH thresholds from Eyre *et al.* (2022) when considering potential breeding places.

Key habitat features for the Greater Glider include:

- a continuous canopy of eucalypt species to support movement and dispersal;
- the presence of mature hollow-bearing trees with suitably sized and aged hollows; and
- a variety of the species' preferred food trees.

Areas within the Project area were assessed as unsuitable (i.e., not critical to the survival) habitat for the Greater Glider, as detailed in Table 8.

Table 8: Greater Glider habitat in the Project area

Habitat description	**Relevant features present within the Project area**
Unsuitable habitat	
Habitat is considered unsuitable for the Greater Glider if: • the canopy is not continuous *Eucalyptus spp*., or it is not dense enough for the species to disperse; and • does not present hollow-bearing trees nor trees with dbh >46 cm.	Habitat within the project area has been assessed as unsuitable for the Greater Glider. These communities, shown in Figure 6, are: • Non-remnant vegetation, due to the absence of mature hollow-bearing trees and/or sufficient canopy density and height to facilitate the species dispersal (including regrowth).

Table 9 provides an assessment of the likelihood of significant impacts on the Greater Glider in accordance with the Significant Residual Impact Guideline.

Table 9: Greater Glider significant impact assessment

Significance criteria	Assessment of significance
An action is likely to have a significant impact on endangered and vulnerable wildlife if the impact on the habitat is likely to:	
A long-term decrease in the size of a local population	There is no suitable habitat for the species within the project area. Suitable habitat close to the Project area is mainly recorded within narrow riparian corridors associated with Roper Creek. The species has not been recorded within the project area; however, a pre-clearance survey will be carried out, and suitably qualified fauna spotter catchers will be present during the clearing activities. This will enable the detection of the species, and the implementation of any necessary mitigation actions should the species be observed. It is unlikely that the Project will lead to a long-term decrease in the local population as there is no confirmed population or suitable habitat in the Project area. Suitable habitat occurs across a broader area than the Project footprint.
A reduced extent of occurrence of the species	The Project is not near the edge of the known distribution of the species.
Fragmentation of an existing population	The Project is unlikely to fragment a population of Greater Glider. Connectivity between other preferred patches in areas of habitat will remain. Due to the availability of suitable habitat, and with no records of this species within the Project area, fragmentation of the existing population is not anticipated to be an issue.
Genetically distinct populations forming as a result of habitat isolation	It is unlikely that the Project will result in genetically distinct populations for the species. Preferred habitat for the species will remain in the region, no removal of habitat within riparian corridors will be conducted as part of the Project, therefore it is considered unlikely to result in the formation of genetically distinct populations.
Invasive species that are harmful to an endangered or vulnerable species becoming established in the endangered or vulnerable species' habitat	The Foxleigh Mine weed and pest management procedures will be reviewed and where necessary, updated to incorporate the Project. Weeds and feral animals' risk will continue to be managed with procedures to: • prevent the introduction of new weeds through the early detection of, and rapid response to new weeds. • identifying and controlling the spread of weeds and feral animal populations at • the site. • raising awareness and understanding of the risks associated with weeds and feral animals; and • ensuring compliance with regulatory and company requirements. The Project is considered unlikely to result in the introduction of any new pest species.
Introduction of disease that may cause the population to decline	Currently, there are no known diseases harmful to greater glider. Proposed Project activities such as vegetation clearing are considered unlikely to introduce disease that may cause the species to decline.
Interference with the recovery of the species	Habitat within the Project area is considered unsuitable for the species. The abundance of preferred habitat outside the Project area means the Project is unlikely to interfere with the recovery of the species.

Significance criteria	Assessment of significance
Disruption to ecologically significant locations (breeding, feeding or nesting sites) of a species	The habitat within the impact area is not considered suitable to support or provide refuge for a population of Greater Gliders. However, it can facilitate their movement. While the area contains features that support foraging, the absence of appropriately sized hollow-bearing trees makes it unlikely to be used for denning. Although this habitat will be disturbed due to clearing activities, preferred habitats with essential features will remain outside the Project area. Therefore, clearing within the Project area is unlikely to disrupt ecologically significant locations.
Conclusion	The Project is unlikely to result in a residual significant impact to Greater Glider

6.1.4 Koala

The Koala (*Phascolarctos cinereus*) is listed as Endangered under the NC Act.

To gain an understanding of the Koala (*Phascolarctos cinereus*), and its preferred habitat and ecology, several resources were consulted to pre-determine habitat to be targeted during the field surveys. This included, but was not limited to:

- Queensland Threatened Species Program;
- Commonwealth Listing Advice;
- Commonwealth Approved Conservation Advice;
- Queensland Government Species profile; and
- Species Profile and Threats Database (SPRAT);

Koalas are a semi-arboreal marsupial that is endemic to Australia (DAWE 2022a; Youngentob *et al.* 2021). They live along the eastern coast of Australia. The species distribution spans from coastal to semi-arid climate to the west (DAWE 2022a, 2022b).

Due to their wide distribution, koala habitat preferences can differ between local populations and are unable to be generalised. The Koala is a specialist folivore and preferred habitats are primarily dominated or associated with *Eucalyptus* spp., which are their primary food source (Youngentob *et al.* 2021). They can, however, feed on other foliage including *Corymbia* spp. and *Angophora* spp. and can be found outside of the geographic range of *Eucalyptus* spp. (Youngentob *et al.* 2021). The koala is primarily nocturnal and can be found sleeping on tree branches with no distinction made between foraging and sheltering trees (Youngentob *et al.* 2021). The 'National Recovery Plan for the Koala *Phascolarctos cinereus* (combined populations of Queensland, New South Wales and the Australian Capital Territory)' (DAWE 2022b) defines a patch of habitat as 'all the necessary resources for the persistence of a population and that is separated from other patches by inhospitable habitat.'

Females commonly live until 13-14 years and have been documented to live until 18 years in the wild, while males generally live until 12 years old (DAWE 2022a, 2022b). Koalas reach sexual maturity between 2-3 years for females and 4 years for males with most births occurring between October and May (DAWE 2022a). Females will usually produce one offspring per year with variability in reproduction occurring from differences in seasonality between northern and southern populations (DAWE 2022a, 2022b). Joeys will travel with their mother until they reach approximately 12 months old and are weaned during periods of favourable climatic conditions and high resource availability (DAWE 2022b).

The main threats to Koalas are urban expansion, disease, habitat loss, fragmentation and degradation, vehicle strike, predation by feral dogs, drought and climate change (DAWE 2022a, 2022b; Youngentob *et al.* 2021).

A desktop analysis was undertaken using relevant databases, including Wildlife Online, WildNet, the Regulated Vegetation Management Map, and the Atlas of Living Australia, to identify records of the Koala (Phascolarctos

cinereus) in the vicinity of the project area. The assessment also incorporated a review of previous survey findings within the defined survey area.

While no evidence of Koalas—either direct sightings or indirect indicators such as scratches or scats—was observed during field surveys in 2010, 2012, and 2024 (ISON 2010; ECOSM 2012; HBA 2024), Koala sightings within the southern extent of ML70171 was reported in the fauna monitoring conducted by CO_2 in 2024. Additionally, database searches identified several Koala records within ten kilometres of the survey area. Given the presence of suitable habitat within the project area, it is reasonable to assume that Koalas may utilise the available habitat within the proposed disturbance footprint.

All areas of vegetation containing dense preferred feed trees have the potential to support comparatively high Koala populations. However, the area of remnant RE 11.3.25, which is located outside the footprint of the proposed project area may play a more important ecological role for the local population due to its vegetation structure and landscape position. Koalas prefer tree species found in more fertile soils with higher leaf nutrient levels and moisture, particularly during periods of drought or heat stress (DAWE 2022a). Additionally, Koalas are vulnerable to extreme temperatures and tend to choose trees that offer better thermal regulation (Briscoe *et al.* 2015; Davies *et al.* 2014). These preferred trees are often situated in gullies or possess thicker canopies (Crowther *et al.* 2013). Given this, the vegetation in RE 11.3.25 likely fulfills these criteria, as it is positioned near creek lines—enhancing the chances of high leaf moisture—and features a taller, denser canopy. Furthermore, this habitat aligns with multiple factors outlined in the criteria for habitat critical to the species' survival as defined in the species conservation advice (DAWE 2022a).

Habitat assessment for the Koala within the Project area is based on the habitat descriptions outlined in Table 10.

Table 10: Koala habitat critical to the survival of the species

Habitat Description	Relevant features present within the project area
Preferred habitat Koala habitat that may provide: • refugial habitat features, such as food trees on more fertile soils with higher leaf nutrient status, higher leaf moisture or with thicker canopies; these characteristics are especially important during periods of drought or heat stress; and • connective function between otherwise discontinuous areas of suitable habitat.	No preferred habitat has been identified within the project area. Areas mapped as eucalypt open forest, with continuous canopy dominated by Blue Gum (*Eucalyptus tereticornis*) and Carbeen (*Blakella tessellaris*) along the local streams have been identified as potential important ecological function habitat. These areas have been identified in riparian habitat along the Roper Creek, outside the project area.
Suitable habitat Koala habitat is any forest or woodland that contains known koala food tree species, or shrubland with emergent food trees (DAWE 2022a). A Koala food tree includes species from the *Eucalyptus*, *Corymbia*, *Angophora*, *Lophostemon* and *Melaleuca* genera (DAWE 2022a). Additionally, woodlands with a high density of ancillary koala trees within the vicinity of habitats deemed important or suitable, are also considered suitable for the species. Non-food trees such as Brigalow and Sally Wattle have been utilised by this species for daytime roosting (Ellis *et al.* 2002). A potential Koala habitat tree is considered to be a tree with a trunk diameter greater than 10 cm at 1.3m above ground (Youngentob *et al.* 2021).	Areas within the levee relocation project were mapped as HVR with food or ancillary habitat trees with a trunk larger than 10 cm dbh, which were considered to provide potential suitable habitat for the Koala. These communities include: • 26 ha of Eucalypt woodlands on alluvial plains RE 11.3.2 • 7.3 ha of Brigalow woodland on alluvium RE 11.3.1

The preferred habitat for koalas is the remnant REs along Roper Creek, which offer tall, mature Eucalyptus trees that serve as refuge for the species. In contrast, although considered suitable, the regrowth communities in the project area consist of smaller, composite trees that are less likely to be utilised by koalas.

The potential for indirect impacts to the Koala are considered to be minimal given the measures that will be implemented to manage these impacts (Section 5.2).

Table 11 provides an assessment of the likelihood of significant impacts on Koala in accordance with the Significant Residual Impact Guideline (DETSI, 2014).

The additional Project disturbance is unlikely to result in a residual significant impact to Koala. The Project is not considered to contain important habitat for the Koala, with preferred habitat to be retained close to the Project area along the Roper Creek. The proposed amendment does not consider the Project to result in a residual significant impact on the species.

Table 11 : Koala significant impact assessment

Significance criteria	**Assessment of significance**
An action is likely to have a significant impact on endangered and vulnerable wildlife if the impact on the habitat is likely to:	
A long-term decrease in the size of a local population	No Preferred habitat is located within the project area (see Table 10). Preferred habitat close to the Project area is mainly recorded within narrow riparian corridors associated with Roper Creek (located >200m to the west of the project area). Suitable habitat within the project consists mainly of younger age regrowth communities, with absence of large Poplar Box with a DBH greater than 30cm (HBA 2024). Research has found that the species tend to prefer larger trees (TSSCS n.d) regardless of the tree species (Hindell & Lee 1987). The removal of 33.3 ha of suitable and marginal habitat for the Koala is unlikely to lead to a long-term decrease in the size of a potential population utilising the area. Preferred habitat exists in the surrounding region that may support a population, however, the habitat in the study area is not well connected to those areas. Although presence of the species has been registered within the Foxleigh Coal Mine, presence of the species, in the form of sightings, scats or scratches, has not been confirmed within the Project area (HBA 2024). Nevertheless, mitigation measures detailed in Section 5 will be in place to minimise potential impacts to the species if occurring.
A reduced extent of occurrence of the species	Based on the location and size of the project in relation to the known distribution of the species and available habitat the proposed impact is unlikely to reduce the extent of occurrence of this species as defined by IUCN (2012). The Project is not near the edge of the known distribution of the species (DAWE 2022).
Fragmentation of an existing population	The Project is unlikely to fragment a population of Koala. Connectivity between other preferred patches in areas of habitat will remain, due to the availability of preferred habitat, and with no records of this species within the Project area, fragmentation of the existing population is not anticipated to be an issue.
Genetically distinct populations forming as a result of habitat isolation	It is unlikely that the Project will result in genetically distinct populations for the species. Preferred habitat for the species will remain in the region, no removal of habitat within riparian corridors will be conducted as part of the Project, therefore it is considered unlikely to result in the formation of genetically distinct populations.
Invasive species that are harmful to an endangered or	The project is located within a highly modified rural landscape, in the vicinity of mining infrastructure. Introduced plants and pest species have been already recorded within the Project area (HBA 2024).

Significance criteria	Assessment of significance
vulnerable species becoming established in the endangered or vulnerable species' habitat	The Foxleigh Mine weed and pest management procedures will be reviewed and where necessary, updated to incorporate the Project. Therefore, it is unlikely the Project would result in the establishment of new invasive species in the Project area. Weeds and feral animals' risk will continue to be managed with procedures to: • prevent the introduction of new weeds through the early detection of, and rapid response to new weeds. • identifying and controlling the spread of weeds and feral animal populations at • the site. • raising awareness and understanding of the risks associated with weeds and feral animals; and • ensuring compliance with regulatory and company requirements. The Project is considered unlikely to result in the introduction of any new pest species.
Introduction of disease that may cause the population to decline	It is unlikely that the project will facilitate the introduction or spread of diseases specific to the species, such as chlamydia or koala retrovirus, which could cause a decline in the population. Additionally, the project is not expected to contribute to the spread of diseases that can significantly degrade critical habitats, such as root rot (*Phytophthora cinnamomic*).
Interference with the recovery of the species	The National Recovery Plan for the Koala identifies land use changes that cause the loss, modification, and fragmentation of native vegetation as direct threats to koala populations. Other threats include increased frequency and severity of droughts, high temperatures, and fires, which limit access to climate refuges. Additional threats are mortality from vehicle strikes and dog attacks. The project will not increase dog attack mortality, spread pathogens, or create movement barriers. While vehicle movements during construction pose a threat to koalas, the increase will be minimal due to the proximity to an existing active mine site. Therefore, it is unlikely that the project will significantly impact koala mortality or interfere with the species' recovery. Preferred and suitable habitats around the impact area will remain unaffected, and the clearing of the Project area is unlikely to hinder koala recovery.
Disruption to ecologically significant locations (breeding, feeding or nesting sites) of a species	Clearing of habitat within the Project area is considered unlikely to cause disruption to ecologically significant locations for koala as the local population is likely to be very sparse (no individuals recorded during survey of the project area), and the local populations is likely to rely on areas of higher value habitat around the Project area. To mitigate risks to koala individuals, mitigation measures detailed in Section 5 will be in place.
Conclusion	The Project is unlikely to result in a residual significant impact to Koala given the habitat within the project consist mainly of younger age regrowth communities, with absence of large Poplar Box with a DBH greater than 30cm (HBA 2024). Furthermore, mitigation measures as described in section 5 will be implemented to avoid any potential impacts.

6.1.5 Short-beaked Echidna

The Short-beaked Echidna is listed as SLC under the NC Act.

The Short-beaked Echidna is found in almost all Australian environments and is present in all Australian states (Van Dyck & Strahan 2008). This species is known from a variety of habitat types, including open forests, grasslands and heavily vegetated woodlands. Distributions in arid regions are generally sparse. The Short-beaked Echidna has no particular habitat requirements outside of the supply of ants and termites for its diet (Van Dyck & Strahan 2008). This species generally seeks shelter under thick bushes, in hollow logs, in debris and has been known to occasionally shelter in rabbit or wombat burrows (Van Dyck & Strahan 2008).

The Short-beaked Echidna is a solitary species, with overlapping home ranges and no fixed nesting sites (Van Dyck & Strahan 2008). In arid regions, the species is known to forage at night to avoid high temperatures (Van Dyck and Strahan 2008). In temperate regions, the pattern of activities varies depending on temperatures, but the species typically foraging around dusk and dawn (Van Dyck & Strahan 2008). Habitat loss poses a threat to the Echidna, and the retention of habitat, such as fallen logs, branches, tree stumps, leaf litter and debris, is beneficial to this species (NSW National Parks and Wildlife Service 1999). The Short-beaked Echidna is thought to have few natural enemies; however, it may be killed by cars, dogs, foxes, cats and occasionally goannas (Australian Museum 2021).

A desktop analysis of relevant databases—including Wildlife Online, WildNet, the Regulated Vegetation Management Map, and the Atlas of Living Australia—was undertaken to identify records of the Short-beaked Echidna within the vicinity of the project area. This assessment also included a review of previous findings within the survey area, as well as ecological surveys and assessments undertaken for nearby developments, to identify any relevant information or records of the species.

The desktop review identified records of the Short-beaked Echidna within 10 km of the survey area. However, the species has not been recorded during any previous on-ground surveys, including those conducted by ISON (2010), ECOSM (2012), and HBA (2024).

An abundance of fallen timber, and general habitat availability suggests this species is likely to occupy habitats within the Project area at some point (HBA 2024). Habitat close to the project consist mostly of cleared vegetation with some regrowth vegetation observed throughout the site (HBA 2024), ECOSM 2012). While the Short-beaked Echidna is known to use cleared and disturbed habitats, remnant vegetation close to the Project area is likely to be preferred.

The potential for indirect impacts to the Short-beaked Echidna from noise and vibration, dust, erosion and sedimentation, and vehicle strike is considered to be minimal given the measures that will be implemented to manage these impacts (Section 5.2). The Project also has the potential to increase animal pest populations if they are not appropriately managed. However, pest management measures will be implemented for the Project as described in Section 5.2.

Table 12 provides an assessment of the likelihood of significant impacts on the Short-beaked Echidna in accordance with the Significant Residual Impact Guideline.

Table 12: Short-beaked Echidna significant impact assessment

Significance criteria	**Assessment of significance**
An action is likely to have a significant impact on a SLC (non-migratory) animal wildlife habitat if it is likely that it will result in:	
A long-term decrease in the size of a local population	The proposed additional disturbance accounts for a total of 33.3 ha of HVR vegetation. The Short-beaked Echidna utilises a wide range of habitats, which are widespread in the survey area and wider region. The extent of habitat disturbance proposed is unlikely to lead to a long-term decrease in the size of a local population, given the extent of habitat that remains available in the survey area and wider region.

Significance criteria	Assessment of significance
A reduced extent of occurrence of the species	While the Project will disturb potential habitat for the Short-beaked Echidna, it is unlikely to reduce the extent of occurrence of this species. The Project is not near the edge of the known distribution of the Short-beaked Echidna (ALA 2025).
Fragmentation of an existing population	The Short-beaked Echidna is a mobile species able to move across cleared or disturbed land. The connectivity of habitats is unlikely to be significantly affected by the proposed vegetation clearance and disturbance associated with the Project. The Project is unlikely to fragment an existing population into two or more populations.
Genetically distinct populations forming as a result of habitat isolation	The Project is unlikely to isolate or fragment an existing population of the Short-beaked Echidna and is, therefore, unlikely to result in genetically distinct populations forming.
Disruption to ecologically significant locations (breeding, feeding or nesting sites) of a species	The Short-beaked Echidna is a mobile species that uses a diverse range of habitats. While direct impacts on Short-beaked Echidna generic foraging habitat and potentially breeding/nesting habitat will occur within proposed Project disturbance areas, similar and higher quality habitat occurs on adjacent and nearby lands within the study area. The habitat within the proposed disturbance areas is unlikely to be of any specific significance to the local population.
Conclusion	The Project is unlikely to result in a residual significant impact to the Short-beaked Echidna.

7 Conclusion

Most habitats within the Project area are considered to be of relatively low quality due to extensive vegetation clearing. Table 13 provide an assessment of impacts on MSES in accordance with the Significant Residual Impact Guideline (DEHP 2014).

Table 13: Significant Impact assessment

MSES		Response to criteria	Significant Impact
Regulated vegetation	Endangered and Of Concern VM Act REs	No endangered and of concern VM Act REs are mapped within the Project area.	No significant residual impact will occur.
	REs that lies within a mapped wetland	REs that intersects areas shown as wetlands on the Vegetation Management Wetlands map, do not occur in the Project area.	No significant residual impact will occur.
	RE within set buffer distance of a watercourse	REs located within a defined distance from the defining banks of a relevant watercourse or relevant drainage feature, were not identified within the Project area.	No significant residual impact will occur.
	Essential habitat	REs mapped as essential habitat for Endangered and Vulnerable flora and fauna, do not occur in the Project area.	No significant residual impact will occur.
Areas that provide connectivity and maintain ecosystem functioning		The Landscape fragmentation and connectivity tool identified the existing extent of core remnant is 17.47%. This level of regional fragmentation sets a local impact threshold of 5.0%. Percent change of core at the local scale (post impact) is 0.00%. The Landscape Fragmentation and Connectivity Tool results are provided in Appendix B. Clearing for the project is considered unlikely to isolate remaining flora and fauna habitat or adversely impact on the ability of native species to survive in the surrounding area. Based on this and the results of the Landscape fragmentation and connectivity tool, the Project is considered unlikely to result in a significant impact to connectivity.	No significant residual impact will occur.
Mapped wetlands and watercourses		Wetlands in a wetland protection area or wetlands of high ecological significance shown on the map of referable wetlands under the Environmental Protection Regulation 2008 (note this has been replaced with the map of Queensland wetland environmental values under the Environmental Protection Regulation 2019). Wetlands and watercourses in high ecological value waters identified in the Environmental Protection (Water) Policy 2009, schedule 1.	No significant residual impact will occur.

MSES	Response to criteria	Significant Impact
Designated precincts in a strategic environmental area under the Regional Planning Interests Regulation 2014	SEAs include Cape York Peninsula, the Gulf Country, the Channel Country, Fraser Island Hinchinbrook Island, Wide Bay Burnett, and North Queensland.	No significant residual impact will occur.
Protected wildlife habitat Endangered, Vulnerable and SLC species listed under the NC Act. *SLC are defined under the Env Offset Regulation as the echidna and platypus.*	An action is likely to have a significant impact on endangered and vulnerable wildlife if the impact on the habitat is likely to: • lead to a long-term decrease in the size of a local population; or • reduce the extent of occurrence of the species; or • fragment an existing population; or • result in genetically distinct populations forming as a result of habitat isolation; or • result in invasive species that are harmful to an endangered or vulnerable species becoming established in the endangered or vulnerable species' habitat; or • introduce disease that may cause the population to decline, or • interfere with the recovery of the species; or • cause disruption to ecologically significant locations (breeding, feeding, nesting, migration or resting sites) of a species. An action is likely to have a significant impact on a SLC (non-migratory) animal wildlife habitat if it is likely that it will result in: • A long-term decrease in the size of a local population • A reduced extent of occurrence of the species • Fragmentation of an existing population • Genetically distinct populations forming as a result of habitat isolation. • Disruption to ecologically significant locations (breeding, feeding or nesting sites) of a species.	No significant residual impact will occur. SRI for *Solanum adenophorum* is detailed in 6.1.1 No significant residual impact will occur. SRI for *Solanum elachophyllum* is detailed in section 6.1.2 No significant residual impact will occur. SRI for the Southern central Greater Glider is detailed in section 6.1.3 No significant residual impact will occur. SRI for the Koala is detailed in section 6.1.4 No significant residual impact will occur. SRI for the Short-beaked Echidna is detailed in Section 6.1.5
Koala Habitat in Southeast Queensland	Mapped Koala habitat in the Southeast Queensland planning area—as identified in the Southeast Queensland Regional Plan, has not been identified within the Project area.	No significant residual impact will occur.
Protected areas and highly protected zones of State marine parks	Marine parks declared under the *Marine Parks Act 2004* over Queensland state waters. Are not present within the Project area.	No significant residual impact will occur.
Fish habitat areas	Areas within declared fish habitat areas that are management A areas or management B areas under the *Fisheries Regulation 2008*. Are not identified within the project area	No significant residual impact will occur.

MSES	Response to criteria	Significant Impact
Waterways providing for fish passage (excluding waterways within an urban area)	The stream within the project area is mapped as being at low risk (green) of adverse impact from waterway barrier works on fish movement. The stream is a first order ephemeral stream that does not flow for long periods during the year, the stream is not expected to provide connectivity of waterways and wetlands near the Project. The watercourse is not expected to provide passage habitat for conservation significant species. When assessed against the MSES residual impact guidelines, the Project is considered unlikely to result in a significant residual impact on the waterways providing for fish passage. Based on the assessment, no offsets under the Environmental Offset Regulation 2014 for waterways providing for fish passage are required for the Project.	No significant residual impact will occur.
Marine plants	Marine plants under the *Fisheries Act 1994* (excluding marine plants in an urban area) are not present within the Project area.	No significant residual impact will occur.
Legally secured offset areas	Legally secured offset areas as defined under the *Environmental Offsets Act 2014* *are not present within the Project area.*	No significant residual impact will occur.

The MSES identified within the project are limited to protected wildlife habitats. The assessment of potential significant impacts on these identified MSES indicates that the additional disturbances from the Project are unlikely to have a significant impact on *Solanum adenophorum*, *Solanum elachophyllum*, the Greater Glider, the Koala, or the Short-beaked Echidna as preferred and suitable habitat is widely distributed throughout the region (see Table 14). Furthermore, in accordance with the Environmental Offsets Act and the Queensland Environmental Offsets Policy, no offsets will be required for the Project.

Table 14: Summary of impacts to Prescribed Environmental Matters

Prescribed Environmental Matters			Extent of proposed additional disturbance (ha)	Offset required
Matters of National Environmental Significance—Refer to MNES Terrestrial Ecology Impact Assessment Report included with the Project's EPBC Referral (ISON 2010, ECOSM 2012).				
Matters of State Environmental Significance				
Protected wildlife habitat	Habitat for Endangered, Vulnerable or SLC animal	*Solanum adenophorum*	7.3 ha	No. See Section 6.1.1.
		Solanum elachophyllum	33.3 ha	No. See Section 6.1.2.
		Greater Glider	NA	No. See Section 6.1.3.
		Koala	NA	No. See Section 6.1.4.
		Short-beaked Echidna	33.3 ha	No. See Section 6.1.5.
Matters of Local Environmental Significance—No MLES are identified within the environmental significance overlay of the Isaac Regional Council's *Isaac Regional Planning Scheme 2021* (Isaac Regional Council 2024).				

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Appendix A. Desktop assessment searches

Table 15: Flora species identified during the desktop assessment

Scientific Name	Common Name	Status	WildNet / Wildlife Online			Atlas of Living Australia			Previous Surveys		
		NC Act	10 km	25 km		10 km	25 km		HBA 2025	ISON 2010	ECOSM 2012
Cadellia pentastylis	Ooline	V		x							
Denhamia megacarpa	Large-fruited Denhamia	E		x							
Dichanthium queenslandicum	King Bluegrass	V		x			x				
Solanum adenophorum		E		x							
Solanum elachophyllum	-	E	x	x		x	x		Identified within the Project area		x
Trioncinia retroflexa	-	E		x							

E – Endangered, V – Vulnerable, x – species recording present.

Table 16: Fauna species identified during the desktop assessment

Scientific Name	Common Name	Status	WildNet / Wildlife Online			Atlas of Living Australia					
		NC Act	10 km	25 km	50 km	10 km	25 km	50 km	HBA 2025	ISON 2010	ECOSM 2012
Actitis hypoleucos	Common sandpiper	SLC					x				
Calidris acuminata	Sharp-tailed Sandpiper	V		x							
Chalinolobus dwyeri	Large-eared Pied Bat	E		x							
Denisonia maculata	Ornamental Snake	V		x			x				

Scientific Name	Common Name	Status	WildNet / Wildlife Online			Atlas of Living Australia					
		NC Act	10 km	25 km	50 km	10 km	25 km	50 km	HBA 2025	ISON 2010	ECOSM 2012
Gallinago hardwickii	Latham's Snipe	V		x			x				
Gelochelidon nilotica	Common Gull-billed Tern	SLC					x				
Geophaps scripta scripta	Squatter Pigeon (southern subspecies)	V	x	x			x				x
Hirundapus caudacutus	White-throated Needletail	V					x				
Hydroprogne caspia	Caspian tern	SLC		x			x				
Jalmenus eubulus	Pale Imperial Hairstreak	V		x							
Monarcha melanopsis	Black-faced Monarch	SLC					x				
Myiagra cyanoleuca	Satin Flycatcher	SLC					x				
Petauroides minor	Northern Greater Glider[1]	V					x				
Petauroides volans volans	Southern Greater Glider[1]	E	x	x							
Petaurus australis australis	Yellow-bellied Glider (Southern Subspecies)	V	x	x							
Phascolarctos cinereus	Koala	E	x	x		x	x				
Plegadis falcinellus	Glossy Ibis	SLC		x			x				
Rhipidura rufifrons	Rufous Fantail	SLC					x				
Tachyglossus aculeatus	Short-beaked Echidna	SLC	x	x		x	x				
Thalassarche melanophris		V					x				
Tringa glareola	Wood Sandpiper	SLC		x			x				

Scientific Name	Common Name	Status	WildNet / Wildlife Online			Atlas of Living Australia					
		NC Act	10 km	25 km	50 km	10 km	25 km	50 km	HBA 2025	ISON 2010	ECOSM 2012
Tringa nebularia	Common Greenshank	E					x				

PE – Extinct in the Wild, CE – Critically Endangered, E – Endangered, V – Vulnerable, SLC, x – species recording present.

Note 1 McGregor *et al.* (2020) describe that while the northern and southern greater glider subspecies are genetically distinct, there has been some gene flow between them. This gene flow has led to morphological similarities, making it challenging to differentiate them based solely on physical characteristics. Furthermore, the study indicates that the northern greater glider is primarily found in the high elevation habitats of Far North Queensland, suggesting that the presence of this subspecies may have been misidentified in other regions.

Appendix B. Conservation significant flora species desktop likelihood of occurrence

Species	Status NC Act	Description	Desktop likelihood of occurrence
Candellia pentastylis	Vulnerable	**Distribution** Ooline occurs on the western edge of the NSW north-west slopes, from Mt Black Jack near Gunnadah to west of Tenterfield, and extends into Queensland to Carnarvon Range and Callide Valley, south-west of Rockhampton (DoE 2008). **Habitat** Ooline grows in dry rainforest, semi-evergreen vine thickets and sclerophyll ecological communities, often locally dominant or as an emergent. Plants have been reported to be growing in cultivation at the Australian National Botanic Gardens, Canberra and Royal Botanic Gardens, Sydney. Ooline is of significant biogeographic interest as it is a relic of the extensive rainforest vegetation which covered much of Australia during the Pleistocene (1.6 million to 10 000 years ago) (DoE 2021). **Ecology** Flowers are usually single, with white petals 5–7 mm long and occur sporadically. Fruits are a cluster of up to five brown coloured drupes, 3–5 mm in diameter, surrounded by papery, red sepals (DoE 2008).	Unlikely Ecological assessment on site have not identified presence of the species on site. There are no records of the species within 10km of the Project area.
Denhamia megacarpa	Endangered	**Distribution** The species is known from three subpopulations in eastern central Queensland, the tableland that occurs within the locality of Mackenzie north of Dingo (the Mackenzie subpopulation), the Junee Tableland near Middlemount (the Junee subpopulation), and an outlying subpopulation at Newlands west of Mackay (the Newlands subpopulation (DoE 2021). **Habitat** *Denhamia megacarpa* prefers shallow, lateritic duricrusts on or near steep upper slopes at the edge of tablelands, often found with *Acacia shirleyi* and *A. catenulata*. It can also be found on deeper sandplains in woodlands of *Eucalyptus crebra* and *Corymbia brachycarpa*. (Halford & Jessup 2020) **Ecology** Little is known about the life cycle of this species, with age at sexual maturity and natural mortality rates presently unknown. Flowering has been recorded in April and November and fruiting in February. Pollination is likely to be facilitated by insects such as native bees and possibly small beetles, which have been observed	Unlikely Ecological assessment on site have not identified presence of the species on site. There are no records of the species within 10 km of the Project area.

Species	Status NC Act	Description	Desktop likelihood of occurrence
		on and around inflorescences in large numbers. Seed dispersal is most likely to be assisted by birds that are attracted to the fleshy aril partially enclosing the seed (DoE 2008).	
King Blue-grass *Dichanthium queenslandicum*	**Endangered**	**Distribution** *Dichanthium queenslandicum* occurs from near Dalby north to about 90 km north of Hughenden and west as far as Clermont. The main concentration of populations in central Queensland in the Emerald region (DCCEEW 2025h). **Habitat** This species occurs on black cracking clay soils in tussock grasslands mainly in association with other species of (*Dichanthium* spp. and *Bothriochloa* spp.) but also with other grasses restricted to this soil type. It is mostly confined to natural grasslands on the heavy black clay soils (basalt downs, basalt cracking clay, open downs) on undulating plains. Other communities where King Bluegrass can be found include *Acacia salicina* thickets in grassland and eucalypt woodlands in association with *Corymbia dallachiana, C. erythrophloia, E. orgadophila* (DCCEEW 2025h). **Ecology** Flowering occurs throughout the year, particularly in March (DCCEEW 2025h).	Unlikely Ecological assessment on site have not identified presence of the species on site. There are no records of the species within 10 km of the Project area.
Solanum adenophorum	**Endangered**	**Distribution** *Solanum adenophorum* is endemic to the Dingo - Nebo - Clermont area in central-eastern Queensland. (Bean 2002, cited in ALA 2025). **Habitat** *Solanum adenophorum* occurs mostly in brigalow woodland and on very gently inclined slopes. It also occurs in gidgee (*Acacia cambagei*) scrub on deep cracking clay soils. (Bean 2004 cited in ALA 2025). **Ecology** *Solanum adenophorum* flowers in October. Mature fruit has been recorded in May, September and October. (Bean 2004 cited in ALA 2025).	Likely Brigalow woodland habitat has been identified on site and specimen of the species have been recorded within 10 km of the Project area.
Solanum elachophyllum	**Endangered**	**Distribution** *Solanum elachophyllum* is endemic to Queensland and confined to the central subcoastal part of the state, from Middlemont to Theodore. The species occurs within Junee State Forest and Taunton National Park (Bean 2004 cited in ALA 2025). **Habitat**	Known Populations of the species was identified at two locations on site.

Species	Status NC Act	Description	Desktop likelihood of occurrence
		Solanum elachophyllum grows on fertile cracking clay soils in open forest of *Eucalyptus thozetiana*, *Acacia harpophylla*, with understorey of *Geijera parviflora*, *Casuarina cristata*, *Macropteranthes leichhardtii*, *Eucalyptus cambageana*, or woodland of *E. crebra* and *E. tenuipes* (Bean 2004 cited in ALA 2025). **Ecology** Flowers of *Solanum elachophyllum* have been recorded in February, March, July and September and mature fruits in March- May, July and September-October (Bean 2004 cited in ALA 2025).	
Trioncinia retroflexa	**Endangered**	**Distribution** *Trioncinia retroflexa* is found near Clermont and Springsure in central Queensland. (Herbrecs 2008 cited in ALA 2025). **Habitat** *Trioncinia retroflexa* occurs in grasslands on basalt downs and also on dark brown or black cracking clay soils. (Veldkamp 1992 cited in ALA 2025). **Ecology** *Trioncinia retroflexa* lives for approximately 5 years and seeds can remain viable in the soil for at least 18 months. (Fensham *et al.* 2002 cited in ALA 2025).	Unlikely Ecological assessment on site have not identified presence of the species on site. There are no records of the species within 10km of the Project area.

Appendix C. Conservation significant fauna species desktop likelihood of occurrence

Species	Status NC Act	Description	Desktop likelihood of occurrence
Reptile			
Ornamental Snake *Denisonia maculata*	**V**ulnerable	**Distribution** This species is sparsely distributed throughout its range and is known only from the Brigalow Belt North and parts of the Brigalow Belt South biogeographical regions (DoE 2014a). The drainage system of the Fitzroy and Dawson Rivers are core areas associated with this species distribution (DoE 2014a). **Habitat** The Ornamental Snake's preferred habitat is within, or close to, habitat that is preferred by its prey (frogs) (DoE 2014a). This species is known to prefer woodlands and open forests associated with moist areas, particularly gilgai (melon-hole) mounds and depressions in Queensland RE Land Zone 4, as well as lake margins and wetlands (DoE 2014a). The vegetation communities associated with this species habitat include Brigalow (*Acacia harpophylla*), Gidgee (A*cacia cambagei*), Blackwood (*Acacia argyrodendron*) or Coolibah (*Eucalyptus coolabah*), or grassland associated with gilgais (DCCEEW 2025h). In Queensland, it has been recorded in Queensland REs 11.4.3, 11.4.6, 11.4.8 and 11.4.9, 11.3.3 and 11.5.16 (DoE 2014a). This species has been recorded in abundance at sites that contain the following microhabitat features; in shallow water where some aquatic vegetation is present or in flooded gilgais where the fringing groundcover has been inundated, where there is a diverse range of gilgai size and depth, in soils of high clay content and deep cracking, ground debris, and in habitat patches greater than 10 ha in area connected to or within large areas of remnant vegetation (DoE 2014a). **Ecology** The Ornamental Snake seeks refuge within soil cracks within gilgai mounds during dry periods. This species is nocturnally active predominantly in early summer throughout the wet season (DoE 2014a), foraging in areas where burrowing frogs are abundant, with frogs being the main food source (DoE 2014a). It is not known to have specific breeding or dispersal habitat requirements (DoE 2014a).	Potentially Although vegetation communities associated with this species are known to occur in the site, there are no records of the species identified in the area by the field study. Potential impacts associated with the Project on this species were assessed in the development of the EPBC Referral (ISON 2010). As this report does not address impacts on EPBC Act MNES that have been assessed by the Commonwealth Government relevant to the EO Act (Section 2.4), within EPBC Approval 2010/5421) this matter will not be considered further within this assessment.
Birds			

Species	Status NC Act	Description	Desktop likelihood of occurrence
Sharp-tailed Sandpiper *Calidris acuminata*	Vulnerable Migratory	**Distribution** During the non-breeding season, approximately 91 percent of the East Asian - Australasian population occurs in Australia and New Zealand. Sharp-tailed sandpipers occur within all states of Australia. They are found mostly in the south-east and are widespread in both inland and coastal locations. In Queensland, the species is widespread along the coast and is sparsely scattered inland, particularly in central and south-western regions (DCCEEW 2025c). **Habitat** The species utilises fresh and hypersaline environments, feeding along the edge of water on mudflats, coastal and inland wetlands, and sewage ponds. After rainfall events, the species may also feed on areas of agricultural pasture (DCCEEW 2025f). On migration, the species forages and roosts on rocky and sandy beaches, freshwater habitats, and inland saltwater habitats (DCCEEW 2025c). **Ecology** The sharp-tailed sandpiper is migratory, breeding in northern Siberia and moving in flocks of less than a thousand individuals to non-breeding areas south of the Equator. Sharp-tailed sandpipers breed from June to August (DCCEEW 2025c).	Unlikely The Project site is not located in a coastal area and therefore, it does not contain the preferred habitat for this species. Habitat within the Project area is marginal and limited to existing clean water dams, as the mine affected water storages on site are hyper-saline. Therefore, not comparable to the water of an inland wetland or a farm dam. Therefore, it is considered unlikely that the pond would be utilised by the species. Additionally, ecological assessments on site have not identified presence of the species and there are no records for the species within 25km.

Species	Status NC Act	Description	Desktop likelihood of occurrence
Snipe, Japanese Latham's Snipe *Gallinago hardwickii*	Vulnerable Migratory	**Distribution** Latham's snipe is a non-breeding visitor to south-eastern Australia and is a passage migrant through northern Australia. The species has been recorded along the east coast of Australia from Cape York Peninsula through to south-eastern South Australia, including the Adelaide plains, Mount Lofty Ranges, and the Eyre Peninsula. The range extends inland over the eastern tablelands in south-eastern Queensland, and occasionally from Rockhampton in the north, and west of the Great Dividing Range in New South Wales (DCCEEW 2024). **Habitat** Latham's snipe feed in soft mudflats or shallow water typically at night, early morning, or evening. Latham's snipe can roost singly and in aggregations. They shelter during the day in small wetlands including urban water bodies, saltmarshes, as well as creek edges, where there is adequate shallow flooded or inundated substrate. They also use crops and pasture. They mostly are found among dense cover comprising sedges, grasses, lignum, reeds, and rushes. The bird tends to disperse after dusk to forage over larger areas (DCCEEW 2024). **Ecology** Latham's snipes breed in Hokkaido and highland areas of Honshu in Japan, and in Sakhalin and the nearby Kuril Islands of far eastern Russia (DCCEEW 2024).	<u>Unlikely</u> The Project site does not contain wetlands or gil not located in a coastal area and therefore, it does not contain the preferred habitat for this species. Additionally, it appears to be limited permanent water sources in close proximity to the Project area. Furthermore, potential impacts associated with the Project on this species were assessed in the development of the EPBC Referral (ISON 2010). As this report does not address impacts on EPBC Act MNES that have been assessed by the Commonwealth Government relevant to the EO Act (Section 2.4), within EPBC Approval 2010/5421) this matter will not be considered further within this assessment.

Species	Status NC Act	Description	Desktop likelihood of occurrence
Squatter pigeon (southern subspecies) *Geophaps scripta scripta*	Vulnerable	**Distribution** The southern sub species for the Squatter Pigeon occurs on the inland slopes of the Great Dividing Range. Its range extends from the Burdekin-Lynd Divide in central Queensland in the southern region of Cape York Peninsula to the Border Rivers region of northern New South Wales, and from the east coast to Hughenden, Longreach and Charleville in Queensland (DCCEEW 2025; TSSC 2015). **Habitat** Defined as open forests to sparse, open woodlands and scrub, this species inhabits the grassy understory of open eucalypt woodland (TSSC 2015). Sandy areas separated by gravel ridges, which have open and short grass cover allowing easier movement, are preferred (TSSC 2015). Important microhabitat features include vegetation that is within 3 km of water bodies or courses, within remnant, regrowth or partly modified vegetation communities and areas that are mostly dominated by *Eucalyptus*, *Corymbia*, *Acacia* or *Callitris* species within the overstorey (DCCEEW 2025) **Ecology** Natural foraging habitat for this species occurs in any remnant or regrowth open forest to sparse, open-woodland or scrub dominated by *Eucalyptus*, *Corymbia*, *Acacia* or *Callitris* species (DCCEEW 2024a). It prefers landscapes with well-draining, sandy or loamy soils on low, gently sloping, flat to undulating plains and foothills (DCCEEW 2025). Access to water is important and foraging habitat is usually within 3 km of a suitable, permanent, or seasonal waterbody (DCCEEW 2025). Typically, the ground covering vegetation layer is patchy consisting of native, perennial tussock grasses or a mix of perennial tussock grasses and low shrubs or forbs (DCCEEW 2025), rarely exceeding 33% of the ground area. The remaining ground cover is areas of bare soil and light leaf litter/coarse woody debris (DCCEEW 2025). Breeding habitat occurs on stony rises occurring on sandy or gravelly soils, within 1 km of a suitable, permanent waterbody. The ground covering vegetation layer is consistent with foraging habitat (DCCEEW 2025). Any forest or woodland occurring between patches of foraging or breeding habitat which facilitates movement between patches of foraging habitat, breeding habitat and/or waterbodies, as well as areas of cleared land less than 100 metres (m) wide linking areas of suitable breeding and/or foraging habitat are important for dispersal (DCCEEW 2025). Dispersal habitat typically occurs on non-alluvial clays (Queensland RE Land zone 4) where the ground vegetation layer has been thinned through current land use practices (cattle grazing) (DCCEEW 2025).	<u>Likely</u> There is suitable habitat for the species within the site. Additionally, records have identified presence of the species within 10 km of the site (desktop assessment). Furthermore, potential impacts associated with the Project on this species were assessed in the development of the EPBC Referral (ISON 2010). As this report does not address impacts on EPBC Act MNES that have been assessed by the Commonwealth Government relevant to the EO Act (Section 2.4), within EPBC Approval 2010/5421) this matter will not be considered further within this assessment.

Species	Status NC Act	Description	Desktop likelihood of occurrence
White-throated Needletail *Hirundapus caudacutus*	Vulnerable	**Distribution** The White-throated Needletail migrates to Australia during the non-breeding season around September/October (DCCEEW 2025; TSSC 2019). During this time, this species is widespread across eastern and south-eastern Australia (DCCEEW 2025; TSSC 2019). In eastern Australia, it has been recorded in all coastal regions of Queensland, extending inland to the western slopes of the Great Divide and occasionally onto adjacent inland plains (DCCEEW 2025). **Habitat** Primarily an aerial species, this species is known to occur across a variety of habitats including wooded areas, open forests, and rainforests (DCCEEW 2025). Large tracts of native vegetation, particularly forest, is considered likely to be a key habitat requirement for this species (DoE 2015). It has been observed flying over farmland, typically over partially cleared pasture or within remnant vegetation at the edge of paddocks (DCCEEW 2025). **Ecology** This species predominantly forages aerially at heights up to 'cloud level', along the edges of low-pressure systems (DCCEEW 2025). This species is also known to forage much closer to the ground (still aerial) in open habitats or recently disturbed areas feeding on a wide variety of insects (DCCEEW 2025). It prefers to roost in forest and woodlands, both among dense foliage in the canopy or in tree hollows, as well as on bark or rock faces, and maybe aerially on occasion (DCCEEW 2025h; DoE 2015).	Unlikely Although potential fly-over habitat occurs within the Project area. No species has been sighted within the Project area. Potential impacts associated with the Project on this species were assessed in the development of the EPBC Referral (ISON 2010). As this report does not address impacts on EPBC Act MNES that have been assessed by the Commonwealth Government relevant to the EO Act (Section 2.4), within EPBC Approval 2010/5421) this matter will not be considered further within this assessment.

Species	Status NC Act	Description	Desktop likelihood of occurrence
Black-browed albatross *Thalassarche melanophiris*	Vulnerable	**Distribution** The black-browed albatross is circumpolar in the southern oceans, and it breeds on 12 islands throughout that range. In the Atlantic Ocean, it breeds on the Falkland Islands, South Georgia and the South Sandwich Islands, and the Cape Horn Islands. In the Pacific Ocean it breeds on Islas Ildefonso, Diego de Almagro, Islas Evangelistas, Campbell Island, Antipodes Islands, Snares Islands, and Macquarie Island. In the Indian Ocean it breeds on the Crozet Islands, Kerguelen Islands, Heard Island, and McDonald Island (ALA 2025) **Habitat** This species normally nests on steep slopes covered with tussock grass and sometimes on cliffs; however, on the Falklands it nests on flat grassland on the coast (ALA 2025) **Ecology** The black-browed albatross feeds on fish, squid, crustaceans, carrion, and fishery discards. This species has been observed stealing food from other species. This species normally nests on steep slopes covered with tussock grass and sometimes on cliffs; however, on the Falklands it nests on flat grassland on the coast. They are an annual breeder laying one egg from between 20 September and 1 November, although the Falklands, Crozet, and Kerguelen breeders lay about three weeks earlier. Incubation is done by both sexes and lasts 68 to 71 days. After hatching, the chicks take 120 to 130 days to fledge. Juveniles will return to the colony after two to three years but only to practice courtship rituals, as they start breeding around the 10th year (ALA 2025).	Unlikely Ecological assessment on site have not identified presence of the species. Additionally, no species have been identified in close proximity to the Project Area. This species thrives in marine environments, relying on oceanic conditions for feeding and nesting. The project area is an inland, terrestrial environment with limited water availability. There are no records of the species within 10km of the Project area.

Species	Status NC Act	Description	Desktop likelihood of occurrence
Common Greenshank *Tringa nebularia*	Endangered	**Distribution** The common greenshank is a highly adaptable shorebird found in various wetlands across Australia. It has the widest distribution of any shorebird in the country. In Queensland the species is widespread in the Gulf country and eastern Gulf of Carpentaria. It has been recorded in most coastal regions, possibly with a gap between north Cape York Peninsula and Cooktown. Inland, there have been a few records south of a line from near Dalby to Mt Guide, and sparsely scattered records (DCCEEW 2023) **Habitat** Common greenshank roost both on the coast and inland, in estuaries and mudflats, mangrove swamps and lagoons, and in billabongs, swamps, sewage farms and flooded crops (BirdLife Australia 2021 cited in DCCEEW 2023). Common greenshank breed between late April and June (del Hoyo *et al.* 1996). Nests are typically a shallow scrape on open ground, often within clearings in woods. They are also typically placed next to a piece of dead wood, or beside rocks, trees, fences and sticks (for use as nest markers) (DCCEEW 2023). **Ecology** The species typically breeds in widely dispersed pairs. Males often construct multiple nests, lining them with feathers and vegetation, from which the female will choose one. Clutch sizes usually consist of four eggs. The incubation period ranges from 23 to 26 days. The young are active and leave the nest within a few hours of hatching, but the fledging period extends for an additional 25 to 31 days (DCCEEW 2023).	<u>Unlikely</u> Marginal clean water dams onsite provide limited habitat, with no ecological assessments on site identifying the presence of the species. Furthermore, the project lies outside of primary coastal distribution. Inland record of this species are considered very scattered, and no records within 25 km of the Project.
Mammals			

Large-eared Pied bat *Chalinolobus dwyeri*	Endangered	**Distribution** The large-eared pied bat has a fragmented distribution in central-eastern New South Wales (NSW) and south-eastern and central Queensland (Qld), from Shoalwater Bay to Ulladulla. Its distribution is patchy due to specific habitat requirements, with individuals recorded from sea level to nearly 1500m above sea level. Key strongholds include the Sydney sandstone region, Pilliga region, and Central Queensland Sandstone Belt. The species is found in various conservation reserves and public lands, such as Expedition National Park and Isla Gorge National Park in Qld, and Pilliga National Park and Coolah Tops National Park in NSW (DCCEEW 2023) **Habitat** The large-eared pied bat requires a combination of suitable roosting and foraging habitats. It typically roosts in areas with cliffs, escarpments, or rocky outcrops, with the presence of caves, overhangs, and cracks being more crucial than the specific type of rock. These roosting sites are closely associated with foraging habitats, which include fertile valleys, plains, and woodlands with moderately tall to taller trees along watercourses. In more productive areas like South-east Queensland and North-east NSW, the bat may also use upper slopes and crests. In the Scenic Rim of South-east Queensland, it has been found in high elevation rainforest and open forest near major escarpments, allowing it to forage along ridge crests and upper slopes. The species is unlikely to occur without both roosting and foraging habitats, and the extent of suitable woodlands has been greatly reduced by land clearing (DCCEEW 2023) **Ecology** Females are able to breed at one year of age and may return to the same maternity sites in successive years. Breeding behaviour for the large-eared pied bat and other insectivorous bats may be disrupted by abiotic conditions, including drought (DCCEEW 2023)	<u>Unlikely</u> The desktop review confirmed no records of the species have been confirmed within 25 km of the Project area. Most records for the species are within several kilometres of cliff lines or rocky terrain (preferred roosting habitat). The Project area does not support preferred roosting habitat such as caves or sandstone escarpments. However, the riparian vegetation could be considered as potential but limited foraging habitat. Preferred foraging habitat comprises open forests and woodlands including riparian zones, foot-slopes and valley floors, within 2.5 km of preferred roosting habitat (Kerswell *et al.* 2020). The Large-eared Pied Bat requires a combination of sandstone cliffs and fertile woodland valley within close proximity of each other (DCCEEW 2023d). Ultimately, the long distance from preferred roosting habitat and the disjunct and limited forging habitat within the Project area, with little connectivity to Blackdown tablelands, the species is considered unlikely to occur.

Species	Status NC Act	Description	Desktop likelihood of occurrence
			The species was not recorded on Anabats during surveys conducted by ISON in 2010 and by ECOSM in 2012.
Northern Greater Glider *Petauroides minor*	Vulnerable	**Distribution** The northern greater glider inhabits the wet-dry tropical region of north-eastern Australia, including the Wet Tropics World Heritage Area. Its range extends from around Townsville northwards to the Windsor Tablelands. This distribution is quite patchy, with some isolated subpopulations, such as those in the Gregory Range/Gilbert Plateau west of Townsville and Blackbraes National Park (DCCEEW 2022). **Habitat** The northern greater glider is a nocturnal, arboreal marsupial that is mostly solitary and primarily found in the eucalypt forests and woodlands of north-eastern Australia. It thrives in high elevation, wetter sites within open woodlands to open forests, which feature relatively old trees and abundant hollows. Only a portion of the forest in potential habitat areas is suitable for the species, as the structural attributes of the forest overstorey and forage quality vary significantly across the landscape (DCCEEW 2022). **Ecology** The northern greater glider shelters in large tree hollows during the day, preferring hollows over 10 cm in diameter in old trees. Favoured denning trees include white mahogany and lemon-scented gum, with forest red gum preferred in the northern range. The species uses 4-6 dens per month, with two dens per hectare in the north (DCCEEW 2022). Primarily folivorous, the glider prefers young foliage, supplemented by buds and flowers, and feeds from a limited range of eucalypt species. It relies on forests with diverse eucalypt species due to seasonal variations. About 85% of its water needs are met through consumed leaves, with additional water from dew on leaves (DCCEEW 2022). Females give birth to a single young from March to June, reaching sexual maturity in the second year. The species has an estimated lifespan of 15 years and a generation length of six to eight years. Its low reproductive rate makes small, isolated subpopulations vulnerable to extinction (DCCEEW 2022).	<u>Unlikely</u> McGregor *et al.* (2020) describe that while the northern and southern greater glider subspecies are genetically distinct, there has been some gene flow between them. This gene flow has led to morphological similarities, making it challenging to differentiate them based solely on physical characteristics. Furthermore, the study indicates that the northern greater glider is primarily found in the high elevation habitats of Far North Queensland, suggesting that the presence of this subspecies may have been misidentified in other regions.

Species	Status NC Act	Description	Desktop likelihood of occurrence
Southern-Central Greater Glider *Petauroides volans volans*	Endangered	**Distribution** The southern and central greater glider is found in eastern Australia, ranging from Proserpine in Queensland, through NSW and the ACT, to Wombat State Forest in central Victoria. It inhabits areas from sea level up to 1200 metres above sea level. In the ACT, its distribution is limited to the Lower Cotter Catchment and Namadgi National Park (DCCEEW 2022) **Habitat** Largely restricted to eucalypt forests and woodlands, the Greater Glider's preferred habitat consists of taller, montane, moist eucalypt forests with relatively old trees and abundant hollows. It also favours forests with a diversity of eucalypt species, due to seasonal variation in its preferred tree species (DCCEEW 2022). **Ecology** This species is primarily folivorous, with a diet mostly comprising of eucalypt leaves, and occasionally flowers. It is an arboreal nocturnal marsupial, sheltering in den trees (large hollows in large, old trees) during the day. Home ranges of the Greater Glider are typically relatively small (1 to 4 ha) but are larger in lower productivity forests and more open woodlands (up to 19 ha). Due in part to the Greater Gliders relatively small home range, and due to its low dispersal ability, this species disperses poorly across vegetation that is not native forest (DCCEEW 2022)	Likely Although no species have been identified on site in ecological surveys. Species have been identified within 10 km of the site

Species	Status NC Act	Description	Desktop likelihood of occurrence
Yellow-bellied Glider (south-eastern) *Petaurus australis australis*	Vulnerable	**Distribution** The yellow-bellied glider (south-eastern) is found at altitudes ranging from sea level to 1400 m above sea level and has a widespread but patchy distribution across its range. Most of the Qld distribution is coastal, extending southward along the eastern seaboard from north of Mackay and continuing through the NSW-Qld border. However, isolated subpopulations are found inland in the Blackdown and Carnarvon Ranges of central Qld (DAWE 2022a). **Habitat** Occurs in eucalypt-dominated woodlands and forests, including both wet and dry sclerophyll forests (DAWE 2022a). **Ecology** The subspecies shows a preference for large patches of mature old growth forest that provide suitable trees for foraging and shelter. The yellow-bellied glider (south-eastern) is nocturnal, spending most of its active time outside the den for foraging-related activities. During the day, the yellow-bellied glider (south-eastern) shelters in hollows found in large, old trees, usually more than one metre in diameter (DAWE 2022a). The subspecies is social and lives in family groups of two to six individuals (though usually three to four) of varying age and sex composition, throughout an exclusive home range of approximately 50–65 ha (DAWE 2022a). The subspecies has very low dispersal capabilities over spaces larger than its gliding distance. The maximum gliding distance may be up to 120 m–140m (DAWE 2022a).	Unlikely The desktop review identified records of the species within 10km of the Project Area. However, no records exist from historic surveys within the Project area. The Yellow-bellied Glider favours forests with a diversity of eucalypt species and taller mature trees, greater than 1 metre in diameter, with abundant hollows and the species requires well connected remnant woodlands. Previous ecological assessments have recorded limited abundance of large eucalyptus trees with large hollows. Therefore, the mine contains marginal suitable habitat.

Species	Status NC Act	Description	Desktop likelihood of occurrence
Koala (combined populations of Queensland, NSW and the Australian Capital Territory) *Phascolarctos cinereus*	Endangered	**Distribution** The Koala is endemic to Australia, ranging from north-eastern Queensland to the south-east corner of South Australia, across coastal and inland areas (DCCEEW 2025). Biogeographic regions of Queensland where Koalas have been recorded include; the Einasleigh Uplands, Wet Tropics, Desert Uplands, Central Mackay Coast, Mitchell Grass Downs, Mulga Lands, Brigalow Belt, South-Eastern Queensland and Channel Country. South-Eastern Queensland and Central Mackay Coast contain the highest density of Koalas (DCCEEW 2025; DAWE 2022b). **Habitat** Koalas occupy a range of temperate, sub-tropical and tropical forest, woodland and semi-arid communities dominated by species from the *Eucalyptus* genus or related genera (including *Corymbia* and *Angophora* species) (DAWE 2022b), as well as *Lophostemon* and *Melaleuca* species (DAWE 2022b).These habitat types are largely influenced by land elevation, annual temperature and rainfall patterns, soil types and the available soil fertility (DAWE 2022b; Youngentob *et al.* 2021). Preferred food and shelter trees are naturally abundant on fertile clay soils, and there is a tendency to find the highest densities of Koalas along creek lines (DAWE 2022a). **Ecology** Koalas are leaf-eating specialists, occupying a range of vegetation communities; dominated by *Eucalyptus* species, or related genera (including *Corymbia* and *Angophora* species), as well as *Lophostemon* and *Melaleuca* species usually along watercourses (Youngentob et al.2021). The species is known to have quite specific foraging habitat requirements, as Koalas have been known to show a strong preference between individual trees within species (DAWE 2022b, 2022b; Youngentob *et al.* 2021), and individual Koalas usually obtain most of their nutrition from one or a few species present at a site (DAWE 2022b; Youngentob *et al.* 2021). Dispersing individuals, mostly young males, may occasionally cover distances of several kilometres over land with little vegetation (DAWE 2022b; Youngentob *et al.* 2021). Koala's often change trees at night, as preferred food trees may be several hundred metres apart, they spend a considerable amount of time on the ground (Van Dyck & Strahan 2008).	Likely No evidence (i.e. scats or scratches) of Koala was identified in the Project area. The desktop review identified six records of the Koala within 25 km of the Project area, and one within 10km. Five species of potential Koala food trees were identified within the Project area and most commonly occurred within remnant REs associated with Roper Creek. HVR communities across the balance of the Project area comprised primarily Poplar Box and occasionally Dawson River Gum, with the latter limited to infrequent specimens in the regrowth Brigalow patches (RE 11.3.1). Tall mature eucalypt habitat along Roper Creek is likely to support this species and provide refuge habitat. While the regrowth communities on adjacent floodplains in the Project area may be less likely to be used by this species due to the small size of the composite trees, Koala may still occupy these areas.

Species	Status NC Act	Description	Desktop likelihood of occurrence
Short-beaked Echidna *Tachyglossus aculeatus*	Special least concern	**Distribution** Mainland Australia and Tasmania. **Habitat** In Australia, they are most common in forested areas with abundant, termite-filled, fallen logs. In agricultural areas, they are most likely to be found in uncleared scrub; they may be found in grassland, arid areas, and in the outer suburbs of the capital cities (ALA 2025) **Ecology** The Short-beaked Echidna is a solitary, nocturnal marsupial that ranges over large areas without defending a specific territory. Their home ranges vary from 21 to 93 hectares, with some regions showing even larger ranges. Echidnas share home ranges and sometimes shelter sites. They are typically active during the day but become crepuscular or nocturnal in warm weather to avoid heat, as they lack sweat glands and cannot pant. Their body temperature is maintained around 32°C, and they can swim to cool down. Echidnas hibernate during the Australian winter, with body temperatures dropping to as low as 4°C. They prepare for hibernation between February and April, with males starting first. Their metabolic rate is low, around 30% of that of placental mammals, making them highly energy-efficient (ALA 2025).	Likely Potential habitat for the species has been identified on site (abundance of fallen timber). Additionally, there are online records of the species occurring within 10m proximity to the project area. As this species can occur in a wide range of habitats it considered potential to occur across the entire Project area.
Invertebrates			
Pale Imperial Hairstreak *Jalmenus Eubulus*	Vulnerable	**Distribution** Jalmenus eubulus is found in Queensland and NSW. In Queensland it is restricted to the seasonally sub-humid central and southern areas of the state. In NSW it is found only in brigalow-dominated open forests and woodlands in northern areas of the state (OEH 2025). **Habitat** Suitable habitat is dominated by brigalow, *Acacia harpophylla* and Buloke, *Casuarina cristata* on clay soils on flat to gently undulating plains, usually with scattered emergent euclypts such as Poplar Box, *Eucalyptus populnea* and low trees of Wilga, *Geijera parviflora* (OEH 2025). **Ecology** Only known to breed in old growth forest or woodland and does not appear to colonise regowth habitats following clearing or other major disturbance (OEH 2025).	Unlikely Although potential habitat is present on site. The species has not been identified by ecological surveys or within 25 km of the Project area.

Appendix D. Landscape Fragmentation and Connectivity (LFC) tool

```
Department of Environment and Science (DES)
Landscape Fragmentation and Connectivity (LFC) Tool version 1.7 LOGFILE
Process started at 28-02-2025 02:04:31 PM
Python version: 3.9.18 [MSC v.1931 64 bit (AMD64)]
Arcpy version: 3.2
Username: Judith

INPUT PARAMETERS
Output Workspace: Q:\Foxleigh Mining Pty Ltd\20 Mapping Data\30 Spatial analsyis outputs\20250228_Foxleigh_EagleNest_LFC_V2
Threshold lookup table: tbl_Regional_frag_Local_Thresh
Remnant cover layer: Regulated Vegetation Layers\RegulatedVeg_202410025_FixedGeo_7855
Cover layer metadata title:None
Remnant cover layer edited: False
Regional buffer extent: 20 kilometres
Local buffer will  be: 5 kilometres
Impact layer: Dom
layer projection: GDA2020_MGA_Zone_55
Raster cell resolution for analysis: 10 metres
Edge Width: 50 metres
(The distance from non-remnant landscapes through to the core ecosystem - the edge of remnant ecosystems)
Default projection: \\10.0.0.5\Corporate\2. BUSINESS RESOURCES\6.COMPUTER SOFTWARE\ArcGIS Pro\DP_ENVOFF_LFC_TOOL\lfc_v2p01
_arcpro\GDA 2020 Queensland AlbersOFFSET.prj


14:04:31        Checking out the spatial analyst tool - required for LFC

14:04:31        ____________BEGINNING LANDSCAPE FRAGMENTATION AND CONNECTIVITY ANALYSIS___________

14:04:31        This tool will categorise the landscape into:
{0: 'non-rem', 1: 'patch', 2: 'edge', 3: 'perforated', 4: 'core (< 100 hectares)', 5: 'core (100-500 hectares)', 6: 'core
(> 500 hectares)', 7: 'water'}

14:04:34        Q:\Foxleigh Mining Pty Ltd\20 Mapping Data\30 Spatial analsyis outputs\20250228_Foxleigh_EagleNest_LFC_V2
\lyr_file does not exist, creating it now.
14:04:34        Copying across impact site feature(s) and calculating area in hectares (AreaHA)
14:04:43        Making a local copy of the impact site
14:05:14        Preparing remnant cover layer for analysis
14:05:25        Created regional scale buffer of 20 kilometres
14:05:36        Created local scale buffer of 5 kilometres
14:06:03        Clipped the remnant cover to the regional buffer extent
14:06:17        Unioned the pre impact remnant layer with the impact site
14:06:32        Attributed the impact area as cleared
14:06:32        Area of RVM Cat B clearing is 0 hectares
14:06:32        SQL selection used is RVM_CAT = 'B' and Landcover = 0 on shapefile
Q:\Foxleigh Mining Pty Ltd\20 Mapping Data\30 Spatial analsyis outputs\20250228_Foxleigh_EagleNest_LFC_V2\LFC_result.gdb
\clip_remcover_post
```

```
14:06:32        Categorised the cover attributes in clip_remcover_pre ready for raster conversion
14:07:04        Converted clip_remcover_pre to raster

14:07:06        Categorised the cover attributes in clip_remcover_post ready for raster conversion
14:07:37        Converted clip_remcover_post to raster

14:07:37        Run Landscape fragmentation analysis on the pre impact regional landscape

REGULATED VEGETATION TYPES BEING EXTRACTED FROM LAND COVER

IDENTIFYING OF CORE, PATCH, EDGE AND PERFORATIONS

COMBINING FRAGMENTATION CLASSES

CLASSIFYING CORE FOREST PATCHES BY AREA

COMPOSING FINAL FRAGMENTATION MAP

FINISHED: COMPOSING FINAL FRAGMENTATION MAP

(FRAGMENTATION CALCULATION TIME WAS 15.8 MINUTES)
```

```
14:24:20        Run Landscape fragmentation analysis on the post impact regional landscape

REGULATED VEGETATION TYPES BEING EXTRACTED FROM LAND COVER

IDENTIFYING OF CORE, PATCH, EDGE AND PERFORATIONS

COMBINING FRAGMENTATION CLASSES

CLASSIFYING CORE FOREST PATCHES BY AREA

COMPOSING FINAL FRAGMENTATION MAP

FINISHED: COMPOSING FINAL FRAGMENTATION MAP

(FRAGMENTATION CALCULATION TIME WAS 18.8 MINUTES)


14:44:03        Extracting a local subset of lfc_regional_pre_impact

14:44:31        Extracting a local subset of lfc_regional_post_impact

14:44:54        Collating pre and post impact statistics and trigger assessment

14:44:54        Summarising area statistics for: lfc_local_pre_impact
14:44:54        Summarising area statistics for: lfc_local_post_impact
14:44:55        Summarising area statistics for: lfc_regional_pre_impact
14:44:56        Summarising patch count for lfc_local_pre_impact
14:45:18        Summarising patch count for lfc_local_post_impact

Analysing impact on Connectivity Areas

SIGNIFICANCE TEST ONE

The regional total area is 155976.75
The regional extent of core remnant is 27359.02
The regional extent of core remnant is 17.54 percent
This level of regional fragmentation sets a local impact threshold of: 5.0 percent
```

```
The table below lists the local impact thresholds for categories of regional core remnant extent:

REGIONAL CORE CATEGORY          LOCAL IMPACT THRESHOLD
< 10                            2.0
10 - 30                         5.0
30 - 50                         10.0
50 - 70                         20.0
70 - 90                         30.0
>90                             50.0

Area of core at the local scale (pre impact): 2059.94
Area of core at the local scale (post impact): 2059.94
Percent change of core at the local scale (post impact): 0.00 percent

SIGNIFICANCE TEST TWO
No core remnant areas occur on the site
(lfc_site_scale_summary.csv table will not be available)


RESULT

14:46:02        This analysis has determined any impact on connectivity areas is NOT significant
(A significant reduction in core remnant at the local scale is False OR a change from core to non-core remnant at the site
scale is False)

The significance table has been written to: ..\main_output\lfc_significance_assessment.csv
The local scale summary table has been written to: ..\main_output\lfc_local_scale_summary.csvGIS layer files copied into
folder \lyr_file within the project folder.
View layers in ArcPro using..\Q:\Foxleigh Mining Pty Ltd\20 Mapping Data\30 Spatial analsyis outputs\20250228
_Foxleigh_EagleNest_LFC_V2\lyr_file\Connectivity Area Impact Assessment.lyrx

Please scrutinise the output tables and spatial layers to confirm the desktop modelling of connectivity area impact


This analysis used an unedited copy of the Regulated Vegetation layer.

14:46:51        ____________COMPLETED LANDSCAPE FRAGMENTATION AND CONNECTIVITY ANALYSIS___________
```

Appendix E. Eagles Nest flood levee - Preliminary assessment of matters of national and state environmental significance

Hansen Botanical Assessments Pty. Ltd.

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P 0466 428 625
E chris.hansen44@protonmail.com

Ref: FMM04_Ltr_01a

8 March 2024

Celeste Ellice
Principal Environmental Advisor
Foxleigh Mine Management Pty Ltd
Level 12
300 Queen Street
Brisbane QLD 4000 Australia
[sent via e-mail: CEllice@foxleighmine.com]

Dear Celeste,

RE: Eagles Nest flood levee - Preliminary assessment of matters of national and state environmental significance

Introduction

Hansen Botanical Assessments was engaged by Foxleigh Mine Management (FMM) to assess the ecological values of vegetation communities at and surrounding the proposed Eagles Nest levee (the project) at Foxleigh Mine and potential impacts of the levee to those values. This letter provides a summary of results of the field survey undertaken for an FMM-nominated study area, encompassing the proposed project, on 15 and 16 February 2024 and review of:

- the presence or likely presence of matters of national environmental significance (MNES) listed under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)' and matters of state environmental significance (MSES) listed under the Queensland *Environmental Offsets Act 2014* (EO Act);
- the potential significance of impacts to these matters under the EPBC Act and EO Act; and,
- options for further assessment and/or reporting to assess these matters in more detail, which may be required to support state and/or Commonwealth approvals.

It should be noted that the study area comprises to areas:

1. the proposed impact area, which includes:
    - the proposed flood levee and an immediately adjacent area, nominally 20 m each side of the levee; and,
    - the area to the east of the proposed levee up to current approved limit of disturbance as prescribed in Environmental Authority EPML00744813 (effective 26 April 2023).

2. the areas outside the proposed impact area, which includes the area west of the nominal 20 m buffer to the proposed levee up to the western high bank of Roper Creek.

The latter was assessed to provide context for possible faunal interaction and utilisation of the proposed impact area.

Desktop information

The site of the proposed levee is at Foxleigh Mine in the Bowen Basin, approximately 12 km south of the township of Middlemount and approximately 190 km west-north-west of the city of Rockhampton in central Queensland. The site is located within mining leases (MLs) 70430 and 70429, on Lot 4 on SP293492, in the Isaac-Comet Downs subregion of the Brigalow Belt North Bioregion.

There are limited ecological values mapped for the study area on Queensland Government mapping. The study area is largely cleared of remnant vegetation, except for a corridor of least concern remnant regional ecosystem (RE) 11.3.25 mapped along Roper Creek, a 4th order watercourse in the western corner of the study area. Another 1st order stream is mapped as dissecting the study area in a north-east, south-west direction, although vegetation is not mapped along this watercourse. There is no essential habitat, protected plants trigger mapping, or wetlands mapped for the study area or within 1.5 km of the study area. A mixed polygon of endangered remnant RE 11.3.1/11.3.2 (80/20) is mapped approximately 100 m east of the study area, which is indicative of the potential for this type of vegetation to occur patchily throughout the landscape. Table 1 provides a summary of the REs mapped within and adjacent to the study area by the Queensland Government.

Table 1: Queensland Government mapped regional ecosystems mapped in the and in close proximity to the study area

RE code	Short Description[1]	VM Act Status	EPBC Act Status[2]
11.3.1	*Acacia harpophylla* and/or *Casuarina cristata* open forest on alluvial plains	Endangered	Endangered (Brigalow TEC)
11.3.2	*Eucalyptus populnea* woodland on alluvial plains. Contains palustrine wetlands.	Of concern	Endangered (Poplar Box Grassy Woodland TEC); and, Weeping Myall Woodlands TEC)
11.3.25	*Eucalyptus tereticornis* or *E. camaldulensis* woodland fringing drainage lines. Riverine wetland.	Least concern	None

[1] As described in the Regional Ecosystem Description Database (March 2024) (Queensland Herbarium, 2023)

[2] The RE is listed in the relevant EPBC Act conservation advice as potentially representing a threatened ecological community (TEC) listed under the EPBC Act; Brigalow (*Acacia harpophylla* dominant and co-dominant) (Brigalow), Poplar Box Grassy Woodland on Alluvial Plains (Poplar Box Grassy Woodland) and Weeping Myall Woodlands

Database searches encompassing a 20 km radial search area around the centre point for the study area identified the following MNES and MSES as potentially occurring within the search area:

- MNES (EPBC Act):
  - 5 threatened ecological communities (TECs)
  - 6 threatened plants
  - 7 threatened mammals
  - 6 threatened terrestrial reptiles
  - 11 threatened birds
  - 2 freshwater turtles
  - 12 migratory birds
- Additional MSES (EO Act) to those dual listed with MNES above:
  - 1 endangered plant
  - 1 near threatened plant
  - 1 special least concern mammal.

These search results are presented in the attached EPBC Act Protected Matters Report (Attachment A) and WildNet database search report (attachment B).

Summary of survey findings

Overview

A field survey was undertaken over two days (15 and 16 February 2024) and included the completion of six Quaternary and seven Tertiary assessment sites in accordance with the Queensland Government's *Methodology for surveying and mapping regional ecosystems and vegetation communities in Queensland, version 6.0* (Neldner, V.J. *et al.*, 2022) as well as a comprehensive random meander and educated walk throughout the study area (Figure 1, Attachment C).

The study area is located on a broad alluvial floodplain associated with and to the east of Roper Creek, which forms part of the Mackenzie River sub-basin of the Fitzroy River basin. Aside from remnant vegetation fringing Roper Creek, the study area has been historically cleared of remnant vegetation, although high-value regrowth was observed throughout. Felled timber was prevalent on the ground in some areas, with many logs supporting hollows. Cattle grazing appears to be the primary historic land use, with numerous scalds and cattle tracks observed. Exotic grasses, i.e. Buffel Grass (**Cenchrus ciliaris*) and Indian Bluegrass (**Bothriochloa pertusa*) patchily dominated the ground layer, particularly where woody vegetation was sparse or absent. Large hollow-bearing trees were observed in remnant vegetation along Roper Creek. The high-value regrowth communities across the study area primarily comprised an even-aged

cohort of trees with a diameter at breast height (DBH) typically less than 100 mm and lacking hollows.

No gilgai were observed during the field surveys and while ponded water was present at the time of the survey, this appears to be directly related to the intense rainfall experienced in the region in the week leading up to the field survey, as aquatic vegetation was not observed in these shallowly ponded areas. This lack of aquatic species in wetter areas indicates ponding habitat is temporary and infrequent within the study area.

Vegetation communities

Remnant riparian communities persist along Roper Creek in the form of Queensland Blue Gum (*Eucalyptus tereticornis* subsp. *tereticornis*) and Carbeen (*Corymbia tessellaris*) fringing woodland (RE 11.3.25), which is flanked by a narrow strip of Poplar Box (*Eucalyptus populnea*) woodland (RE 11.3.2). The remainder of the study area is represented by fragmented high-value regrowth comprising primarily regrowth Poplar Box low woodland (RE 11.3.2) and Brigalow (*Acacia harpophylla*) low open forest to shrubland (RE 11.3.1). The spatial distribution of these communities is presented in Figure 1 (Attachment C). A brief description of each of these communities is provided in Table 2.

There are no wetlands within the study area, although temporary ponding appears to occur in isolated depressions, during and following periods of heavy and/or prolonged rainfall. This was observed within the study area during the survey (refer Plate 1 & 2).

PP 3a

T 7a

Plates 1 & 2: Shallow, ephemeral ponding observed within the study area during the field survey

Table 2: Field-validated regional ecosystems in the study area

RE Code	Brief description	VM Act Status	Representative photo (Site No.)
11.3.1: Brigalow woodland on alluvium (high-value regrowth)	***Species assemblage and structure:*** Brigalow dominates the canopy of this community standing generally between 5 and 8 m in height. Emergent Poplar Box and Dawson River Gum (*Eucalyptus cambageana*) and canopy Red-flowered Bauhinia (*Lysiphyllum carronii*) were recorded infrequently in this community. The low understory is dominated by younger Brigalow to 3 m in height, with a highly variable ground layer mostly dominated by Early Spring Grass (*Eriochloa crebra*), Bastard Marshmallow (*Abutilon malvifolium*), Brigalow Burr (*Sclerolaena tetracuspis*), and Buffel Grass in open patches. ***Condition:*** Three patches were observed within the study area comprising 0.39, 2.71 and 4.29 ha respectively. It should be noted that the larger polygon is contiguous with similar vegetation to the north and east of the approved limit of disturbance (see Figure 1). The 2.71 ha patch is markedly fragmented with large areas intervening between regenerating clumps dominated by Buffel Grass. These patches have been historically cleared and continue to be somewhat fragmented, although regenerating. There is limited recruitment within this community. ***Potential to represent a TEC:*** Two of the three patches of this RE (0.39 and 2.71 ha) would fail to represent the Brigalow TEC due to the dominance of exotic perennial species and/or small patch size as per the condition thresholds for the TEC. However, the northern-most patch exhibits the required diagnostic criteria and condition thresholds that correspond with the Brigalow TEC as per the Commonwealth Government's conservation advice for this TEC (see further discussion below).	Endangered	T 2a Q 5a T 7a

RE Code	Brief description	VM Act Status	Representative photo (Site No.)
11.3.2: Poplar Box woodland on alluvium (remnant & high-value regrowth)	***Species assemblage and structure:*** This RE was represented primarily by even-aged high-value regrowth standing between 10 and 14 m in height and dominated by Poplar Box with an understory of Sally Wattle (*Acacia salicina*), Leichhardt Bean (*Cassia brewsteri*), False Sandalwood (*Eremophila mitchellii*) and a shrub layer of Currant Bush (*Carissa ovata*). Remnant areas of this RE occurred as a narrow patch on the floodplain alluvium adjacent to Roper Creek and was primarily comprised of mid-mature and mature Poplar Box, with Carbeen, Long-fruited Bloodwood (*Corymbia clarksoniana*) and Queensland Blue Gum, standing between 15 and 17 m in height, infrequently encroaching from the adjacent fringing woodland community (RE 11.3.25). Younger Poplar Box, Sally Wattle, and Leichhardt Bean were observed in the understorey with a generally grassy ground layer (to 0.6 m in height) comprising primarily exotic Buffel Grass and Indian Bluegrass, Forest Bluegrass (*Bothriochloa bladhii* subsp. *bladhii*) and Shrubby stylo (**Stylosanthes scabra*). ***Condition:*** The community across the majority of the study area has been historically cleared, although is regenerating with pockets of increased species richness in the ground layer. The strip along Roper Creek, while remnant, has been thinned and contracted due to the adjacent alluvial clearing. The ground layer condition has become compromised due to edge effects from the east. There is limited recruitment of this community throughout the study area. ***Potential to represent a TEC:*** Neither the remnant or regrowth distributions of this RE represent Weeping Myall Woodland TEC due the absence of Weeping Myall (*Acacia pendula*), which is a minimum diagnostic criteria to classify the vegetation as representing the TEC (TSSC, 2009).	Of concern	Remnant 11.3.2 Q 4a Q 4a High Value Regrowth Q 2a

RE Code	Brief description	VM Act Status	Representative photo (Site No.)
	The regrowth distribution of this RE lacks large Poplar Box with a DBH of greater than 30 cm, which is required to meet the condition thresholds of the Poplar Box Grassy Woodland TEC (DoEE, 2019). While the remnant patch along Roper Creek would meet the Category C (Moderate Quality) condition thresholds in relation to species richness, native ground cover, and large trees, a patch size of 5 ha of this quality class is the minimum requirement to be considered a component of the Poplar Box Grassy Woodland TEC (see further discussion below).		T 7a
11.3.25: Queensland Blue Gum woodland (remnant)	***Species assemblage and structure:*** Queensland Blue Gum and Carbeen dominates this riparian community, standing between 23 and 28 m in height. The sub-canopy layer (14 to 21 m in height) is comprised of predominantly River Oak (*Casuarina cunninghamiana* subsp. *cunninghamiana*), with canopy species, Poplar Box and Clarkson's Bloodwood also prevalent. The community also exhibits a lower tree and shrub layer with Sally Wattle, Leichhardt Bean, Sandpaper Fig (*Ficus opposita*), Pegunny (*Lysiphyllum hookeri*), and juvenile canopy species. The ground layer is largely exotic, dominated by Green Panic (**Megathyrsus maximus* var. *pubiglumis*) and associated Buffel Grass and Sabi Grass (**Urochloa mosambicensis*) to 1 m in height. ***Condition:*** This community was reasonably intact with large mature trees scattered throughout and hollows prevalent in the larger trees. However, there is low species richness within this community and recruitment was observed to be suppressed. ***Potential to represent a TEC:*** This RE does not contribute to a TEC as defined under the EPBC Act.	Least concern	T 4a Q 3a

Threatened ecological communities (MNES)

One patch of high-value Brigalow regrowth mapped during the field survey was confirmed to exhibit the species assemblage, structure, patch size (i.e. >0.5 ha), and age (i.e. >15 years), which corresponds with the key diagnostic features and condition thresholds of the Brigalow (*Acacia harpophylla* dominant and co-dominant) threatened ecological community (TEC). The patch is considered to represent the Brigalow TEC as it is:

- dominated by Brigalow;
- comprises less than 50% exotic perennial plants; and
- although it displays regrowth characteristics, the vegetation exhibits the composition and structural elements broadly typical of RE 11.3.1 and based on review of historic satellite imagery on the Queensland Globe (DR, 2009, 2012), this community does not appear to have been comprehensively cleared within the last 15 years (DoE, 2013).

This patch is shown on Figure 1 as extending beyond the study area surveyed as part of this assessment and is potentially greater than 5 ha in size. A minimum patch size of 0.5 ha is required to meet the condition thresholds for this TEC.

The patch of remnant RE 11.3.2 adjacent to woodland fringing Roper Creek was, although narrow, comprised of mid-mature and mature Poplar Box trees and is likely to extend beyond the limits of the study area. It is anticipated that the patch is likely to satisfy the diagnostic criteria and moderate quality condition thresholds of the Poplar Box Grassy Woodland TEC wherein:

- the crown cover of canopy trees in the patch, which is dominated by Poplar Box, is ≥10%; and,
- ≥ 20 native plant species occur in the ground layer across the whole patch; and,
- ≥ 10 mature Poplar Box trees with ≥ 30 cm DBH per hectare are present; and,
- smaller trees, saplings, or seedlings suggestive of periodic recruitment are present.

It should be noted that:

1. the distribution of this vegetation type is limited to 1.4 ha within the study area and further work would be required to determine if the entire patch is greater than 5 ha in area; BUT,
2. the distribution of this vegetation type at the closest point greater than 280 m west of the proposed flood levee and associated impacts; i.e. it will not be impacted.

Significant flora and fauna

One flora species, *Solanum elachophyllum* (no common name), which is listed as endangered under Schedule 2 of the Nature Conservation (Plants) Regulation 2020, was identified within the study area during the survey. *Solanum adenophorum*, though not recorded, is also considered to have the potential to occur in the study area. These species are discussed further in Table 3. No other threatened flora species were identified or considered likely to occur due to the comprehensive survey coverage of the study area as well as the supra-optimal conditions experienced during the survey. A preliminary flora species list for the study area is provided in Attachment D.

No threatened or otherwise significant fauna were observed while conducting vegetation and habitat surveys. A preliminary fauna species list for the study area is provided in Attachment E.

Numerous threatened, near threatened, and special least concern flora and fauna were returned from database searches for the study area and surrounding areas. Many of these species are unlikely to occur in or near the study area due to the study area being outside their known distribution, lack of nearby or recent records, and/or the lack of or marginality of habitat values within the study area. However, the following species have been initially identified as requiring further consideration due to the presence of potential habitat values in the study area and the distribution of these species encompassing the study area.

Table 3: Significant flora and fauna occurring or potentially occurring in the study area

Matter	NC Act Status (MSES)	EPBC Act Status (MNES)	Habitat values within the study area
Flora			
Solanum elachophyllum (no common name)	E	NL	***Present:*** This species was identified at two primary locations in the study area during the field survey (Figure 1). The populations comprised approximately 116 individuals generally in good condition and including reproductive individuals. All plants were recorded beneath regrowth Brigalow trees or stags, although the broader community included both regrowth REs in the study area (i.e. REs 11.3.1 and 11.3.2). While the populations occupied an area less than 20 m^2 in area, this is a very small and cryptic plant, that can be difficult to detect and therefore may occur more widely within the study area. Large populations were recorded by Chris Hansen as part of the environmental impact studies for the broader Foxleigh Plains and Cockatoo Creek Diversion projects in 2011.
Solanum adenophorum (no common name)	E	NL	***Potentially occurs:*** Specimens of this species have been recorded in regrowth Brigalow on cracking clays approximately **8** km to the north-west of the study area. These were not submitted to the Queensland Herbarium at the time due to a lack of landowner permission. *Solanum adenophorum* is a perennial herb growing to 40 cm high but has annual stems. Prickles measuring 1-7 mm long are present on the stems, leaves, and leaf stalks. The stems are green and covered with distinctive but fine glandular hairs (DES, 2022). Given the supra-optimal conditions experienced during the survey period this species should have been readily detectable, however, in the absence of very tightly held grid-based searches, the potential for

Matter	NC Act Status (MSES)	EPBC Act Status (MNES)	Habitat values within the study area
			this species to occur within the patches of regrowth Brigalow cannot be discounted.
Fauna			
Australian Painted Snipe (*Rostratula australis*)	E	E	***Unlikely to occur:*** There are no nearby records of Australian Painted Snipe within 100 km of the study area, although there are two undated records within 16 km of the study area for Latham's Snipe (Belbin, Lee, 2011) (accessed 4 March 2024). These species are thought to occupy similar habitats and somewhat nomadic, tending not to reliably use the same habitat areas consistently. There are no wetlands or gilgai habitats within the study area. Although very shallow ponding was observed during the field survey (primarily as a result of intense rainfall events occurring prior to the survey), this is unlikely to occur regularly or for prolonged periods due to the lack of aquatic vegetation observed in these ponded areas, which would require frequent moist conditions.
Latham's Snipe (*Gallinago hardwickii*)	SLC	V	
Squatter Pigeon (southern) (*Geophaps scripta scripta*)	V	V	***Potentially occurs:*** There are no records within 20 km of the study area (Belbin, Lee, 2011) (accessed 4 March 2024) and there appears (based on review of aerial photography) to be limited permanent water sources in close proximity to the study area (i.e. within 2 km – Roper Creek is an ephemeral stream), however, the habitats in the study area are broadly suitable and within the known distribution of this species.
Greater Glider (central) (*Petauroides volans*)	E	E	***Likely occurs:*** This species potentially uses tall large hollow-bearing habitats associated with Roper Creek as it is known from the region (i.e. records of both *P. volans* and *P. minor* occur on the ALA, approximately 13 km west of the study area) (Belbin, Lee, 2011) (accessed 4 March 2024). However, the younger age of the regrowth communities in the study area, evidenced by the small DBH and lack of hollows, particularly larger hollows, suggests these regrowth communities are less likely to be used by this species.
Koala (*Phascolarctos cinereus*)	E	E	***Potentially occurs:*** No evidence (i.e. scats or scratches) of Koala was identified in the study area, although the species is known from the region and there are relatively recent records 10 km north and 16 km south-west of the study area (Belbin, Lee, 2011) (accessed 4 March 2024).

Matter	NC Act Status (MSES)	EPBC Act Status (MNES)	Habitat values within the study area
			Five species of potential Koala food trees were identified within the study area and most commonly occurred within remnant REs associated with Roper Creek. High-value regrowth communities across the balance of the study area comprised primarily Poplar Box and occasionally Dawson River Gum, with the latter limited to infrequent specimens in the regrowth Brigalow patches (RE 11.3.1). Tall mature eucalypt habitat along Roper Creek is likely to support this species and provide refuge habitat. While the regrowth communities on adjacent floodplains in the study area may be less likely to be used by this species due to the small size of the composite trees, Koala may still occupy these areas.
Short-beaked Echidna (*Tachyglossus aculeatus*)	SLC	NL	***Potentially occurs:*** This species (animal or scats) was not identified in the study area, however, an abundance of fallen timber, and general habitat availability suggests this species is likely to occupy habitats in the study area at some point.
Ornamental Snake (*Denisonia maculata*)	V	V	***Potentially occurs:*** Lack of gilgai habitat and standing water following a period of prolonged and intense rainfall indicates refuge habitat (i.e. gilgai cracks) and amphibian (prey) habitat is limited within the study area and the presence of this species is unlikely to occupy the study area other than as part of dispersal movements between gilgai habitats elsewhere in the immediate region.

[1] E – Endangered, V – Vulnerable, SLC – Special Least Concern under the *Nature Conservation Act 1992*
[2] E – Endangered, V – Vulnerable, NL – Not listed under the *Environment Protection and Biodiversity Conservation Act 1999*

Table 4 breaks down the likelihood of MNES and MSES in the proposed impact area within the study area and areas outside the proposed impact area.

Table 4: Significant flora and fauna occurring or potentially occurring in the proposed impact area

Matter	NC Act Status (MSES)	EPBC Act Status (MNES)	Study Area	
			Proposed Impact Area (PIA)	Outside of PIA
Flora				
Solanum elachophyllum	E	NL	**Present** (Regrowth RE 11.3.1)	Potentially (Regrowth RE 11.3.1)
Solanum adenophorum	E	NL	Potentially (Regrowth RE 11.3.1)	Potentially (Regrowth RE 11.3.1)

Matter	NC Act Status (MSES)	EPBC Act Status (MNES)	Study Area	
			Proposed Impact Area (PIA)	Outside of PIA
Fauna				
Australian Painted Snipe (*Rostratula australis*)	E	E	Unlikely	Unlikely
Latham's Snipe (*Gallinago hardwickii*)	SLC	V	Unlikely	Unlikely
Squatter Pigeon (southern) (*Geophaps scripta scripta*)	V	V	Potentially (all HVR and RV)	Potentially (all HVR and RV)
Greater Glider (central) (*Petauroides volans*)	E	E	Unlikely	Likely (RE 11.3.25)
Koala (*Phascolarctos cinereus*)	E	E	Potential (all HVR and RV)	Potentially (all HVR and RV REs 11.3.2 and 11.3.25)
Short-beaked Echidna (*Tachyglossus aculeatus*)	SLC	NL	Potentially (all HVR and RV)	Potentially (all HVR and RV)
Ornamental Snake (*Denisonia maculata*)	V	V	Potentially (Regrowth RE 11.3.1)	Potentially (Regrowth RE 11.3.1)

Potential significance of impacts

Although the scale of potential impact has been deemed to be minor by Foxleigh Mine Management, leading to a minor Environmental Authority amendment being sought under Queensland legislation, and remnant habitats along Roper Creek will be avoided entirely, small scale impacts to habitats of endangered species and communities has the potential to trigger significant impacts depending on the nature of the impact (e.g. permanent versus temporary) and importance of habitat or vegetation community (e.g. refuge versus marginal utilisation).

In relation to the species occurring or potentially occurring in the study area, impacts to Koala habitat and the *Solanum elachophyllum* population of only a few hectares may be considered significant due to their endangered status and potential habitat values in the study area. Similarly, impacts of this scale to TECs can also attract a 'controlled action' decision by the Department of Climate Change, Energy, the Environment and Water (DCCEEW), particularly if in combination with other significant impacts.

It is likely that impacts to Short-beaked Echidna could be reasonably shown not to be significant. Similarly, the lack of breeding habitat for Squatter Pigeon (i.e. lack of permanent water sources within 1 km of the habitats in the study area) and Ornamental Snake (i.e. lack of gilgai) could be argued to reduce the significance of impacts of a relatively small area (i.e. up to 20 ha) to foraging and/or dispersal habitat rather than primary habitat for those species. Nonetheless, the final determination of significance of impacts lies with the Queensland and Commonwealth assessment agencies.

Recommendations

The Queensland Department of Science (DES) and Commonwealth DCCEEW will require all matters, returned from desktop results, appropriately considered as part of an application or referral. In most cases that would involve a fairly simple presentation of known distribution and habitat requirements and a statement about the lack of these within the study area (e.g. likelihood of occurrence assessment table). For other matters, including for example the Koala, Squatter Pigeon, Ornamental Snake, and Greater Glider more detailed assessment is required as these species are widespread, known from the region and/or habitat elements were identified in study area.

The field survey was undertaken in optimal conditions for the detection of most fauna groups, particularly reptiles and amphibians due to the hot, humid conditions and substantial recent rainfall, however detailed fauna surveys were not undertaken as part of this current field surveys. Further field work may not necessarily provide further confidence in the presence or absence of more cryptic species like Australian Painted Snipe and Ornamental Snake, given optimal conditions were experienced for the Ornamental Snake and there is limited habitat within the study area, and the presence of Australian Painted Snipe in any given potential habitat area is unpredictable. Furthermore, additional survey resulting in a lack of detection of species such as Squatter Pigeon, Koala or Greater Glider, may not sufficiently reduce their likelihood of occurring from an Agency perspective. Nonetheless, agencies may require further survey effort to provide greater confidence in assessment outcomes. This could involve further survey for evidence of Koala, hollow surveys, targeted bird surveys, and targeted reptile surveys.

A detailed assessment report, that considers and effectively discusses: a) the presence or absence of; and, b) the potential significance of impacts to MNES and MSES returned in database and desktop mapping is generally required as part of State and Commonwealth approvals.

If you require any further information, please do not hesitate to contact me via e-mail or on 0466 428 625

Kind regards,

Chris Hansen
Principal Consultant
HBA

Att.:

References
Disclaimer
Attachment A - EPBC Act Protected Matters search report
Attachment B - WildNet databse search report
Attachment C - Figure 1: Field-validated regional ecosystem mapping
Attachment D - Preliminary flora species inventory for the study area
Attachment E - Preliminary fauna species inventory for the study area

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Attachment A - EPBC Act Protected Matters search report

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: 29-Feb-2024

Summary
Details
- Matters of NES
- Other Matters Protected by the EPBC Act
- Extra Information

Caveat
Acknowledgements

Summary

Matters of National Environment Significance

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

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	5
Listed Threatened Species:	31
Listed Migratory Species:	11

Other Matters Protected by the EPBC Act

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

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at 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:	16
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

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

State and Territory Reserves:	1
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	18
Key Ecological Features (Marine):	None
Biologically Important Areas:	None
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

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 feature area
Natural Grasslands of the Queensland Central Highlands and northern Fitzroy Basin	Endangered	Community likely to 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 buffer area only

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			
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Erythrotriorchis radiatus Red Goshawk [942]	Endangered	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat may occur within area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat may occur within area	In feature area
Geophaps scripta scripta Squatter Pigeon (southern) [64440]	Vulnerable	Species or species habitat known 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
Neochmia ruficauda ruficauda Star Finch (eastern), Star Finch (southern) [26027]	Endangered	Species or species habitat likely to occur within area	In feature area
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 may occur within area	In feature area
Stagonopleura guttata Diamond Firetail [59398]	Vulnerable	Species or species habitat may occur within area	In feature area
MAMMAL			
Dasyurus hallucatus Northern Quoll, Digul [Gogo-Yimidir], Wijingadda [Dambimangari], Wiminji [Martu] [331]	Endangered	Species or species habitat may occur within area	In feature area
Macroderma gigas Ghost Bat [174]	Vulnerable	Species or species habitat may occur within area	In buffer area only
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

Scientific Name	Threatened Category	Presence Text	Buffer Status
Petauroides volans			
Greater Glider (southern and central) [254]	Endangered	Species or species habitat known 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 known to occur within area	In feature area
Pteropus poliocephalus			
Grey-headed Flying-fox [186]	Vulnerable	Roosting known to occur within area	In feature area
PLANT			
Cadellia pentastylis			
Ooline [9828]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Denhamia megacarpa			
Large-fruited Denhamia [91342]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Dichanthium queenslandicum			
King Blue-grass [5481]	Endangered	Species or species habitat may occur within area	In feature area
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 may occur within area	In feature area
Polianthion minutiflorum			
[82772]	Vulnerable	Species or species habitat may occur within area	In buffer area only
REPTILE			
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 known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
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 may occur within area	In feature area
Furina dunmalli Dunmall's Snake [59254]	Vulnerable	Species or species habitat may occur within area	In feature area
Hemiaspis damelii Grey Snake [1179]	Endangered	Species or species habitat may occur within area	In feature area
Lerista allanae Allan's Lerista, Retro Slider [1378]	Endangered	Species or species habitat may occur within area	In buffer area only
Rheodytes leukops Fitzroy River Turtle, Fitzroy Tortoise, Fitzroy Turtle, White-eyed River Diver [1761]	Vulnerable	Species or species habitat likely to occur within area	In feature area

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
Migratory Terrestrial Species			
Cuculus optatus Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area	In feature area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Rhipidura rufifrons			
Rufous Fantail [592]		Species or species habitat known to occur within area	In buffer area only
Migratory Wetlands Species			
Actitis hypoleucos			
Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
Calidris acuminata			
Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area	In feature area
Calidris ferruginea			
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Calidris melanotos			
Pectoral Sandpiper [858]		Species or species habitat may occur within area	In feature area
Gallinago hardwickii			
Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat may occur within area	In feature area
Pandion haliaetus			
Osprey [952]		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 may 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]		Species or species habitat may occur within area overfly marine area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may 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
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat may occur within area overfly marine area	In feature area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area	In feature area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may 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 feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Myiagra cyanoleuca			
Satin Flycatcher [612]		Species or species habitat may occur within area overfly marine area	In feature area
Pandion haliaetus			
Osprey [952]		Species or species habitat likely to occur within area	In buffer area only
Rhipidura rufifrons			
Rufous Fantail [592]		Species or species habitat known to occur within area overfly marine area	In buffer area only
Rostratula australis as Rostratula benghalensis (sensu lato)			
Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area overfly marine area	In feature area

Extra Information

State and Territory Reserves [Resource Information]

Protected Area Name	Reserve Type	State	Buffer Status
German Creek	Nature Refuge	QLD	In buffer area only

EPBC Act Referrals [Resource Information]

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Action clearly unacceptable				
Galilee Coal Project including development of coal mine, 495km railway, port and	2008/4366	Action Clearly Unacceptable	Completed	In buffer area only
Controlled action				
Bowen Gas Project	2012/6377	Controlled Action	Post-Approval	In feature area
Foxleigh Coal Mine Extension	2010/5421	Controlled Action	Post-Approval	In feature area
German Creek Coal Mine Extension into Oak Park	2003/1005	Controlled Action	Post-Approval	In buffer area only
Grasstree Extension Project	2018/8171	Controlled Action	Post-Approval	In buffer area only
install & operate gas pipeline	2005/2059	Controlled Action	Post-Approval	In buffer area only

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Controlled action				
Middlemount Coal Mine, North-eastern Extension, Bowen Basin, Qld	2016/7717	Controlled Action	Post-Approval	In buffer area only
Middlemount Coal Mine - Southern Open Cut Extension Project, QLD	2021/8920	Controlled Action	Assessment Approach	In buffer area only
Middlemount Coal Mine Western Extension Project, Qld	2017/8130	Controlled Action	Post-Approval	In buffer area only
Middlemount Coal Project Stage 2	2010/5394	Controlled Action	Post-Approval	In buffer area only
Norwich Park & Blackwater CSG Fields & supporting infrastructure Bowen Basin	2011/6032	Controlled Action	Completed	In buffer area only
Norwich Park to Blackwater Gas Pipeline	2011/6031	Controlled Action	Completed	In buffer area only
Not controlled action				
Expansion of One Tree Pit & Pipeline Pit and diversion of Cockatoo Creek Stage 1 & 2	2013/6841	Not Controlled Action	Completed	In buffer area only
extention to the existing underground mine and additional surface areas to gain	2004/1547	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
Open Cut Coal MIne	2001/276	Not Controlled Action	Completed	In buffer area only
Not controlled action (particular manner)				
275kV transmission line	2002/795	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only
Referral decision				
Stage One - Cockatoo Creek Diversion (Foxleigh Mine)Qld	2013/6749	Referral Decision	Completed	In buffer area only

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 are 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

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

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

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
- 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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Attachment B - WildNet databse search report

Queensland Government

WildNet species list

Search Criteria: Species List for a Specified Point
Species: All
Type: All
Queensland status: All
Records: All
Date: All
Latitude: -22.9179
Longitude: 148.7383
Distance: 20
Email: meredith@ecoscribe.com.au
Date submitted: Thursday 29 Feb 2024 13:29:27
Date extracted: Thursday 29 Feb 2024 13:30:08

The number of records retrieved = 340

Disclaimer
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The State of Queensland disclaims all responsibility for information contained in this product and all liability (including liability in negligence) for all expenses, losses, damages and costs you may incur as a result of the information being inaccurate or incomplete in any way for any reason.
Information about your Species lists request is logged for quality assurance, user support and product enhancement purposes only.
The information provided should be appropriately acknowledged as being derived from WildNet database when it is used. As the WildNet Program is still in a process of collating and vetting data, it is possible the information given is not complete. Go to the WildNet database webpage (https://www.qld.gov.au/environment/plants-animals/species-information/wildnet) to find out more about WildNet and where to access other WildNet information products approved for publication. Feedback about WildNet species lists should be emailed to wildlife.online@des.qld.gov.au.

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	amphibians	Bufonidae	*Rhinella marina*	cane toad	Y			25
animals	amphibians	Hylidae	*Cyclorana alboguttata*	greenstripe frog		C		1
animals	amphibians	Hylidae	*Cyclorana brevipes*	superb collared frog		C		1
animals	amphibians	Hylidae	*Cyclorana novaehollandiae*	eastern snapping frog		C		1
animals	amphibians	Hylidae	*Litoria caerulea*	common green treefrog		C		6
animals	amphibians	Hylidae	*Litoria inermis*	bumpy rocketfrog		C		2
animals	amphibians	Hylidae	*Litoria latopalmata*	broad palmed rocketfrog		C		2
animals	amphibians	Hylidae	*Litoria rubella*	ruddy treefrog		C		1
animals	amphibians	Limnodynastidae	*Limnodynastes tasmaniensis*	spotted grassfrog		C		1
animals	amphibians	Limnodynastidae	*Limnodynastes terraereginae*	scarlet sided pobblebonk		C		4
animals	amphibians	Limnodynastidae	*Platyplectrum ornatum*	ornate burrowing frog		C		18
animals	amphibians	Myobatrachidae	*Uperoleia sp.*			C		1
animals	birds	Acanthizidae	*Acanthiza chrysorrhoa*	yellow-rumped thornbill		C		4
animals	birds	Acanthizidae	*Acanthiza reguloides*	buff-rumped thornbill		C		1
animals	birds	Acanthizidae	*Gerygone fusca*	western gerygone		C		1
animals	birds	Acanthizidae	*Gerygone olivacea*	white-throated gerygone		C		20
animals	birds	Acanthizidae	*Smicrornis brevirostris*	weebill		C		53
animals	birds	Accipitridae	*Accipiter cirrocephalus*	collared sparrowhawk		C		1
animals	birds	Accipitridae	*Accipiter fasciatus*	brown goshawk		C		3
animals	birds	Accipitridae	*Aquila audax*	wedge-tailed eagle		C		7
animals	birds	Accipitridae	*Aviceda subcristata*	Pacific baza		C		2
animals	birds	Accipitridae	*Haliastur sphenurus*	whistling kite		C		9
animals	birds	Accipitridae	*Milvus migrans*	black kite		C		5
animals	birds	Aegothelidae	*Aegotheles cristatus*	Australian owlet-nightjar		C		13
animals	birds	Alaudidae	*Mirafra javanica*	Horsfield's bushlark		C		1
animals	birds	Alcedinidae	*Dacelo leachii*	blue-winged kookaburra		C		2
animals	birds	Alcedinidae	*Dacelo novaeguineae*	laughing kookaburra		C		27
animals	birds	Alcedinidae	*Todiramphus macleayii*	forest kingfisher		C		1
animals	birds	Alcedinidae	*Todiramphus pyrrhopygius*	red-backed kingfisher		C		1
animals	birds	Alcedinidae	*Todiramphus sanctus*	sacred kingfisher		C		4
animals	birds	Anatidae	*Anas gracilis*	grey teal		C		1
animals	birds	Anatidae	*Anas superciliosa*	Pacific black duck		C		1
animals	birds	Anatidae	*Chenonetta jubata*	Australian wood duck		C		1
animals	birds	Ardeidae	*Ardea alba modesta*	eastern great egret		C		1
animals	birds	Artamidae	*Artamus cyanopterus*	dusky woodswallow		C		1
animals	birds	Artamidae	*Cracticus nigrogularis*	pied butcherbird		C		49
animals	birds	Artamidae	*Cracticus torquatus*	grey butcherbird		C		33
animals	birds	Artamidae	*Gymnorhina tibicen*	Australian magpie		C		49
animals	birds	Artamidae	*Strepera graculina*	pied currawong		C		1
animals	birds	Burhinidae	*Burhinus grallarius*	bush stone-curlew		C		1
animals	birds	Cacatuidae	*Cacatua galerita*	sulphur-crested cockatoo		C		17
animals	birds	Cacatuidae	*Eolophus roseicapilla*	galah		C		10
animals	birds	Cacatuidae	*Nymphicus hollandicus*	cockatiel		C		7
animals	birds	Campephagidae	*Coracina novaehollandiae*	black-faced cuckoo-shrike		C		24
animals	birds	Campephagidae	*Coracina papuensis*	white-bellied cuckoo-shrike		C		2
animals	birds	Casuariidae	*Dromaius novaehollandiae*	emu		C		13

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	birds	Charadriidae	*Vanellus miles*	masked lapwing		C		1
animals	birds	Charadriidae	*Vanellus miles novaehollandiae*	masked lapwing (southern subspecies)		C		1
animals	birds	Columbidae	*Geopelia humeralis*	bar-shouldered dove		C		2
animals	birds	Columbidae	*Geopelia placida*	peaceful dove		C		9
animals	birds	Columbidae	*Geophaps scripta scripta*	squatter pigeon (southern subspecies)		V	V	1
animals	birds	Columbidae	*Ocyphaps lophotes*	crested pigeon		C		21
animals	birds	Columbidae	*Phaps chalcoptera*	common bronzewing		C		3
animals	birds	Coraciidae	*Eurystomus orientalis*	dollarbird		C		11
animals	birds	Corcoracidae	*Corcorax melanorhamphos*	white-winged chough		C		2
animals	birds	Corcoracidae	*Struthidea cinerea*	apostlebird		C		22
animals	birds	Corvidae	*Corvus coronoides*	Australian raven		C		1
animals	birds	Corvidae	*Corvus orru*	Torresian crow		C		54
animals	birds	Cuculidae	*Cacomantis flabelliformis*	fan-tailed cuckoo		C		1
animals	birds	Cuculidae	*Cacomantis pallidus*	pallid cuckoo		C		1
animals	birds	Cuculidae	*Centropus phasianinus*	pheasant coucal		C		12
animals	birds	Cuculidae	*Chalcites basalis*	Horsfield's bronze-cuckoo		C		1
animals	birds	Cuculidae	*Chalcites minutillus*	little bronze-cuckoo		C		2
animals	birds	Cuculidae	*Eudynamys orientalis*	eastern koel		C		1
animals	birds	Cuculidae	*Scythrops novaehollandiae*	channel-billed cuckoo		C		5
animals	birds	Dicaeidae	*Dicaeum hirundinaceum*	mistletoebird		C		13
animals	birds	Dicruridae	*Dicrurus bracteatus*	spangled drongo		C		1
animals	birds	Estrildidae	*Taeniopygia bichenovii*	double-barred finch		C		16
animals	birds	Eurostopodidae	*Eurostopodus mystacalis*	white-throated nightjar		C		3
animals	birds	Falconidae	*Falco berigora*	brown falcon		C		5
animals	birds	Falconidae	*Falco cenchroides*	nankeen kestrel		C		6
animals	birds	Gruidae	*Antigone rubicunda*	brolga		C		3
animals	birds	Hirundinidae	*Hirundo neoxena*	welcome swallow		C		1
animals	birds	Locustellidae	*Cincloramphus mathewsi*	rufous songlark		C		1
animals	birds	Maluridae	*Malurus assimilis*	purple-backed fairy-wren		C		9
animals	birds	Maluridae	*Malurus melanocephalus*	red-backed fairy-wren		C		24
animals	birds	Meliphagidae	*Entomyzon cyanotis*	blue-faced honeyeater		C		35
animals	birds	Meliphagidae	*Gavicalis virescens*	singing honeyeater		C		14
animals	birds	Meliphagidae	*Lichmera indistincta*	brown honeyeater		C		7
animals	birds	Meliphagidae	*Manorina flavigula*	yellow-throated miner		C		34
animals	birds	Meliphagidae	*Manorina melanocephala*	noisy miner		C		27
animals	birds	Meliphagidae	*Melithreptus albogularis*	white-throated honeyeater		C		22
animals	birds	Meliphagidae	*Nesoptilotis leucotis*	white-eared honeyeater		C		2
animals	birds	Meliphagidae	*Philemon citreogularis*	little friarbird		C		18
animals	birds	Meliphagidae	*Philemon corniculatus*	noisy friarbird		C		34
animals	birds	Meliphagidae	*Plectorhyncha lanceolata*	striped honeyeater		C		23
animals	birds	Meliphagidae	*Ptilotula penicillata*	white-plumed honeyeater		C		1
animals	birds	Meropidae	*Merops ornatus*	rainbow bee-eater		C		10
animals	birds	Monarchidae	*Grallina cyanoleuca*	magpie-lark		C		16
animals	birds	Monarchidae	*Myiagra rubecula*	leaden flycatcher		C		7
animals	birds	Motacillidae	*Anthus novaeseelandiae*	Australasian pipit		C		1
animals	birds	Neosittidae	*Daphoenositta chrysoptera*	varied sittella		C		2

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	birds	Oriolidae	*Oriolus sagittatus*	olive-backed oriole		C		3
animals	birds	Otididae	*Ardeotis australis*	Australian bustard		C		3
animals	birds	Pachycephalidae	*Colluricincla harmonica*	grey shrike-thrush		C		6
animals	birds	Pachycephalidae	*Pachycephala rufiventris*	rufous whistler		C		29
animals	birds	Pardalotidae	*Pardalotus striatus*	striated pardalote		C		54
animals	birds	Passeridae	*Passer domesticus*	house sparrow	Y			1
animals	birds	Petroicidae	*Microeca fascinans*	jacky winter		C		6
animals	birds	Phasianidae	*Synoicus ypsilophorus*	brown quail		C		6
animals	birds	Podargidae	*Podargus strigoides*	tawny frogmouth		C		12
animals	birds	Podicipedidae	*Tachybaptus novaehollandiae*	Australasian grebe		C		1
animals	birds	Pomatostomidae	*Pomatostomus temporalis*	grey-crowned babbler		C		29
animals	birds	Psittaculidae	*Aprosmictus erythropterus*	red-winged parrot		C		21
animals	birds	Psittaculidae	*Parvipsitta pusilla*	little lorikeet		C		1
animals	birds	Psittaculidae	*Platycercus adscitus*	pale-headed rosella		C		31
animals	birds	Psittaculidae	*Trichoglossus chlorolepidotus*	scaly-breasted lorikeet		C		1
animals	birds	Psittaculidae	*Trichoglossus moluccanus*	rainbow lorikeet		C		25
animals	birds	Ptilonorhynchidae	*Chlamydera maculata*	spotted bowerbird		C		6
animals	birds	Rhipiduridae	*Rhipidura albiscapa*	grey fantail		C		15
animals	birds	Rhipiduridae	*Rhipidura leucophrys*	willie wagtail		C		10
animals	birds	Strigidae	*Ninox boobook*	southern boobook		C		20
animals	birds	Threskiornithidae	*Plegadis falcinellus*	glossy ibis		SL		1
animals	birds	Threskiornithidae	*Threskiornis molucca*	Australian white ibis		C		2
animals	birds	Turnicidae	*Turnix varius*	painted button-quail		C		2
animals	birds	Tytonidae	*Tyto javanica*	eastern barn owl		C		8
animals	mammals	Bovidae	*Bos taurus*	European cattle	Y			37
animals	mammals	Canidae	*Canis familiaris*	dog	Y			2
animals	mammals	Canidae	*Canis familiaris (dingo)*	dingo				1
animals	mammals	Canidae	*Canis sp.*		Y			9
animals	mammals	Dasyuridae	*Planigale maculata*	common planigale		C		4
animals	mammals	Dasyuridae	*Planigale tenuirostris*	narrow-nosed planigale		C		1
animals	mammals	Dasyuridae	*Sminthopsis macroura*	stripe-faced dunnart		C		2
animals	mammals	Emballonuridae	*Saccolaimus flaviventris*	yellow-bellied sheathtail bat		C		12
animals	mammals	Emballonuridae	*Taphozous troughtoni*	Troughton's sheathtail bat		C		1
animals	mammals	Equidae	*Equus caballus*	horse	Y			17
animals	mammals	Felidae	*Felis catus*	cat	Y			3
animals	mammals	Leporidae	*Oryctolagus cuniculus*	rabbit	Y			46
animals	mammals	Macropodidae	*Macropus giganteus*	eastern grey kangaroo		C		65
animals	mammals	Macropodidae	*Osphranter robustus*	common wallaroo		C		2
animals	mammals	Macropodidae	*Wallabia bicolor*	swamp wallaby		C		5
animals	mammals	Molossidae	*Chaerephon jobensis*	northern freetail bat		C		1
animals	mammals	Molossidae	*Mormopterus lumsdenae*	northern free-tailed bat		C		1
animals	mammals	Molossidae	*Mormopterus ridei*	eastern free-tailed bat		C		1
animals	mammals	Muridae	*Mus musculus*	house mouse	Y			5
animals	mammals	Muridae	*Pseudomys mimulus*	eastern delicate mouse		C		11
animals	mammals	Muridae	*Rattus sordidus*	canefield rat		C		1
animals	mammals	Petauridae	*Petaurus australis australis*	yellow-bellied glider (southern subspecies)		V	V	2

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	mammals	Petauridae	*Petaurus notatus*	Krefft's glider		C		8
animals	mammals	Phalangeridae	*Trichosurus vulpecula*	common brushtail possum		C		24
animals	mammals	Phascolarctidae	*Phascolarctos cinereus*	koala		E	E	7
animals	mammals	Potoroidae	*Aepyprymnus rufescens*	rufous bettong		C		23
animals	mammals	Pseudocheiridae	*Petauroides volans volans*	southern greater glider		E	E	12
animals	mammals	Pteropodidae	*Pteropus scapulatus*	little red flying-fox		C		5
animals	mammals	Suidae	*Sus scrofa*	pig	Y			4
animals	mammals	Tachyglossidae	*Tachyglossus aculeatus*	short-beaked echidna		SL		26
animals	mammals	Vespertilionidae	*Chalinolobus gouldii*	Gould's wattled bat		C		2
animals	mammals	Vespertilionidae	*Chalinolobus morio*	chocolate wattled bat		C		2
animals	mammals	Vespertilionidae	*Chalinolobus nigrogriseus*	hoary wattled bat		C		1
animals	mammals	Vespertilionidae	*Chalinolobus picatus*	little pied bat		C		3
animals	mammals	Vespertilionidae	*Nyctophilus gouldi*	Gould's long-eared bat		C		3
animals	mammals	Vespertilionidae	*Nyctophilus sp.*			C		1
animals	mammals	Vespertilionidae	*Scotorepens balstoni*	inland broad-nosed bat		C		1
animals	mammals	Vespertilionidae	*Scotorepens greyii*	little broad-nosed bat		C		1
animals	mammals	Vespertilionidae	*Scotorepens sanborni*	northern broad-nosed bat		C		5
animals	mammals	Vespertilionidae	*Scotorepens sp.*			C		1
animals	mammals	Vespertilionidae	*Vespadelus baverstocki*	inland forest bat		C		2
animals	ray-finned fishes	Ambassidae	*Ambassis agassizii*	Agassiz's glassfish				22
animals	ray-finned fishes	Anguillidae	*Anguilla reinhardtii*	longfin eel				1
animals	ray-finned fishes	Atherinidae	*Craterocephalus stercusmuscarum*	flyspecked hardyhead				6
animals	ray-finned fishes	Clupeidae	*Nematalosa erebi*	bony bream				3
animals	ray-finned fishes	Eleotridae	*Hypseleotris galii*	firetail gudgeon				1
animals	ray-finned fishes	Eleotridae	*Hypseleotris klunzingeri*	western carp gudgeon				1
animals	ray-finned fishes	Eleotridae	*Hypseleotris sp.*					20
animals	ray-finned fishes	Eleotridae	*Mogurnda adspersa*	southern purplespotted gudgeon				12
animals	ray-finned fishes	Melanotaeniidae	*Melanotaenia sp.*					1
animals	ray-finned fishes	Melanotaeniidae	*Melanotaenia splendida splendida*	eastern rainbowfish				20
animals	ray-finned fishes	Osteoglossidae	*Scleropages leichardti*	southern saratoga				1
animals	ray-finned fishes	Percichthyidae	*Macquaria ambigua*	golden perch				1
animals	ray-finned fishes	Plotosidae	*Neosilurus hyrtlii*	Hyrtl's catfish				10
animals	ray-finned fishes	Plotosidae	*Tandanus tandanus*	freshwater catfish				1
animals	ray-finned fishes	Terapontidae	*Leiopotherapon unicolor*	spangled perch				20
animals	ray-finned fishes	Terapontidae	*Scortum hillii*	leathery grunter				1
animals	reptiles	Agamidae	*Diporiphora australis*	tommy roundhead		C		2
animals	reptiles	Agamidae	*Pogona barbata*	bearded dragon		C		3
animals	reptiles	Boidae	*Antaresia maculosa*	spotted python		C		2
animals	reptiles	Boidae	*Aspidites melanocephalus*	black-headed python		C		2
animals	reptiles	Boidae	*Morelia spilota*	carpet python		C		1
animals	reptiles	Carphodactylidae	*Nephrurus asper*	spiny knob-tailed gecko		C		13
animals	reptiles	Chelidae	*Chelodina expansa*	broad-shelled river turtle		C		3
animals	reptiles	Chelidae	*Emydura macquarii krefftii*	Krefft's river turtle		C		4
animals	reptiles	Colubridae	*Boiga irregularis*	brown tree snake		C		1
animals	reptiles	Colubridae	*Dendrelaphis punctulatus*	green tree snake		C		2
animals	reptiles	Colubridae	*Tropidonophis mairii*	freshwater snake		C		3

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	reptiles	Diplodactylidae	*Diplodactylus platyurus*	eastern fat-tailed gecko		C		5
animals	reptiles	Diplodactylidae	*Diplodactylus vittatus*	wood gecko		C		1
animals	reptiles	Diplodactylidae	*Lucasium steindachneri*	Steindachner's gecko		C		12
animals	reptiles	Diplodactylidae	*Oedura monilis*	ocellated velvet gecko		C		3
animals	reptiles	Diplodactylidae	*Oedura monilis sensu lato*	ocellated velvet gecko		C		4
animals	reptiles	Diplodactylidae	*Strophurus williamsi*	soft-spined gecko		C		2
animals	reptiles	Elapidae	*Brachyurophis australis*	coral snake		C		3
animals	reptiles	Elapidae	*Cryptophis boschmai*	Carpentaria whip snake		C		3
animals	reptiles	Elapidae	*Demansia psammophis*	yellow-faced whipsnake		C		1
animals	reptiles	Elapidae	*Denisonia maculata*	ornamental snake		V	V	2
animals	reptiles	Elapidae	*Furina diadema*	red-naped snake		C		1
animals	reptiles	Elapidae	*Furina ornata*	orange-naped snake		C		1
animals	reptiles	Elapidae	*Hoplocephalus bitorquatus*	pale-headed snake		C		2
animals	reptiles	Elapidae	*Pseudonaja textilis*	eastern brown snake		C		2
animals	reptiles	Elapidae	*Suta suta*	myall snake		C		1
animals	reptiles	Gekkonidae	*Gehyra catenata*	chain-backed dtella		C		34
animals	reptiles	Gekkonidae	*Gehyra dubia*	dubious dtella		C		66
animals	reptiles	Gekkonidae	*Heteronotia binoei*	Bynoe's gecko		C		87
animals	reptiles	Pygopodidae	*Delma tincta*	excitable delma		C		1
animals	reptiles	Pygopodidae	*Lialis burtonis*	Burton's legless lizard		C		5
animals	reptiles	Pygopodidae	*Pygopus lepidopodus*	common scaly-foot		C		1
animals	reptiles	Pygopodidae	*Pygopus schraderi*	eastern hooded scaly-foot		C		2
animals	reptiles	Scincidae	*Carlia munda*	shaded-litter rainbow-skink		C		5
animals	reptiles	Scincidae	*Carlia pectoralis*	open-litter rainbow skink		C		29
animals	reptiles	Scincidae	*Carlia pectoralis sensu lato*			C		3
animals	reptiles	Scincidae	*Carlia vivax*	tussock rainbow-skink		C		1
animals	reptiles	Scincidae	*Cryptoblepharus pannosus*	ragged snake-eyed skink		C		50
animals	reptiles	Scincidae	*Cryptoblepharus pulcher pulcher*	elegant snake-eyed skink		C		5
animals	reptiles	Scincidae	*Ctenotus ingrami*	unspotted yellow-sided ctenotus		C		2
animals	reptiles	Scincidae	*Ctenotus spaldingi*	straight-browed ctenotus		C		25
animals	reptiles	Scincidae	*Ctenotus strauchii*	eastern barred wedgesnout ctenotus		C		5
animals	reptiles	Scincidae	*Ctenotus taeniolatus*	copper-tailed skink		C		7
animals	reptiles	Scincidae	*Lerista fragilis*	eastern mulch slider		C		29
animals	reptiles	Scincidae	*Lerista punctatovittata*	eastern robust slider		C		8
animals	reptiles	Scincidae	*Lygisaurus foliorum*	tree-base litter-skink		C		12
animals	reptiles	Scincidae	*Menetia greyii*	common dwarf skink		C		8
animals	reptiles	Scincidae	*Morethia boulengeri*	south-eastern morethia skink		C		41
animals	reptiles	Scincidae	*Morethia taeniopleura*	fire-tailed skink		C		4
animals	reptiles	Varanidae	*Varanus tristis*	black-tailed monitor		C		11
fungi	lecanoromycetes	Acarosporaceae	*Acarospora citrina*			C		1/1
fungi	lecanoromycetes	Cladoniaceae	*Cladia muelleri*			C		1/1
fungi	lecanoromycetes	Parmeliaceae	*Xanthoparmelia remanens*			C		1/1
plants	land plants	Acanthaceae	*Brunoniella australis*	blue trumpet		C		1/1
plants	land plants	Acanthaceae	*Dipteracanthus australasicus subsp. corynothecus*			C		1/1
plants	land plants	Amaranthaceae	*Alternanthera nana*	hairy joyweed		C		1/1
plants	land plants	Amaranthaceae	*Nyssanthes erecta*			C		1/1

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	land plants	Apocynaceae	*Cerbera dumicola*			NT		3/2
plants	land plants	Apocynaceae	*Parsonsia lanceolata*	northern silkpod		C		1/1
plants	land plants	Asteraceae	*Calotis cuneata*			C		1/1
plants	land plants	Asteraceae	*Calotis cuneifolia*	burr daisy		C		1/1
plants	land plants	Asteraceae	*Centratherum punctatum*		Y			1/1
plants	land plants	Asteraceae	*Peripleura hispidula var. setosa*			C		1/1
plants	land plants	Bignoniaceae	*Pandorea pandorana*	wonga vine		C		1/1
plants	land plants	Boraginaceae	*Heliotropium indicum*		Y			1/1
plants	land plants	Boraginaceae	*Heliotropium tenuifolium*			C		1/1
plants	land plants	Bryaceae	*Gemmabryum pachytheca*			C		1/1
plants	land plants	Chenopodiaceae	*Einadia nutans subsp. linifolia*			C		1/1
plants	land plants	Chenopodiaceae	*Maireana enchylaenoides*			C		1/1
plants	land plants	Chenopodiaceae	*Sclerolaena calcarata*	red burr		C		1/1
plants	land plants	Commelinaceae	*Cyanotis axillaris*			C		1/1
plants	land plants	Convolvulaceae	*Ipomoea plebeia*	bellvine		C		1/1
plants	land plants	Cyperaceae	*Abildgaardia ovata*			C		1/1
plants	land plants	Cyperaceae	*Cyperus gilesii*			C		1/1
plants	land plants	Cyperaceae	*Eleocharis blakeana*			C		1/1
plants	land plants	Cyperaceae	*Eleocharis dietrichiana*			C		1/1
plants	land plants	Cyperaceae	*Eleocharis pallens*	pale spikerush		C		1/1
plants	land plants	Cyperaceae	*Scleria mackaviensis*			C		1/1
plants	land plants	Euphorbiaceae	*Acalypha eremorum*	soft acalypha		C		1/1
plants	land plants	Euphorbiaceae	*Euphorbia hyssopifolia*		Y			1/1
plants	land plants	Euphorbiaceae	*Euphorbia thymifolia*		Y			1/1
plants	land plants	Funariaceae	*Entosthodon smithhurstii*			C		1/1
plants	land plants	Funariaceae	*Goniomitrium acuminatum subsp. enerve*			C		2/2
plants	land plants	Goodeniaceae	*Goodenia grandiflora*			C		1/1
plants	land plants	Haloragaceae	*Haloragis stricta*			C		1/1
plants	land plants	Lamiaceae	*Basilicum polystachyon*			C		1/1
plants	land plants	Lamiaceae	*Ocimum caryophyllinum*			C		1/1
plants	land plants	Leguminosae	*Acacia cretata*			C		1/1
plants	land plants	Leguminosae	*Acacia cretata x Acacia fodinalis*			C		1/1
plants	land plants	Leguminosae	*Acacia excelsa subsp. excelsa*			C		1/1
plants	land plants	Leguminosae	*Chamaecrista absus var. absus*			C		1/1
plants	land plants	Leguminosae	*Desmodium macrocarpum*			C		1/1
plants	land plants	Leguminosae	*Galactia tenuiflora var. macrantha*			C		1/1
plants	land plants	Leguminosae	*Indigofera haplophylla*			C		1/1
plants	land plants	Leguminosae	*Indigofera linifolia*			C		1/1
plants	land plants	Leguminosae	*Neptunia gracilis*			C		1/1
plants	land plants	Leguminosae	*Tephrosia astragaloides*			C		1/1
plants	land plants	Leguminosae	*Vachellia farnesiana*		Y			1/1
plants	land plants	Leguminosae	*Vigna lanceolata var. lanceolata*			C		1/1
plants	land plants	Leguminosae	*Zornia muriculata subsp. muriculata*			C		1/1
plants	land plants	Malvaceae	*Malvaceae*					1/1
plants	land plants	Malvaceae	*Malvastrum americanum var. americanum*		Y			1/1
plants	land plants	Malvaceae	*Sida hackettiana*			C		1/1

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	land plants	Malvaceae	*Sida sp. (Musselbrook M.B.Thomas+ MRS437)*			C		1/1
plants	land plants	Malvaceae	*Sida spinosa*	spiny sida	Y			1/1
plants	land plants	Moraceae	*Ficus opposita*			C		1/1
plants	land plants	Myrtaceae	*Eucalyptus exserta*	Queensland peppermint		C		1/1
plants	land plants	Myrtaceae	*Melaleuca trichostachya*			C		1/1
plants	land plants	Myrtaceae	*Micromyrtus capricornia*			C		3/3
plants	land plants	Orchidaceae	*Cymbidium canaliculatum*			SL		1
plants	land plants	Oxalidaceae	*Oxalis radicosa*			C		1/1
plants	land plants	Phyllanthaceae	*Synostemon ramosissimus*			C		1/1
plants	land plants	Plantaginaceae	*Limnophila brownii*			C		1/1
plants	land plants	Poaceae	*Ancistrachne uncinulata*	hooky grass		C		1/1
plants	land plants	Poaceae	*Aristida holathera var. holathera*			C		1/1
plants	land plants	Poaceae	*Aristida lignosa*			C		1/1
plants	land plants	Poaceae	*Aristida personata*			C		2/2
plants	land plants	Poaceae	*Astrebla lappacea*	curly mitchell grass		C		1/1
plants	land plants	Poaceae	*Chloris divaricata var. divaricata*	slender chloris		C		1/1
plants	land plants	Poaceae	*Chloris pectinata*	comb chloris		C		1/1
plants	land plants	Poaceae	*Dactyloctenium radulans*	button grass		C		1/1
plants	land plants	Poaceae	*Dichanthium sericeum subsp. sericeum*			C		1/1
plants	land plants	Poaceae	*Digitaria brownii*			C		1/1
plants	land plants	Poaceae	*Dinebra decipiens var. asthenes*			C		2/2
plants	land plants	Poaceae	*Diplachne fusca var. fusca*			C		2/2
plants	land plants	Poaceae	*Enneapogon gracilis*	slender nineawn		C		3/3
plants	land plants	Poaceae	*Enneapogon lindleyanus*			C		1/1
plants	land plants	Poaceae	*Enneapogon polyphyllus*	leafy nineawn		C		1/1
plants	land plants	Poaceae	*Enneapogon truncatus*			C		1/1
plants	land plants	Poaceae	*Enneapogon virens*			C		1/1
plants	land plants	Poaceae	*Eragrostis cilianensis*		Y			1/1
plants	land plants	Poaceae	*Eragrostis elongata*			C		1/1
plants	land plants	Poaceae	*Eragrostis parviflora*	weeping lovegrass		C		1/1
plants	land plants	Poaceae	*Eriachne mucronata forma (Alpha C.E.Hubbard 7882)*			C		1/1
plants	land plants	Poaceae	*Eriachne rara*			C		1/1
plants	land plants	Poaceae	*Eriochloa crebra*	spring grass		C		1/1
plants	land plants	Poaceae	*Eriochloa pseudoacrotricha*			C		1/1
plants	land plants	Poaceae	*Hyparrhenia rufa subsp. rufa*		Y			1/1
plants	land plants	Poaceae	*Panicum buncei*			C		2/2
plants	land plants	Poaceae	*Panicum decompositum var. decompositum*			C		2/2
plants	land plants	Poaceae	*Panicum effusum*			C		1/1
plants	land plants	Poaceae	*Panicum queenslandicum var. queenslandicum*			C		1/1
plants	land plants	Poaceae	*Paspalidium caespitosum*	brigalow grass		C		2/2
plants	land plants	Poaceae	*Paspalidium constrictum*			C		1/1
plants	land plants	Poaceae	*Paspalidium globoideum*	sago grass		C		1/1
plants	land plants	Poaceae	*Schizachyrium fragile*	firegrass		C		1/1
plants	land plants	Poaceae	*Sporobolus caroli*	fairy grass		C		1/1
plants	land plants	Poaceae	*Sporobolus scabridus*			C		2/2
plants	land plants	Poaceae	*Thellungia advena*	coolibah grass		C		1/1

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	land plants	Poaceae	*Thyridolepis xerophila*			C		2/2
plants	land plants	Poaceae	*Urochloa foliosa*			C		1/1
plants	land plants	Proteaceae	*Grevillea parallela*			C		1/1
plants	land plants	Pteridaceae	*Cheilanthes sieberi subsp. sieberi*			C		1/1
plants	land plants	Putranjivaceae	*Drypetes deplanchei*	grey boxwood		C		1/1
plants	land plants	Rubiaceae	*Larsenaikia ochreata*			C		1/1
plants	land plants	Rubiaceae	*Oldenlandia corymbosa var. caespitosa*		Y			1/1
plants	land plants	Rubiaceae	*Psydrax forsteri*			C		1/1
plants	land plants	Rutaceae	*Flindersia dissosperma*			C		1/1
plants	land plants	Sapindaceae	*Dodonaea stenophylla*			C		1/1
plants	land plants	Scrophulariaceae	*Eremophila bignoniiflora*	eurah		C		1/1
plants	land plants	Scrophulariaceae	*Eremophila debilis*	winter apple		C		1/1
plants	land plants	Solanaceae	*Solanum elachophyllum*			E		3/3
plants	land plants	Solanaceae	*Solanum esuriale*	quena		C		1/1
plants	land plants	Solanaceae	*Solanum galbinum*			C		1/1
plants	land plants	Sparrmanniaceae	*Grewia latifolia*	dysentery plant		C		1/1
plants	land plants	Stylidiaceae	*Stylidium eriorhizum*			SL		2/2
plants	land plants	Tamaricaceae	*Tamarix aphylla*	athel pine	Y			1/1

CODES

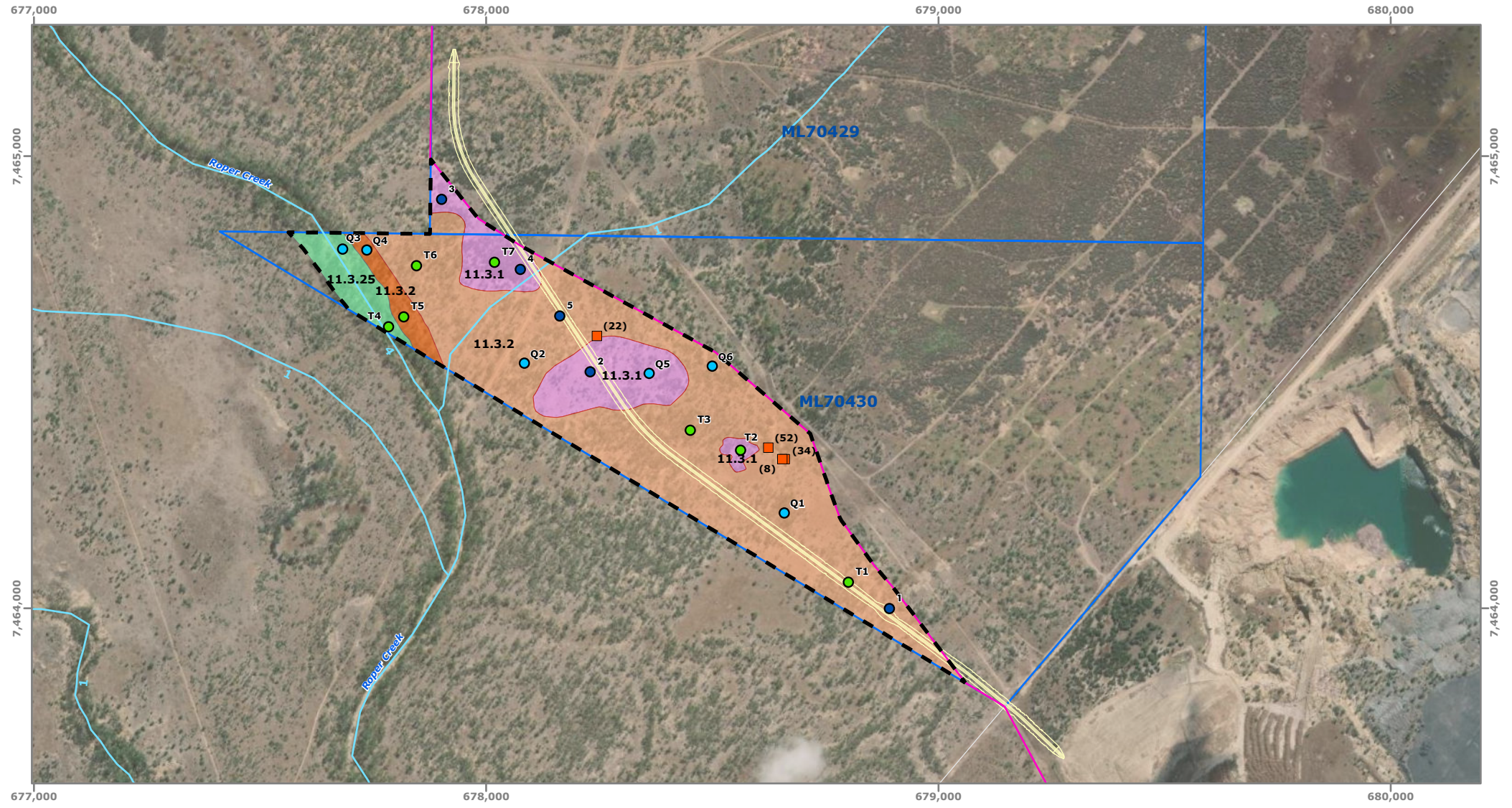
I - Y indicates that the taxon is introduced to Queensland and has naturalised.

Q - Indicates the Queensland conservation status of each taxon under the *Nature Conservation Act 1992.*
The codes are Extinct (EX), Extinct in the Wild (PE), Critically Endangered (CR), Endangered (E), Vulnerable (V), Near Threatened (NT), Special Least Concern (SL) and Least Concern (C).

A - Indicates the Australian conservation status of each taxon under the *Environment Protection and Biodiversity Conservation Act 1999.*
The values of EPBC are Extinct (EX), Extinct in the Wild (XW), Critically Endangered (CE), Endangered (E), Vulnerable (V) and Conservation Dependent (CD).

Records - The first number indicates the total number of records of the taxon (wildlife records and species listings for selected areas).
This number is output as 99999 if it equals or exceeds this value. A second number located after a / indicates the number of specimen records for the taxon.
This number is output as 999 if it equals or exceeds this value.

Attachment C - Figure 1: Field-validated regional ecosystem mapping



Legend

- StudyArea
- Approved Limit of Disturbance
- Proposed levee
- Vegetation Management Act watercourse (Stream order)
- Mining Leases
- Cadastral boundary

Remnant Vegetation

- Of concern
- Least concern

High Value Regrowth

- Endangered
- Of concern

Vegetation assessment sites

- Tertiary site
- Quaternary site
- Photo point

***Solanum elachophyllum* (no common name) - Endangered (NC Act)**

- Recorded locations (approximate population count)

N

0 200 400 600

Metres

Figure 1 : Field-validated Regional Ecosystem mapping

Eagles Nest Levee

Map Number: FMM04_PRE_01_B
Date: 06 March 2024
Map Projection: GDA 1994 MGA Zone 55
Imagery: (c) Digital Globe
Data: Road, Rail, Watercourse - (c) DNRM 2023

HBA
Hansen Botanical Assessments Pty. Ltd.

Attachment D - Preliminary flora species inventory for the study area

Table D-1: Preliminary flora species inventory for the study area

Family	Scientific name	Common name[1]	Status		Regional Ecosystems[5]		
			EPBC Act[2]	NC Act[3,4]	11.3.1	11.3.2	11.3.25
Malvaceae	*Abutilon malvifolium*	Mallow-flowered Lantern Flower	NL	C	3	2	
Mimosaceae	*Acacia harpophylla*	Brigalow	NL	C	6	2	
Mimosaceae	*Acacia oswaldii*	Umbrella Wattle	NL	C		2	
Mimosaceae	*Acacia salicina*	Sally Wattle	NL	C		3	4
Amaranthaceae	*Achyranthes aspera*	Chaff Flower	NL	C	2	2	
Fabaceae	*Aeschynomene indica*	Buddha Pea	NL	C	1	1	
Violaceae	*Afrohybanthus enneaspermus*	Purple Spade Flower	NL	C		1	2
Asteraceae	*Ageratum conyzoides*	Billygoat Weed	*	*			1
Sapindaceae	*Alectryon oleifolius subsp. elongatus*	Western Rosewood	NL	C	1	2	1
Apocynaceae	*Alstonia constricta*	Bitterbark	NL	C			4
Amaranthaceae	*Alternanthera denticulata*	Lesser Joyweed	NL	C		1	
Amaranthaceae	*Alternanthera nana*	(a) Joyweed	NL	C		2	
Asteraceae	*Apowollastonia spilanthoides*	*ncn*	NL	C		2	
Mimosaceae	*Archidendropsis basaltica*	Dead Finish	NL	C		1-3	
Poaceae	*Aristida calycina* var. *praealta*	Dark Wiregrass	NL	C		2	
Poaceae	*Aristida queenslandica* var. *dissimilis*	(a) Wiregrass	NL	C		2	
Poaceae	*Aristida ramosa*	Purple Wiregrass	NL	C		3	
Poaceae	*Aristida warburgii*	*ncn*	NL	C		1	
Poaceae	*Astrebla squarrosa*	Bull Mitchell Grass	NL	C	1		
Sapindaceae	*Atalaya hemiglauca*	Whitewood	NL	C	2	2	
Lamiaceae	*Basilicum polystachyon*	Native Basil	NL	C			2
Asteraceae	*Bidens bipinnata*	Cobbler's Pegs	*	*		1	
Nyctaginaceae	*Boerhavia dominii*	Tarvine	NL	C		2	
Convolvulaceae	*Bonamia media*	*ncn*	NL	C		+	
Poaceae	*Bothriochloa bladhii*	Forest Bluegraas	NL	C			2
Poaceae	*Bothriochloa decipiens* var. *cloncurrensis*	*ncn*	NL	C		1	
Poaceae	*Bothriochloa decipiens* var. *decipiens*	Pitted Bluegrass	NL	C		1	
Poaceae	*Bothriochloa pertusa*	Indian Bluegrass	*	*	1-3	1-3	3
Poaceae	*Brachyachne convergens*	Native Couch	NL	C	1-3		
Phyllanthaceae	*Breynia oblongifolia*	Coffee Bush	NL	C		1	
Acanthaceae	*Brunoniella australis*	Blue Trumpet	NL	C	2	2	
Asteraceae	*Calotis lappulacea*	Yellow Burr Daisy	NL	C		2	

Family	Scientific name	Common name[1]	Status		Regional Ecosystems[5]		
			EPBC Act[2]	NC Act[3,4]	11.3.1	11.3.2	11.3.25
Asteraceae	*Calotis scabiosifolia* var. *scabiosifolia*	Rough Burr Daisy	NL	C		1	
Capparaceae	*Capparis aphylla*	Warrior Bush	NL	C	1		
Capparaceae	*Capparis lasiantha*	Nipan	NL	C		2	
Apocynaceae	*Carissa ovata*	Klunkerberry	NL	C	3-4	3	
Caesalpiniaceae	*Cassia brewsteri*	Leichardt Bean	NL	C		3	3-4
Casuarinaceae	*Casuarina cristata*	Belah	NL	C	1		
Casuarinaceae	*Casuarina cunninghamiana*	River Oak	NL	C			3-5
Poaceae	*Cenchrus ciliaris*	Buffel Grass	*	*	1-4	2-5	3
Caesalpiniaceae	*Chamaecrista absus*	*ncn*	NL	C		2	
Pteridaceae	*Cheilanthes sieberi* subsp. *sieberi*	Mulga Fern	NL	C	1		
Poaceae	*Chloris divaricata* var. *divaricata*	Slender Chloris	NL	C		1	
Poaceae	*Chloris ventricosa*	Tall Chloris	NL	C		3	
Asteraceae	*Chrysocephalum apiculatum*	Golden Yellow Buttons	NL	C		1	
Poaceae	*Chrysopogon fallax*	Golden Beard Grass	NL	C		3	
Vitaceae	*Clematicissus opaca*	Forest Grape	NL	C	1		
Lamiaceae	*Clerodendrum floribundum*	Lolly Bush	NL	C		+	1
Commelinaceae	*Commelina diffusa*	Native Wandering Jew	NL	C		1	1
Commelinaceae	*Commelina ensifolia*	*ncn*	NL	C	1		
Sparrmanniaceae	*Corchorus trilocularis*	Native Jute	NL	C	1		
Myrtaceae	*Corymbia clarksoniana*	Long-fruited Bloodwood	NL	C		1	2
Myrtaceae	*Corymbia tessellaris*	Carbeen	NL	C		1	5
Amaryllidaceae	*Crinum flaccidum*	River Lily	NL	SL		1	1
Fabaceae	*Crotalaria goreensis*	Gambia Pea	*	*			2
Fabaceae	*Crotalaria juncea*	Sunn Hemp	*	*		+	
Fabaceae	*Crotalaria medicaginea*	Tre-foil Rattlepod	NL	C			1
Fabaceae	*Crotalaria novae-hollandiae*	New Holland Rattlepod	NL	C		1	
Asteraceae	*Cyanthillium cinereum*	Veronia	NL	C		2	1
Orchidaceae	*Cymbidium canaliculatum*	Black Orchid	NL	SL			1
Poaceae	*Cymbopogon refractus*	Barbed Wire Grass	NL	C		1	
Cyperaceae	*Cyperus concinnus*	*ncn*	NL	C		1	
Cyperaceae	*Cyperus fulvus*	*ncn*	NL	C		1	
Cyperaceae	*Cyperus gracilis*	Whisker Grass	NL	C	2	2	
Cyperaceae	*Cyperus isabellinus*	*ncn*	NL	C		2	
Cyperaceae	*Cyperus pilosus*	*ncn*	NL	C			1

Family	Scientific name	Common name[1]	Status		Regional Ecosystems[5]		
			EPBC Act[2]	NC Act[3,4]	11.3.1	11.3.2	11.3.25
Poaceae	*Dactyloctenium radulans*	Button Grass	NL	C	2-4	2-3	
Celastraceae	*Denhamia cunninghamii*	Yellowberry	NL	C		2	
Celastraceae	*Denhamia oleaster*	Stiff Denhamia	NL	C		1	
Fabaceae	*Desmodium brachypodum*	Lack Tick Tre-foil	NL	C		1	
Fabaceae	*Desmodium gangeticum*	*ncn*	NL	C		+	
Fabaceae	*Desmodium rhytidophyllum*	Hairy Tre-foil	NL	C		1	
Fabaceae	*Desmodium varians*	Slender Tick-trefoil	NL	C		2	
Poaceae	*Dichanthium aristatum*	Angleton Grass	*	*			2
Poaceae	*Digitaria brownii*	Cotton Panic Grass	NL	C		1	
Ebenaceae	*Diospyros humilis*	Small-leaved Ebony	NL	C		+	
Acanthaceae	*Dipteracanthus australasicus* subsp. *corynothecus*	*ncn*	NL	C	2		
Chenopodiaceae	*Dysphania pumilio*	*ncn*	NL	C		2	
Poaceae	*Echinochloa colona*	Awnless Barnyard Grass	*	*	1-3		
Boraginaceae	*Ehretia membranifolia*	Peach Bush	NL	C		1	
Chenopodiaceae	*Einadia nutans*	Climbing Saltbush	NL	C		1	
Chenopodiaceae	*Einadia polygonoides*	Climbing Saltbush	NL	C	3		
Chenopodiaceae	*Enchylaena tomentosa*	Ruby Saltbush	NL	C	3	1	
Poaceae	*Enneapogon avenaceus*	Slender Bottlewashers	NL	C		2	
Poaceae	*Enneapogon lindleyanus*	Cone-top Nine-awn	NL	C		2	
Poaceae	*Enneapogon robustissimus*	*ncn*	NL	C		+	
Poaceae	*Enteropogon acicularis*	Twirly Windmill Grass	NL	C	2	3	
Poaceae	*Enteropogon ramosus*	Curly Windmill Grass	NL	C	1	1	
Poaceae	*Eragrostis lacunaria*	Purple Lovegrass	NL	C	1	1	
Poaceae	*Eragrostis parviflora*	Weeping Lovegrass	NL	C	2		
Poaceae	*Eragrostis sororia*	*ncn*	NL	C		1	
Scrophulariaceae	*Eremophila debilis*	Winter Apple	NL	C		1	
Scrophulariaceae	*Eremophila mitchellii*	False Sandalwood	NL	C		3	
Poaceae	*Eriochloa crebra*	Early Spring Grass	NL	C	2-4	2	
Poaceae	*Eriochloa procera*	Cup Grass	NL	C	2	1-3	
Myrtaceae	*Eucalyptus cambageana*	Dawson River Gum	NL	C	2		
Myrtaceae	*Eucalyptus populnea*	Poplar Box	NL	C	2	5	2
Myrtaceae	*Eucalyptus tereticornis* subsp. *tereticornis*	Queensland Blue Gum	NL	C			5
Poaceae	*Eulalia aurea*	Silky Browntop	NL	C		2	1
Euphorbiaceae	*Euphorbia drummondii*	Caustic Weed	NL	C		2	

Family	Scientific name	Common name[1]	Status		Regional Ecosystems[5]		
			EPBC Act[2]	NC Act[3,4]	11.3.1	11.3.2	11.3.25
Euphorbiaceae	*Euphorbia hyssopifolia*	Hyssopleaf Sandmat	*	*			1
Laxmanniaceae	*Eustrephus latifolius*	Wombat Berry	NL	C		1	1
Convolvulaceae	*Evolvulus alsinoides*	Dwarf Morning Glory	NL	C		1	
Moraceae	*Ficus opposita*	Deciduous Fig	NL	C		+	
Cyperaceae	*Fimbristylis dichotoma*	*ncn*	NL	C		1	
Rutaceae	*Flindersia dissosperma*	Scrub Leopardwood	NL	C		2	
Fabaceae	*Galactia tenuiflora*	*ncn*	NL	C		2	
Fabaceae	*Glycine tabacina*	Glycine Pea	NL	C		1	
Fabaceae	*Glycine tomentella*	Woolly Glycine	NL	C		2	1
Amaranthaceae	*Gomphrena celosioides*	Gomphrena Weed	*	*		1	
Goodeniaceae	*Goodenia* sp. (Mt Castletower M.D.Crisp 2753)	*ncn*	NL	C		1	
Sparrmanniaceae	*Grewia latifolia*	Dysentery Bush	NL	C		1	2
Proteaceae	*Hakea lorea* subsp. *lorea*	Corkwood	NL	C		1	
Cactaceae	*Harrisia martinii*	Harrisia Cactus	*	*(RI)	1		
Boraginaceae	*Heliotropium amplexicaule*	Blue Heliotrope	*	*			1
Poaceae	*Heteropogon contortus*	Black Speargrass	NL	C		1-3	
Malvaceae	*Hibiscus sturtii*	Hill's Hibiscus	NL	C		1	
Fabaceae	*Indigofera colutea*	*ncn*	NL	C		1	
Fabaceae	*Indigofera linifolia*	Narrow-leaved Indigo	NL	C		1	
Fabaceae	*Indigofera linnaei*	Birdsville Indigo	NL	C		2	
Convolvulaceae	*Ipomoea plebeia*	Bell Vine	NL	C		1	1
Convolvulaceae	*Ipomoea polymorpha*	*ncn*	NL	C		1	2
Poaceae	*Iseilema vaginiflorum*	Red Flinders Grass	NL	C	2		
Convolvulaceae	*Jacquemontia paniculata* var. *paniculata*	*ncn*	NL	C		2	
Oleaceae	*Jasminum didymum subsp. lineare*	Desert Jasmine	NL	C		1	
Apocynaceae	*Leichhardtia viridiflora* subsp. *viridiflora*	*ncn*	NL	C		2	
Laxmanniaceae	*Lomandra longifolia*	Spiny-headed Mat Rush	NL	C			2
Loranthaceae	*Lysiana subfalcata*	Lemon Mistletoe	NL	C	1	1	
Caesalpiniaceae	*Lysiphyllum carronii*	Red-flowered Bauhinia	NL	C	2	1	1
Fabaceae	*Macroptilium atropurpureum*	Siratro	*	*			2
Fabaceae	*Macroptilium lathyroides*	Phasey Bean	*	*			2
Malvaceae	*Malvastrum americanum* var. americanum	Spiked Malvastrum	*	*	2	2	
Poaceae	*Megathyrsus maximus* var. *pubiglumis*	Green Panic	*	*		1	5
Pentapetaceae	*Melhania oblongifolia*	Melhania	NL	C		1	2

Family	Scientific name	Common name[1]	Status		Regional Ecosystems[5]		
			EPBC Act[2]	NC Act[3,4]	11.3.1	11.3.2	11.3.25
Poaceae	*Melinis repens*	Red Natal Grass	*	*			1
Cucurbitaceae	*Cucumis maderaspatanus*	*ncn*	*	*			1
Mimosaceae	*Neptunia gracilis*	Native Sensitive Plant	NL	C		2	
Amaranthaceae	*Nyssanthes erecta*	*ncn*	NL	C		2	
Lamiaceae	*Ocimum tenuiflorum*	Holy Basil	NL	C			1
Cactaceae	*Opuntia streptacantha*	Westwood Pear	*	*(RI)		1	
Cactaceae	*Opuntia tomentosa*	Velvety Tree Pear	*	*(RI)		1	
Meliaceae	*Owenia acidula*	Emu Apple	NL	C		2	
Oxalidaceae	*Oxalis chnoodes*	*ncn*	NL	C		+	1
Bignoniaceae	*Pandorea pandorana*	Wonga Vine	NL	C		1	
Poaceae	*Panicum effusum*	Hairy Panic	NL	C		2	
Poaceae	*Panicum larcomianum*	*ncn*	NL	C	1		
Apocynaceae	*Parsonsia lanceolata*	Rough Silkpod	NL	C		1	
Poaceae	*Paspalidium caespitosum*	Brigalow Grass	NL	C	1-3		
Poaceae	*Paspalidium rarum*	*ncn*	NL	C		1	
Asteraceae	*Peripleura diffusa*	*ncn*	NL	C		2	
Asteraceae	*Peripleura hispidula*	*ncn*	NL	C		1	1
Picrodendraceae	*Petalostigma pubescens*	Quinine Bush	NL	C		1	
Phyllanthaceae	*Phyllanthus maderaspatensis*	*ncn*	NL	C	2	2	
Polygalaceae	*Polygala triflora*	*ncn*	NL	C		2	
Portulacaceae	*Portulaca filifolia*	Native Pigweed	NL	C		2	
Portulacaceae	*Portulaca oleracea*	Pigweed	*	*	1	1	
Asteraceae	*Pterocaulon redolens*	*ncn*	NL	C		1	1
Asteraceae	*Pterocaulon serrulatum*	Pineapple Bush	NL	C		+	
Fabaceae	*Rhynchosia minima* var. *australis*	Rhyncho	NL	C		2	
Rubiaceae	*Richardia brasiliensis*	White-eye	*	*			1
Acanthaceae	*Rostellularia adscendens*	Pink Tongues	NL	C	2	2	2
Chenopodiaceae	*Salsola australis*	Soft Roly Poly	NL	C		1	
Santalaceae	*Santalum lanceolatum*	Northern Sandalwood	NL	SL		1	
Goodeniaceae	*Scaevola spinescens*	Prickly Fan Flower	NL	C		1	
Chenopodiaceae	*Sclerolaena birchii*	Galvanised Burr	NL	C		2	
Chenopodiaceae	*Sclerolaena muricata* var. *muricata*	Black Roly Poly	NL	C		2	
Chenopodiaceae	*Sclerolaena tetracuspis*	Brigalow Burr	NL	C	3		
Mimosaceae	*Senna artemisioides* subsp. x *coriacea*	*ncn*	NL	C		1	

Family	Scientific name	Common name[1]	Status		Regional Ecosystems[5]		
			EPBC Act[2]	NC Act[3,4]	11.3.1	11.3.2	11.3.25
Caesalpiniaceae	*Senna coronilloides*	Brigalow Senna	NL	C	1	1	
Fabaceae	*Sesbania cannabina*	Sesbania Pea	NL	C	1		
Malvaceae	*Sida cordifolia*	Flannel Weed	*	*		1	2
Malvaceae	*Sida corrugata*	Corrugated Sida	NL	C		1	
Malvaceae	*Sida fibulifera*	Pin Sida	NL	C		1	
Malvaceae	*Sida hackettiana*	Shrub Sida	NL	C		2	
Malvaceae	*Sida rohlenae*	*ncn*	NL	C		1	2
Malvaceae	*Sida spinosa*	Spiny Sida	*	*		2	
Malvaceae	*Sida trichopoda*	High Sida	NL	C		1	
Solanaceae	***Solanum elachophyllum***	**ncn**	**NL**	**E**	**1**	**1**	
Solanaceae	*Solanum ellipticum*	Potato Bush	NL	C	1		
Solanaceae	*Solanum ellipticum*	Potato Bush	NL	C		1	
Solanaceae	*Solanum esuriale*	Quena	NL	C		2	
Rubiaceae	*Spermacoce multicaulis*	*ncn*	NL	C		2	
Asteraceae	*Sphaeromorphaea australis*	ncn	NL	C		1	
Poaceae	*Sporobolus actinocladus*	Katoora Grass	NL	C	2		
Poaceae	*Sporobolus caroli*	Fairy Grass	NL	C	3-4	2	
Poaceae	*Sporobolus creber*	Slender Rat's Tail Grass	NL	C	2	1	
Fabaceae	*Stylosanthes scabra*	Shrubby Stylo	*	*		3	
Combretaceae	*Terminalia oblongata* subsp. *oblongata*	Yellowwood	NL	C		1	1
Poaceae	*Themeda triandra*	Kangaroo Grass	NL	C		1-3	
Poaceae	*Tragus australianus*	Burr Grass	NL	C		+	
Aizoaceae	*Trianthema portulacastrum*	Black Pigweed	*	*		1	
Aizoaceae	*Trianthema triquetra*	Red Spinach	NL	C	2	2	
Zygophyllaceae	*Tribulus micrococcus*	Yellow Vine	NL	C	2		
Asteraceae	*Tridax procumbens*	Tridax Daisy	*	*			2
Poaceae	*Urochloa mosambicensis*	Sabi Grass	*	*		3	2
Mimosaceae	*Vachellia farnesiana*	Prickly Acacia	*	*			1
Rhamnaceae	*Ventilago viminalis*	Vine Tree	NL	C		1	
Fabaceae	*Vigna lanceolata* var. lanceolata	Maloga Bean	NL	C		1	
Asteraceae	*Vittadinia dissecta*	*ncn*	NL	C		1	
Campanulaceae	*Wahlenbergia gracilis*	Australian Bluebell	NL	SL		1	
Byttneriaceae	*Waltheria indica*	*ncn*	NL	C		2	
Fabaceae	*Zornia muelleriana*	*ncn*	NL	C		1	

Family	Scientific name	Common name[1]	Status		Regional Ecosystems[5]		
			EPBC Act[2]	NC Act[3,4]	11.3.1	11.3.2	11.3.25
Fabaceae	*Zornia muriculata*	*ncn*	NL	C		1	

Legend

1. ncn = no common name.
2. Flora species status under the EPBC Act: CE – critically endangered; E – endangered; V – vulnerable; NL = not listed.
3. Flora species status under the NC Act: CR – critically endangered; E – endangered; V – vulnerable; NT – near threatened; SL – special least concern; C = least concern native species; C (n-l) = not listed native species but not local to region; * = exotic species.
4. Class of declared species under Queensland's *Biosecurity Act 2014*: *(RI) – restricted invasive exotic flora species.
5. Relative abundance of species was based on the Braun-Blanquet technique cover-abundance scale (Mueller-Dombois and Ellenberg 2003) as follows:

   + = individual specimen recorded

   1 = sparse, <5%;

   2 = any number, <5%;

   3 = 5 – 24%;

   4 = 25 – 49%;

   5 = 50 – 74%; and,

   6 = 75 – 100%.

Attachment E - Preliminary fauna species inventory for the study area

Table E-1: Preliminary fauna species inventory for the study area

Scientific Name	Vernacular Name	EPBC Act	NC Act	Family
Mammals				
Canis familiaris	Common Dog	NL	C	Canidae
Macropus giganteus	Eastern Grey Kangaroo	NL	C	Macropodidae
Macropus robustus erubescens	Common Wallaroo	NL	C	Macropodidae
Oryctolagus cuniculus	Rabbit	NL	C	Leporidae
Sus scrofa	Pig	NL	C	Suidae
Wallabia bicolor	Swamp Wallaby	NL	C	Macropodidae
Reptiles				
Carlia munda	Shaded-litter Rainbow-skink	NL	C	Scincidae
Pogona barbata	Bearded Dragon	NL	C	Agamidae
Frogs				
Cyclorana alboguttata	Striped Burrowing Frog	NL	C	Hylidae
Limnodynastes salmini	Salmon Striped Frog	NL	C	Myobatrachidae
Limnodynastes tasmaniensis	Spotted Marsh Frog	NL	C	Myobatrachidae
Limnodynastes terraereginae	Northern Banjo Frog	NL	C	Myobatrachidae
Litoria caerulea	Green Tree Frog	NL	C	Hylidae
Litoria nasuta	Rocket Frog	NL	C	Hylidae
Litoria latopalmata	Broad-palmed Frog	NL	C	Hylidae
Platyplectrum ornatum	Ornate Burrowing Frog	NL	C	Myobatrachidae
Birds				
Acanthiza reguloides	Buff-rumped Thornbill	NL	C	Acanthizidae
Aprosmictus erythropterus	Red-winged Parrot	NL	C	Psittacidae
Aquila audax	Wedge-tailed Eagle	NL	C	Accipitridae
Ardea ibis	Cattle Egret	NL	C	Ardeidae
Ardeotis australis	Australian Bustard	NL	C	Otididae
Artamus leucorynchus	White-breasted Woodswallow	NL	C	Artamidae
Cacatua galerita	Sulphur-crested Cockatoo	NL	C	Cacatuidae
Cacomantis pallidus	Pallid Cuckoo	NL	C	Cuculidae
Centropus phasianinus	Pheasant Coucal	NL	C	Centropodidae
Cisticola exilis	Golden-headed Cisticola	NL	C	Cisticolidae
Colluricincla harmonica	Grey Shrike-thrush	NL	C	Pachycephalidae
Coracina novaehollandiae	Black-faced Cuckoo-shrike	NL	C	Campephagidae
Corvus orru orru	Torresian Crow	NL	C	Corvidae
Cracticus nigrogularis	Pied Butcherbird	NL	C	Artamidae
Cracticus tibicen	Australian Magpie	NL	C	Artamidae
Cracticus torquatus	Grey Butcherbird	NL	C	Artamidae
Dacelo leachii leachii	Blue-winged Kookaburra	NL	C	Alcedinidae

Scientific Name	Vernacular Name	EPBC Act	NC Act	Family
Dacelo novaeguineae	Laughing Kookaburra	NL	C	Alcedinidae
Dicaeum hirundinaceum	Mistletoebird	NL	C	Nectariniidae
Dromaius novaehollandiae	Emu	NL	C	Casuariidae
Egretta novaehollandiae	White-faced Heron	NL	C	Ardeidae
Elanus axillaris	Black-shouldered Kite	NL	C	Accipitridae
Entomyzon cyanotis	Blue-faced Honeyeater	NL	C	Meliphagidae
Eolophus roseicapillus	Galah	NL	C	Cacatuidae
Eurystomus orientalis	Dollarbird	NL	C	Coraciidae
Gavicalis virescens	Singing Honeyeater	NL	C	Meliphagidae
Geopelia humeralis	Bar-shouldered Dove	NL	C	Columbidae
Geopelia striata	Peaceful Dove	NL	C	Columbidae
Grallina cyanoleuca	Magpie-lark	NL	C	Monarchidae
Grus rubicunda	Brolga	NL	C	Gruidae
Haliastur sphenurus	Whistling Kite	NL	C	Accipitridae
Lalage leucomela	Varied Triller	NL	C	Campephagidae
Lichmera indistincta	Brown Honeyeater	NL	C	Meliphagidae
Malurus lamberti assimilis	Variegated Fairy-wren	NL	C	Maluridae
Malurus melanocephalus	Red-backed Fairy-wren	NL	C	Maluridae
Manorina flavigula	Yellow-throated Miner	NL	C	Meliphagidae
Manorina melanocephala	Noisy Miner	NL	C	Meliphagidae
Melithreptus albogularis	White-throated Honeyeater	NL	C	Meliphagidae
Milvus migrans	Black Kite	NL	C	Accipitridae
Neochmia modesta	Plum-headed Finch	NL	C	Estrildidae
Pachycephala rufiventris	Rufous Whistler	NL	C	Pachycephalidae
Petrochelidon nigricans	Tree Martin	NL	C	Hirundinidae
Philemon citreogularis	Little Friarbird	NL	C	Meliphagidae
Philemon corniculatus	Noisy Friarbird	NL	C	Meliphagidae
Platycercus adscitus	Pale-headed Rosella	NL	C	Psittacidae
Plegadis falcinellus	Glossy Ibis	NL	C	Threskiornithidae
Pomatostomus temporalis	Grey-crowned Babbler	NL	C	Pomatostomidae
Rhipidura albiscapa keasti	Grey Fantail	NL	C	Rhipiduridae
Smicrornis brevirostris	Weebill	NL	C	Acanthizidae
Stizoptera bichenovii	Double-barred Finch	NL	C	Estrildidae
Struthidea cinerea cinerea	Apostlebird	NL	C	Corcoracidae
Taeniopygia guttata	Zebra Finch	NL	C	Estrildidae

Appendix F. MSES Report northern MIA

Queensland Government

Department of the Environment, Tourism, Science and Innovation

Environmental Reports

Matters of State Environmental Significance

For the selected area of interest

Longitude: 148.7375 Latitude: -22.8749 with 2 kilometre radius

Environmental Reports - General Information

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

All area and area derived figures included in this report have been calculated via reprojecting relevant spatial features to Albers equal-area conic projection (central meridian = 146, datum Geocentric Datum of Australia 2020). As a result, area figures may differ slightly if calculated for the same features using a different co-ordinate system.

Figures in tables may be affected by rounding.

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

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

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

Disclaimer

Whilst every care is taken to ensure the accuracy of the information provided in this report, the Queensland Government makes no representations or warranties about its accuracy, reliability, completeness, or suitability, for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs which the user may incur as a consequence of the information being inaccurate or incomplete in any way and for any reason.

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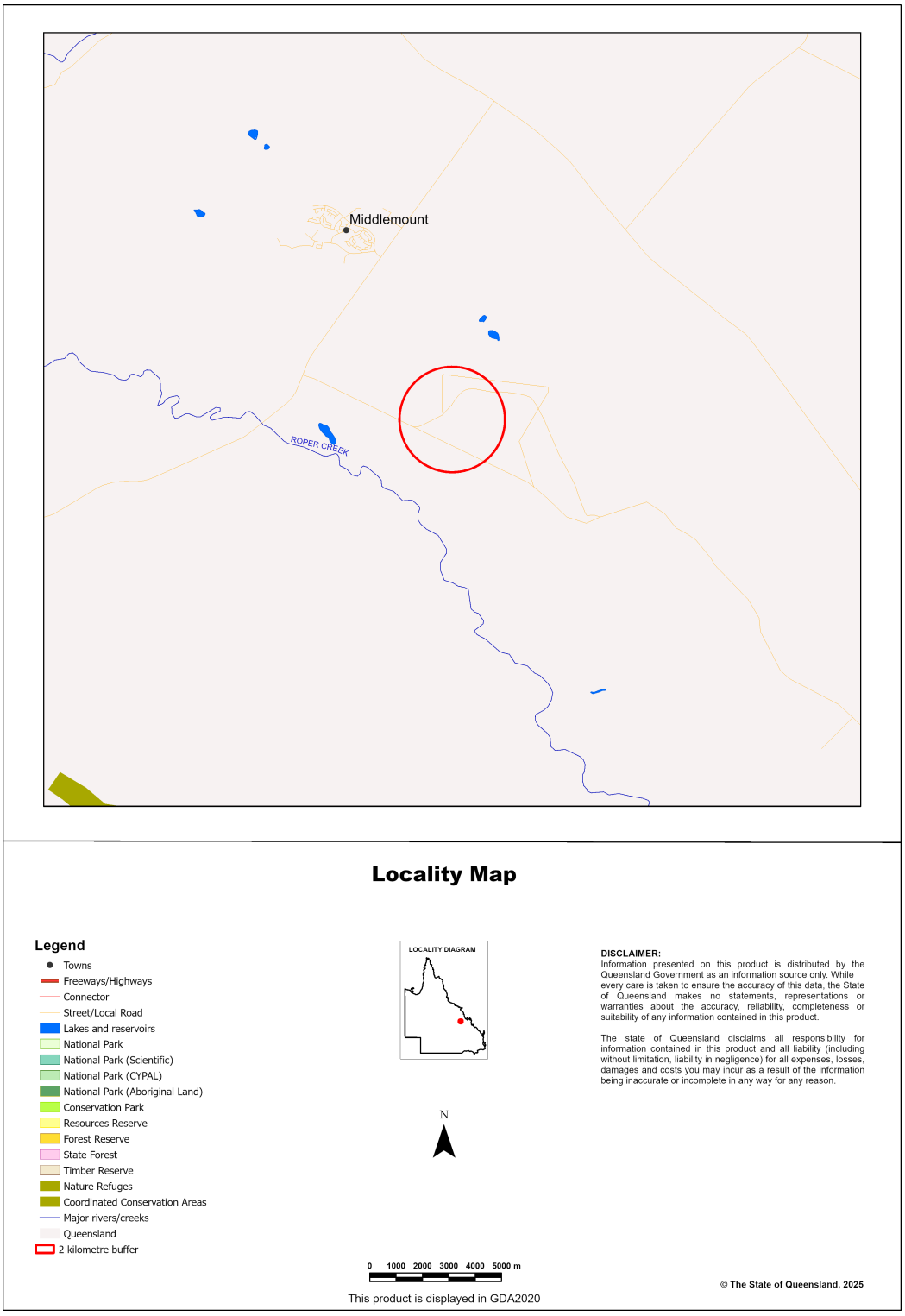
Assessment Area Details

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

Table 1: Summary table, details for AOI: Longitude: 148.7375 Latitude: -22.8749 with 2 kilometre radius, with area 1256.64 ha

Local Government(s)	Catchment(s)	Bioregion(s)	Subregion(s)
Isaac Regional	Fitzroy	Brigalow Belt	Isaac - Comet Downs



Matters of State Environmental Significance (MSES)

MSES Categories

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

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

The MSES mapping product is a guide to assist implementation of the SPP biodiversity policy. While it supports the SPP, the mapping does not replace the regulatory mapping or environmental values specifically called up under other laws or regulations.

The SPP defines matters of state environmental significance as:

- Protected areas (including all classes of protected area except coordinated conservation areas) under the *Nature Conservation Act 1992;*

- Marine parks and land within a 'marine national park', 'conservation park', 'scientific research', 'preservation' or 'buffer' zone under the Marine Parks Act 2004 ;

- Areas within declared fish habitat areas that are management A areas or management B areas under the Fisheries Regulation 2008;

- *Threatened wildlife under the Nature Conservation Act 1992* and special least concern animals under the Nature Conservation (Wildlife) Regulation 2006;

- Regulated vegetation under the *Vegetation Management Act 1999* that is:

  - Category B areas on the regulated vegetation management map, that are 'endangered' or 'of concern' regional ecosystems;
  - Category C areas on the regulated vegetation management map that are 'endangered' or 'of concern' regional ecosystems;
  - Category R areas on the regulated vegetation management map;
  - Regional ecosystems that intersect with watercourses identified on the vegetation management watercourse and drainage feature map;
  - Regional ecosystems that intersect with wetlands identified on the vegetation management wetlands map;

- Strategic Environmental Areas under the *Regional Planning Interests Act 2014* ;

- Wetlands in a wetland protection area of wetlands of high ecological significance shown on the Map of Queensland Wetland Environmental Values under the Environment Protection Regulation 2019;

- Wetlands and watercourses in high ecological value waters defined in the Environmental Protection (Water) Policy 2009, schedule 2;
- Legally secured offset areas.

MSES Values Present

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

Table 2: Summary of MSES present within the AOI

1a Protected Areas- estates	0 ha	0.0%
1b Protected Areas- nature refuges	0 ha	0.0%
1c Protected Areas- special wildlife reserves	0 ha	0.0%
2 State Marine Parks- highly protected zones	0 ha	0.0%
3 Fish habitat areas (A and B areas)	0 ha	0.0%
4 Strategic Environmental Areas (SEA)	0 ha	0.0%
5 High Ecological Significance wetlands on the Map of Queensland Wetland Environmental Values	0 ha	0.0%
6a High Ecological Value (HEV) wetlands	0 ha	0.0%
6b High Ecological Value (HEV) waterways	0 km	Not applicable
7a Threatened (endangered or vulnerable) wildlife	0.55 ha	0.0%
7b Special least concern animals	0 ha	0.0%
7c i Koala habitat area - core (SEQ)	0 ha	0.0%
7c ii Koala habitat area - locally refined (SEQ)	0 ha	0.0%
7d Sea turtle nesting areas	0 km	Not applicable
8a Regulated Vegetation - Endangered/Of concern in Category B (remnant)	17.93 ha	1.4%
8b Regulated Vegetation - Endangered/Of concern in Category C (regrowth)	0 ha	0.0%
8c Regulated Vegetation - Category R (GBR riverine regrowth)	0 ha	0.0%
8d Regulated Vegetation - Essential habitat	0.55 ha	0.0%
8e Regulated Vegetation - intersecting a watercourse	1.9 km	Not applicable
8f Regulated Vegetation - within 100m of a Vegetation Management Wetland	0 ha	0.0%
9a Legally secured offset areas- offset register areas	0 ha	0.0%
9b Legally secured offset areas- vegetation offsets through a Property Map of Assessable Vegetation	0 ha	0.0%

Additional Information with Respect to MSES Values Present

MSES - State Conservation Areas

1a. Protected Areas - estates

(No results)

1b. Protected Areas - nature refuges

(No results)

1c. Protected Areas - special wildlife reserves

(No results)

2. State Marine Parks - highly protected zones

(No results)

3. Fish habitat areas (A and B areas)

(No results)

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

MSES - Wetlands and Waterways

4. Strategic Environmental Areas (SEA)

(No results)

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

(no results)

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

(no results)

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

(no results)

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

MSES - Species

7a. Threatened (endangered or vulnerable) wildlife

Values are present

7b. Special least concern animals

Not applicable

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

Not applicable

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

Not applicable

7d. Wildlife habitat (sea turtle nesting areas)

Not applicable

Threatened (endangered or vulnerable) wildlife habitat suitability models

Species	Common name	NCA status	Presence
Boronia keysii	Keys boronia	V	None
Calyptorhynchus lathami	Glossy black cockatoo	V	None
Casuarius casuarius johnsonii	Sthn population cassowary	E	None
Crinia tinnula	Wallum froglet	V	None
Denisonia maculata	Ornamental snake	V	Core
Euastacus bindal	Mount Elliot crayfish	CR	None
Euastacus binzayedi		CR	None
Euastacus eungella		E	None
Euastacus hystricosus		E	None
Euastacus jagara	Jagara hairy crayfish	CR	None
Euastacus maidae		CR	None
Euastacus monteithorum		E	None
Euastacus robertsi		E	None
Taudactylus pleione	Kroombit tinkerfrog	E	None
Litoria freycineti	Wallum rocketfrog	V	None
Litoria olongburensis	Wallum sedgefrog	V	None
Macadamia integrifolia		V	None
Melaleuca irbyana	swamp tea-tree	E	None
Macadamia ternifolia		V	None
Macadamia tetraphylla	bopple nut	V	None
Petrogale penicillata	brush-tailed rock-wallaby	V	None
Petrogale coenensis	Cape York rock-wallaby	E	None
Petrogale purpureicollis	purple-necked rock-wallaby	V	None
Petrogale sharmani	Sharmans rock-wallaby	V	None
Petrogale xanthopus celeris	yellow-footed rock-wallaby (Qld subspecies)	V	None
Petaurus gracilis	Mahogany Glider	E	None
Petrogale persephone	Proserpine rock-wallaby	E	None
Phascolarctos cinereus	Koala - outside SEQ*	E	None
Pezoporus wallicus wallicus	Eastern ground parrot	V	None
Xeromys myoides	Water Mouse	V	None

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

Threatened (endangered or vulnerable) wildlife species records

(No results)

Special least concern animal species records

(No results)

Shorebird habitat (critically endangered/endangered/vulnerable)

Not applicable

Shorebird habitat (special least concern)

Not applicable

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

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

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

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

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

MSES - Regulated Vegetation

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

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

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

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

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

Regional ecosystem	Vegetation management polygon	Vegetation management status
11.4.8/11.4.9	E-dom	rem_end
11.5.3/11.3.2	O-subdom	rem_oc

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

Not applicable

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

Not applicable

8d. Regulated Vegetation - Essential habitat

Values are present

8e. Regulated Vegetation - intersecting a watercourse**

A vegetation management watercourse is mapped as present

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

Not applicable

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

MSES - Offsets

9a. Legally secured offset areas - offset register areas

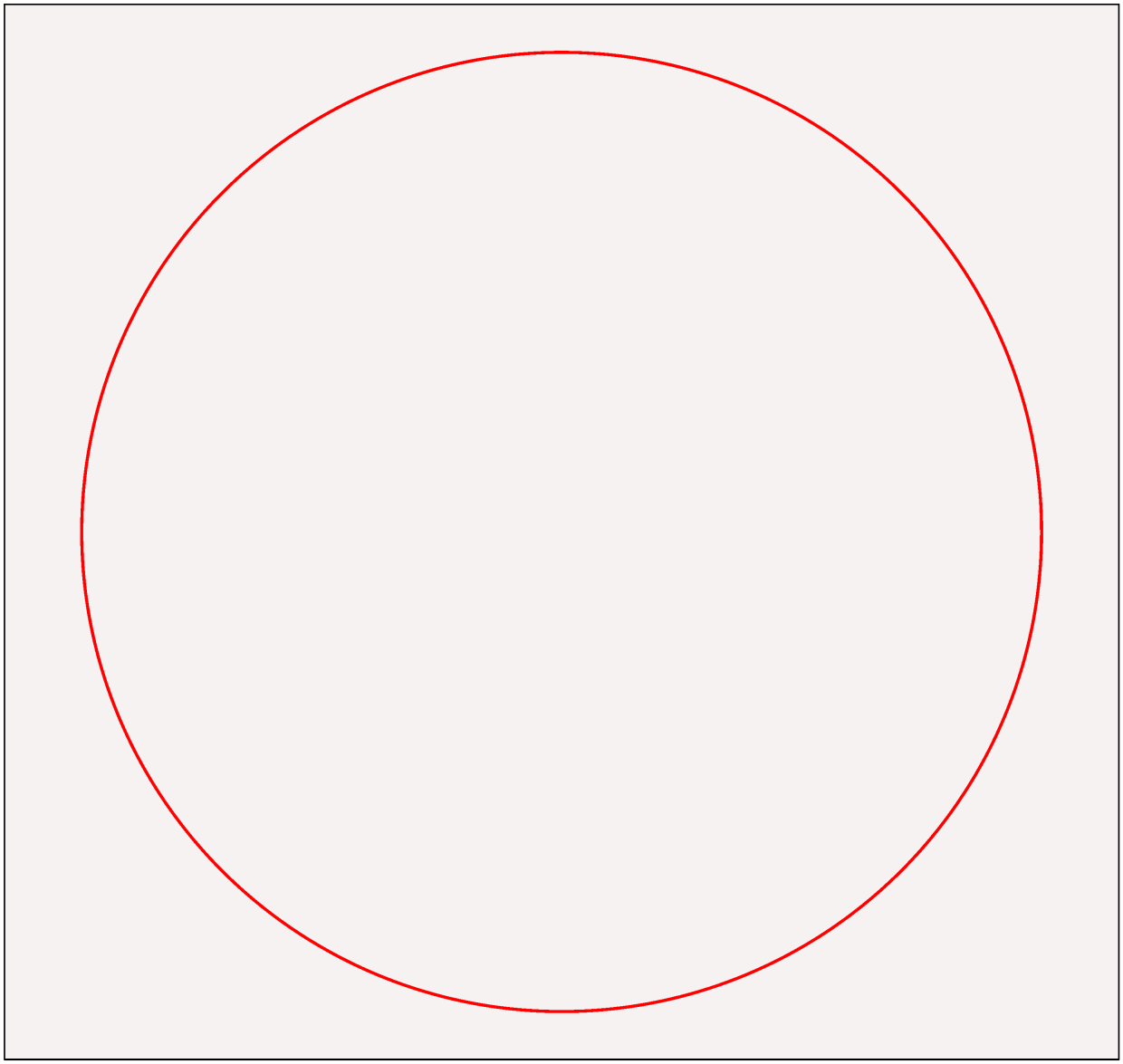
(No results)

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

(No results)

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

Map 1 - MSES - State Conservation Areas



MSES - State Conservation Areas

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

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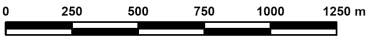

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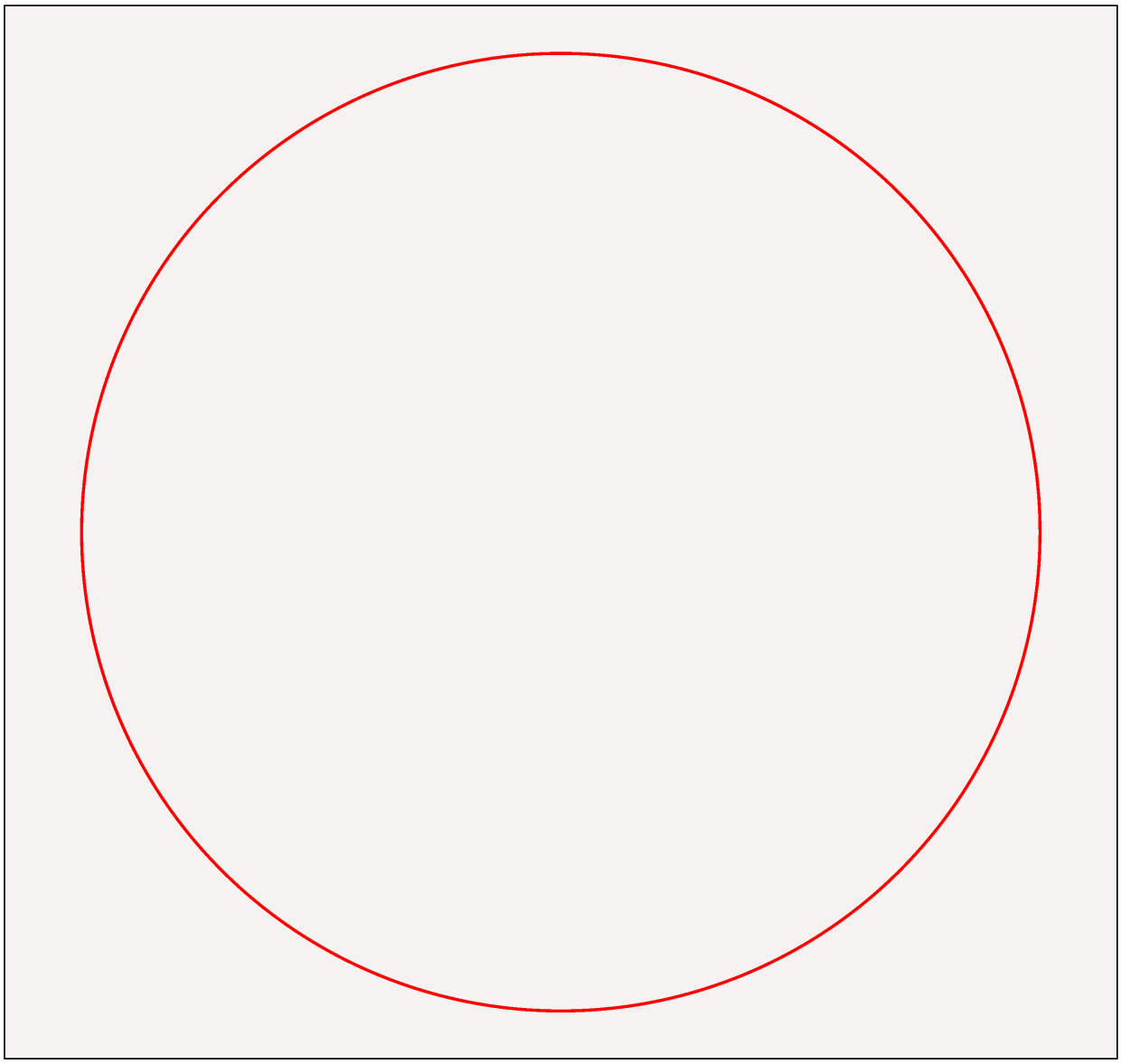
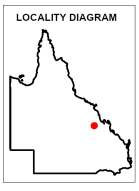
Map 2 - MSES - Wetlands and Waterways



MSES - Wetlands and Waterways

- Towns
- Freeways/Highways
- Secondary roads
- Major rivers/creeks
- Declared high ecological value waters (watercourse)
- Strategic environmental area (designated precinct)
- Declared high ecological value waters (wetland)
- High ecological significance wetlands
- 2 kilometre buffer



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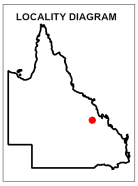
Map 3a - MSES - Species - Threatened (endangered or vulnerable) wildlife and special least concern animals

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

- ▲ Towns
- Freeways/Highways
- Secondary roads
- Major rivers/creeks
- Wildlife habitat (special least concern)
- Wildlife habitat (endangered or vulnerable)
- 2 kilometre buffer



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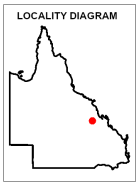
Map 3b - MSES - Species - Koala habitat area (SEQ)

MSES - Species
Koala habitat area (SEQ)

- Towns
- Freeways/Highways
- Secondary roads
- Major rivers/creeks
- Koala habitat area (core)
- Koala habitat area (locally refined)
- 2 kilometre buffer

LOCALITY DIAGRAM



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

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

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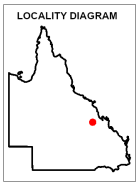
Map 3c - MSES - Species - Wildlife habitat (sea turtle nesting areas)

MSES - Wildlife habitat (sea turtle nesting areas)

- Towns
- Freeways/Highways
- Secondary roads
- Major rivers/creeks
- Wildlife habitat (sea turtle nesting areas)
- 2 kilometre buffer

LOCALITY DIAGRAM



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MSES mapping of sea turtle nesting areas identifies beaches where the recorded number of turtle nests are over 1% of the turtle species or genetic stock. The linework is also deliberately extended along nearby rocky coastlines and headlands to recognise that significant numbers of nesting adults and hatchlings can become disoriented by light pollution from development on rocky coastlines and headlands while navigating offshore from nesting beaches.

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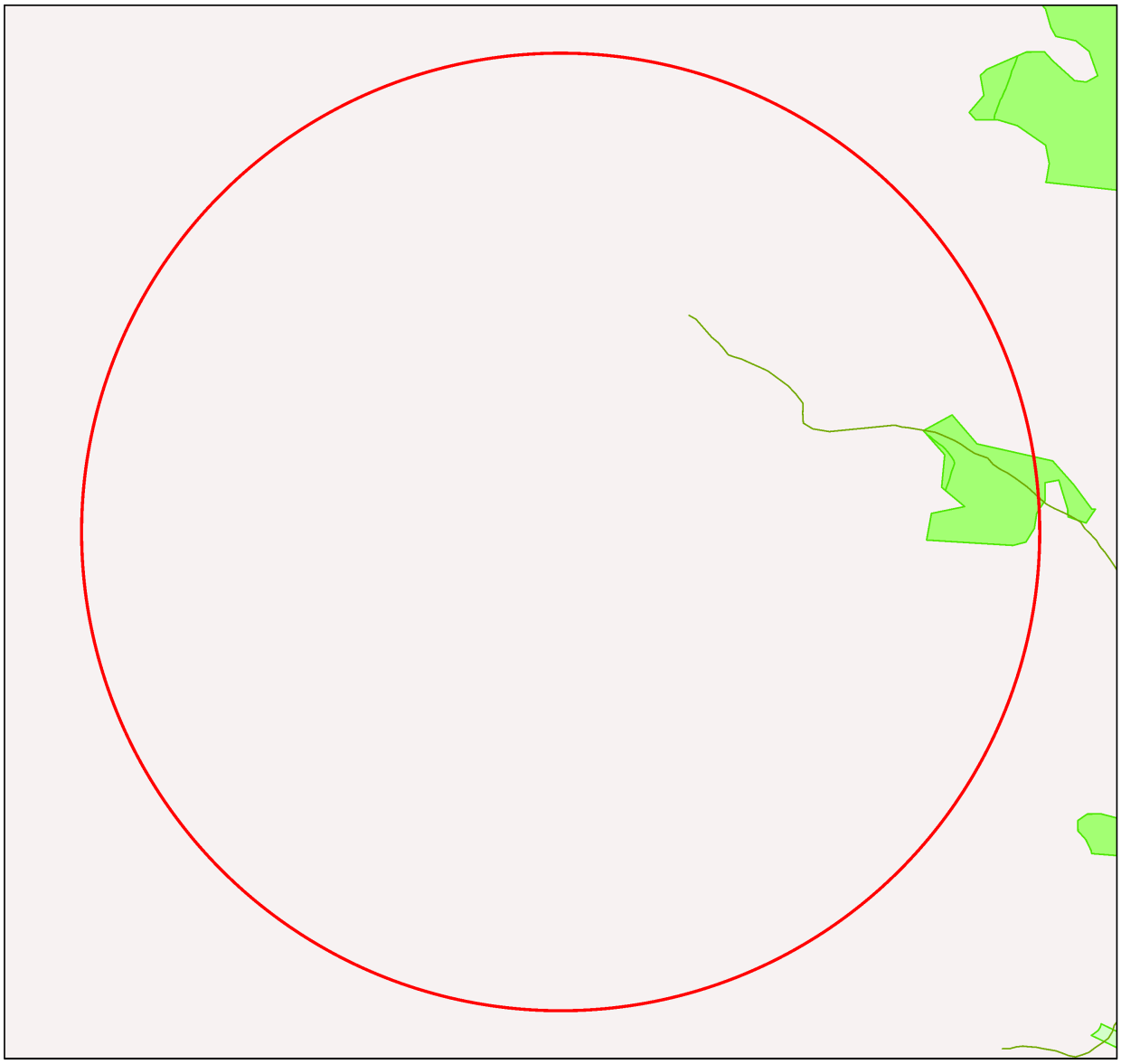
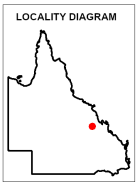
Map 4 - MSES - Regulated Vegetation



MSES - Regulated Vegetation

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



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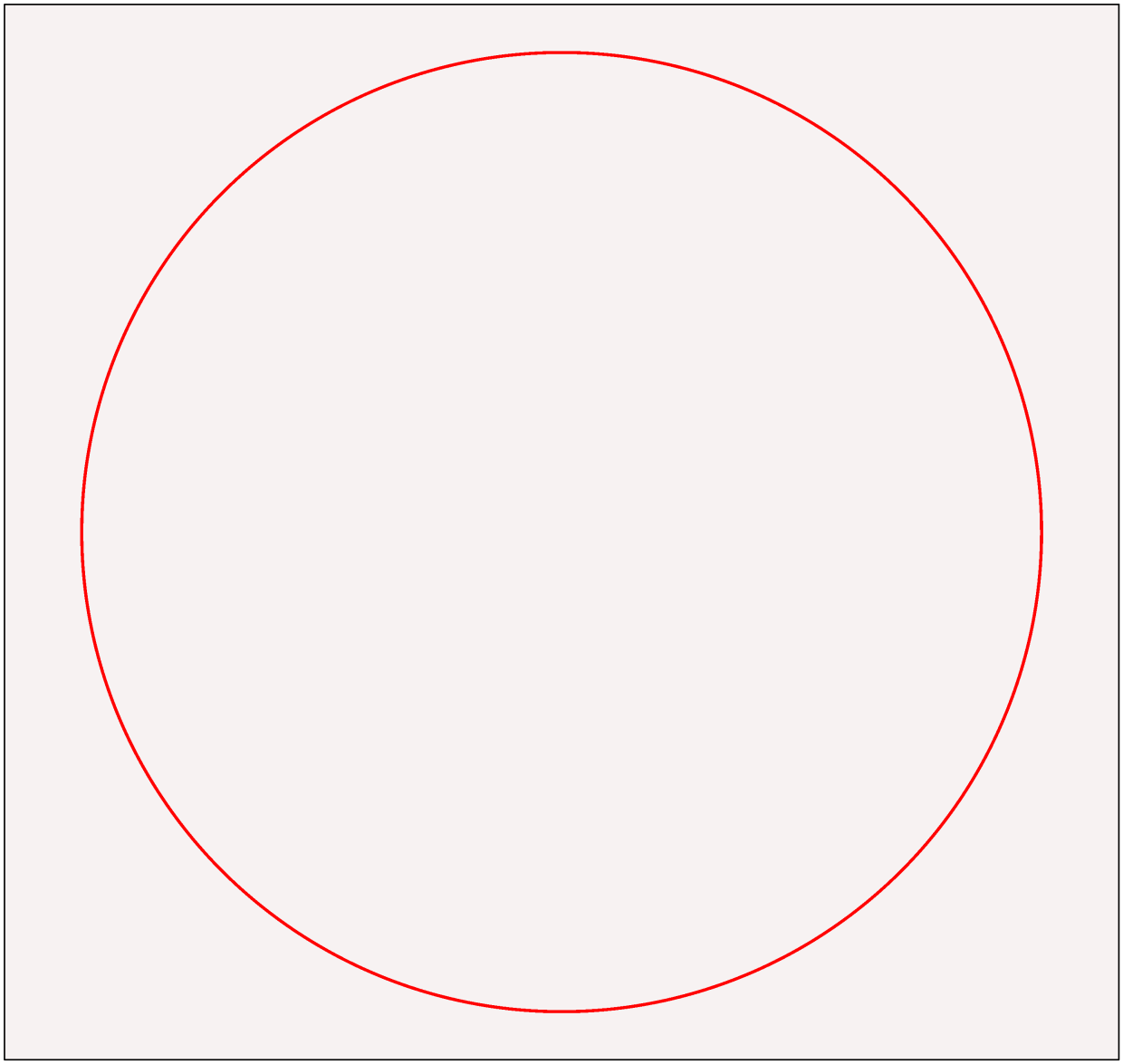
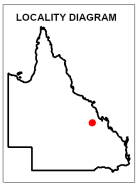
Map 5 - MSES - Offset Areas



MSES - Offsets

- ▲ Towns
- Freeways/Highways
- Secondary roads
- Major rivers/creeks
- Legally secured offset area (offset register)
- Legally secured offset area (vegetation offsets)
- 2 kilometre buffer



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Appendices

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

MSES mapping is a regional-scale representation of the definition for MSES under the State Planning Policy (SPP). Its primary purpose is to support implementation of the SPP biodiversity policy.

MSES mapping does not replace the regulatory mapping or environmental values specifically called up under other laws or regulations.

MSES mapping does not determine whether state or local development assessment is required. For state assessment triggers refer to the Development Assessment Mapping System (DAMS). For local assessment triggers, refer to the relevant local planning scheme.

The Queensland Government's "Method for mapping - matters of state environmental significance can be downloaded from:

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

Appendix 2 - Source Data

The datasets listed below are available on request from:

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

- Matters of State environmental significance

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

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

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

Appendix 3 - Acronyms and Abbreviations

AOI	- Area of Interest
DETSI	- Department of the Environment, Tourism, Science and Innovation
EP Act	- Environmental Protection Act 1994
EPP	- Environmental Protection Policy
GDA2020	- Geocentric Datum of Australia 2020
GEM	- General Environmental Matters
GIS	- Geographic Information System
MSES	- Matters of State Environmental Significance
NCA	- Nature Conservation Act 1992
RE	- Regional Ecosystem
SPP	- State Planning Policy
VMA	- Vegetation Management Act 1999

Appendix G. MSES Report eagle nest levee

Queensland Government

Department of the Environment, Tourism, Science and Innovation

Environmental Reports

Matters of State Environmental Significance

For the selected area of interest

Longitude: 148.7407 Latitude: -22.9188 with 2 kilometre radius

Environmental Reports - General Information

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

All area and area derived figures included in this report have been calculated via reprojecting relevant spatial features to Albers equal-area conic projection (central meridian = 146, datum Geocentric Datum of Australia 2020). As a result, area figures may differ slightly if calculated for the same features using a different co-ordinate system.

Figures in tables may be affected by rounding.

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

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

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

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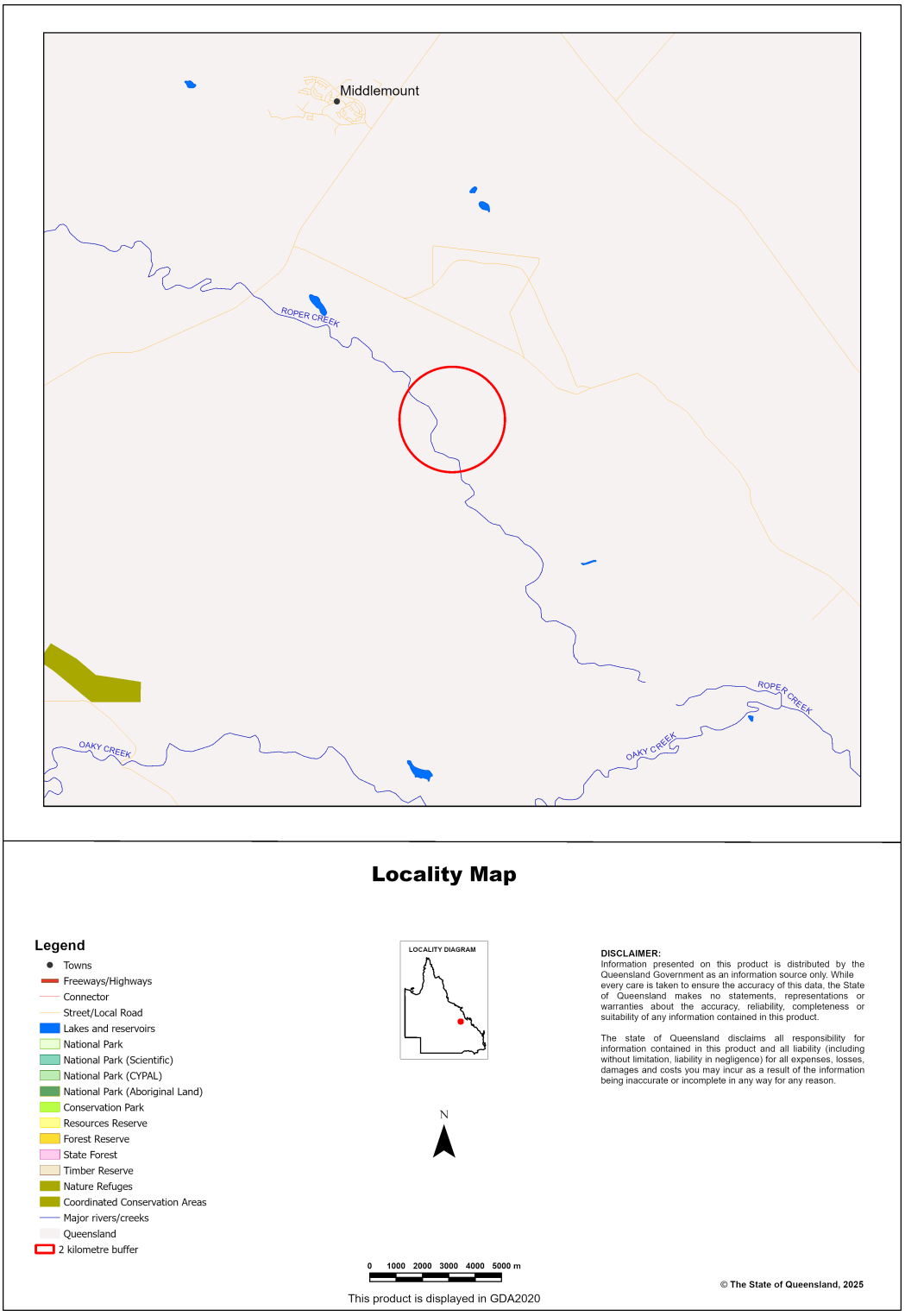
Assessment Area Details

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

Table 1: Summary table, details for AOI: Longitude: 148.7407 Latitude: -22.9188 with 2 kilometre radius, with area 1256.64 ha

Local Government(s)	Catchment(s)	Bioregion(s)	Subregion(s)
Isaac Regional	Fitzroy	Brigalow Belt	Isaac - Comet Downs



Matters of State Environmental Significance (MSES)

MSES Categories

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

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

The MSES mapping product is a guide to assist implementation of the SPP biodiversity policy. While it supports the SPP, the mapping does not replace the regulatory mapping or environmental values specifically called up under other laws or regulations.

The SPP defines matters of state environmental significance as:

- Protected areas (including all classes of protected area except coordinated conservation areas) under the *Nature Conservation Act 1992;*

- Marine parks and land within a 'marine national park', 'conservation park', 'scientific research', 'preservation' or 'buffer' zone under the Marine Parks Act 2004 ;

- Areas within declared fish habitat areas that are management A areas or management B areas under the Fisheries Regulation 2008;

- *Threatened wildlife under the Nature Conservation Act 1992* and special least concern animals under the Nature Conservation (Wildlife) Regulation 2006;

- Regulated vegetation under the *Vegetation Management Act 1999* that is:

  - Category B areas on the regulated vegetation management map, that are 'endangered' or 'of concern' regional ecosystems;
  - Category C areas on the regulated vegetation management map that are 'endangered' or 'of concern' regional ecosystems;
  - Category R areas on the regulated vegetation management map;
  - Regional ecosystems that intersect with watercourses identified on the vegetation management watercourse and drainage feature map;
  - Regional ecosystems that intersect with wetlands identified on the vegetation management wetlands map;

- Strategic Environmental Areas under the *Regional Planning Interests Act 2014* ;

- Wetlands in a wetland protection area of wetlands of high ecological significance shown on the Map of Queensland Wetland Environmental Values under the Environment Protection Regulation 2019;

- Wetlands and watercourses in high ecological value waters defined in the Environmental Protection (Water) Policy 2009, schedule 2;
- Legally secured offset areas.

MSES Values Present

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

Table 2: Summary of MSES present within the AOI

1a Protected Areas- estates	0 ha	0.0%
1b Protected Areas- nature refuges	0 ha	0.0%
1c Protected Areas- special wildlife reserves	0 ha	0.0%
2 State Marine Parks- highly protected zones	0 ha	0.0%
3 Fish habitat areas (A and B areas)	0 ha	0.0%
4 Strategic Environmental Areas (SEA)	0 ha	0.0%
5 High Ecological Significance wetlands on the Map of Queensland Wetland Environmental Values	0.91 ha	0.1%
6a High Ecological Value (HEV) wetlands	0 ha	0.0%
6b High Ecological Value (HEV) waterways	0 km	Not applicable
7a Threatened (endangered or vulnerable) wildlife	0 ha	0.0%
7b Special least concern animals	0 ha	0.0%
7c i Koala habitat area - core (SEQ)	0 ha	0.0%
7c ii Koala habitat area - locally refined (SEQ)	0 ha	0.0%
7d Sea turtle nesting areas	0 km	Not applicable
8a Regulated Vegetation - Endangered/Of concern in Category B (remnant)	24.31 ha	1.9%
8b Regulated Vegetation - Endangered/Of concern in Category C (regrowth)	0 ha	0.0%
8c Regulated Vegetation - Category R (GBR riverine regrowth)	0 ha	0.0%
8d Regulated Vegetation - Essential habitat	0 ha	0.0%
8e Regulated Vegetation - intersecting a watercourse	12.1 km	Not applicable
8f Regulated Vegetation - within 100m of a Vegetation Management Wetland	1.2 ha	0.1%
9a Legally secured offset areas- offset register areas	0 ha	0.0%
9b Legally secured offset areas- vegetation offsets through a Property Map of Assessable Vegetation	0 ha	0.0%

Additional Information with Respect to MSES Values Present

MSES - State Conservation Areas

1a. Protected Areas - estates

(No results)

1b. Protected Areas - nature refuges

(No results)

1c. Protected Areas - special wildlife reserves

(No results)

2. State Marine Parks - highly protected zones

(No results)

3. Fish habitat areas (A and B areas)

(No results)

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

MSES - Wetlands and Waterways

4. Strategic Environmental Areas (SEA)

(No results)

5. High Ecological Significance wetlands on the Map of Queensland Wetland Environmental Values
Natural wetlands that are 'High Ecological Significance' (HES) on the Map of Queensland Wetland Environmental Values are present.

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

(no results)

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

(no results)

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

MSES - Species

7a. Threatened (endangered or vulnerable) wildlife

Not applicable

7b. Special least concern animals

Not applicable

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

Not applicable

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

Not applicable

7d. Wildlife habitat (sea turtle nesting areas)

Not applicable

Threatened (endangered or vulnerable) wildlife habitat suitability models

Species	Common name	NCA status	Presence
Boronia keysii	Keys boronia	V	None
Calyptorhynchus lathami	Glossy black cockatoo	V	None
Casuarius casuarius johnsonii	Sthn population cassowary	E	None
Crinia tinnula	Wallum froglet	V	None
Denisonia maculata	Ornamental snake	V	None
Euastacus bindal	Mount Elliot crayfish	CR	None
Euastacus binzayedi		CR	None
Euastacus eungella		E	None
Euastacus hystricosus		E	None
Euastacus jagara	Jagara hairy crayfish	CR	None
Euastacus maidae		CR	None
Euastacus monteithorum		E	None
Euastacus robertsi		E	None
Taudactylus pleione	Kroombit tinkerfrog	E	None
Litoria freycineti	Wallum rocketfrog	V	None
Litoria olongburensis	Wallum sedgefrog	V	None
Macadamia integrifolia		V	None
Melaleuca irbyana	swamp tea-tree	E	None
Macadamia ternifolia		V	None
Macadamia tetraphylla	bopple nut	V	None
Petrogale penicillata	brush-tailed rock-wallaby	V	None
Petrogale coenensis	Cape York rock-wallaby	E	None
Petrogale purpureicollis	purple-necked rock-wallaby	V	None
Petrogale sharmani	Sharmans rock-wallaby	V	None
Petrogale xanthopus celeris	yellow-footed rock-wallaby (Qld subspecies)	V	None
Petaurus gracilis	Mahogany Glider	E	None
Petrogale persephone	Proserpine rock-wallaby	E	None
Phascolarctos cinereus	Koala - outside SEQ*	E	None
Pezoporus wallicus wallicus	Eastern ground parrot	V	None
Xeromys myoides	Water Mouse	V	None

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

Threatened (endangered or vulnerable) wildlife species records

(No results)

Special least concern animal species records

(No results)

Shorebird habitat (critically endangered/endangered/vulnerable)

Not applicable

Shorebird habitat (special least concern)

Not applicable

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

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

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

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

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

MSES - Regulated Vegetation

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

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

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

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

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

Regional ecosystem	Vegetation management polygon	Vegetation management status
11.3.1/11.3.2	E-dom	rem_end
11.3.1b	E-dom	rem_end
11.3.2	O-dom	rem_oc

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

Not applicable

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

Regulated vegetation map category	Map number
R	8652

8d. Regulated Vegetation - Essential habitat

Not applicable

8e. Regulated Vegetation - intersecting a watercourse**

A vegetation management watercourse is mapped as present

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

Regulated vegetation map category	Map number
B	8652

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

MSES - Offsets

9a. Legally secured offset areas - offset register areas

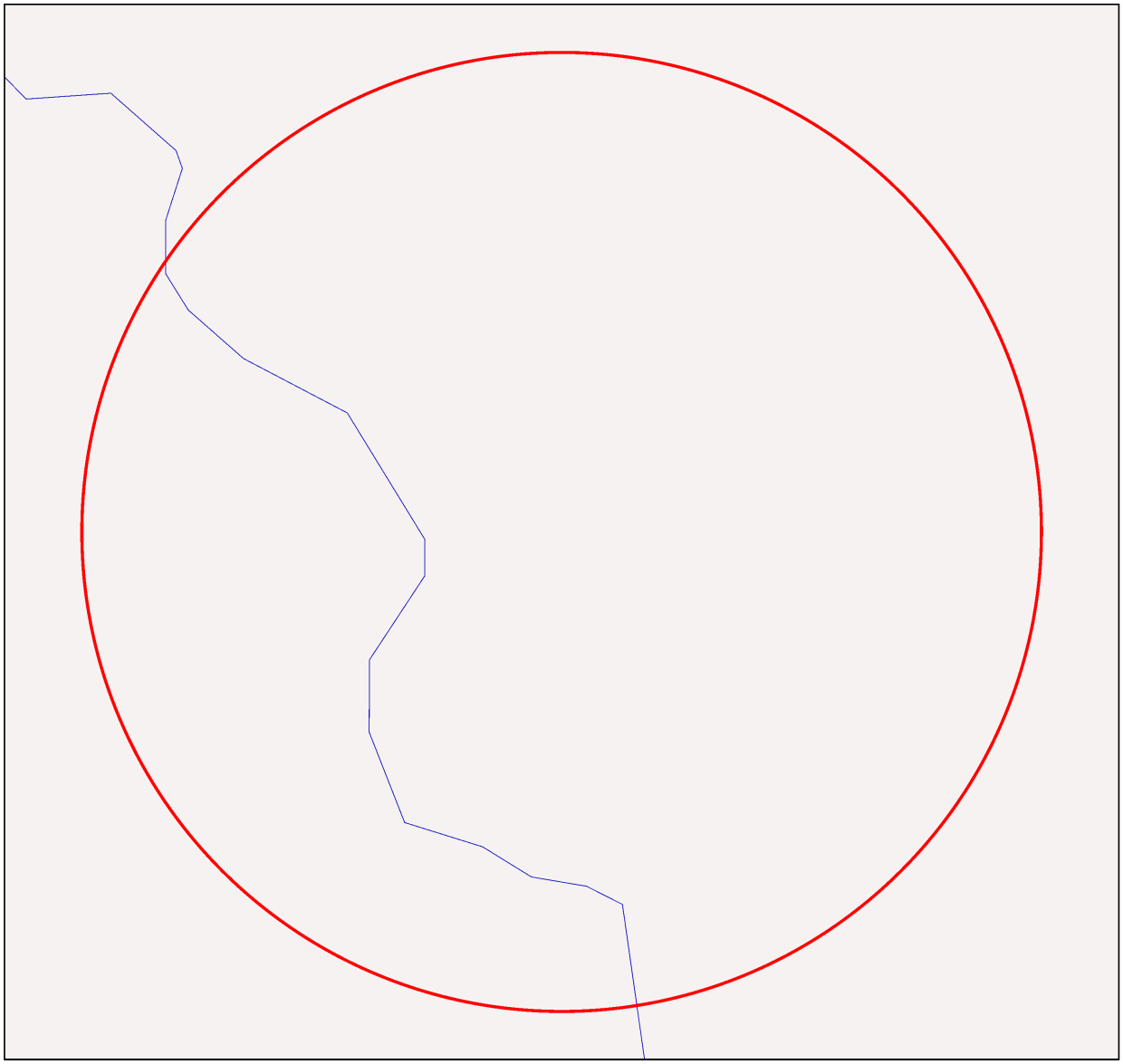
(No results)

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

(No results)

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

Map 1 - MSES - State Conservation Areas



MSES - State Conservation Areas

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

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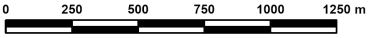

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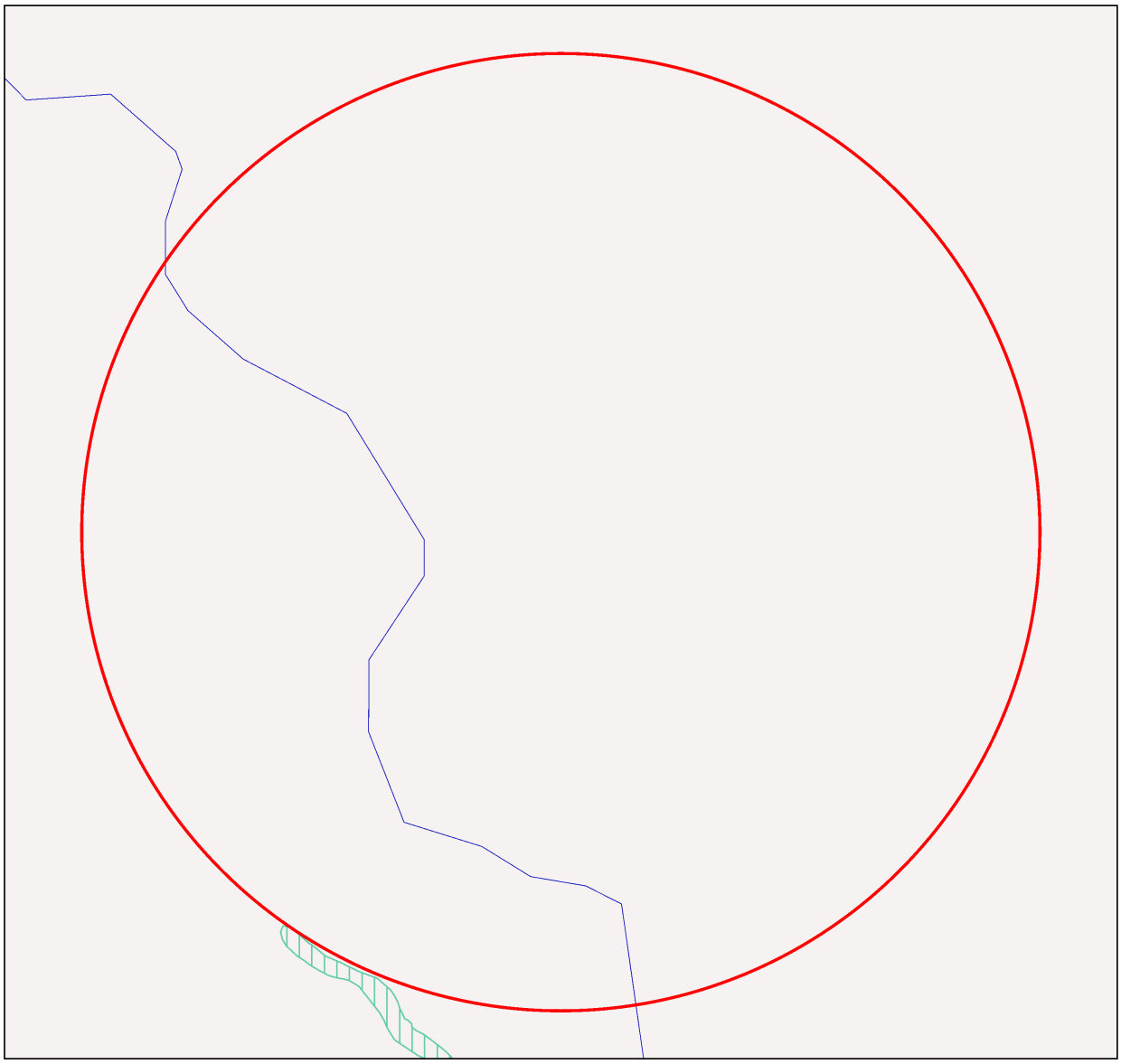
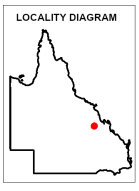
Map 2 - MSES - Wetlands and Waterways



MSES - Wetlands and Waterways

- Towns
- Freeways/Highways
- Secondary roads
- Major rivers/creeks
- Declared high ecological value waters (watercourse)
- Strategic environmental area (designated precinct)
- Declared high ecological value waters (wetland)
- High ecological significance wetlands
- 2 kilometre buffer



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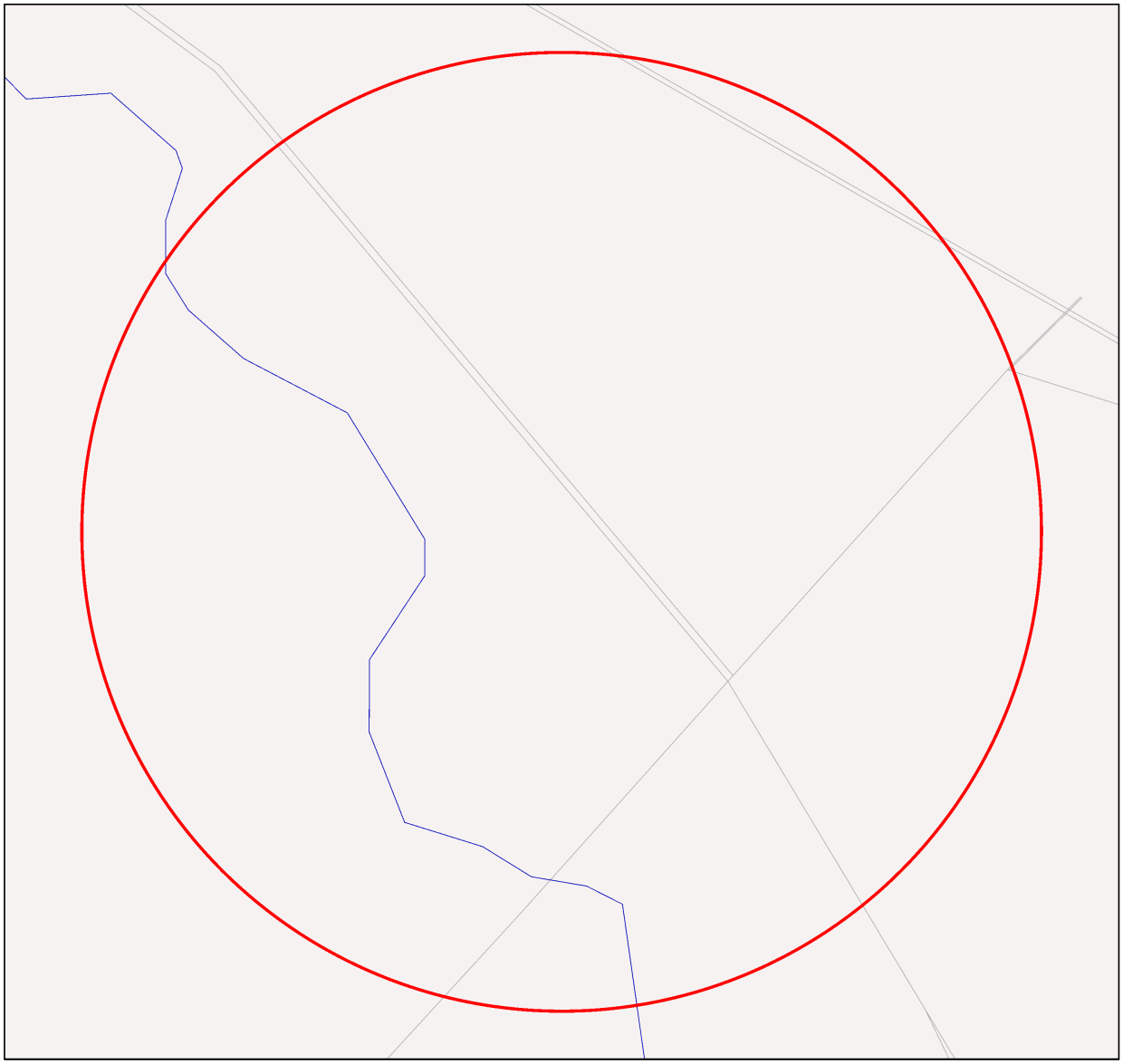
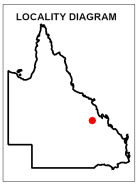
Map 3a - MSES - Species - Threatened (endangered or vulnerable) wildlife and special least concern animals



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

- ▲ Towns
- Freeways/Highways
- Secondary roads
- Major rivers/creeks
- Wildlife habitat (special least concern)
- Wildlife habitat (endangered or vulnerable)
- 2 kilometre buffer



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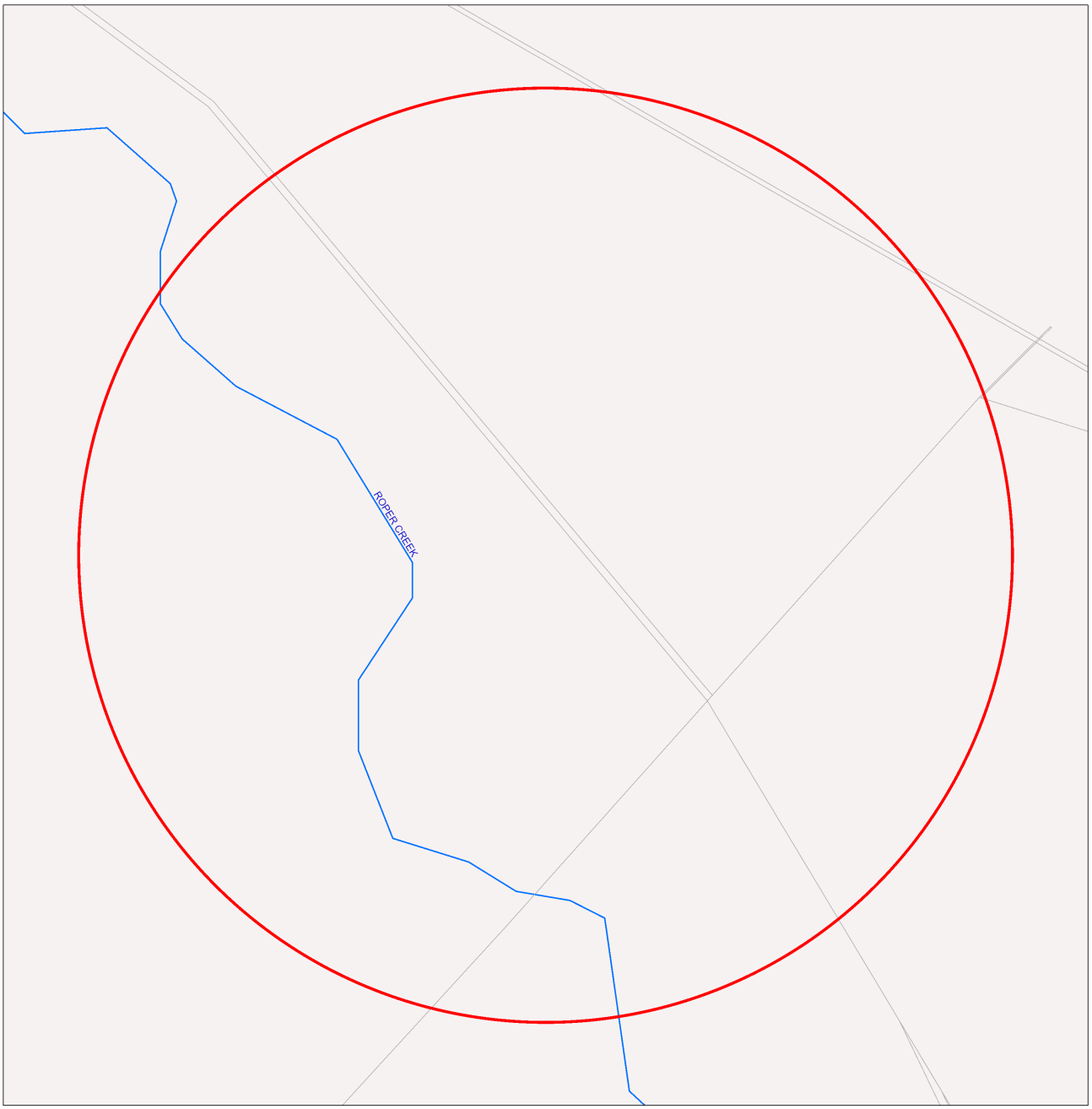
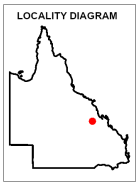
Map 3b - MSES - Species - Koala habitat area (SEQ)



MSES - Species
Koala habitat area (SEQ)

- Towns
- Freeways/Highways
- Secondary roads
- Major rivers/creeks
- Koala habitat area (core)
- Koala habitat area (locally refined)
- 2 kilometre buffer

LOCALITY DIAGRAM



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

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

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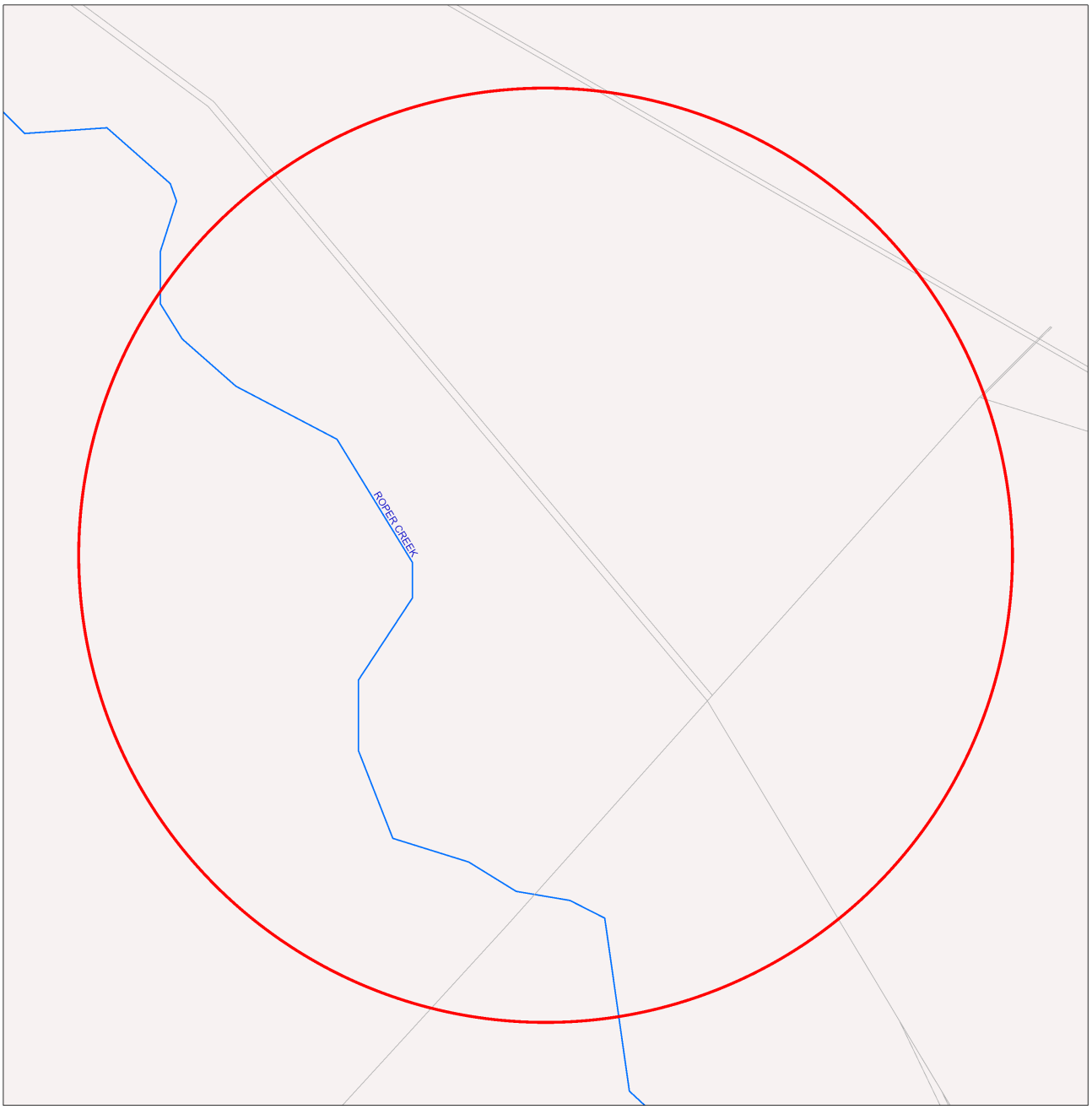
Map 3c - MSES - Species - Wildlife habitat (sea turtle nesting areas)



MSES - Wildlife habitat (sea turtle nesting areas)

- Towns
- Freeways/Highways
- Secondary roads
- Major rivers/creeks
- Wildlife habitat (sea turtle nesting areas)
- 2 kilometre buffer

LOCALITY DIAGRAM

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MSES mapping of sea turtle nesting areas identifies beaches where the recorded number of turtle nests are over 1% of the turtle species or genetic stock. The linework is also deliberately extended along nearby rocky coastlines and headlands to recognise that significant numbers of nesting adults and hatchlings can become disoriented by light pollution from development on rocky coastlines and headlands while navigating offshore from nesting beaches.

0 240 480 720 960 1,200 m

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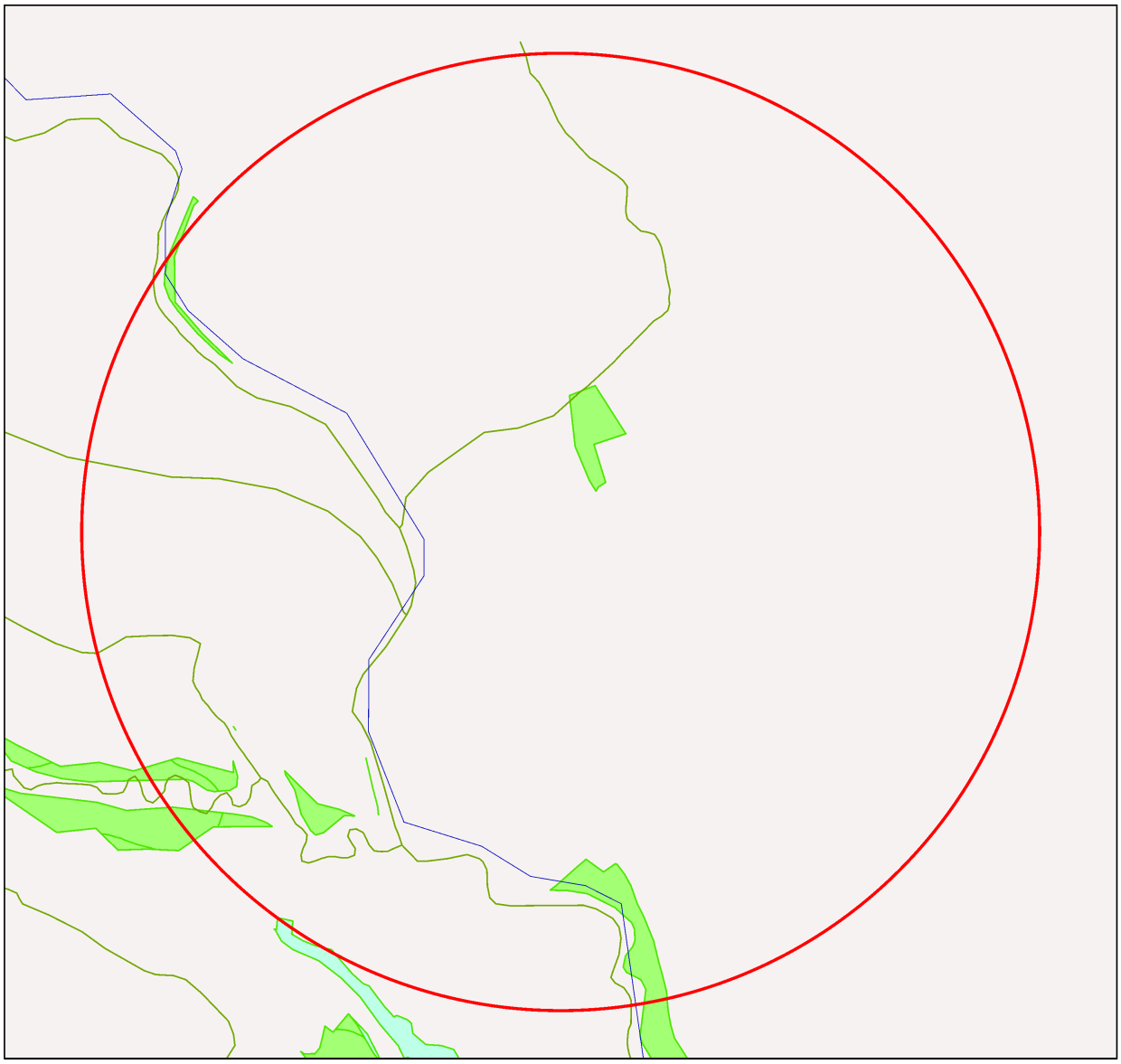
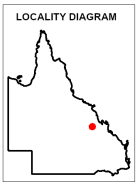
Map 4 - MSES - Regulated Vegetation



MSES - Regulated Vegetation

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



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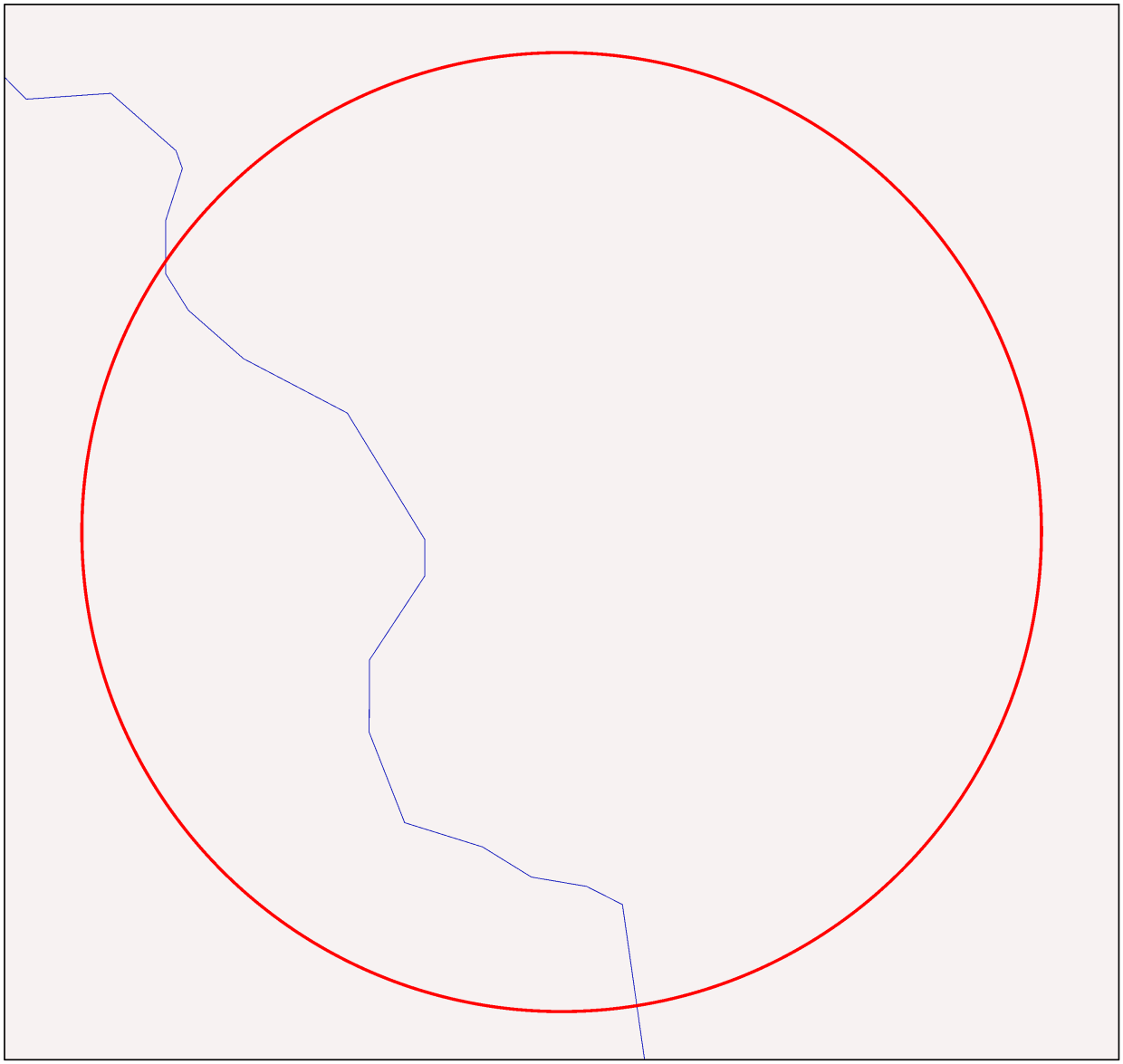
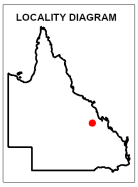
Map 5 - MSES - Offset Areas



MSES - Offsets

- ▲ Towns
- Freeways/Highways
- Secondary roads
- Major rivers/creeks
- Legally secured offset area (offset register)
- Legally secured offset area (vegetation offsets)
- 2 kilometre buffer



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Appendices

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

MSES mapping is a regional-scale representation of the definition for MSES under the State Planning Policy (SPP). Its primary purpose is to support implementation of the SPP biodiversity policy.

MSES mapping does not replace the regulatory mapping or environmental values specifically called up under other laws or regulations.

MSES mapping does not determine whether state or local development assessment is required. For state assessment triggers refer to the Development Assessment Mapping System (DAMS). For local assessment triggers, refer to the relevant local planning scheme.

The Queensland Government's "Method for mapping - matters of state environmental significance can be downloaded from:

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

Appendix 2 - Source Data

The datasets listed below are available on request from:

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

- Matters of State environmental significance

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

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

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

Appendix 3 - Acronyms and Abbreviations

AOI	- Area of Interest
DETSI	- Department of the Environment, Tourism, Science and Innovation
EP Act	- Environmental Protection Act 1994
EPP	- Environmental Protection Policy
GDA2020	- Geocentric Datum of Australia 2020
GEM	- General Environmental Matters
GIS	- Geographic Information System
MSES	- Matters of State Environmental Significance
NCA	- Nature Conservation Act 1992
RE	- Regional Ecosystem
SPP	- State Planning Policy
VMA	- Vegetation Management Act 1999